

**ARGENTINE WINGS: THE STATE, POPULAR CULTURE, AND THE CREATION OF  
A TECHNOLOGICAL FUTURE IN ARGENTINA, 1910-1955**

by  
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## ABSTRACT

During the first half of the twentieth century, Argentines harnessed the symbolic power of aviation technology to advance the practice of flight in their nation and—in the process—articulate an aspirational Argentine technical identity. Elites and common people grappled with modernization through the construction of a new but contested sense of *Argentinidad*—“Argentineness.” The airplane proved a powerful symbol of this identity. Argentines increasingly perceived of the aviation industry as an avenue to upward mobility, masculine confirmation, and national development. Despite setbacks in the transfer of the technology to Argentina, this cultural valuation sustained the practice of aviation and led to the creation of the nation’s modern aviation system under Juan Perón. Through analysis of state documents, popular media, and aviation community publications, this dissertation reveals how aviation became a fundamental aspect of Argentine politics and society, bound to changing discourses of class, gender, race, and the role of government.

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## TABLE OF CONTENTS

Abstract	ii
Acknowledgements	iii
Table of Contents	vi
List of Figures	vii
Abbreviations	xi
Introduction	1
Part I – Belle Époque Aviation	
1. Jorge Newbery and the Gendered Culture of Early Flight, 1909-18.	41
2. Learning to Fly: Technology Transfer and the Origins of Dependency, 1909-20.	90
Part II – Interwar Aviation	
3. Heroic Aviation, Gender, and Biological Fitness for Modernity, 1920-40.	155
4. Culture, Class, and Aviation in the Search for <i>Argentinidad</i> , 1920-40.	229
5. The Army and the Civil Aviation Community, 1919-36.	309
6. The Military Aircraft Factory and its Discontents, 1919-36.	353
Part III – Peronist Aviation	
7. Class, Gender, and State Aviation in Juan Perón’s “New Argentina,” 1943-55.	419
8. The Peronist State and the National Aviation Community, 1943-55.	500
Conclusion	597
Bibliography	615
Curriculum Vitae	632

## LIST OF FIGURES

### Introduction

Figure i.1	The provinces of Argentina in the present day.	xii
Figure i.2	The principal cities of northern Argentina.	xiii
Figure i.3	Buenos Aires' airports and strips in 1947.	xiv
Figure i.4	Garay family's " <i>bautismo del aire</i> " in 1945.	2

### Chapter 1

Figure 1.1	Newbery and Anchorena in the basket of <i>El Pampero</i> in 1907.	42
Figure 1.2	Newbery and Correa before and after a balloon flight in 1908.	48
Figure 1.3	Henri Brégi shortly before his historic first heavier-than-air flight in 1910.	51
Figure 1.4	Newbery before his double traverse of the Rio de la Plata in 1912.	56
Figure 1.5	"Women of the future" cartoon in <i>El Hogar</i> , 1919.	64
Figure 1.6	"Moscias," winning "allegorical" submission for 1912 drawing competition.	71
Figure 1.7	Images of Teodoro Fels from 1912.	81
Figure 1.8	Aero Club Argentino 1911 banquet for <i>globos floridos</i> event.	84
Figure 1.9	Monument for Benjamin Matienzo in San Miguel de Tucumán.	86
Figure 1.10	"Modern war" cartoon in <i>El Hogar</i> , 1915.	88

### Chapter 2

Figure 2.1	Aviators circling the Stadium Palermo in 1916.	91
Figure 2.2	The first Gnome Omega 50HP engine.	96
Figure 2.3	Example of a Farman biplane.	97
Figure 2.4	Example of a Blériot XI monoplane.	98
Figure 2.5	Marcel Paillette before a flight in 1911.	101
Figure 2.6	The <i>Argentino I</i> biplane in 1912.	112
Figure 2.7	Antonio Guido Borello and his <i>El Argentino</i> in 1912.	113
Figure 2.8	Gerardo Noni and one of his monoplanes.	121
Figure 2.9	Paul Castaibert and his Castaibert 914-5 monoplane.	123
Figure 2.10	Castaibert in flight racing a motorcycle in 1915.	125
Figure 2.11	Cross-section of the Gnome rotary engine.	132
Figure 2.12	Luis Candelaria and the Morane-Saulnier used to cross the Andes.	146

### Chapter 3

Figure 3.1	Images from the aerobatics show at a 1920 parade for military aviators.	156
Figure 3.2	Carolina Lorenzini after her heroic flight in 1940.	157
Figure 3.3	Autoline advertisement featuring Adrienne Bolland in 1921.	162
Figure 3.4	"El major tribute" cover of <i>Mundo Argentino</i> , August 21, 1929.	163
Figure 3.5	Comic strips of <i>El Hijo Adoptivo</i> and <i>Rin-Tin-Tin</i> from <i>Billiken</i> in 1929 and 1930.	169
Figure 3.6	"The Hero" cartoon from <i>El Hogar</i> , 1920.	171
Figure 3.7	Pedro Zanni in 1920.	175
Figure 3.8	Guillermo Hillcoat in 1924 and 1925.	181

Figure 3.9	Medical testing device for prospective pilots.	185
Figure 3.10	Representations of <i>la mujer moderna</i> in advertising from <i>El Hogar</i> and <i>Caras y Caretas</i> .	203
Figure 3.11	Illustration for “La colegiala y el aviador” in <i>La Prensa</i> , 1931.	209
Figure 3.12	Myriam Stefford in 1931.	211
Figure 3.13	Carola Lorenzini in 1935.	220
 <b>Chapter 4</b>		
Figure 4.1	The <i>Plus Ultra</i> low over Buenos Aires’ harbor in 1926.	230
Figure 4.2	Ramón Franco and Julio Ruiz de Alda in 1926.	241
Figure 4.3	The <i>Plus Ultra</i> moored in Buenos Aires’ harbor.	243
Figure 4.4	Advertising and contests to mark the arrival of the <i>Plus Ultra</i> in <i>La Prensa</i> .	244
Figure 4.5	The aviators’ motorcade passing through Buenos Aires.	246
Figure 4.6	Franco and some of his many female admirers in 1926.	247
Figure 4.7	Drawing of Franco and Columbus shaking hands in <i>Crítica</i> .	248
Figure 4.8	Eduardo Olivero, Bernando Duggan, and Ernesto Campanelli in 1926.	254
Figure 4.9	Olivero and Duggan depicted alongside <i>gauchos</i> in <i>Crítica</i> .	259
Figure 4.10	Pablo Rada in 1926.	273
Figure 4.11	“Boston Studio” advertisement in <i>Ciencia Popular</i> , 1935.	281
Figure 4.12	Illustration of “mechanical” pilots <i>Ciencia Popular</i> , 1933.	284
Figure 4.13	An <i>aficionado</i> father with his sons in advertisement for CADE in <i>Ciencia Popular</i> , 1942.	289
Figure 4.14	Schematics for a homebuilt glider designed by <i>Ciencia Popular</i> and published in 1930.	291
Figure 4.15	Photograph of a homebuilt glider in Santa Rosa, La Pampa, in <i>Ciencia Popular</i> , 1931.	292
 <b>Chapter 5</b>		
Figure 5.1	Enrique Mosconi’s proposal for air routes in 1921.	317
Figure 5.2	Illustration juxtaposing the <i>Plus Ultra</i> and the early-modern caravel in <i>La Prensa</i> , 1926.	326
Figure 5.3	Cartoons lampooning the anticipated “Air Age” in <i>El Hogar</i> in 1924 and 1925.	329
 <b>Chapter 6</b>		
Figure 6.1	The Fábrica Militar de Aviones of Córdoba in May 1933 from the air.	354
Figure 6.2	Comparison between the French and Argentine aviation industries by <i>Aviación</i> in 1925.	358
Figure 6.3	Exterior and interior of the fabrication workshop in 1931 and 1936.	362
Figure 6.4	A FMA-built Dewoitine D-21C in 1931.	370
Figure 6.5	The first Ae.C prototype aircraft by the FMA in 1931.	386
Figure 6.6	Ae.T.1 transport variant in 1933.	387
Figure 6.7	Ae.C.2 “ <i>Tenga Confianza</i> .”	390
Figure 6.8	The FMA’s wind tunnel in 1931.	392



## Chapter 7

Figure 7.1	Photographs from the 1953 <i>Semana Aeronáutica</i> .	421
Figure 7.2	Title page from <i>La Aeronáutica nacional al servicio del país</i> depicting the emblem of the Secretaría de Aeronáutica.	433
Figure 7.3	State advertisement in favor of constitutional reform in <i>El Líder</i> in 1948.	438
Figure 7.4	The main installation of the “Exposición Aeronáutica 1947” in downtown Buenos Aires.	446
Figure 7.5	The Pulqui II and Horten flying wing glider displayed at a national fair in Mendoza in 1954.	447
Figure 7.6	Juan Perón and Bartolomé de la Colina looking at a model of the Ezeiza airport at the 1946 “Exposición de Aeronáutica.”	449
Figure 7.7	The terminals of the international airport at Ezeiza in 1950.	450
Figure 7.8	An advertisement for the airport at Ezeiza in the <i>Revista Nacional de Aeronáutica</i> in 1951.	451
Figure 7.9	Existent and planned aero clubs and aeromodelling clubs in 1947.	453
Figure 7.10	Private/Civilian flight hours registered with the Secretaría de Aeronáutica from 1944 to 1953.	454
Figure 7.11	The “Aviator of tomorrow” throws a model airplane in state propaganda from 1948.	469
Figure 7.12	State propaganda depicting the “disciplined youth” of the FAA and a recruitment poster for the service in 1948.	483
Figure 7.13	Cartoons promising manly validation from flight training published by Secretaría de Aeronáutica officials in 1947.	477
Figure 7.14	A father encourages his son to fly in state propaganda, 1947.	479
Figure 7.15	IA advertisement for the “El Indio” piston engine.	480
Figure 7.16	Images of women in state propaganda in 1948 and 1949.	488
Figure 7.17	Eva Duarte with Minister of Aeronautics Ojeda presenting the FMA-designed Boyero airplane in 1949.	492
Figure 7.18	Images of women workers in the aviation industry in official media.	494
Figure 7.19	Perón and Ojeda congratulate the technicians who built the Pulqui II prototype in 1951.	497

## Chapter 8

Figure 8.1	The remains of Matienzo’s airplane that were recovered and displayed by officials in 1951.	501
Figure 8.2	Graphical representation of the Secretaría de Aeronáutica’s organization in 1947.	516
Figure 8.3	The existent and planned radio navigation and air traffic control network in 1947.	518
Figure 8.4	The Secretaría de Aeronáutica’s planned airport network in 1947.	521
Figure 8.5	FAMA’s active and planned destinations in 1947.	536
Figure 8.6	Zonda, ALFA, and Aeroposta domestic routes in 1947.	539
Figure 8.7	I.Ae. 22 DL military trainer on display at the Exposición de Aeronáutica in 1947.	545
Figure 8.8	I.Ae.24 Calquín light bomber.	546

Figure 8.9	I.Ae.27 Pulqui I jet prototype.	555
Figure 8.10	Coverage of the Pulqui II prototype's public demonstration in <i>Democracia</i> in 1951.	561
Figure 8.11	A planned administrative headquarters for the Secretaría de Aeronáutica that was never built.	568
Figure 8.12	Aero club pilots spell "Perón" in the sky in 1954.	589
Figure 8.13	Satirical cartoon of the Pulqui II in the <i>Revista Nacional de Aeronáutica</i> in 1954.	590
<b>Conclusion</b>		
Figure 9.1	Mural of June 1955 bombing by Andy Riva, Secretaría de Derechos Humanos de la Nación.	598
Figure 9.2	September 1955 cover of the <i>Revista Nacional de Aeronáutica</i> .	600

## ABBREVIATIONS

BNA	Biblioteca Nacional de Aeronáutica, Argentina.
COR	Colección Oscar Rodríguez.
DEHFAA	Dirección de Estudios Históricos de la Fuerza Aérea Argentina.
SD	Colección de la Subsecretaría de Aviación.
ARNAD	Archivo Nacional de la Administración, Chile.
P.E.	Poder Ejecutivo [Executive Branch].
P.d.l.N.	Presidencia de la Nación [National Presidency].
S.d.	Secretaría de [Secretary of].
M.d.	Ministerio de [Ministry of].
D.d.	Dirección de [Directorate of]
D.G.d.	Dirección General de [General Directorate of].



Figure i.1. The provinces of Argentina in the present day. Not pictured is Tierra del Fuego in the extreme south.  
*National Geographic Society Map Maker*, accessed February 10, 2022.



Figure i.2. The principal cities of northern Argentina mentioned in this study. *National Geographic Society Map Maker*, accessed February 10, 2022.



Figure i.3. The airports and strips of Buenos Aires in 1947. Secretaría de Aeronáutica, *La Aeronáutica nacional al servicio del país* (Buenos Aires: Secretaría de Aeronáutica, 1948), 56.

## Introduction

On a brisk winter's day in 1945, the Garay family from Buenos Aires arrived at a small grass strip in Monte Grande, near the suburb of Ezeiza. The owner of an appliance store in Villa Devoto, José Ramon Garay had his wife, Aída Federici, and their three daughters, Susana, Silvia, and Alicia, in tow. The three girls, aged six, ten, and fourteen, were dressed in “the best clothes we had”—what they would wear to a birthday party, as Silvia recalled 76 years later. One at a time, Susana, Silvia, and Alicia were about to undergo a truly “extraordinary thing,” one of Argentina’s most modern of rituals.<sup>1</sup> They were to receive their “*bautismo del aire*,” or “aerial baptism,” aboard a Focke Wulfe Fw-44J biplane.

At the airfield that day the Garay family met their pilot, Siro Alberto Comi, who would take each of them into the sky for the first time. Comi epitomized a new phenomenon in Argentine society—the professional pilot. After earning his license in 1932, he became the first Argentine to earn a living as a skywriter for advertisements. With an imported Cessna light airplane, Comi would fly out over the Rio de la Plata casting a tail of smoke to write out brand names from Argentine companies like Geniol and foreign corporations like Pepsi. Thousands of people watched his displays from Buenos Aires’ many boardwalks, beaches, and balconies. Comi represented Safac, a local yerba maté brand, for much of his early career.<sup>2</sup> In the mid-1940s, Safac began a publicity campaign that could have served as Willy Wonka’s inspiration. To drum up sales, coupons for “aerial baptisms” were randomly distributed in their yerba tins.<sup>3</sup>

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<sup>1</sup> Silvia Aída Garay, interview with author, Salta, AR via Zoom, May 1, 2021.

<sup>2</sup> Angel O. Prignano, “El avioncito de Safac,” *Buenos-Ayres*, October 1, 2010, accessed January 24, 2022, <http://serdebuenosayres.blogspot.com/2010/10/el-avioncito-de-safac.html>.

<sup>3</sup> Silvia Aída Garay.



Figure i.4. The commemorative photograph from the Garay family's "aerial baptism." From left to right, Siro Comi, Silvia, José Ramon (blocking Alicia Martha from view), Susana, and Aída Federici. The text on the image is original. Author's personal collection.

With some luck and plenty of maté consumption—an easy task for most Argentines—one could win a ride with Comi in the open-cockpit Focke Wulf biplane.

My great grandfather, José Ramon Garay, evidently chose to make his own luck so that his family could experience the latest wonder of modern technology. Through a friend of a friend, José arranged flights for his entire family which, in Silvia's recollections, was still a very rare event among her friends. Silvia herself remembered feeling fearful of the "impression of flying," something which "had never entered my mind."<sup>4</sup> Nevertheless, in the commemorative photograph for that momentous day (see fig. i.4), she can be seen hopping down from the airplane with a smile, while my grandmother, Alicia, climbed up for her "baptism." Their

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<sup>4</sup> Silvia Aída Garay.



younger sister, six-year-old Susana, seems to have been thrilled by the experience. Although no one yet knew it, her visible delight standing center in the photograph was a sign of her future in the sky. Some fifteen years later, Susana Garay became a flight attendant for Pan American World Airways.

This dissertation is the story of how aviation technology became an intrinsic aspect of Argentine society—in essence, the story of how and why the Garay family and their pilot, Siro Alberto Comi, came to be at that airfield in 1945. Flight technology was not developed in Argentina. Its origins lay in the European and North American nations far to the north. But this did not lessen the technology's impact on the upstart republic at the southern tip of South America. Argentines, too, would take part in the defining “conquest” of the early twentieth century—that of the sky. The experiences of learning to fly and build flying machines would profoundly affect how Argentines understood their place—both present and future—in a world defined by technological and social change.

During the first half of the twentieth century, an assortment of political and social groups in Argentina harnessed the rhetorical and symbolic power of aviation technology and culture to advance the practice of flight in their nation and—in the process—articulate an aspirational Argentine identity. Using the methods of the History of Technology, this dissertation demonstrates that the process of technology transfer was far more than the movement of knowledge and objects from one place to another. Argentina was transforming from a traditional society into an industrial and urbanized nation. Elites and common people grappled with the nature of this change through the construction of a new but contested sense of national identity forged around the concept of *Argentinidad*—“Argentineness.”

At the outset of the century, Argentine elites generally denigrated the manual labor involved in the construction, maintenance, and operation of technology—practices associated with humbler *argentinos*. But the popular prestige lavished on celebrity pilots and airplane mechanics transformed the cultural valuation of technical knowledge. Media commentators and state officials increasingly presented technical careers, especially in aviation, as a route to upward mobility, masculine confirmation, and national aggrandizement.

Such associations—focused on the workers, not the customers, of the aviation industry—drove efforts by military officials and civilian enthusiasts to build their own airplanes and organize supporting infrastructure. The technology’s enthusiasts risked life, limb, and bankruptcy for them and their nation to take flight. Through new private and public institutions, aviation boosters worked to develop technical standards for flying and building airplanes; they strived to escape a dependency on foreign suppliers; and they lobbied their government to secure what they believed was their nation’s aerial future.

Although many different social groups participated in these efforts, the Army aviation community came to dominate aviation policy during the interwar period. Army aviation boosters proved particularly vociferous promoters of the idea that velocity drove progress and that their technology—heavier-than-air flight—would be the last word in the conquest of space and time. These officers believed aviation would serve a special role in national development, which they understood as industrialization. Army aviation boosters directed their efforts at the impoverished Argentine interior, where they hoped to continue their long-held mission as the propagators of “civilization” on the frontier. Such beliefs reflected the Army’s brand of nationalist politics as much as any technical assessment of aviation’s potential.

These developments culminated with the presidency of Juan Perón from 1946 to 1955, which invested millions of pesos into a heavily-politicized popular aviation program and established most of the nation's current flight infrastructure. State propaganda depicted the aviation industry as an agent of social justice through its creation of remunerative and “dignified” jobs for working people.

Through the analysis of state documents, popular media, and aviation community publications, this dissertation argues that aviation was successfully “transferred” to Argentine society—it became a fundamental responsibility of the state and an intrinsic feature of its economy—because of a robust cultural valuation of flight technology among the nation's leaders and common *argentinos*. The airplane became both a symbol and a physical incarnation of Argentine progress, the material representation of the changes brought by modernity. This cultural belief in aviation technology was bound to changing discourses of class, gender, race, and the role of government in the modern world. The popular enthusiasm for flight sustained the technology despite a multitude of obstacles for its use in Argentina, including an underdeveloped industrial sector, a small market for aircraft and airlines, and an unstable political environment. This dissertation argues that aviation technology was a key catalyst of a new national identity in Argentina—a technical identity associated with working men—which would eventually become a fundamental aspect of the nation's most well-known political movement, Peronism.

In this dissertation I integrate two historiographies that have tended to remain independent of one another: the study of aviation culture in society and the more technical analysis involved in the study of technology transfer. I have applied these methodologies from the History of Technology to the context of modern Argentina, a society rarely studied for its relationship to technology outside of a handful of Argentine researchers. The symmetrical study

of the cultural *and* technical development of aviation in Argentina has demonstrated the full extent of social processes involved in the importation, adaption, and use of technologies new to a society. This method has permitted the reconstruction of a historical narrative of Argentine aviation for the first time—in Spanish or English. My symmetrical approach has brought to the fore the importance of working people to the development of a prestige technology usually associated with elites during its first fifty years.

In this introduction, I will first provide an overview of the history of modern Argentina through a historiographical review. This will be followed by a review of the literature of aviation history in the first fifty years of heavier-than-air flight, both in Argentina and in the North Atlantic nations. Lastly, I will lay out the conceptual framework of this dissertation, which is based on the methods of the History of Technology.

### **Historiography of Modern Argentina, 1880-1955**

Between 1880 and 1955, Argentina went through a series of tumultuous economic, political, and social changes which transformed the nation from an unstable and marginal agricultural nation into one of the most prosperous countries per capita in the world, with some particularly optimistic prophets labeling it the United States of South America.<sup>5</sup> By the beginning of the period, the rampant civil conflict between the provinces and Buenos Aires had drawn to a close, with power largely concentrated in the great port city. Underpinned by this newfound stability, Argentina's liberal elites took advantage of new developments in transportation, communications, and a skyrocketing European demand for food to transform the nation's economy into an agricultural export powerhouse. Soon, Argentina was Latin America's

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<sup>5</sup> Robert Crassweller, *Perón and the Enigmas of Argentina* (New York: W.W. Norton & Company, 1987), 7-8.

wealthiest nation as its economy grew at an average of four percent annually between 1875 and 1912.<sup>6</sup>

As the massive waves of nineteenth-century migration to the New World began in the 1870s, Argentina opened its doors in an effort to modernize its economy and people. Liberal elites sought to populate their nation with prosperous, white European immigrants, incorporating their skills and mentalities to model Argentina in the image of Europe. They could have hardly imagined the success of their program. Thanks to the arrival of millions of Europeans, the national population grew from 1.8 million in 1869 to over 11 million in 1930.<sup>7</sup> This influx of people and capital from Europe, and the ideas, politics, skills, and objects they brought with them, drove the frenzied pace of social, political, demographic, and cultural change that swirled around Argentina.

It is these dramatic changes, most of which occurred within a single lifetime, that have drawn historians to study modern Argentina. It has served as a test case to understand the transformations and dislocations of modernity in a space outside the supposed “center”—Europe and the United States. Historians have focused on the movement of people, ideas, and capital to Buenos Aires, and how Argentines themselves reacted to these unprecedented developments.<sup>8</sup> With rapid change came conflict and social anxiety, as well as optimism for a utopia over the future’s horizon. Limited democracy arrived in 1912, and with it, new levels of political strife between the country’s traditional center of power, the agricultural oligarchy, and the newly

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<sup>6</sup> Yovanna Pineda, *Industrial Development in a Frontier Economy: The Industrialization of Argentina, 1890-1930* (Stanford: Stanford University Press, 2009), 2.

<sup>7</sup> Pineda, *Industrial Development*, 2.

<sup>8</sup> For general English-language histories of this period in Argentina, see David Rock, *Argentina: 1516-1982* (Berkeley: University of California Press, 1985); Nicolas Shumway, *The Invention of Argentina* (Berkeley: University of California Press, 1991); Luis Alberto Romero and James P. Brennan, *A History of Argentina in the Twentieth Century: Updated and Revised Edition* (University Park: Penn State University Press, 2013).

empowered lower and middle strata of society.<sup>9</sup> The gradual buildup of industry—largely light manufacturing of consumer goods and food stuffs—created new employment opportunities for common people, including European immigrants, rural migrants from the interior, and women.<sup>10</sup> Yet such socioeconomic changes also brought new anxieties and tensions that, at least in the minds’ of the nation’s power brokers and public intellectuals, constantly threatened to boil over into violence and anarchy.

While transformation remains at the forefront of most scholarship, operating just beneath the surface were deep structural continuities that ensured, in the words of the famous Argentine historian Beatriz Sarlo, Argentina’s twentieth-century experience was of a “peripheral modernity.” Argentines were aware of, and in many cases experiencing, the material and social changes of modernity, yet felt their connection to this supposed “progress” of civilization to be tenuous.<sup>11</sup> For all of the efforts to build a progressive civilization in the image of Europe, liberal elites remained anxious that it could all slip away under the dark clouds of “barbarism” that were always threatening to emerge from the nation’s interior and its Hispanic colonial past. The distance of Buenos Aires from the global economic “center” in Europe only furthered the liberal elites’ sense of being on the edge of modernity. As the twentieth century wore on, Argentines experienced another aspect of peripherality: continued economic and political marginalization in the international scene. Even as Argentines eagerly participated in the rhetoric and activity of

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<sup>9</sup> For the history of the first period of popular, albeit limited, democracy in Argentina from 1912-1930, see Joel Horowitz, *Argentina’s Party and Popular Mobilization, 1916-1930* (University Park: Penn State University Press, 2008); Romero and Brennan, *A History of Argentina*, chapter two.

<sup>10</sup> More recent scholarship on industry in late-nineteenth and early-twentieth-century Argentina emphasizes the larger scale of private industry than is represented in earlier histories of state-run industry in the 1930s. See Fernando Rocchi, *Chimneys in the Desert: Industrialization in Argentina during the Export Boom Years, 1870-1930* (Stanford: Stanford University Press, 2006); Pineda, *Industrial Development*.

<sup>11</sup> Beatriz Sarlo, *Una modernidad periférica: Buenos Aires 1920 y 1930* (Buenos Aires: Ediciones Nueva Visión, 1988), 27-34.

modernity, they found themselves excluded from centers of international power and unable to escape their economic dependencies.<sup>12</sup>

The historiography of Argentina has characterized the local intellectual and popular discourses from the nineteenth century and on as a series of dualisms that encapsulated the hopes and anxieties of its “peripheral modernity”: traditional versus modern, pastoral versus urban, provincial versus *porteño* (from Buenos Aires), barbarism versus civilization. In articulating these dualisms, Argentines were searching for their identity, for a true *Argentinidad*, which would solidify their place in the modernizing world.<sup>13</sup> Was Argentina a modern nation in line with the developed, technologically-sophisticated nations of the North Atlantic? Or was it a creature of its past, a traditional Hispanic culture more in tune with the Church and the rolling *Pampas* than the materialist whirlwind unfolding in the United States and Europe?

For historians such as Sarlo and Nicolas Shumway, the answer is both. Argentina was a “culture of mixture,” whose identity straddled the contradictions its intellectuals struggled to rectify. But for contemporaries themselves, these dualisms were unresolved tensions that weakened the socio-political cohesion of their nascent country. As such, throughout the history of modern Argentina, social and political groups mobilized the rhetoric embedded in these dichotomies to support their distinct visions for the nation.<sup>14</sup>

The contested nature of Argentine identity in this period of flux was not limited to conflicts between these grand visions of the “true” Argentina, but was also within each of them. By the early twentieth century, the liberal elites had indeed transformed Buenos Aires into a

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<sup>12</sup> Sarlo, *Una modernidad periférica*, 27-34.

<sup>13</sup> This understanding of national identity as the “imagined” construction of a community has been greatly influenced by Benedict Anderson’s seminal *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (London: Verso, 1983).

<sup>14</sup> Sarlo, *Una modernidad periférica*, 28; Shumway, *The Invention of Argentina*, preface, 167. Shumway calls the national myths that surround these dualisms to be Argentina’s “guiding fictions.”

diverse, cosmopolitan city filled with white Europeans. As millions of immigrants poured into Buenos Aires from Spain, Italy, and Eastern Europe, the cities' streets and media became battlegrounds for competing political discourses.<sup>15</sup>

Notions of normative gender, race, and class were naturally intrinsic to these public debates and articulations of an “Argentine” identity. First and foremost, Argentine intellectuals promoted a white racial identity, one which grew into the myth of the nation’s “racial exceptionalism” in Latin America.<sup>16</sup> The country’s original Amerindian, Afro-Argentine, and mixed raced populations were largely rendered invisible amongst a sea of new peoples from abroad in a policy of *blanqueamiento* [whitening].<sup>17</sup> This “white” identity was itself stratified between different national and even regional subgroups, all vying for their place in a rapidly transforming society. Media commentators, artists, and other public figures often interpreted domestic and international events through the lens of race. Everything from wars to scientific discoveries to flight records became symbols of racial superiority or inferiority.<sup>18</sup>

The articulation of racial identity was itself framed by notions of normative gender. As Sandra McGee Deutsch argued in her study of rural Jewish immigrants in Argentina, men

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<sup>15</sup> The most comprehensive English-language treatment of Spanish immigration to Argentina remains José C. Moya, *Cousins and Strangers: Spanish Immigrants in Buenos Aires, 1850-1930* (Oakland: University of California Press, 1998). For Italian immigration, see Samuel Baily, *Immigrants in the Lands of Promise: Italians in Buenos Aires and New York City, 1870-1914* (Ithaca: Cornell University Press, 1999); Fernando Devoto, *Historia de los italianos en la Argentina* (Buenos Aires: Editorial Biblos, 2008). For a recent overview of immigration to Argentina, see also Maria Bjerg, *Historias de la inmigración en Argentina* (Buenos Aires: EDHASA Argentina, 2013).

<sup>16</sup> Oscar Chamosa, “People as Landscape: The Representation of the Criollo Interior in Early Tourist Literature in Argentina, 1920-30,” in *Rethinking Race in Modern Argentina*, eds. Paulina L. Alberto and Eduardo Elena, 53-72 (New York: Cambridge University Press, 2016), 54-5.

<sup>17</sup> George Reid Andrews, *The Afro-Argentines of Argentina, 1800-1900* (Madison: University of Wisconsin Press, 1980); Robert J. Cottrol, *The Long, Lingering Shadow: Slavery, Race, and Law in the American Hemisphere* (Athens: University of Georgia Press, 2013), chapter 4.

<sup>18</sup> For an introduction into the history of race in Argentina, see Paulina L. Alberto and Eduardo Elena, eds., *Rethinking Race in Modern Argentina* (New York: Cambridge University Press, 2016). For race in Latin America, see Nancy Leys Stepan, “*The House of Eugenics*”: *Race, Gender, and Nation in Latin America* (Ithaca: Cornell University Press, 1991); Julia Rodriguez, “A Complex Fabric: Intersecting Histories of Race, Gender, and Science in Latin America,” *Hispanic American Historical Review* 91, no. 3 (2011): 409-29; Cottrol, *The Long, Lingering Shadow*.



performed their “whiteness” through masculinity.<sup>19</sup> Immigrant associations expressed dismay at reports of the sexual traffic of white women, the so-called epidemic of “white slavery,” which ostensibly threatened to undermine the status of the white race and its many national communities.<sup>20</sup> Argentina, much like the North Atlantic nations, maintained the doctrine of “separate spheres,” wherein men worked outside the home, and women inside.<sup>21</sup> Men would forge the nation’s future in its cattle pens, workshops, and offices while women maintained their homes and raised the next generation of *argentinos*. Women were elevated yet imprisoned by their collective status as the nation’s mothers and wives, as the ostensible guardians of a “traditional” Argentine character and culture.

Argentine men articulated a modern masculinity that promised further national progress while reinforcing their privileges in the face of feminism.<sup>22</sup> The media and common people debated the merits and risks of transcending traditional gender roles as elite and common women alike advocated for and won greater agency in their homes, workplaces, and the public square. While European “civilization” was characterized as a feminine, acculturating force by nineteenth-century Argentine intellectuals, their twentieth-century successors deemed “progress”

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<sup>19</sup> Sandra McGee Deutsch, “Insecure Whiteness: Jews between Civilization and Barbarism, 1880s-1940s,” in *Rethinking Race in Modern Argentina*, eds. Paulina L. Alberto and Eduardo Elena, 25-52 (New York: Cambridge University Press, 2016).

<sup>20</sup> Donna J. Guy, *White Slavery and Mothers Alive and Dead: The Troubled Meeting of Sex, Gender, Public Health, and Progress in Latin America* (Lincoln: University of Nebraska Press, 2000).

<sup>21</sup> This gendered segregation of labor was a new development in the nineteenth century. See Ruth Schwartz Cowan, *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave* (New York: Basic Books, 1983), especially chapter two.

<sup>22</sup> For the historiography of gender in Argentina, see Rebekah E. Pite, “Engendering Argentine History: A Historiographical Review of Recent Gender-Based Histories of Women during the National Period,” *Estudios Interdisciplinarios de America Latina y el Caribe* 25, no. 1 (2014): 41-62. For the history of the women’s suffrage and feminist movements in Argentina, see Gregory Hammond, *The Women’s Suffrage Movement and Feminism in Argentina from Roca to Perón* (Albuquerque: University of New Mexico Press, 2011); Silvana A. Palermo, *Los derechos políticos de la mujer: Los proyectos y debates parlamentarios 1916-1955* (Buenos Aires: Secretaría de Relaciones Parlamentarias, Jefatura de Gabinete de Ministros, 2012); Christine Ehrick, *Radio and the Gendered Soundscape: Women and Broadcasting in Argentina and Uruguay, 1930-1950* (New York: Cambridge University Press, 2015), chapters one and three.

a fundamentally masculine endeavor.<sup>23</sup> Technological celebrities like Jorge Newbery projected a manly image through their “conquest” of and mastery over nature.

Just as with race, the gendering of Argentine identity depended on class. Women were tasked with maintaining the latest requirement for social respectability: the bourgeois lifestyle depicted in US and European advertising and popular media. Even mothers of few means were now expected to provide their families with a sheltered, comfortable, and hygienic environment that lent itself to self-improvement and social ascendancy—the trappings of a middle-class life.<sup>24</sup> Technological contrivances meant to ease their burden rarely did so.<sup>25</sup> The result was a paradoxical modern experience for Argentine women. They gained new freedoms and powers out of the home, but only within narrow bounds, and with the knowledge that the cultural expectation for their labor as wives and mothers was intensifying.

Elite women found new freedoms in interwar Argentina—as we shall see, the South American republic had its own famous women aviators to compete with the likes of Amelia Earhart or Amy Johnson. But the aviation industry remained closed to those women who needed to support themselves. Technological work remained the purview of working men, not women or the even the high-society elites that first took to the air. Yet even the articulation of a masculine technical identity was not a straightforward process. As historian Eduard Achetti has demonstrated, the early twentieth century saw the rise of a common masculine identity with its

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<sup>23</sup> For a literary analysis of gender, identity, and notions of “civilization,” see Francine Masiello, *Between Civilization & Barbarism: Women, Nation, and Literary Culture in Modern Argentina* (Lincoln: University of Nebraska Press, 1993), especially chapters one, three, and five.

<sup>24</sup> For the depiction of the middle-class housewife in Argentina, see Rebekah E. Pite, *Creating a Common Table in Twentieth-Century Argentina: Doña Petrona, Women, & Food* (Chapel Hill: University of North Carolina Press, 2013), 7-25. For expectations of bourgeois family structures in Mexico, see Ann S. Blum, *Domestic Economies: Family, Work, and Welfare in Mexico City, 1884-1943* (Lincoln: University of Nebraska Press, 2009), especially chapter three.

<sup>25</sup> For the mid-twentieth century technification of the home, see Inés Pérez, *El hogar technificado: Familias, género y vida cotidiana, 1940-1970* (Buenos Aires: Editorial Biblos, 2012), especially chapters two and three.

roots in the culture of rural, mixed-race, working men. Best represented by the figure of the soccer player, “*criollo*” [creole] masculinity emphasized flair, individuality, and rebellion against authority—qualities that did not easily map onto technical work.<sup>26</sup>

The main class division in Argentina throughout this period of study was between elites and the “popular” classes, the “crowd” as José María Ramos Mejía derisively called them. As Matthew Karush and Ezequiel Adamovsky have recently argued, a bounded middle class in a cultural or political sense largely materialized after 1955. Members of the middle-income bracket tended to identify either with the elites they hoped to become, or the “popular” classes from which they came. Popular culture—whether in print, over the airwaves, or on the film screen—reflected this bifurcation of Argentine society.<sup>27</sup>

No word better encapsulates the intersection of race, gender, class, and nationality than “*criollo*” or creole. *Criollo* had and has a host of meanings in Argentine society. In a basic sense, the word came to mean “Argentine,” although that in-and-of itself was controversial. Originally the term referred to those with Hispanic and Amerindian ancestry. Yet soon “*criollo*” came to be associated with the rural culture of the Argentine countryside, the *Pampa*. An ascendent nationalist movement in the early twentieth century increasingly harnessed the figure of “*gaucho*” or the rural horseman as *the* incarnation of the national character. They saw the “*criollismo*” of the countryside as a remedy to the dominance of European culture with all its supposed decadence and effeminacies. Nationalist writers effectively rendered the “*criollo*”

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<sup>26</sup> Eduardo Archetti, *Masculinities: Football, Polo, and the Tango in Argentina* (New York: Berg, 1999), 72, 105.

<sup>27</sup> Matthew B. Karush, *Culture of Class: Radio and Cinema in the Making of a Divided Argentina, 1920-1946* (Durham, NC: Duke University Press, 2012), 36-7, 216; Ezequiel Adamovsky, *Historia de la clase media argentina: Apogeo y decadencia de una ilusión, 1919-2003* (Buenos Aires: Planeta, 2009), chapters six and seven.

white and applied the label to all “proper” Argentines.<sup>28</sup> Increasingly *criollo* meant not only a type of person, but a comportment or style that any native could embody. A few writers and social commentators used the core idea of the “*criollo*” to synergize with ideas of “*mestizaje*” [racial mixture or blending] from countries like Brazil and Mexico. In their conception, there was a new race—*la raza nueva*—being created in the New World (and usually—but not always—south of the Rio Grande).<sup>29</sup>

As the work of the historian Oscar Chamosa has shown, the appropriation of the *gaucho* as the symbol of Argentine identity did not challenge the “myth of the white Argentina,” since the “non-European rural populations” associated with the horsemen were still subordinated to white, urban culture. The celebration of a white “mythical” gaucho did not translate into increased opportunities for the rural mixed-raced population either. Since the rural “folk type” was perceived through the lens of the Spanish heritage, they were characterized as essentially white, but of a lower class than people of pure European ancestry or lighter skin. Nevertheless, Argentine identity continued to be burdened by a fundamental contradiction: “the exotic other was at the same time the authentic national Self.”<sup>30</sup>

Thus the politics of nationalism and class often framed the common interpretation of race and gender, and vice versa. Those of mixed-race were white but lower class; men were rendered “*criollo*” through masculine performance; women signaled their *Argentinidad* through their roles as mothers and wives, and their efforts to maintain bourgeois lifestyles. Immigrants became

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<sup>28</sup> For the nationalist movement in Argentina, see David Rock, *Authoritarian Argentina: The Nationalist Movement, its History and its Impact* (Berkeley: University of California Press, 1993); Sandra McGee Deutsch and Ronald H. Dolcart, *The Argentine Right: Its History and Intellectual Origins, 1910 to the Present* (Wilmington, DL: Scholarly Resources, Inc., 1993).

<sup>29</sup> Cottrol, *The Long, Lingering Shadow*, especially chapters 5 and 8.

<sup>30</sup> Chamosa, “People as Landscape,” 64. The way mainstream Argentine culture accommodated this tension was to mythologize the rural, mixed-race gaucho or peasant as a historical aspect of the nation. Any living representatives of this rural population were classified as Argentine “types” whose culture and lives could be “consumed” by urbanites as a form of “Heritage Tourism.”

*argentinos* through their whiteness, gendered behavior, and the display of qualities rhetorically linked to a “*criollismo*” supposedly still beating in the Argentine heartland.

In the historiography of Argentina, the studies of the interwar period (usually 1918-1943) perfectly encapsulate this web of changes and continuities that were pushing and pulling Argentine civil society and private life. New sectors of political power arose—especially the military and working classes—which expanded and intensified the morass of competing interests. As Karush argues in his study of interwar radio and cinema culture, Argentine society was deeply divided, and this conflict would only worsen as the century wore on.<sup>31</sup> Whereas their unnaturalized parents had remained off the voter rolls, millions of naturalized, second-generation immigrants threatened the long-standing power centers held by the landed elite. Labor strife exploded into violence, most famously in the *Semana Trágica* [Tragic Week] in 1919, which resulted in the deaths of hundreds of striking workers.

Throughout this period, political elites turned to science, medicine, and technology to impose their visions for a “healthy” and truly “Argentine” political body. Parties and government institutions across the political spectrum harnessed the rhetorical power—which purported objectivity—and tools of social control provided by European and North American science and medicine. State officials, whether under the guise of preventing disease, protecting traditional family roles, creating racial purity, or reducing crime, used the language and methodologies of public health, eugenics, and criminology to justify new forms of social coercion and control. In the process, they sought to reinforce social hierarchies, such as the legal primacy of male heads

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<sup>31</sup> Karush, *Culture of Class*, 6-10, 134-5.

of household, which they felt were under threat, while also “improving” the social body through better hygiene.<sup>32</sup>

But while technology could help maintain the power of the state and the associated socio-political elite, it simultaneously provided new opportunities for marginalized sectors of the Argentine population, such as women and the popular classes, to exercise greater independence or undermine social hierarchies. Despite a multitude of restrictions on the public rights of women, some highly educated individuals managed to carve out a space within old and new media forms, such as radio and literature, to advocate for more egalitarian gender norms and legal frameworks.<sup>33</sup> The need for low-wage industrial workers also provided a myriad of new employment opportunities for women who managed to escape from under the thumbs of their male heads of household.<sup>34</sup> Working men saw technical invention as a way to climb the socioeconomic ladder, even as many elites condemned technical knowledge and culture as crass, foreign and overly materialistic.<sup>35</sup>

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<sup>32</sup> For the history of social control, public health, and Argentina, see Donna J. Guy, “Lower-Class Families, Women, and the Law in Nineteenth-Century Argentina” *Journal of Family History* 10, no. 3 (1985): 318; Donna J. Guy, *Sex & Danger in Buenos Aires: Prostitution, Family, and Nation in Argentina* (Lincoln: University of Nebraska Press, 1991); Natalia Milanese, “Redefining Men’s Sexuality, Resignifying Male Bodies: The Argentine Law of Anti-Venereal Prophylaxis, 1936,” *Gender & History* 17, No. 2 (August 2005), 463-91; Julia Rodriguez, *Civilizing Argentina: Science, Medicine, and the Modern State* (Chapel Hill: University of North Carolina Press, 2006); Yolanda Eraso, “Biotypology, Endocrinology, and Sterilization: The Practice of Eugenics in the Treatment of Argentinian Women during the 1930s,” *Bulletin of the History of Medicine* 81 (2007), 793-822; Adriana Novoa, “The Act or Process of Dying Out: The Importance of Darwinian Extinction in Argentine Culture,” *Science in Context* 22, No. 2 (2009), 217-244; Diego Armus, *The Ailing City: Health, Tuberculosis, and Culture in Buenos Aires, 1870-1950* (Durham, NC: Duke University Press, 2011). For the region, see Stepan, “*The House of Eugenics*,” especially chapters 3-5; Rodriguez, “A Complex Fabric.”; Marius Turda and Aaron Gillette, *Latin Eugenics in Comparative Perspective* (New York: Bloomsbury Academic, 2014), chapters 5 and 7; Cottrol, *The Long, Lingering Shadow*, especially chapter 4.

<sup>33</sup> Ehrick, *Radio and the Gendered Soundscape*; Masiello, *Between Civilization & Barbarism*, chapter 5.

<sup>34</sup> For an excellent history of women’s labor in the modern industrial economy of Argentina, see Mirta Zaida Lobato, *Historia de las trabajadoras en la Argentina (1869-1960)* (Buenos Aires: Edhasa, 2007). For the history of working women in the nineteenth century, especially in the sex industry, see Guy, *Sex & Danger in Buenos Aires*, especially chapter four.

<sup>35</sup> Beatriz Sarlo, *The Technical Imagination: Argentine Culture’s Modern Dreams*, trans. Xavier Callahan (Stanford: Stanford University Press, 2008).

The First World War dulled the luster of the European rhetoric of civilization and the dominant liberal ideologies of science, medicine, and technology in Argentina and many other colonial and peripheral nations.<sup>36</sup> The Great Depression only reinforced these doubts, leaving Argentina wondering how to forge an independent path to progress and prosperity. The result of these changing perceptions was a renaissance for those who saw true *Argentinidad* as being on the other side of the national dichotomies. If the liberal project of free trade and cosmopolitan urbanity only led to strife, instability, and dependency, perhaps the future of Argentina lay more in its countryside and its Hispanic and *criollo* roots than in Paris or New York. This shift in intellectual discourse emanated from a broad spectrum of social groups, from literary elites to nationalist military officials to popular entertainers. The new media of radio and cinema, while being powerful vectors of North American culture, also gave the growing community of nationalists and anti-liberals an opportunity to disseminate alternative conceptions of *Argentinidad*.<sup>37</sup>

Despite the relative success of Argentina's industrial development in comparison to its neighbors, some nationalists and economic theorists felt that the country remained too dependent on foreign technology and industry. This anxiety would eventually lead to the well-studied policy of import-substitution industrialization as the state grew in power and influence during the interwar period.<sup>38</sup>

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<sup>36</sup> Michael Adas, *Machines as the Measure of Man: Science, Technology and Ideologies of Western Dominance* (Ithaca: Cornell University Press, 1989), especially chapter 6.

<sup>37</sup> Karush, *Culture of Class*; Oscar Chamosa, *The Argentine Folklore Movement: Sugar Elites, Criollo Workers, and the Politics of Cultural Nationalism, 1900-1955* (Tucson: University of Arizona Press, 2010).

<sup>38</sup> For the development of state economic interventionism in Argentina, see Carl Solberg, *Oil and Nationalism in Argentina* (Stanford: Stanford University Press, 1979); Korol Juan Carlos and Sabato Hilda, "Incomplete Industrialization: An Argentine Obsession" *Latin American Research Review* 25:1 (1990), 7-30; Claudio Belini and Marcelo Rougier, *El estado empresario en la industria argentina. Conformación y crisis* (Buenos Aires: Cuadernos Argentina Manatí, 2008). For the region, see Kristina Mani, "Military Entrepreneurs: Patterns in Latin America," *Latin American Politics and Society* 53, no. 3 (2011): 25-55; Patrice Franko, *The Puzzle of Latin American Economic Development*, 4<sup>th</sup> ed. (Lanham: Rowman & Littlefield, 2019), chapter 3.

It was in the economic realm that the armed forces first began to flex their political muscles in what became one of the dominant trends of modern Argentine history.<sup>39</sup> Army leaders came to see their institutions as the forgers of the nation, through the conquest of Patagonia and the education and indoctrination of countless conscripts. By the 1920s, the professionalized military leaders became politicized as they balked at the perceived corruption of the nation's democratic politics. Some began advocating for new state-run industries to reduce the need to import key strategic resources, namely steel, coal, and oil. For these men, development meant industrialization. They believed industry was the last step in the process of progress, that it would guarantee Argentine national autonomy and power as well as prosperity for common people.

Then, beginning with a coup d'état in 1930, a series of military and military-backed governments ended the open democratic era while continuing to expand the role of the state in the economy. Nevertheless, early state efforts to intervene in the economy were piecemeal, undermined by a lack of funds and political will. This would change in 1943, with the rise of the defining political figure of twentieth-century Argentina: Juan Perón (1895-1974).

From 1943 to 1955, Perón monopolized the national political scene, and through this unprecedented concentration of power, transformed his nation. As such, studies about the man,

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<sup>39</sup> The foremost history of the Argentine Army remains the three-volume series by Robert Potash. For my period, Robert Potash, *The Army & Politics in Argentina, 1928-1945, Yrigoyen to Perón* (Stanford: Stanford University Press, 1969) and Robert Potash, *The Army & Politics in Argentina, 1945-1962, Perón to Frondizi* (Stanford: Stanford University Press, 1980).



his philosophy, and the movement he inspired dominate the historiography of Argentina.<sup>40</sup> Perón built a populist alliance across Argentine society—based primarily on urban labor unions, industrialists, the Catholic Church, and the armed forces—by promising social justice, political independence, and economic prosperity. To deliver on these promises, Perón unleashed vigorous industrial and social programs to re-forge the nation into the “New Argentina” [*la Nueva Argentina*]. His accomplishments were marred by financial irregularities, poor execution, and a drift toward ever-increasing authoritarian politics. In the process, he reshaped the nation’s economy and political landscape, leaving a legacy that still affects Argentina today.

Perón harnessed the rhetoric of technology and industrialization to project a new vision of Argentina. Authorities presented industrialization under the state’s tutelage as the best path to national power, prestige, and better living standards for common people. Perón’s vision for an industrial Argentina proved a totalizing one, with no room for political discourse outside of Peronism. Perón legitimized his heavy-handed policies by pointing to the newfound economic prosperity of the humbler classes. Mass consumption and leisure, through state subsidies and labor laws, finally reached the lower classes.<sup>41</sup> He and his legendary wife, Eva Duarte, promoted Peronist working-class culture as the basis for *Argentinidad*, in effect integrating the urban

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<sup>40</sup> For political histories and interpretations of Peronism, see Joseph Page, *Perón: A Biography* (New York: Random House, Inc., 1983); Hugo Gambini, *La primera presidencia de Perón: testimonios y documentos* (Buenos Aires: Centro Editor de América Latina, 1983); Crassweller, *Perón and the Enigmas of Argentina*; Cristián Buchrucker, “Interpretations of Peronism: Old Frameworks and New Perspectives,” in *Peronism and Argentina*, ed. James P. Brennan (Wilmington, DE: Scholarly Resources Inc., 1998); Juan Carlos Torre and Elisa Pastoriza, “La democratización del bienestar,” in *Nueva historia Argentina, Los años peronistas*, vol. 8, ed. Juan Carlos Torre, 257-313 (Buenos Aires: Editorial Sudamericana, 1998); Matthew B. Karush and Oscar Chamosa, eds., *The New Cultural History of Peronism: Power and Identity in Mid-Twentieth-Century Argentina* (Durham, NC: Duke University Press, 2010); Mark A. Healey, *The Ruins of the New Argentina: Peronism and the Remaking of San Juan after the 1944 Earthquake* (Durham, NC: Duke University Press, 2011); Ernesto Semán, *Ambassadors of the Working Class: Argentina’s International Labor Activists and Cold War Democracy in the Americas* (Durham, NC: Duke University Press, 2017).

<sup>41</sup> Eduardo Elena, *Dignifying Argentina: Peronism, Citizenship, and Mass Consumption* (Pittsburgh: University of Pittsburgh Press, 2011); Natalia Milanese, *Workers Go Shopping in Argentina: The Rise of Popular Consumer Culture* (Albuquerque: University of New Mexico Press, 2013).

working class into the national body for the first time. Perón created a powerful public persona that won him and Eva the loyalties of many Argentines for generations.<sup>42</sup>

For the purposes of this study, the Peronist period will represent the culmination of the competing discourses around *Argentinidad*, technology, and the state. Perón recognized the power of technological ideas and objects to transform his country and legitimize his government. His administration was the first in Argentine history to articulate an extensive “technopolitics”—the political use of technology—one which placed aviation in a position of privilege. Peronism attempted to create a coherent narrative of progress which tied together two aspects of *Argentinidad* that had formerly seemed unreconcilable: the pastoral, “*criollo*” countryside with the cosmopolitan and industrial city. In other words, the story of technology, industry, and progress was no longer one of foreign impositions and cultural dislocations, but instead an Argentine narrative wherein traditional values and the labor of working men framed the path to a future nation of prosperity and dignity.

### **Historiography of the Airplane in Argentina and the World, 1903-1955**

As various social and political groups engaged in the debate over the possibilities and risks posed by the material and social changes of modernity, they harnessed particular technological ideas and objects to represent their dreams and fears. Through their ability to move

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<sup>42</sup> Mariano Plotkin, *Mañana es San Perón: propaganda, rituales políticos y educación en el régimen peronista (1946-1955)* (Buenos Aires: Ariel Historia Argentina, 1994); Donna J. Guy, *Creating Charismatic Bonds in Argentina: Letters to Juan and Eva Perón* (Albuquerque: University of New Mexico Press, 2016).

people, objects, and ideas, the technologies associated with transportation and communication were particularly poignant symbols of the possibilities of the twentieth century.<sup>43</sup>

The airplane was no exception. Throughout the first half-century of its use, the airplane was one of the most powerful symbols of the technological capabilities of the modern age. Its promise to crush space and time enthralled futurists, businessmen, and politicians, while the drama of dashing aviators and roaring airplanes soaring above the earthly chaos entranced common people and elites alike. The arrival of squadrons of aircraft from overseas had the power to instill both euphoria and dread. Owing to this combination of wonder, opportunity, and anxiety, aviation—as a collection of ideas, metaphors, and objects—came to be deeply embedded in debates about material modernity in Argentina.

The historiography of aviation in Argentina and Latin America more broadly remains a small field, often disconnected from wider discourse in the History of Technology. Spanish-language histories of Argentine aviation are a limited but growing body of literature, largely focused on aircraft production, airlines, and the military. The Argentine historian of aviation Antonio Biedma Recalde's *Crónica histórica de la aeronáutica argentina* is one of the few texts on interwar Argentine aviation written by a participant himself.<sup>44</sup> The end of the military dictatorship in 1983 saw a flowering of new publications on Argentine aviation, which established and/or revised the industry's key chronologies, biographies, and institutional

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<sup>43</sup> For the impact of long-distance telecommunications on Argentina, see Lila Caimari, "News from Around the World: The Newspapers of Buenos Aires in the Age of the Submarine Cable, 1866-1900," *Hispanic American Historical Review* 94, no. 4 (2016): 607-40. For the automobile in Argentina, see Melina Piglia, *Autos, rutas y turismo: el Automóvil Club Argentino y el Estado* (Buenos Aires: Siglo Veintiuno Editores, 2014); Gustavo Feder, *Un siglo de autos argentinos: de los pioneros a la producción seriada* (Carapachay: Lenguaje claro Editora, 2018); Guillermo Giucci, *La vida cultural del automóvil. Rutas de la modernidad cinética* (Buenos Aires: Universidad Nacional de Quilmes, 2007).

<sup>44</sup> Antonio Biedma Recalde, *Crónica histórica de la aeronáutica argentina*, 2 vols. (Buenos Aires: Círculo de Aeronáutica, Dirección de Publicaciones, 1968). See also Ángel María Zuloaga, *La victoria de las alas: historia de la aviación argentina* (Buenos Aires: El Ateneo, 1948); Ángel María Zuloaga, *La victoria de las alas: historia de la aviación argentina*, 2nd ed. (Buenos Aires: Círculo de Aeronáutica, 1958).

narratives. The military aircraft factory in Córdoba and state airlines have seen the most extensive treatments. These authors frequently used their histories of aviation institutions to either support or impugn national politics, especially the Peronist government from 1946 to 1955 and its subsequent movement.<sup>45</sup>

The past twenty years have seen historical studies of Argentine aviation that engage with topics of interest for scholars in the US and Europe. The aircraft factory in Córdoba has been repeatedly studied to better understand the history of state industry and capitalism in Argentina.<sup>46</sup> The historian of architecture Anahí Ballent's work on Peronist housing policies and public works was invaluable in its analysis of the cultural and aesthetic character of the international airport at Ezeiza and its surrounding projects.<sup>47</sup> Alejandro Atropoulos investigated the Pulqui II jet project as a case of "successful failure" in the transfer of technology from Europe to Argentina.<sup>48</sup> The recent work by Melina Piglia, focusing on domestic aerial tourism in the 1930s and

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<sup>45</sup> Pablo Potenze, *La Aviación Comercial Argentina (1945-1980)* (Buenos Aires: El Cronista, 1987); Leopoldo Frenkel, *Juan Ignacio San Martín: El desarrollo de las industrias aeronáutica y automotriz en la Argentina* (Buenos Aires: Germano Artes Gráficas S.R.L., 1992); Walter Bonetto, *La industria perdida* (Río Cuarto, AR: Universidad Nacional de Río Cuarto, 2004); Francisco Halbritter, *Historia de la industria aeronáutica argentina*, vol. 1 (Buenos Aires: Asociación Amigos de la Biblioteca Nacional de Aeronáutica, 2004); Ricardo Burzaco, Juan Carlos Cicales, and Santiago Rivas, *Las alas de Perón II: la aeronáutica argentina 1945-1960* (Banfield, AR: Ediciones Eugenio B, 2007); Ángel C. Arreguez, *Fábrica militar de aviones: crónicas y testimonios* (Córdoba: Agencia Córdoba Ciencia, 2008); Jorge Rodríguez Nogueras, *Comunicaciones aeronáuticas en la Argentina: origen y evolución 1912-1982* (Buenos Aires: Fuerza Aérea Argentina, Dirección de Estudios Históricos, 2011); Oscar Luis Aranda Durañona, *El vuelo del cóndor: centenario de la Fuerza Aérea Argentina* (Buenos Aires: Editorial de Arte, 2012); Guido Ghiretti et al., eds., *Los orígenes de Aerolíneas Argentinas: La posguerra y un modelo de país (1945-1955)* (Buenos Aires: Grupo Abierto Libros, 2020).

<sup>46</sup> María del Carmen Angueira and Alicia del Carmen Tonini, *Capitalismo de Estado (1927-1956)* (Buenos Aires: Consejo Editor de América Latina, 1986); Mario Raccanello, "Industrias Aeronáuticas y Mecánicas del Estado y la lógica de la política económica peronista," *América Latina en la historia económica* 20, no. 2 (2013): 177-221.

<sup>47</sup> Anahí Ballent, "El peronismo y sus escenarios. La operación territorial de Ezeiza (1944-1955)," *Entrepasados*, no. 22 (2002): 7-25.

<sup>48</sup> Alejandro Atropoulos, *Tecnología e innovación en países emergentes: La aventura del Pulqui II* (Carapachay: Lenguaje claro Editora, 2014).

international air legislation in the 1940s, integrates the history of aviation in Argentina with new directions in Mobility Studies in Latin America.<sup>49</sup>

The English-language historiography of Argentine aviation is nearly non-existent. Beyond Dan Hagedorn's chronology of aviation across Latin America, there are only a scattering of articles, largely focused on the Peronist aircraft industry in the 1950s. Studies by Jonathan Hagoood and others have investigated the emigration of German aviation personnel to Argentina at the behest of Peronist officials.<sup>50</sup>

Willie Hiatt's 2016 study of Peruvian aviation in the first half of the twentieth century represents a refreshing change in the historiography of Latin American aviation. Hiatt reveals how Andean elites harnessed the airplane as a tool to further their integration into European modernity. In the process, competing social groups in Peru, including non-elites, saw different possibilities for aerial technology.<sup>51</sup>

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<sup>49</sup> Melina Piglia, "En torno al viaje en avión en la Argentina: representaciones y experiencias, 1929-1958," *Avances del Cesor* 12 (2015), 133-158; Melina Piglia, "La Aeroposta Argentina, el desarrollo de la Patagonia y los orígenes de la política aerocomercial," in *Estudios sobre Planificación y Desarrollo*, ed. Marcelo Rougier and Juan Odisio, 27-58 (Carapachay: Lenguaje claro Editora, 2016); Melina Piglia, "'Carry our colours and defend our interests under the skies of other Continents.' Argentinian Commercial aviation policy in the *Peronista* decade (1945-55)," *The Journal of Transport History* 40, no. 1 (2019): 44-61. For Mobility Studies in Latin America, see *Términos clave para los estudios de movilidad en América Latina*, eds. Dhan Zunino Singh, Guillermo Giucci, and Paola Jirón (Buenos Aires: Editorial Biblos, 2017).

<sup>50</sup> Jonathan Hagoood, "Arming and Industrializing Perón's 'New Argentina': the Transfer of German Scientists and Technology after World War II," *Icon* 11 (2005): 63-78; Jonathan Hagoood, "Why does technology transfer fail? Two Technology Transfer Projects from Peronist Argentina," *Comparative Technology Transfer and Society* 4, no. 1 (April 2006): 73-98; Anil Hira and Luiz Guilherme de Oliveira, "Take off and Crash: Lessons from the Diverging Fates of the Brazilian and Argentine Aircraft Industries," *Competition & Change* 11, no. 4 (December 2007): 329-47; Dan Hagedorn, *Conquistadors of the Sky: A History of Aviation in Latin America* (Gainsville: University Press of Florida, 2008). For Spanish-language studies, see Robert A. Potash and Celso Rodríguez, "El empleo en el Ejército argentino de nazis y otros científicos y técnicos extranjeros, 1943-1955," *Estudios Migratorios Latinoamericanos* 14, no. 43 (1999): 261-276; Ignacio Klich, "La contratación de nazis y colaboracionistas por la Fuerza Aérea Argentina," *Ciclos* 10, no. 19 (2000): 177-216; Ruth Stanley, "Transferencia de tecnología a través de la migración científica: alemanes en la industria militar de Argentina y Brasil (1947-1963)," *Revista Iberoamericana de Ciencia, Tecnología y Sociedad – CTS* 1, no. 2 (April 2004): 21-46.

<sup>51</sup> Willie Hiatt, *The Rarified Air of the Modern: Airplanes and Technological Modernity in the Andes* (New York: Oxford University Press, 2016), 2-5.

Jenifer Van Vleck's *Empire of the Air*, albeit focused on the United States, shows how the airplane was a critical tool in the expansion of US power in Latin America. The US government harnessed aviation as a tool for the extension of North American globalism as its "chosen instruments," namely airlines, reached farther across oceans and continents. Van Vleck's work is particularly useful for its consideration of the political motivations behind flag air carriers from the 1930s to 1960s.<sup>52</sup>

There is a richer tradition of cultural studies of aviation in the US and Europe. The works of aviation historians Joseph Corn, Robert Wohl, Scott Palmer, and more have shown how aviation was harnessed by governments, elites, and common people as a "messianic" and "emancipatory" representation of technological accomplishment and possibilities.<sup>53</sup> These historians have embedded discussions of aviation and technological development in the social, economic, political, and cultural contexts of the United States and Europe. In each case, the needs, dreams, and fears of competing social groups shaped the prophecies of the coming age of the air. Together, these national stories reveal the existence of a rich, transnational culture of aviation, which traveled across borders and oceans in news and entertainment media, military journals, and on the very wings that caused people the world over to look up in amazement.

The narrative of popular participation largely fades into the background after World War II as the popularity of aviation waned, replaced by the new wonder technologies of nuclear power and space flight. Before the advent of airline deregulation and the rise of mass air travel in

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<sup>52</sup> Jenifer Van Vleck, *Empire of the Air: Aviation and the American Ascendancy* (Cambridge: Harvard University Press, 2013). For more on US commercial aviation and South America, see Rosalie Schwartz, *Flying Down to Rio: Hollywood, Tourists, and Yankee Clippers* (College Station: Texas A&M University Press, 2004).

<sup>53</sup> Joseph Corn, *The Winged Gospel: America's Romance with Aviation, 1900-1950* (New York: Oxford University Press, 1983); Peter Fritzsche, *A Nation of Fliers: German Aviation and the Popular Imagination* (Cambridge, MA: Harvard University Press, 1992); Robert Wohl, *The Spectacle of Flight: Aviation and the Western Imagination, 1920-1950* (New Haven: Yale University Press, 2005); Scott Palmer, *Dictatorship of the Air: Aviation Culture and the Fate of Modern Russia* (New York: Cambridge University Press, 2006); Fernando Esposito and Patrick Camiller, *Fascism, Aviation, and the Mythical Modernity* (Hampshire, UK: Palgrave Macmillan, 2015).

the 1970s and 1980s, the scholarship on the post-World War II period has focused on the maturing airline and general aviation industries, with an attendant interest in their middle- and upper-class customers.<sup>54</sup>

All such studies, whether by scholars or enthusiasts, have tended to analyze particular aspects of aviation in relative isolation. They consider commercial aviation, aircraft production, infrastructure construction, famous flights, or the airplane in popular culture as somewhat distinct phenomena in their analyses, if not in their explicit framing. The historiography of flight rarely considers aviation technology in a wholistic sense, as an amorphous panoply of cultural notions, technical practices, people, institutions, and, of course, machines. As we shall now see, this tendency is exacerbated by the broader schism in the History of Technology between those who focus on the technical development of technology, and those who consider the wider cultural understanding and reception of technology in society.

### **Conceptual Framework and the History of Technology**

As my project is primarily interested in how Argentines engaged with a technology— heavier-than-air flight—my conceptual framework is embedded in the discourses and methodologies of the History of Technology. All technologies, from the door-stop to the commercial airliner, represent the culmination of historically-contingent cycles of technological ideas and their material incarnations. Historians of technology have gone to great lengths to

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<sup>54</sup> These studies have done excellent work on the international politics of US postwar power and the domestic politics of gender, sexuality, and race in the industry. See Alan Meyer, *Weekend Pilots: Technology, Masculinity & Private Aviation in Postwar America* (Baltimore: Johns Hopkins University Press, 2015); Phil Tiemeyer, *Plane Queer: Labor, Sexuality, and AIDs in the History of Male Flight Attendants* (Berkeley: University of California Press, 2013); Van Vleck, *Empire of the Air*; Lee Kolm, “Stewardesses’ ‘Psychological Punch’: Gender and Commercial Aviation in the United States, 1930-1978,” in *From Airships to Airbus: The History of Civil and Commercial Aviation, Vol 2: Pioneers and Operations*, ed. William F. Trimble, 112-25 (Washington, D.C.: Smithsonian Institution Press, 1995); Chandra D. Bhimull, *Empire in the Air: Airline Travel and the African Diaspora* (New York: New York University Press, 2017).

argue that technologies are not entities apart from society with their own internal mechanisms of change. Technologies “[do] not have an essential nature,” but are instead reflections of human culture and society.<sup>55</sup>

Prior to the development of a new device or system, inventors and financiers must believe in the future utility of their imagined objects. For some of these creators, their objects represent a commercial opportunity; for others, new technologies present unprecedented opportunities to transform human societies, often melding into utopian visions of peace and prosperity. These visions draw upon the broader political and social discourses of the technologists’ communities. Promoters and detractors of new technologies mobilize their hopes and fears about the future—which are themselves referendums on the past and present—to frame the possibilities posed by material improvement.<sup>56</sup>

Such ideas form what Sheila Jasanoff and Sang-Hyun Kim call “sociotechnical imaginaries,” or the “collectively imagined forms of social life and social order reflected in the design and fulfilment of...technological projects.”<sup>57</sup> Sociotechnical imaginaries extend beyond the prediction of technological development. They are the construction of a cohesive understanding of past, present, and future for a given people, nation, or the world. These imaginaries are *sociotechnical* because they focus on how material objects and systems are

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<sup>55</sup> Eden Medina, “History and Technology Forum: Author Response,” *History and Technology* 28, no. 4 (December 2012): 431-441, 434.

<sup>56</sup> For the “visions” of the aerospace industry, see Paul Hoffman, *Wings of Madness: Alberto Santos-Dumont and the Invention of Flight* (New York: Hyperion, 2003); A. Bowdoin Van Riper, *Imagining Flight: Aviation and Popular Culture* (College Station: Texas A&M University Press, 2004); and Howard E. McCurdy, *Space and the American Imagination* (Baltimore: Johns Hopkins University Press, 2011). See also Patrick W. McCray, *The Visioneers: How a Group of Elite Scientists Pursued Space Colonies, Nanotechnologies, and a Limitless Future* (Princeton: Princeton University Press, 2013).

<sup>57</sup> Sheila Jasanoff, “Future Imperfect: Science, Technology, and the Imaginations of Modernity,” in *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, eds. Sheila Jasanoff and Sang-Hyun Kim, 1-33 (Chicago: University of Chicago Press, 2015), 4.



thought to empower and disempower their users.<sup>58</sup> In a basic sense, sociotechnical imaginaries represent the perceived “opportunities and dangers” of new technologies to their articulators.<sup>59</sup> Such concepts are often intrinsically tied to notions of personal and collective identity, which by their nature are exclusionary; any identity is defined in opposition to racial, class, national, and/or sexual “Others.” Thus sociotechnical imaginaries often replicate and reinforce “categories of difference” and “categories of power,” in the words of Nina Lerman.<sup>60</sup>

Of course, the ideas surrounding technology would have little importance were it not for their material creation. As these objects are gradually pulled from the realm of the mind’s eye into reality, the physical incarnations of technological ideas are limited by their materials and their creators’ understanding of those materials, or as David Baird called it, “working knowledge.”<sup>61</sup> In a sense, the materiality of objects points to a form of agency in that they delimit the range of human action—a role that will become frustratingly evident with the use of metals in Argentine aircraft construction.

Once they take form, technologies exhibit another form of agency through their stimulation of a wide range of emotions in their users and observers. As is commonly discussed in the history of aviation and transportation, large, complex, and/or powerful technological objects can instill wonder, amazement, and fear in the popular imagination. Even without the connotations of “progress” embedded in objects such as airplanes or ocean liners, the self-

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<sup>58</sup> Jasanoff, “Future Imperfect,” 24.

<sup>59</sup> I borrow this phrasing from Cecilia Tichi, *Shifting Gears: Technology, Literature, Culture in Modernist America* (Chapel Hill: University of North Carolina Press, 1987), 170.

<sup>60</sup> Nina Lerman, “Categories of Difference, Categories of Power: Bringing Gender and Race to the History of Technology,” *Technology and Culture* 51, no. 4 (October 2010): 893-918, 918.

<sup>61</sup> Davis Baird, *Thing Knowledge: A Philosophy of Scientific Instruments* (Berkeley: University of California Press, 2004), see chapter 3. See also Eugene S. Ferguson, *Engineering and the Mind’s Eye* (Cambridge: The MIT Press, 1992).

evident power conveyed by their scale and noise had the ability to transfix onlookers.<sup>62</sup> Although difficult to quantify, these objects' emotional weight was surely instrumental in explaining the popularity of particularly visible and dramatic technologies like the airplane.

Yet the effects and limitations of material reality are rarely the main decider of a technology's mature form. As the school of the Social Construction of Technology (SCOT) has articulated since the 1980s, the refinement of a technology from an idea to a prototype to a marketable product involves a complex process of negotiation among relevant social groups and their institutions. Inventors, producers, regulators, users, maintainers, and more are all involved the design process, albeit unequally.<sup>63</sup> SCOT inspired a blossoming of studies in the social history of technology, a subfield interested in the social interpretation and reception of technologies more than the analysis of technical design and development.<sup>64</sup>

The unfolding of socially-negotiated cycles of ideas and objects is necessarily a political process, one which in the History of Technology falls under the concept of "technopolitics." Originating with Gabrielle Hecht's seminal study of nuclear power in post-World War II France, technopolitics refer "to the strategic practice of designing or using technology to constitute,

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<sup>62</sup> This is to say nothing of the experiences provided for those lucky few individuals who actually flew in an airplane or were first-class passengers on a transatlantic ocean liner. Robert Wohl, *A Passion for Wings: Aviation and the Western Imagination, 1908-1918* (New Haven: Yale University Press, 1994); Bernard Rieger, *Technology and the Culture of Modernity in Britain and Germany, 1890-1945* (New York: Cambridge University Press, 2005); Frances Steel, *Oceania Under the Steam: Sea Transport and the Cultures of Colonialism, c. 1870-1914* (Manchester: Manchester University Press, 2011). Recent histories of the automobile have discussed the roles of emotion and gender norms in explaining the experience and popularity of the technology, see Brian Ladd, *Autophobia: Love and Hate in the Automotive Age* (Chicago: University of Chicago Press, 2008); Gijs Mom, *Atlantic Automobility: Emergence and Persistence of the Car, 1895-1940* (Berghahn Books, 2014).

<sup>63</sup> Trevor J. Pinch and Wiebe E. Bijker, "The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other," in *The Social Construction of Technological Systems*, eds. Wiebe E. Bijker, Thomas P. Hughes, and Trevor J. Pinch, 17-50 (Cambridge: The MIT Press, 1987).

<sup>64</sup> Hyungsub Choi, "The Social Construction of Imported Technologies: Reflections on the Social History of Technology in Modern Korea," *Technology and Culture* 58, no. 4 (October 2017): 905-20, 913-4.

embody, or enact political goals.”<sup>65</sup> Hecht argued that the French state’s heavy investment in nuclear power was an effort to use “technological prowess” to reassert French power and bolster its national identity. The design and creation of France’s nuclear power industry was driven not by technical or economic exigencies, but cultural and political notions of power, prestige, and technology. State engineers deployed the authority of the state and a rhetoric of ostensibly disinterested expertise to enact their goals.<sup>66</sup> Studies of technopolitics have uncovered not simply the political nature of technology, but also the importance of technology as physical manifestations of state power, ideology, and identity.<sup>67</sup>

As technopolitics are carried out, certain sociotechnical imaginaries and their associated people and institutions are prioritized over others. Some of their proponents prove more successful at mobilizing the needed capital, resources, and knowledge to transform the ethereal into the material. Thus technologies crystallize into powerful tools in our society through politically contested cycles of ideas and material enactments that are associated with particular individuals, communities, and institutions.

Although this model of technological development is theoretically applicable to any society, it was largely derived from historical studies of the US and Europe. These societies were the original contexts for most of the nineteenth and twentieth centuries’ new technologies. What about contexts beyond the North Atlantic then? Argentina—after all—did not create the airplane nor steer its subsequent development over the twentieth century. What about societies that

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<sup>65</sup> Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity after World War II* (Cambridge: The MIT Press, 1998), 15.

<sup>66</sup> Hecht, *The Radiance of France*, 2-3, 26-7, 51.

<sup>67</sup> Recent histories have emphasized how political ideologies like European Fascism or Chilean Socialism were enacted through technological products and systems. See, for example, Tiago Saraiva, *Fascist Pigs: Technoscientific Organisms and the History of Fascism* (Cambridge: The MIT Press, 2016); Lino Camprubi, *Engineers and the Making of the Francoist Regime* (Cambridge: The MIT Press, 2014); Eden Medina, *Cybernetic Revolutionaries: Technology and Politics in Allende’s Chile* (Cambridge: The MIT Press, 2011).

largely *imported* their material modernity from abroad? What do the methods of the History of Technology have to say about the majority of societies that experienced a “peripheral modernity,” that is, away from the “centers” of technological innovation?

As historian Hyungsub Choi argued, the SCOT method of analysis breaks down in this context—in Choi’s case, post-World War II South Korea. SCOT places its emphasis on innovation, on the formation of *new* technologies via social negotiation.<sup>68</sup> Yet South Korea, much like Argentina, was not in the practice of technological innovation for much of the twentieth century in a strict sense. Choi lamented the tendency for historians of technology to largely eschew the technical development of imported “machines” and instead solely focus on the social reception of technology in “a specific geographical context.”<sup>69</sup>

The scholarship on the history of technology in Latin America embodies many of the issues Choi raises. As Michael Lemon and Eden Medina found in their review of the literature on technology in the region, there is little engagement between general histories of Latin America that consider phenomena such as modernization, industrialization, and urbanization, and more specialized histories that employ the methods of the History of Technology. The latter, according to Lemon and Medina, have focused on “elites within economic modernization (e.g., inventors, champions of industry...)” and “specific technological artifacts.”<sup>70</sup> Yet the dearth of *known* cases of Latin American innovation and invention—in the narrow sense of creating brand new technologies—reduces the utility of these methods.<sup>71</sup>

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<sup>68</sup> Choi, “The Social Construction of Imported Technologies,” 909.

<sup>69</sup> *Ibid.*, 913-4.

<sup>70</sup> Michael Lemon and Eden Medina, “A Review of History of Technology Scholarship in Latin America,” in *Beyond Imported Magic: Essays on Science, Technology, and Society in Latin America*, eds. Eden Medina, Ivan da Costa Marques, and Christina Holmes, 111-36 (Cambridge: The MIT Press, 2014), 112-9.

<sup>71</sup> Lemon and Medina, “A Review,” 124.

One path for uncovering the political and social construction of technologies outside of the US and Europe, according to Choi, Lemon, and Medina, is to find those rare cases where imported technologies were substantially changed before their large-scale local employment. Eden Medina's *Cybernetic Revolutionaries* is an exemplary case. Medina showed how imported computer technology was radically transformed upon its deployment by the Chilean state in the 1970s to reflect the particular socialist values of the Chilean left and Allende himself.<sup>72</sup> Lemon and Medina found that such studies of "technological adaptation" are a growing body of literature in the history of Latin America.<sup>73</sup>

Yet this method too poses a problem for the vast majority of cases where imported technologies, even upon their local manufacture, do not appear substantially different than their original form. Argentine airplanes, as we shall see, did not look unusual nor involve unique designs that reflected local political or social concerns. Such cultural influences were manifested more in the choices of which airplanes to purchase or build, or which production methods to use.

Choi proposed additional remedies for the conundrum of analyzing the development of imported technologies. One is to shift the emphasis from innovation to use and maintenance, represented by the work of David Edgerton, and Andrew L. Russell and Lee Vinsel, respectively.<sup>74</sup> Another method is to unpack the process of local production of foreign products, since imported technologies "could become local by virtue of being made locally."<sup>75</sup> In other words, innovation can be local in scale, and it can be seen in the *process* of production more than in the final design of a technology.

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<sup>72</sup> Medina, *Cybernetic Revolutionaries*, 6.

<sup>73</sup> Lemon and Medina, "A Review," 123-4.

<sup>74</sup> David Edgerton, *The Shock of the Old: Technology and Global History since 1900* (Oxford: Oxford University Press, 2006); Andrew L. Russell and Lee Vinsel, "After Innovation, Turn to Maintenance," *Technology and Culture* 59 (January 2018): 1-25.

<sup>75</sup> Choi, "The Social Construction of Imported Technologies," 916.

This dissertation employs these suggested methods to tell “a nuanced story of technology in the global periphery”<sup>76</sup> while also engaging with another body of scholarship in the History of Technology: that of technology transfer. Works by the historians Ian Inkster, Daniel Headrick, Jonathan Hagoood, Edward Beatty and others have shown the difficulties of relocating US and European technologies to different cultural and social settings.<sup>77</sup> Technologies are shaped by the collective knowledge, cultural associations, and economic conditions of the locality in which they are produced and/or used.<sup>78</sup> Thus any technology moved outside of its original context will require adjustments, usually to both the receiving society and the technology itself.

Historians in the past half-century have successfully challenged simplistic models of unidirectional technology transfer from “centers” and “peripheries” that were often at the foundation of older analyses of science and technology outside the US and Europe.<sup>79</sup> Scholars have shown how supposedly “peripheral” spaces were critical to the development of science and technology. Some technologies developed in Europe and the US matured in peripheral spaces.<sup>80</sup>

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<sup>76</sup> Choi, “The Social Construction of Imported Technologies,” 917.

<sup>77</sup> Daniel Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850-1940* (New York: Oxford University Press, 1988); Stephen H. Haber, *Industry and Underdevelopment: The Industrialization of Mexico* (Stanford: Stanford University Press, 1989); Ian Inkster, “Technology Transfer and Industrial Transformation: An Interpretation of the Pattern of Economic Development circa 1870-1914,” in *Technological Change: Methods and Themes in the History of Technology*, ed. Robert Fox, 177-201 (Amsterdam: Harwood Academic, 1996); Hagoood, “Why does technology transfer fail?”; Edward Beatty, *Technology and the Search for Progress in Modern Mexico* (Oakland, CA: University of California Press, 2015).

<sup>78</sup> For how technologies are shaped by a different contexts, see Yulia Frumer, *Making Time: Astronomical Time Measurement in Tokugawa Japan* (Chicago, University of Chicago Press, 2018); Silvia Spitta, *Misplaced Objects: Migrating Collections and Recollections in Europe and the Americas* (Austin: University of Texas Press, 2009).

<sup>79</sup> This approach to scientific and technological transfer is exemplified by George Basalla, “The Spread of Western Science,” *Science* 156 (May 5, 1967): 611-622; and W. Paul Strassman, *Technological Change and Economic Development: The Manufacturing Experience of Mexico and Puerto Rico* (Ithaca: Cornell University Press, 1968).

<sup>80</sup> For science, see Miguel de Asua and Robert French, *A New World of Animals: Early Modern Europeans on the Creatures of Iberian America* (Burlington, VT: Ashgate, 2005), chapters 3 and 6; Brian W. Ogilvie, *The Science of Describing: Natural History in Renaissance Europe* (Chicago: University of Chicago Press, 2006). For technology, see Edgerton, *The Shock of the Old*, ix-xviii.

Such scholarship has emphasized the multidirectional nature of technoscientific exchange across social contexts.

The reciprocal flow of ideas, objects, and people between different societies, however, does not suggest an equality in the technology transfer process. As the experience of modern Argentina and its historiography have demonstrated, there is truth to the notion of a “peripheral” modernity outside of the US and Europe. Argentines were witnesses to the industrial development in other nations and sought to emulate them, but they had significant disadvantages as a society that had not undergone the first wave of industrialization associated with western Europe and the US. Historians of technology transfer have overturned Alexander Gerschenkron’s classic model of “latecomer” industrialization, which posited that industrial development was easier for countries that could import technology and hence avoid the cost of innovation.<sup>81</sup> As Eduard Beatty argued in his study of industrialization in Porfirian Mexico, “*Transfer* denotes not just successful *adoption* and commercial use but also the local *assimilation* of the knowledge and expertise necessary to troubleshoot, repair, modify, adapt, and perhaps replicate imported technologies.”<sup>82</sup> While Gerschenkron focused on the “adoption” of technology, he neglected the far more important and difficult process of “assimilation.”

Technological assimilation requires a deeper process of learning. It involves the development of human capital to engage with and reproduce imported technologies and their accompanying practices. Thus technology transfer is far from a simple process of replication or emulation. As Ian Inkster argued, “the creative effort and resource mobilization involved in

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<sup>81</sup> Alexander Gerschenkron, *Economic Backwardness in Historical Perspective* (Cambridge: Cambridge University Press, 1962).

<sup>82</sup> Beatty, *Technology and the Search*, 17.

successful technology transfer is in most senses quite equivalent to processes associated with initial, significant technological change within the core of advanced systems.”<sup>83</sup>

In his study of principal industrial sectors in nineteenth-century Mexico, Beatty found the trickiest aspect of industrialization to be the development of human capital. Local elites’ positivist dreams of a simple process of technological importation leading to material and social progress were thwarted by a lack of technological “assimilation” by the general population. Elites failed to inculcate the needed technical knowledge into the common people, effectively grafting new technologies on top of society without giving *mexicanos* the ability to harness the new ideas and objects to their own ends. As a result, the needed “technical know-how” and scientific knowledge to feed Mexican industry failed to materialize.<sup>84</sup>

Beatty’s emphasis on technology transfer as a learning process underpins the technical analysis of my study. I will focus on the two aspects of learning intrinsic to aviation: learning how to fly airplanes and how to build them. The development of technical standards for the operation and construction of flying machines was a particularly important process that gradually reduced the risks—both financial and bodily—of aviation in Argentina.<sup>85</sup> The articulation of such standards required local institutions that imported, translated, and disseminated foreign knowledge and practices, a process which facilitated the creation of transnational networks of technoscientific expertise.<sup>86</sup>

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<sup>83</sup> Inkster, “Technology transfer,” 180.

<sup>84</sup> Beatty, *Technology and the Search*, 4-14, 208-9.

<sup>85</sup> For the role of technical standards in the maturation of technologies and their producer, maintainer, and user communities, see Andrew L. Russell, *Open Standards and the Digital Age: History, Ideology, and Networks* (New York: Cambridge University Press, 2014); James Sumner and Graeme J. N. Gooday, “Introduction: Does Standardization Make Things Standard?” *History of Technology* 28 (2008): 1–13; Andrew L. Russell, “Standardization in History: A Review Essay with an Eye to the Future,” in *The Standards Edge: Future Generations*, ed. Sherrie Bolin, 1-18 (Ann Arbor: Sheridan Books, 2005).

<sup>86</sup> For the development and influence of such transnational networks of expertise in Europe, see Helmuth Trischler and Martin Kohlrausch, *Building Europe on Expertise: Innovators, Organizers, Networkers* (New York: Palgrave Macmillan, 2014), especially Introduction and Part I.



But I will also go beyond Beatty's economic and political analysis of industrialization, which is generally conducted in a top-down manner with its emphasis on state policy and the structures of international and domestic capitalism.<sup>87</sup> Whereas studies in the social history of technology have frequently eschewed technical analysis, the scholarship on technology transfer has generally avoided in-depth analysis of popular culture and social structures—to the detriment of both.<sup>88</sup> The development of human capital is a cultural process; common people need to aspire to engage with technology whether as users, maintainers, and/or builders. Not all these people need master the new technologies either. Technologies like the airplane were incorporated into the sociopolitical lexicon, becoming symbols and metaphors for the interests of segments of society who may never use or understand the objects themselves.<sup>89</sup> Their enthusiasm, or lack thereof, drove the powerbrokers of Argentine society to take credence of the promises and dangers of technology. The beliefs, motivations, and fears of common people were thus just as important to the process of technology transfer as prominent engineers, investors, and the state officials. As Lemon, Medina, and Nina Lerman emphasize, the neglect of workers and non-elites

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<sup>87</sup> Beatty focuses on the failure of the state to support technical education and incentivize people to acquire technological skills. Beatty, *Technology and the Search*, 188-205.

<sup>88</sup> Lemon and Medina note the “top-down” tendency among studies of industrialization and development, Lemon and Medina, “A Review,” 119-20.

<sup>89</sup> Rieger, *Technology and the Culture of Modernity*, 16-8.

in the historical understanding of modernization remains a deficit in the scholarship on Latin America and the North Atlantic nations.<sup>90</sup>

This dissertation will thus consider technology transfer as a technical and cultural process. We will see the many trials, tribulations, and triumphs of Argentine's aviation community, while also endeavoring to understanding the sociocultural meaning ascribed to flight by common people. It will reconstruct Argentina's aerial sociotechnical imaginaries, locating them in the many intersectional identities articulated by *argentinos* during the first half of the twentieth century. We will then see these imaginaries expressed in a belabored yet fruitful process of technology transfer—of technological learning—that culminated with the “technopolitics” of the mid-century Peronist state, the creators of the nation's modern aviation system. In so doing, this study argues for the importance of non-elite artisans, mechanics, and technicians to not just technology transfer, but to the very articulation and creation of industrial modernity in Argentina.

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This dissertation is divided into three parts, each representing a distinctive period in Argentina's aviation history. We begin with the *belle époque* period from the origins of the

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<sup>90</sup> Lemon and Medina, “A Review,” 122-3; Lerman, “Categories of Difference,” 898. Nina Lerman notes how historians of technology in the 1970s and 1980s were interested in the role of artisans and mechanics in the process of industrialization, which is exemplified by the work of Robert Gordon and Merritt Roe Smith. Nevertheless, John Staudenmaier found few perspectives on workers in his 1985 historiographical review of the field. Recent intersectional analyses in the social history of technology have done little to incorporate such scholarship. An important exception to this trend was the 2010 study of auto mechanics by Kevin Borg. See Merritt Roe Smith, *Harpers Ferry Armory and the New Technology: The Challenge of Change* (Ithaca: Cornell University Press, 1977); John Staudenmaier, “What SHOT hath wrought and what SHOT hath not: Reflections on twenty-five years of the history of technology,” *Technology and Culture* 25, no. 4 (1984): 707-730; Robert B. Gordon, “Who turned the mechanical ideal into mechanical reality?” *Technology and Culture* 29, no. 4 (1988): 744-778; Kevin L. Borg, *Auto Mechanics: Technology and Expertise in Twentieth-Century America* (Baltimore: Johns Hopkins University Press, 2007).

flying community in 1907 until 1920. Chapter one on Jorge Newbery and the gendered culture of the nation's first aviation institution, the Aero Club Argentino, unpacks the early relationship between elites and the new technology of flight. Argentina's first aviators, through their dance with death, reasserted the masculine bona fides of modern progress. In chapter two, we will look at the Argentine aviation community's first steps in their decade's long process of learning to fly and build airplanes. Learning how to fly proved relatively simple, albeit very dangerous. Learning to build airplanes, on the other hand, was far more difficult as early builders struggled with a lack of technical standards, an underdeveloped local metallurgical sector, and deepening foreign dependencies.

Part II moves onto the interwar period from 1920 to 1940. Although not a participant in either world war, Argentina's economic and political conditions were sufficiently shaped by the global conflicts that the subdivision is helpful nonetheless. Chapter three investigates the role of the "heroic" pilot in the articulation of a racialized and gendered Argentine identity. With a focus on biological notions of race and Darwinian extinction, this chapter shows how the performance of pilots was mapped onto official and popular anxieties about the suitability of Argentine men and women for modernity. Chapter four shifts the intersectional analysis to the registers of nationality and class. Popular media characterized heroic flights as illustrations of a budding sense of *Argentinidad*, one defined by the competition between immigrant identities and nationalist ideology. As the interwar period progressed, immigrant and class identities blended, fused together by a cultural expectation of upward social mobility through self-taught technical skills. This trend was embodied in the figures of first the *aficionado* [amateur, hobbyist] and then the *técnico* [technician].

Chapter five turns back to the aviation community and its early relationship with the Argentine state. By the 1920s, the national government began to promote flight training through the management and funding of the aero clubs spread across the country. I will focus on the ideology of the most powerful group of officials on the matter of aviation: the officers of the Army air service. These men articulated a narrative of history in which the velocity of transportation technology drove progress—an idea that would shape Argentine aviation policy for decades. Chapter six then looks at the next substantial evolution in the local capability in aircraft production: the Army’s *Fábrica Militar de Aviones* [Military Airplane Factory] in Córdoba. The decision to take on aircraft production posed a massive number of questions for aviation authorities, from what types of airplanes to make to what materials to use. As we shall see, the answers to those questions were steered by many different cultural, political, and technical considerations. In the end, the effort would become a flash point in national politics as the factory became associated with the broader issue of military involvement in industry and government.

In Part III, we will look at the culmination of the transfer of aviation technology to Argentina. From 1943 to 1955, the government of Juan Perón committed the full resources of the state to the construction of a national aviation system, from basic education and infrastructure to extensive air services. Chapter seven seeks to understand why Peronist authorities harnessed the aviation technology to bolster their political movement. Perón articulated a “technopolitics” that emphasized the benefits of industrial work for common people as a source of economic prosperity and personal dignity. Officials presented aviation as a prime opportunity for *argentinos* to realize the promises of an industrial “New Argentina.” Chapter eight will then investigate the effects of the Peronist program on the aviation community itself. As we shall see,

the historiographic narrative of failure in the transfer of aviation technology to Peronist Argentina represents a narrow understanding of the transfer process. Although not without its faults and abuses, the Peronist aviation program finally created many of the structures and institutions long called for by Army aviation boosters. Lastly, in the concluding chapter I will briefly consider the history of Argentine aviation after Perón's ousting in 1955, before a final analysis of the interplay among technology, culture, and the state.

Part I

*Belle Époque* Aviation

1907-1920

## Chapter One

### Jorge Newbery and the Gendered Culture of Early Flight, 1907-1918

“¡Tal el héroe moderno! Diera guerra  
Al abismo, a los vientos, a la altura;  
Y su mansa y magnífica figura  
Fue de paz a los hombres de la tierra.  
[...]  
¡Tal el héroe argentino! El ancho Plata,  
La Pampa inmensa, la alta cordillera,  
Una vez más son campo que dilata.

El blanco y el azul de su bandera  
¡Y el tipo de la raza se aquilata  
En su actitud magnífica y austera!

“Such the modern hero! Give war  
To the abyss, to the winds, to the heights;  
And his meek and magnificent figure  
It was of peace to the men of the earth.  
[...]  
Such the Argentine hero! The wide River Plate,  
The immense Pampa, the high mountains,  
Once again they are fields of expansion.

The white and blue of his flag  
And the type of the race is measured  
In his magnificent and austere attitude!

Excerpts from Julio A. Costa, “Jorge Newbery,” in *Jorge Newbery: Homenaje* (Belgrano, AR: Talleres Gráficos “Roma” de Magrini y Assenti, 1914), 64.

On October 20, 1907, a small, inconspicuous notice appeared in the newspaper *La Nación*: Aarón de Anchorena—the young, eccentric “playboy” descended from a long line of distinguished, and wealthy, *porteño* traders—would soon take flight with a passenger in a hot air balloon. He would launch from the grounds of the Sociedad Hípica Argentina as part of a women’s charity event to raise money for orphanages.<sup>1</sup> Within days Anchorena (1877-1965) had extended an offer to his friend, the dashing sporting celebrity and electrical engineer Jorge Newbery (1875-1914). Two months later, on Christmas Day, the two men boarded the balloon Anchorena brought back from France, the *Pampero*, and lifted gracefully up into the air in front of a large crowd of onlookers (see fig. 1.1). As the correspondent for *La Nación* recalled, “For many of the spectators, the engineer Newbery seemed like a supernatural being.”<sup>2</sup>

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<sup>1</sup> Untitled, *La Nación*, October 20, 1907.

<sup>2</sup> “Para muchos de los espectadores, el ingeniero Newbery parecía como un ser sobrenatural.” Untitled, *La Nación*, December 26, 1907.

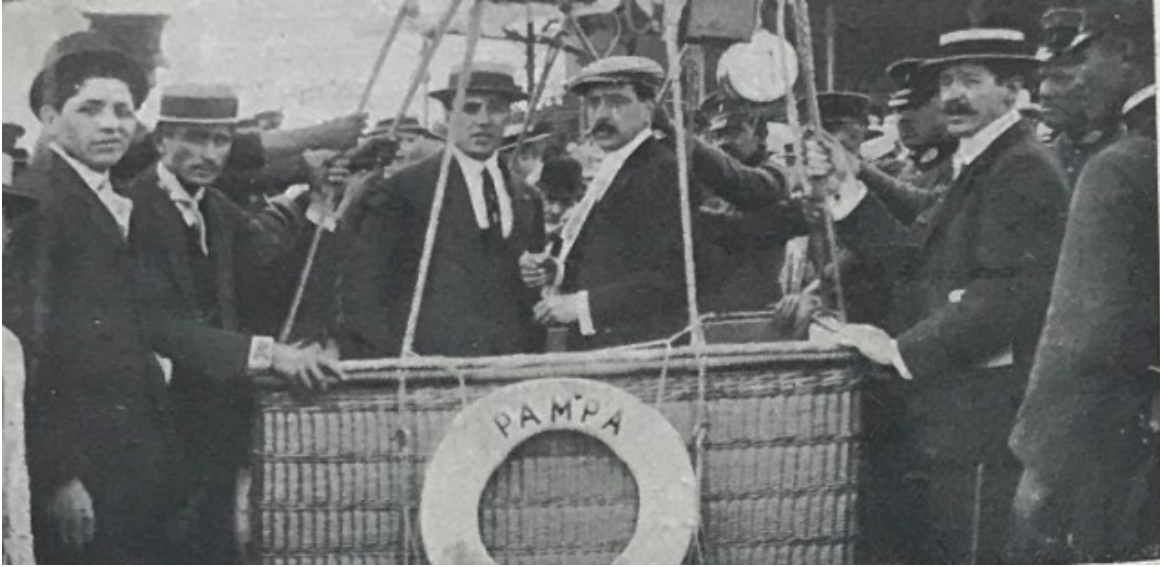


Figure 1.1. Newbery (left) and Anchorena (right) just before their historic flight. "Aero-Club Argentino: Reseña histórica," *Boletín del Aero Club Argentina*, June 1, 1911, 10.

There had been balloon flights in Argentina before, associated with military campaigns and the odd traveling showman. In January 1904, an Italian husband and wife team of acrobatic “aeronauts”<sup>3</sup> performed a series of daring shows over Buenos Aires that tragically ended in the drowning death of the young woman. But these flights were mere foreshadows of the “conquest of the air” to come, leaving no lasting institutional and practical roots in Argentina. Two and a half months after Anchorena’s announcement to take flight in the *Pampero*, on January 13, 1908, he and a group of his friends and fellow aeronautical enthusiasts created the foundational institution of Argentine aviation, the Aero Club Argentino (ACA). Initially a small auxiliary social club under the prestigious Jockey Club Argentino (1882), the club soon grew into the locus of aeronautical activity in Argentina, providing funds, materials, and skills for the nascent civilian and military aviation communities.

The aviation craze sweeping France and the United States arrived in Argentina shortly after the founding of the ACA. The hundreds of Argentines who turned out to see the wonderful,

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<sup>3</sup> “Aeronaut(a)” was the common Spanish word for a balloon pilot at the time.



and sometimes deadly, exploits of aeronauts and aviators soon grew into crowds of thousands.<sup>4</sup> Aviation was the latest incarnation of mechanical “sport,” preceded by bicycle, motorcycle and automobile racing, that was pushing the limits of speed and human endurance.<sup>5</sup> Men and women of all classes gathered at rudimentary air fields to witness a mechanical marvel, and in the process participate—even if only as an earthly spectator—in a technological pageant.

According to contemporary accounts in the popular press, every person had a part to play. The male aviators, wrapped in an aura of daring, youthful energy and courage, represented the heights of modern masculinity with its desire for velocity, danger, and conquest. The women in the crowd, often depicted as tearing up at the sight of the aviator taking off into the unknown, stood as juxtapositions to the stoic and determined pilot. Women and their organizations were important sponsors of early flight, organizing balloon launches for their charity events and raising money for the monuments to those aviators that never came back. Small groups of elite Argentines, dressed in fine clothes and socializing in the stadium stands or chatting with their friends on the field, signaled the immense social prestige of early aviation. And lastly, the throngs of common Argentines watching from the edges of the aerodrome were a necessary audience, one that would support aviation through thousands of small donations, as well as encourage aviators to push the limits of aerial technology in search of fame and fortune.

This chapter examines when aviation first permeated Argentine society, beginning with a small cadre of elites who used their personal wealth, connections, and mobility to transfer aviation technology to their home country. In the process, it will show how pilots and aviation

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<sup>4</sup> By 1909, police were required to keep crowds under control at ACA events. Alejandro Guerrero, *Jorge Newbery* (Buenos Aires: Emecé, 1999), 212.

<sup>5</sup> Flight, whether in a balloon or airplane, was considered a “sport” in *belle époque* culture. Insider publications like the official newsletter of the Aero Club Argentino, the *Boletín del Aero Club Argentino*, as well as popular magazines such as the women’s home magazine *El Hogar*, wrote of aviation as a “sport” or covered aerial feats under the sports section. Wilbur Wright also thought of aviation as a sport. Wilbur Wright, “Flying as a Sport—Its Possibilities,” *Scientific American*, February 29, 1908.

enthusiasts were at the intersection of transnational and local discourses on gender, class, and progress in turn-of-the-century Argentina. Social commentators, politicians, and aviation boosters saw flight and pilots as emblematic of the social and economic changes sweeping the Southern Cone. Flight was seen as the next wondrous step in science's conquest over nature. It represented a future of great possibility and uncertainty. Some of its practitioners were among the earliest popular celebrities at the dawn of the mass media in Argentina. Yet even in an activity considered the apex of modern technology, some flight enthusiasts grew increasingly uneasy with the social change that was overtaking Argentine society at the time—whether it be gender roles or the new cosmopolitan bourgeois culture—and saw aviation as a remedy for the supposed maladies of modern life. At the center of these developments stands one question: how was early flight—despite the immense costs in blood and treasure—able to sustain itself in Argentina?

### **“Golden Age” Argentina and its “High Society” before the First World War**

Aviation arrived at a time of unprecedented social change, population growth, and economic development in Argentina. The advent of the railroad, the refrigerated steamship, and the end of the bitter civil wars that characterized the nineteenth century had opened the fertile Argentine pampa to European markets. Soon the economy was growing at an unprecedented rate as elite landowners made millions of pesos feeding a rapidly industrializing Europe with Argentine wheat and meat. Much like the United States, Argentina became a major destination for European immigrants, largely from Spain and Italy. The population of Buenos Aires alone grew from around 180,000 in 1869 to over 1.5 million by 1914.<sup>6</sup> The city became a cosmopolitan

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<sup>6</sup> Leandro Losada, *La alta sociedad en la Buenos Aires de la “Belle Époque”*: sociabilidad, estilos de vida e identidades (Buenos Aires: Siglo Veintiuno, 2008), 46.

mixture of different nationalities, ethnicities and classes, all vying for a piece of the immense wealth passing through its port.

The infusion of money and people had a profound effect on Argentine “high society” [*alta sociedad*], in the words of the Argentine historian Leandro Losada. By far the greatest beneficiaries of the economic boom,<sup>7</sup> the socioeconomic elite in Argentina expanded greatly in size and wealth during the so-called “Golden Age” from 1880 to 1914. They poured money into their cities, remaking it in the image of Paris—the city “perceived as the core of modernity”<sup>8</sup>—with wide avenues, green spaces, cafés, and cultural institutions such as the Teatro Colón. Economic growth did stimulate some degree of social mobility. This “social diversification” led to an increased drive for elites to demonstrate their socioeconomic status and maintain their preeminence in national life. The elite joined new social clubs, such as the Jockey Club Argentino (1882), to display their pedigrees, wealth, and cement their place in *la alta sociedad*. They underscored their leisure time with a new trend from across the Atlantic: physical education and sporting. Young elites took extended journeys to Europe, especially Paris, where they absorbed and brought back the latest trends of European aristocrats.<sup>9</sup>

Old-wealth families that had been in Argentina for decades now mingled with recent immigrants and the newly wealthy. This new blood sometimes created conflict, especially as the highest echelons of Argentine political society remained largely closed to newcomers. But even as the old and new jockeyed for greater social status in public life, they also cooperated, reveling in their love for the trappings and culture of modernity, or in their rejection of them.

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<sup>7</sup> Rodriguez, *Civilizing Argentina*, 3.

<sup>8</sup> Archetti, *Masculinities*, 4.

<sup>9</sup> Losada, *La alta sociedad*, 2-4, 129, 152, 188-191.

The friendship and ballooning exploits of Aarón de Anchorena and Jorge Newbery are just such an example of new alliances formed in the interest of aviation. Aarón de Anchorena was the young son of a well-established commercial family in Buenos Aires. In fact, his ancestors were so successful that “richer than Anchorena” became a turn-of-phrase in the nineteenth century. The Anchorenas were closely connected to the centers of political power in the country, with family members involved in many of the key national projects of the twentieth century such as the creation of Yacimientos Petrolíferos Fiscales, the national oil company.<sup>10</sup> Aarón himself was well-known as an international “playboy,” entertaining high-society women on his Mediterranean yacht when he was not making the rounds in Parisian aristocratic circles. It was in one such circle that the young Anchorena met Alberto Santos-Dumont (1873-1932), the famed Franco-Brazilian aviator, in 1905. Soon after, Anchorena joined the Aero Club de París, where he learned to pilot a balloon and made the connections to order one of his own.<sup>11</sup>

Jorge Newbery, on the other hand, was a second-generation immigrant. His father Ralph Lamartine Newbery—a successful New York City-born dentist—had arrived in Buenos Aires in 1872. Jorge (sometimes called George in the sources) was born there three years later. Jorge never lost his North American roots. Between 1891 and 1895, he completed a degree in electrical engineering at Cornell University and the Drexel Institute, where he studied under Thomas Edison. During his subsequent career, he returned every few years to the US for engineering conferences and to procure new materials. Newbery also made regular trips to Europe, both to learn about the newest developments in science and technology, and to bask in the refined culture of the Old World.<sup>12</sup>

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<sup>10</sup> Losada, *La alta sociedad*, 6-9.

<sup>11</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 83-84; Untitled, *La Nación*, October 20, 1907.

<sup>12</sup> “Biografía de Jorge Newbery,” *La Nación*, March 2, 1914, reprinted in *Jorge Newbery: Homenaje* (Belgrano, AR: Talleres Gráficos “Roma” de Magrini y Assenti, 1914), 22; Guerrero, *Jorge Newbery*, 12-22, 66.

Jorge Newbery's work as an engineer brought him to national prominence. Throughout his life he was always introduced as *Ingeniero* Jorge Newbery. He worked on the city's electrical infrastructure and maintained the electrical systems of the Argentine Navy's newly-built European warships. He publicly campaigned for Buenos Aires' first underground subway system and for the nationalization of utility companies.<sup>13</sup> Newbery's services were in near constant demand for the major events of high society Argentina, such as the annual "Curso de las flores" in Palermo, as organizers increasingly wanted dramatic electrical displays to accompany the traditional pageantry.<sup>14</sup>

But Newbery's public reputation as an engineer was only one piece of what became his popular image as a national celebrity. While studying at Cornell University, he took up boxing, and soon won a collegiate competition. Upon his return to Buenos Aires, Newbery began winning local competitions in boxing, running, fencing and rowing. He was a gifted natural athlete, renowned for his energy and positive spirit. An adept cultivator of his popular image, he wore the latest fashions, often impeccable white suits, to his meets and the many social events honoring his exploits (see fig. 1.2). He befriended many of the movers and shakers of elite sporting in Buenos Aires, including Baron Antonio de Marchi (1875-1934), the president of the Sociedad Sportiva Argentina.<sup>15</sup> By the early 1900s, newspapers and magazines were already covering Newbery's many exploits, and cataloguing his social appearances all over town.

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<sup>13</sup> Newbery's status in many ways mirrors that of the "heroic engineer" that rose to prominence in mid-nineteenth century Britain, associated with men such as Isambard Kingdom Brunel and George Stephenson. These men were entangled in popular heroic myth, which characterized them as having the unique energy, drive, genius, and "coolness of leadership" to transform their country. Furthermore, they were associated with a "golden age" in Britain when the nation transformed into an industrial juggernaut and exported its way of life around the world. Angus Buchanan, *Brunel: The Life and Times of Isambard Kingdom Brunel* (New York: Hambledon Continuum, 2001), xi, 212-227.

<sup>14</sup> Jorge was often photographed at events promoting new technologies, such as the opening of an electric trolley factory in 1906. "Con los del trolley," *Caras y Caretas*, June 30, 1906, 49; see also Guerrero, *Jorge Newbery*, 61-66, 115, 243.

<sup>15</sup> Guerrero, *Jorge Newbery*, 86.

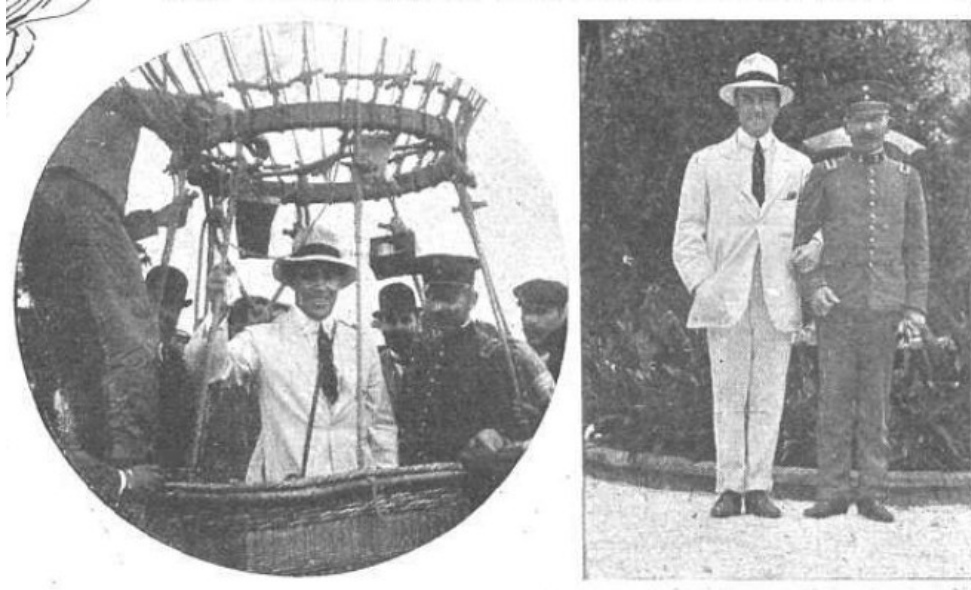


Figure 1.2. Newbery and Mayor Wadino Correa before and after a flight on February 7, 1908. “Buenos Aires desde las nubes,” *Caras y Caretas*, Feb. 15, 1908, 51.

When Aarón de Anchorena invited his friend to join him for a balloon flight on Christmas Day, Newbery was already a rising star. Ballooning was just one more example of his incredible energy and will to lead in all things novel and modern. His nonchalant poise as he rose to the heavens in his elegant suits, surrounded by a crowd of onlookers, cemented him as a national icon. Yet the apex of his fame only came with the beginning of heavier-than-air flight in Argentina two years later, after what was also the summit of the Argentine elites’ aristocratic splendor and ostentation: the celebrations of the centenary of Argentine Independence in 1910.<sup>16</sup>

### **The Centenary of 1910: Heavier-Than-Air Flight Arrives in Argentina**

The festivities to celebrate the hundredth anniversary of the May Revolution in 1810 promised to be like none other in the country’s history. The Centenary would mark the arrival of Argentina on the world stage as it revealed in the accomplishments of its liberal “Golden Age.”

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<sup>16</sup> Losada, *La alta sociedad*, xxvii.

Months of parties, sporting competitions, and public entertainment were planned for the first half of 1910. The national government, not known for its liberal dispensation of funds, earmarked millions of pesos to underwrite many of the events.<sup>17</sup>

Flight was also on the minds of many as organizers looked ahead to 1910. Argentine elites were swept up by the French fervor for aviation. France was the world capital of flight at the time, having hundreds of pilots and aircraft when most nations could report fewer than a dozen of each.<sup>18</sup> The French government invested millions of francs in military and civilian aviation projects.<sup>19</sup> By 1909, rapid advances in aircraft and powerplant designs enabled more and more “*hombres-pájaros*” [bird-men] to fly faster, higher and farther.

Public interest in aviation, even if from a place of fear or skepticism, reached a fever pitch in France. The culminating event of this early period was the aviation meet at Rheims in August 1909. Dozens of pilots competed for altitude, speed, and distance prizes. Some even competed head-to-head in daring races that thrilled the crowds below. One local journalist, amazed by the parade of wood and wire aircraft passing overhead, reported “...everything that has happened astonishes you, surprises your imagination, leaves you deeply moved and disconcerted, your head a bit dizzy as if you’d had too much to drink.”<sup>20</sup> When the famous meet

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<sup>17</sup> “El presupuesto,” *La Prensa*, July 19, 1909, 5.

<sup>18</sup> For the culture of aviation in *belle époque* France, see Wohl, *A Passion for Wings*. For the development of French military aviation, see Charles Christienne and Pierre Lissarague, *A History of French Military Aviation*, translated by Francis Kianka (Washington, D.C.: Smithsonian Institution Press, 1986); for a general history of French aircraft and production, as well as the other major powers, see John H. Morrow, Jr., *The Great War in the Air: Military Aviation from 1909 to 1921* (Tuscaloosa: University of Alabama Press, 1993); and Charles H. Gibbs-Smith, *Aviation: A Historical survey from its origins to the end of the Second World War* (London: Science Museum, 1985).

<sup>19</sup> The Argentine press, especially the newspapers *La Nación* and *La Prensa*, reported on the investments by European states in military aviation, spurring their government to do the same. See, for example, *La Nación*’s coverage of the British Army’s experiments with dirigibles on October 19, 1907, and “Importancia estratégica de los globos,” *La Nación*, December 2, 1907.

<sup>20</sup> *Le Petit Parisien*, August 24, 1909, quoted in Wohl, *A Passion for Wings*, 109.

drew to a close, the world had a model for a national aviation event and a supply of young, dashing aviators willing to travel the world in search of prize money and fame.

Argentines, some of which were present at the meet, were undoubtedly inspired by Rheims.<sup>21</sup> Businessmen, newly formed commercial ventures, and social clubs all saw the opportunity to advance aviation in Argentina and earn a nice profit in the process. None took advantage of the events as much as Jorge Newbery and the ACA. The ACA was officially recognized by the government in 1909, and popular and press enthusiasm for the club's balloon launches had forced military officials to take greater interest in aviation.<sup>22</sup> Newbery was involved in many of the different events as both an electrical engineer and an aviation booster. The ACA and other sponsors contracted foreign aviators and prepared proper grounds for the meets. The first purpose-made airfield in the country, Villa Lugano, was built in a suburb of Buenos Aires by a private firm for the businessman Louis Moraud, who contracted a team of aviators for a meet. At least thirteen aviators, ten of them Frenchmen, arrived in Buenos Aires for the festivities. They brought with them almost the same number of cutting-edge Voisin, Blériot, and Farman aircraft.

Frenchman Henri Brégi (1888-1917) and Italian Ricardo Ponzelli (1885-1943) were the first to arrive in January 1910, each hoping to be the first to fly a heavier-than-air machine in Argentina. Brégi was sponsored by the French automotive magazine *L'Auto*, with his trip being organized by the ACA. The head of the Sociedad Sportiva, Baron Antonio de Marchi, not wanting to be outdone by his friend Jorge, contracted Ponzelli to make a competing bid for the first flight. But on February 8, 1910, Henri Brégi took off at the Hipódromo de Longchamps,

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<sup>21</sup> Argentine newspapers covered each day of the meet at Rheims. See, for example, *La Prensa* from August 24 to August 30, 1909.

<sup>22</sup> Guerrero, *Jorge Newbery*, 207-217. A consistent refrain in the historiography for this period was the general unwillingness of the state to fund early aviation.





Figure 1.3. Henri Brégi shortly before his successful bid for the "Tornquist" prize in April 1910. "La Aviación en Buenos Aires," *Caras y Caretas*, April 23, 1910, 64.

flying in his Voisin for eight minutes and 45 seconds in what was recognized as the first heavier-than-air flight in Argentina.<sup>23</sup>

With the achievement of Brégi, the arrival of the other aviators, and the completion of Villa Lugano, the stage was set for the main events of 1910. A "Quincena de Aviación" [Fortnight of Aviation], sponsored by Moraud and the ACA, began with the inauguration of Villa Lugano on March 23. Although 2,500 people witnessed the inaugural flights, bad weather kept the day's events to just one short flight and most left disappointed.<sup>24</sup> But each subsequent day, more people came to the field to watch young French, Italian, and Belgian aviators take briefly to the sky. The peak of the Quincena was on Sunday March 27, when over 6,000 Argentines made the journey to Villa Lugano.<sup>25</sup>

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<sup>23</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 119-121. Not without controversy though. Ponzelli had flown before Brégi, but his flight was brief and ended in an accident. The ACA, tasked with arbitrating what constituted a real "flight," decided in favor of their man Brégi.

<sup>24</sup> "Aero Club Argentino: Quincena de Aviación," *La Prensa*, March 24, 1910, 12. It should be remembered that "bad weather" for these rudimentary aircraft could simply be a stiff breeze.

<sup>25</sup> Guerrero, *Jorge Newbery*, 232-236.

The biggest meet of the year got underway on May 30, 1910, five days after the centennial anniversary. Organized by the ACA and the Auxiliary Commission of the Olympic Games [Comisión Auxiliar de Juegos Olímpicos], the “Aviation Week of the Centenary” [Semana de Aviación del Centenario] featured over 200,000 francs in prize money.<sup>26</sup> Just as in March, bad weather hampered flight activity. In the end, the flyers could only take to the skies on two of the seven days.<sup>27</sup>

Shortly after the week’s events, the majority of the contracted pilots returned to their home countries. But some stayed and became foundational members of the national aviation community. The Italian Bartoloméo Cattáneo (1883-1949), contracted for the Semana de Aviación, became a household name flying over Buenos Aires in November 1910, and later won a 15,000-franc prize put up by *La Nación* for a “raid” between Rosario and Buenos Aires. The Frenchman Marcel Paillete (1884-1965) also gained national fame flying over the capital in early 1911, and the following year was named the chief flight instructor for the newly-created military aviation school.<sup>28</sup>

The flood of money, skills, and aircraft brought by the Centenary celebrations kick-started local aviation in Argentina. The country had its first rudimentary airfields, a collection of European aircraft, and a public eager for more aerial spectacles. Just as Rheims had produced a feeling of awe in the French journalist, at the close of 1910 a correspondent for *La Nación* marveled at the rapidity of technological development in aviation since the Wright Brothers’ and Santos-Dumont’s first flights. Heavier-than-air flight was advancing even faster than automobile

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<sup>26</sup> “Aero-Club Argentino, Reseña Histórica,” *Boletín del Aero Club Argentino*, June 1, 1911, 13. Although some of this money was not claimed.

<sup>27</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 132-135.

<sup>28</sup> “Pro-Flotilla Aero-Militar Argentina: Importantísima donación de la Compañía Argentina de Tabacos,” *Boletín del Aero Club Argentino*, June 15, 1912, 134.

technology, and “for that reason it is impossible to foresee what impact it will have in the not too distant future.”<sup>29</sup>

### **Jorge Newbery, the Sportsman Pilot**

Although heavier-than-air flight had arrived in Argentina, it remained firmly in the hands of foreign aviators in early 1910. That began to change when Jorge Newbery underwent his heavier-than-air flight “baptism”—as it was commonly called at the time—on March 3, 1910 with the visiting French aviator Émile E. Auburn. On June 20, he received his brevet, becoming one of the first native-born Argentines to obtain a pilot’s license.<sup>30</sup> Between 1910 and 1914, Jorge Newbery soared to new heights of fame in his home country and abroad. Known for his pursuit of altitude records, it is notable that aviation transformed him from not just a “sportsman,” but a “*scientific* sportsman” pushing the boundaries of the “conquest of the sky.”<sup>31</sup> Newbery was lauded in Argentine media as an ideal modern Argentine man, bursting with the masculine qualities that would lead his country into a brave new world of material improvement and the submission of nature to science. This gendered rhetoric of progress, sport, and aviation justified—and thus sustained—the nascent practice of flight in Argentina during its early “heroic era” when the technology seemed more likely to kill its operators than propel them into the sky.

Newbery’s popular image was first formed as a “sportsman,” a masculine archetype that came into fashion among Argentina’s elite in the late nineteenth century. Sporting culture was an import from Great Britain and was initially closely associated with English aristocratic

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<sup>29</sup> “...y por eso es imposible prever qué proyecciones tendrá para un futuro no lejano.” Untitled, *La Nación*, December 17, 1910.

<sup>30</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 157. Just ahead of him were the famed theater actor Florencio Parravicini, Juan A. Roth, and Carlos Goffre. Parravicini and Roth were taught by Henri Brégi, while Goffre was a pupil of Auburn.

<sup>31</sup> “Un sportsman excepcional: records de altura en globo y en aeroplano,” *Boletín del Aero Club Argentino*, December 15, 1912, 203.

comportment. The sportsman was an update of the ideals of the Victorian gentleman, a more active incarnation that saw sports as the “moral activity of the body.”<sup>32</sup> Physical exercise and team sports built discipline, determination, and the will to win. It also maintained the “ideals of male beauty and fitness” that characterized modern European masculinity.<sup>33</sup>

Over the course of the late nineteenth and early twentieth centuries, these ideals of sporting and masculinity were brought to Argentina by immigrants and the return of elite *argentinos* from holiday in Europe. Young high-society men were expected to box, run, swim, and sail, not just to show their individual abilities, but to represent the overall fitness of their class and nation. Newbery defeating a North American in the ring was a victory for the Argentine elite, not just Jorgito himself, as he was sometimes affectionately called. Young high-society women, while encouraged to practice more appropriately feminine sports, were foremost to be seen at the racetrack or gymnasium with their friends, watching Argentina’s finest display their physical and moral fitness. Furthermore, sports served as a poignant marker of wealth and status through the large amounts of leisure time they connoted. The arrival of new immigrants and atmosphere of social mobility created considerable flux within the ranks of Argentine high society, urging its members to display and confirm their status more fervently than ever.<sup>34</sup>

By 1910, sporting fever had spread across the nation. What started as an almost exclusively upper-class activity was also diffusing into the common people. Fitness was being integrated into popular education, and athletic clubs for poor children focused on fitness and hygiene so that “the future [will] reserve for us the pride of having a race of winners by the arm

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<sup>32</sup> Archetti, *Masculinities*, 57. “Sportsman” was written in English in Spanish media.

<sup>33</sup> *Ibid.*, 42.

<sup>34</sup> Losada, *La alta sociedad*, 129, 188-190.

and by the heart.”<sup>35</sup> The meteoric rise in the popularity of soccer created new opportunities for humbler players to join the ranks of sportsmen. Especially after the First World War, the pure amateurism of high society declined in the face of a more professionalized sporting culture associated with second-generation immigrants.<sup>36</sup>

Jorge Newbery and his celebrity image crystallized at the transition between the aristocratic and popular conceptions of the sportsman, which is evident in Newbery’s switch from ballooning to heavier-than-air flight. Ballooning, although still spoken about in terms of a “conquest of the air,” was a decidedly more aristocratic sport in practice and popular perception. To take to the air, Newbery wore his Sunday best. Aeronauts brought whiskey and sandwiches with them to pass the hours suspended in the air.<sup>37</sup> In a 1908 satirical description of a balloon journey in Anchorena and Newbery’s *Pampero*, Martín Oro describes how “elegant and neat” *el ingeniero* was, and how the aeronauts used Jabón Reuter-brand bars of soap—a popular luxury import among *porteños*—as ballast.<sup>38</sup> Later in April 1910, the Aero Club Argentino sponsored an aerial “fox hunt” in which one balloon—the “fox”—took off first, and two other balloons competed to get the closest to the fox.<sup>39</sup>

Yet the risks of ballooning were very real—Newbery’s own brother died in an accident in 1908—and stories of Newbery’s early flights commented on his easy-going nature in the face of danger. Sportsman culture dictated that men flaunt such risks, and it was *de riguer* for young, well-to-do men to participate in bicycle, automobile, and motorcycle racing, sometimes losing their lives in the process. Motor racing, and later aviation, were the ultimate markers of wealth

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<sup>35</sup> “...*el porvenir nos reserve el orgullo de tener una raza de triunfadores por el brazo y por el corazón.*” “Un club de niños ricos para niños pobres,” *Caras y Caretas*, October 18, 1913, 64.

<sup>36</sup> Archetti, *Masculinities*, 56-65.

<sup>37</sup> “Carrera de globos,” *Revista mensual del Touring Club Argentino*, September 1909, 504.

<sup>38</sup> Martín Oro, “Un milagro del globo ‘Pampero,’” *Caras y Caretas*, May 2, 1908, 105.

<sup>39</sup> “La caza del zorro en globo,” *Caras y Caretas*, April 30, 1910, 57-58.



Figure 1.4. Newbery before the first double traverse of the Rio de la Plata in a single day. "Buenos Aires-Colonia-Buenos Aires," *Boletín del Aero Club Argentino*, December 15, 1912, 206.

and modernity for Argentine elites, both through the mastery of these new machines and the ability to contend with the speed and violence of driving and flight.<sup>40</sup>

With Newbery's transition to the airplane came the intensification of his masculine popular image as he now contended with the likes of hero-pilots Louis Blériot, Roland Garros<sup>41</sup>, and Orville Wright. These early aviators, who risked everything for flight, were archetypal masculine heroes in France and the United States, emblematic of a national spirit and energy that had the willpower to face—and cheat—death. Blériot and Wright, eschewing the flamboyance of Alberto Santos-Dumont, exemplified a cold, steely determination—sometimes to the point of nonchalance—in the photographs and press accounts of their feats.<sup>42</sup>

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<sup>40</sup> For automobile racing, see Eduardo Archetti, *El potrero, la pista y el ring: Las patrias del deporte argentino* (Buenos Aires: Fondo de cultura económica, 2001), 69-96.

<sup>41</sup> Guerrero, *Jorge Newbery*, 288.

<sup>42</sup> Although never remarked upon at the time, Newbery probably bore the closest resemblance to the English aristocratic pilot Henry Latham, one of the earliest celebrity pilots, who was known for his "sporty casualness and man-about-town elegance." Wohl, *A Passion for Wings*, 48, 50, 112.

While Newbery was also known for his warm cordiality and smile, his “*sangre fría*” [cold blood] and calculating intelligence in the face of danger became renowned in Argentina. No longer wearing suits to the airfield, now Newbery donned flight suits and a breathing apparatus to help him survive at high altitude. In the popular magazine *Caras y Caretas*, he was deemed the “poet of energy,” a “strong and distinguished sportsman” who in his “display of Herculean strength” was simultaneously emblematic of—and ahead of—his time in Argentina.<sup>43</sup> Thousands of onlookers, eager for the noise, drama, and potential violence of early flight, flocked to see Newbery’s exploits.

Aviation had the effect of elevating the status of Newbery’s sportman endeavors as he joined the ranks of men “that do not take ‘sports’ as a simple diversion, assigning them, instead, a scientific value.”<sup>44</sup> As César Viale remembered after Newbery’s tragic death in 1914:

Born in these [modern] times, your big soul, groping, sought, longed for glory—the aspiration of select mentalities—firstly in the noble arena of sports competition, later transforming your thrusts—rightly oriented—in favor of science and for the honor of your country...<sup>45</sup>

The drive to fly higher, faster, and farther was seen as a scientific conquest of man over nature. When Newbery reached a world-record altitude of 6,250 meters (20,505 feet) on February 10, 1914, *el ingeniero* had given Argentina “a place of honor in the international concert of the conquest of space.”<sup>46</sup>

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<sup>43</sup> Eduardo Perotti, “Jorge Newbery: El poeta de la energía,” *Caras y Caretas*, December 7, 1912, 57-59.

<sup>44</sup> “...*que no toman los ‘sports’ como simple diversión, asignándoles, en cambio, un valor científico.*” “Un sportsmen excepcional,” *Boletín del Aero Club Argentino*, December 15, 1912, 203.

<sup>45</sup> “*Nacido en estos tempos, tu alma grande, tanteando, buscó, anheló la gloria—aspiración de las mentalidades selectas—primeramente sobre la arena noble de la competencia deportiva, transformando más tarde tus empujes—acertadamente orientados—en pro de la ciencia y para honra de tu país...*” César Viale, “Jorge Newbery,” in *Jorge Newbery: Homenaje*, 5.

<sup>46</sup> “...*un puesto de honor en el concierto internacional de la conquista del espacio.*” “Figuras de Actualidad: Jorge Newbery,” *Caras y Caretas*, February 28, 1914, 59.

Despite embodying a transnational sporting and aviation culture, the Newbery name was made known “in this country by *criollos* [creoles].”<sup>47</sup> Jorge Newbery closely resembled the European ideal of modern masculinity, through his courage, will, physical prowess, and preference for the latest fashions from Paris. Yet Argentines were quick to not only accept Newbery as authentically theirs but laud him as emblematic of the Argentine spirit and comportment. As a national hero, he was “a synthesis of the soul of the race, a moment of national consciousness, a page of its history.”<sup>48</sup> The peak of Newbery’s fame represents perhaps the zenith of liberal, cosmopolitan ideology in Argentina as it celebrated the achievements of its “Golden Age.” Soon the nationalist movement would burst upon the national scene, with its call for a more restrictive definition of *Argentinidad*. As Eduardo Archetti reveals in *Masculinities: Football, Polo, and the Tango*, the masculine norms around sports shifted away from the European adulation of physical prowess, beauty, and will-power, to a supposedly *criollo* emphasis on flourish, style, and panache.<sup>49</sup> Nationalist writers, such as the social curmudgeon Luis María Jordán, would soon disown the sportsman altogether, branding it a foreign and feminized imposition evident in the profusion of English words in sporting.<sup>50</sup> But these changes would mostly come after Newbery’s death in 1914.

### **Gender and the Aero Club Argentino**

If masculine performance and aviation culture came to fruition on the airfield, it was nurtured in the social club. Although there were some independent organizations, such as a few

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<sup>47</sup> “Ingeniero Ernesto Newbery: Vocal de la Comisión Directiva del ACA,” *Boletín del Aero Club Argentino*, September 1913, 426. The use of the identifier “criollo” will be discussed in chapters four and seven. Here “criollo” is meant as “native” or “local.”

<sup>48</sup> “...una síntesis del alma de la raza, un momento de la conciencia nacional, una página de su historia.” Carlos Delcasse, “Jorge Newbery,” in *Jorge Newbery: Homenaje*, 3-4.

<sup>49</sup> Archetti, *Masculinities*, 72, 105.

<sup>50</sup> Luis María Jordán, “El espíritu masculino,” *El Hogar*, March 15, 1918, 3.



scattered commercial ventures, the Aero Club Argentino was at the center of the Argentine aviation community during the 1910s. The club organized the funds and resources necessary for flight training and sport flying, promoted a popular enthusiasm for flight, and lobbied the government for greater investment in aviation. Its *socios* [members] ran fund drives both within its membership and in the greater Argentine community to import new planes, pay for repairs, and to purchase fuel. But beyond its practical efforts, the ACA was a space in which Argentine men displayed their socioeconomic status while wrapping themselves in the aura of cutting-edge technological modernity.

From its beginnings in January 1908 as a gathering of like-minded aviation enthusiasts and friends, the club grew to over 160 members by October 1912. The vast majority of its members were civilian, with only eight military officers on the club's roster. Many of its leading *socios* were engineers, including some figures who would loom large in the local aviation community for decades, such as Horacio Anasagasti and Alberto R. Mascías. As would be expected of a social club like the ACA, its civilian members were often from high society. The October 1912 club roster included four barons, and prominent family names such as Tornquist, Castex, Doderro, and Anchorena.

Club members, upon the payment of a monthly fee, would gain access to the ACA's flight facilities at El Palomar.<sup>51</sup> The *socios* pooled their resources to purchase the needed balloons and aircraft, or individuals agreed to make their privately-owned aircraft available for a certain amount of time per week. Any member could use one of the club's planes for 30 pesos for ten to fifteen minutes (with the fee going to the aircraft's owner). For every twenty minutes

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<sup>51</sup> I cannot find any mention of how much this fee was. It also is not clear if one had to pay a monthly fee. An analysis of the cash earnings of the ACA from October 1910 to September 1911 reveals that the monthly collection of funds was highly irregular.

thereafter, the pilot would pay 15 pesos. Lessons to receive a license cost 500 pesos with a mandatory 1,000-peso deposit to cover damages to the planes.<sup>52</sup> The system of sharing aircraft made flight far more accessible, even if it remained an elite activity. In 1909, a new Blériot aircraft cost the ACA at least 10,000 francs, or 4,500 pesos.<sup>53</sup> By October 1913, cutting-edge planes such as a Gnome-powered Farman could cost as much as 33,000 francs (14,850 pesos), without shipping and handling across the Atlantic.<sup>54</sup>

To help cover its costs, the club loaned its services out to other clubs and social events, such as the organization of balloon launches for festivals and charity events, and solicited donations from companies and wealthy individuals looking to involve themselves in the aviation frenzy of the early 1910s. Although almost entirely a volunteer effort, the ACA added a few salaried employees, such as the secretary and timekeeper (for flight records) Manuel Ramos Vivot and the Italian balloon technician Ernani Mazzoleni.<sup>55</sup> This model for an aviation organization proved far more sustainable at the dawn of aviation than its profit-seeking counterparts, who tended to last for only one or two years.

At its heart, the ACA was an exclusive social space in which the men of Argentine aviation gathered to promote their interests and revel in their own achievements. It was a haven for fostering the male bonding and friendship so sought after by high-society men at the time.<sup>56</sup>

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<sup>52</sup> 500 pesos was the equivalent of two to three month's salary for a well-compensated master artisan, such as a carpenter or shoemaker. For lower-level assistants, whether a potter, mechanic, or carpenter, flight lessons could be as much as 33 times their monthly salary, and a single 10-15 minute flight would still be two month's salary. "Circular importante," *Boletín del Aero Club Argentino*, June 1913, 339. Wage information based on the capital district's *Censo general de la población, edificación, comercio é industrial de la ciudad de Buenos Aires 1909* (Buenos Aires: Compañía sud-americana de billetes de banco, 1910), 164-168.

<sup>53</sup> "Aeroplanos en Buenos Aires," *Revista mensual del Touring Club Argentino*, September 1909, 504.

<sup>54</sup> "Noticias varias," *Boletín del Aero Club Argentino*, October 1913, 467. The French franc was pegged at 0.45 pesos until after World War I. Currency conversion based *La Prensa*, March 30, 1910 and January 8, 1914.

<sup>55</sup> See "Caja: Movimiento caja desde el 1 de Octubre de 1910 hasta el 30 de Septiembre 1911," *Boletín del Aero Club Argentino*, October 15, 1912, 186-189.

<sup>56</sup> Losada, *La alta sociedad*, 141.

Monthly banquets were often lavish, multi-course meals featuring the latest European cuisine and ending with champagne, coffee, and cigars.<sup>57</sup> These banquets frequently involved grandiose speeches that praised its *socios*, placing them in a long and distinguished history of aviation dating back to Icarus and Daedalus in antiquity. The club's bulletin, first published in 1911, also featured articles lauding the accomplishments and personal characters of its flyers, describing men such as Horacio Anasagasti, Lisandro Billinghamurst, and—of course—Jorge Newbery as exemplary sportsmen and gentlemen.<sup>58</sup> And one did not have to fly to receive such accolades. Severo Vaccaro, who never flew but wrote articles on flight, was praised in one such article as a “man of letters” whose “great imagination” perfectly captured the feelings of an aerial journey.<sup>59</sup> These profiles of *socios* were featured among advertisements of the latest technological and cultural imports, from champagne to automobiles.

The club's exclusivity effectively dictated who had access to the technology. Nowhere is this more evident than in the treatment of early women aviators. Women, just like men, were catching the aviation bug at the dawn of flight. The “intoxicating effect” of flight, in the words of the French aviator Marie Marvingt, knew no gender, and Argentine women of means looked to the sky as well.<sup>60</sup> But the ACA, like most clubs at the time, were exclusive spaces of *male* bonding and comradery. This lack of institutional support meant women's access to flight was highly contingent on finding individual men willing to fly with them, and even rarer, to train them to fly on their own.

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<sup>57</sup> Champagne in particular was associated with aviation at the time. The meet at Rheims in 1909 was sponsored by a consortium of champagne producers, and champagne was often advertised in the ACA's *Boletín*. “La comida mensual de socios: Demostración a don It. Eduardo Perotti,” *Boletín del Aero Club Argentino*, December 10, 1911, 84.

<sup>58</sup> “Banquete al ingeniero Anasagasti,” *Boletín del Aero Club Argentino*, June 1, 1911, 17-18; “Nuestros pilotos: Lisandro Billinghamurst” *Boletín del Aero Club Argentino*, November 10, 1911, 44; “Un sportsmen excepcional,” 203-204.

<sup>59</sup> “Nuestros Pilotos: Severo Vaccaro” *Boletín del Aero Club Argentino*, October 15, 1912, 179-180.

<sup>60</sup> Wohl, *A Passion for Wings*, 308.

The case of Enriqueta Fuchard de Jarfelt (?-1956), the second Argentine woman to obtain a pilot's license (no. 101), is illustrative. Jarfelt attended the Rheims meet in 1909, and later was inspired to take up aviation herself when she witnessed the French aviator Madame de la Roche fly in 1910. Despite that particular flight ending in Madame de la Roche's hospitalization, Jarfelt was hooked. Back in Argentina, she watched planes taking off from Villa Lugano. On a trip to the airfield in 1912 she had the fortune of meeting the young pilot and plane-builder Paul Castaibert. He was the first successful local builder of aircraft, and his "Castaibert" series of hand-made planes were used across the capital.<sup>61</sup> Castaibert seems to have been particularly open to flying with women. He also flew with Amalia Celia Figueredo de Pietra (1895-1985), the first Argentine woman to receive a pilot's license (no. 34) in 1914.<sup>62</sup> Perhaps he saw the commercial benefit of having a woman pilot his airplanes, hoping it would demonstrate their safety and ease of use. Or maybe Castaibert genuinely enjoyed the company of women and sought to give Jarfelt a chance to realize her dreams.

Whatever his reasons, when Castaibert asked a crowd of onlookers for a volunteer to fly as a passenger on a test flight, no one but Jarfelt stepped forward. In her recollection, Jarfelt told Castaibert that she weighed very little and had no fear of flying. He thought for a moment, and then with his signature "implacable smile" agreed to take her up. But the young plane builder did not provide lessons for Jarfelt. Over the next few years, she pieced together her training with multiple instructors. In 1915 she flew with the famous Swiss *loopista* [looper] John Domenjoz, becoming the first South American woman to fly upside down in a loop. But the process was made all the more difficult by the deaths of her instructors and the national shortage of aircraft

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<sup>61</sup> "Como me inicié en la aviación, Henriette Fuchard Jarfelt," *Boletín del Aero Club Argentino*, March 1, 1916, 25-26.

<sup>62</sup> "Amalia Figueredo y el vaticinio de Newbery," *Aeroespacio*, February 1969, 31-32.

caused by World War I.<sup>63</sup> She finally obtained her license in April 1916 at the San Fernando flight school, which was run by the Frenchman Marcelle Paillette, the Argentine Teodoro Fels, and her husband, Alberto Jarfelt.<sup>64</sup> Both Jarfelt and Figueredo received their final training at the prominent civilian flight school.<sup>65</sup> It had taken her four years to do what men could accomplish in a few months with the support of the Aero Club Argentino.

The ACA did recognize the achievements of female aviators, and even rhetorically argued against the “prejudice” that kept women out of the cockpit,<sup>66</sup> but they made no effort to integrate women into their social space. Argentine women lamented the lack of their own aviation club. The first Argentine female balloon passenger, Raquel Cabrera Bernet, after her historic flight in 1911 exclaimed “Oh, if we could also have a Club Stella, like in France!”<sup>67</sup> The women aviator, as observed by the historian Robert Wohl in Europe and the United States, remained a mere curiosity, unintegrated into the “conquest of the skies” narrative so often invoked by male flyers.<sup>68</sup> When men flew, it demonstrated their bold and courageous dedication to scientific conquest of nature. When women took to the skies, their flights were poetic, emotional journeys with “the only effect of putting their souls in tune with nature, to take in its infinity, to deeply understand it, and to love it with yearning.”<sup>69</sup>

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<sup>63</sup> “Como me inicié en la aviación,” 25-26.

<sup>64</sup> Notice in *El Hogar*, April 28, 1916, 45.

<sup>65</sup> “El almanaque de nuestra aviación 20 de enero al 20 de febrero,” *Boletín del Aero Club Argentino*, March 1, 1915, 8. That fact that her husband was the lead pilot of the flight school may have helped Jarfelt gain access to flight lessons, although she did not mention this in her account.

<sup>66</sup> “Una aeronauta argentina: La señorita Raquel Cabrera Bernet,” *Boletín del Aero Club Argentino*, August 10, 1911, 18-19.

<sup>67</sup> L’Aéroclub Féminin *la Stella* was a French female aviators club founded in February 1909, whose members included the legendary women pilots Marie Surcouf, Hélène Dutrieu, and Marie Marvingt, among many others.

<sup>68</sup> Wohl, *A Passion for Wings*, 280.

<sup>69</sup> “...al efecto único de poner el alma al diapason de la naturaleza, para abarcarla en su infinito, para comprenderla hondamente, y para amarla con ansias.” “Una aeronauta argentina,” 18.



Figure 1.5. "Women of the future...The girlfriend of an aviator." *El Hogar*, March 28, 1919, 41.

Magazines and newspapers engaged in a transnational debate by doctors, psychologists, and pilots about the physiological and psychological capabilities of men versus women in flight, with not all appraisals being negative for *aviadoras*. The arguments for women pilots varied from the logical—women are generally smaller and lighter than men—to the ludicrous, such as women’s eyes having a wider field of view.<sup>70</sup> The supposed inability of women to focus on one task could be an asset in flight, since the pilot had to keep track of so many things at once. But for every positive argument for women pilots, there were far more detractors, who felt their “natural weakness” and lack of *sangre fría* made them less able aviators.<sup>71</sup>

Within the early narratives of Argentine aviation, women were almost exclusively bystanders, part of the earthly masses aviators sought to leave behind. One cartoon from the women’s home magazine *El Hogar* depicted the “woman of the future” as a girlfriend craning

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<sup>70</sup> Although another article, inspired by North American “studies,” claimed that men had a richer color vision. “La sensibilidad en el hombre y la mujer,” *El Hogar*, April 6, 1917, 16.

<sup>71</sup> “La mujer y la aviación,” *El Hogar*, October 22, 1915, 44. This article featured arguments by an Austrian physician and an English pilot. For the “natural weakness” of women, see “Una aeronauta argentina,” 18-19.

her neck skyward in search of her lover (see fig. 1.5). Some narratives, as will be seen later in this dissertation, explicitly deemed women antithetical to flight. When the Paraguayan aerobatic aviator Silvio A. Pettrossi (1887-1916) got married, it was a “forced landing.”<sup>72</sup> In the short story “A Long Flight” by E. Ramirez Angel, women are portrayed as pre-modern and naturalistic, and thus incompatible with the scientific and materialistic conquest of space.<sup>73</sup>

Nevertheless the mere fact that there was a debate on women in aviation, with some arguing *for* opening access, reflected a growing discussion of feminism in Argentine society. Just as with women and aviation, articles in *El Hogar* occasionally praised, but mostly condemned, the growing economic and social independence of women in the North Atlantic nations. *El Hogar*'s columnists argued feminism was a “rebellion against subjugation and slavery” sweeping the civilized world; women were making new inroads into national cultural life. Yet how they could make these new contributions was rigidly policed. Women were predisposed to art and literature, not science and politics.<sup>74</sup> They could play sports, but only appropriate ones such as swimming.<sup>75</sup> The Argentine woman was adaptable to modern life, but she was deemed (by men) less interested in the public sphere than her North Atlantic counterparts.<sup>76</sup>

The most hostile broadsides against early feminism in *El Hogar*, leveled by Luis María Jordán, considered it a frivolous, superficial, and crass foreign fad with no place in Argentine society.<sup>77</sup> Jordán felt certain that feminism would fade away:

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<sup>72</sup> “Pettrossi,” *El Hogar*, January 8, 1915, 8.

<sup>73</sup> E. Ramirez Angel, “Un vuelo largo,” *El Hogar*, February 11, 1916, 35.

<sup>74</sup> “Un poco de feminismo,” *El Hogar*, April 28, 1916, 15. Throughout this discussion of women, feminism, and early aviation, I am referring to gender culture among the top-half of Argentine society. The magazine *El Hogar*, the basis of my argument, targeted more affluent women, and only women of substantial means and independence could hope to fly.

<sup>75</sup> “La mujer y los deportes” *El Hogar*, October 25, 1918, 32. In the opinion of a French doctor.

<sup>76</sup> Tirso Lorenzo, “La mujer argentina en la vida moderna,” *El Hogar*, January 11, 1918, 43. Thus female suffrage was unnecessary in Argentina.

<sup>77</sup> Luis María Jordán, “El espíritu femenino,” *El Hogar*, March 29, 1918, 3.

...I am convinced that when the current madness passes, our [feminine] youth, faithful to the virtues of the original race, will listen, never to forget, the austere cry of [their] lineage. And the Argentine woman will once again be the owner and lady of her house, [the] exemplary mother, [the] respectable and respected wife...<sup>78</sup>

Yet here at the extreme end of the critiques of feminism, one can also find a rejection of modern masculinity in the vein of Jorge Newbery. As mentioned above, Jordán launched vehement assaults on the sportsmen archetype that was at the heart of the cult of the early aviator. He lampooned the “clubmen” who guzzled whiskey and champagne<sup>79</sup> and conversed in French. Almost as if describing Jorge Newbery, Jordán writes:

The ‘sportsman’ dresses with elegance, grace, and culture. [He has] short hair and [a] shaved face. His gaze, which no longer provokes anyone, has something of a cynical and audacious [air]. Women adore him, but they find him less generous, less courageous and outspoken than his predecessors...<sup>80</sup>

To continue on the present path of modern masculinity risked “[mutilating] the country’s future sources of vitality.”<sup>81</sup>

Jordán’s hostility toward sportsmen masculinity exposes a central tension in Argentine gender and popular culture evident since the independence period: are the creation and maintenance of “progress” and “civilization” masculine endeavors? From the North Atlantic perspective, it is taken as a given that the narrative of progress was cast in a masculine light—part of the reinforcement of male privilege in the face of massive material and social change. Yet in the nineteenth century, Argentine intellectuals and politicians like Domingo Sarmiento and

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<sup>78</sup> “...estoy convencido de que cuando pase la locura actual, nuestra juventud, fiel a las virtudes de la raza originaria, escuchará, para no olvidarlo jamás, el austero grito de la estirpe. Y la mujer argentina volverá a ser dueña y señora de su casa, madre ejemplar, esposa respetable y respetada...” Jordán, “El espíritu femenino,” 3.

<sup>79</sup> Whiskey, like champagne, was frequently advertised in the *Boletín del Aero Club Argentino*.

<sup>80</sup> “El ‘sportsman’ viste con elegancia, con gracia, y con cultura. Usa el cabello corto y la cara afeitada. Su mirada, que ya no provoca a nadie, tiene un algo de cínico y de audaz. Las mujeres le adoran, pero le hallan menos generoso, menos valiente y menos franco que sus antecesoras...” Jordán, “El espíritu masculino,” 3.

<sup>81</sup> “...porque al dejarle donde y como está, corremos el riesgo de mutilar futuras fuentes vitales del país.” Ibid.



Esteban Echeverría, enamored with European culture and technology, often characterized the “civilizing” process in feminine terms. In the midst of a series of bloody civil wars between Buenos Aires and rural strongmen, or *caudillos*, *porteño* elites of the “Generation of 1837” wrote of their provincial opponents as emblematic of a violent, sexual, and “barbaric” hypermasculinity. These intellectuals saved their most voracious condemnations for the populist dictatorship of Juan Manuel de Rosas, who forced many of them into exile.<sup>82</sup>

After Rosas’ fall and the stabilization of national politics in the 1870s, the men of the Generation of 1837 still articulated the ideals of civilization in feminine terms—or at the very least, qualities and practices that were generally not considered masculine—such as the pursuit of cultural refinement, education, and restrained comportment. The first echelon of leaders of a stable and prosperous Argentina—the Generation of 1880—maintained the values of their intellectual and literary forebearers. They too strived to recreate European civilization far away on the southern tip of the Americas.<sup>83</sup> Yet by the turn-of-the-century, a handful of public figures were able to challenge the governing liberal orthodoxy by characterizing elites like Sarmiento as effeminate sycophants to foreign culture.<sup>84</sup> As seen with Jordán above, nationalist writers in particular branded European or “cosmopolitan” culture as feminine and thus dangerous to the nation’s vitality and strength. Such arguments created a sense of uncertainty over the masculinity of European-style progress. These doubts easily fit into narratives of social Darwinism and racial competition<sup>85</sup>—what if modern, urban life was rendering Argentine men weak and docile, and thus jeopardizing the national “race”?

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<sup>82</sup> See, for example, Esteban Echeverría, “The Slaughterhouse (1871),” in *The Argentina Reader: History, Culture, Politics*, eds. Gabriela Nouzeilles and Graciela Montaldo, 107-114 (Durham: Duke University Press, 2002); and Domingo F. Sarmiento, “Civilization or Barbarism? (1845),” in *The Argentina Reader: History, Culture, Politics*, eds. Gabriela Nouzeilles and Graciela Montaldo, 81-90 (Durham: Duke University Press, 2002).

<sup>83</sup> Masiello, *Between Civilization & Barbarism*, 85; Rodríguez, *Civilizing Argentina*, 16-25.

<sup>84</sup> For the early nationalist movement in Argentina, see Rock, *Authoritarian Argentina*, 26-54.

<sup>85</sup> See chapter three.

The drama of flight was an opportunity for urban, liberal elites in the vein of Jorge Newbery to prove the masculine bona fides of modern progress—in addition to their own. “Civilization” might require discipline, refinement, and education, but for the brave and the capable, there was still the chance to demonstrate supposedly masculine qualities like *sangre fría*, energy, and sacrifice in the interest of national progress. In effect, flight and other similar activities were efforts to render modern technological progress unquestionably masculine. This emphasis on the manly nature of flight naturally attracted women looking to buck the imposed constraints of their gender, while also encouraging men to keep them out of the cockpit.

As we will see, gender remained at the heart of the identity construction swirling around aviation technology and Argentine society through at least the mid-century. Notions of normative male and female comportment and conduct were foundational to rapidly-changing understandings of race, class, technology, and identity. In the early days of heavier-than-air flight, even the masculinities of the great male Argentine aviators could be called into question in the face of an intensified nationalist movement. But in the end, it was women who bore the brunt of gender discrimination in aviation.

### **Popular Participation and the Genesis of Military Aviation in Argentina**

Undoubtedly the ACA was an elitist social organization that provided few inroads for humbler aspirants to fly. But this did not mean early aviation in Argentina was an exclusionary practice overall. Popular participation by humbler men and women was essential to the early growth of the aviation community. The ACA harnessed the enthusiasm of common Argentines to force the hand of the reluctant and parsimonious national government into investing in military aviation.

Newbery and Anchorena invited Ministry of War officials to watch their launch of the *Pampero* in December 1907. Newbery, the ACA, and several of the most prominent national newspapers all campaigned for the foundation of a military aviation organization, especially as the European powers began pouring funds into their budding air forces. The national government after 1909 provided the modest subsidy of 150 pesos a month to the ACA, enough to support the salary of a single technical advisor.<sup>86</sup> While initially it seemed the ACA itself could serve as an auxiliary aviation wing to the military, critics in the national press argued it was unjust for the state to subsidize the “whims of any reckless [aeronaut] who hazards, without any useful end, daring and dangerous undertakings.”<sup>87</sup> A distinct, government-directed organization dedicated to “scientific” flight was necessary to justify such state involvement.<sup>88</sup> Yet government officials largely ignored the growing fervor for military aviation, despite purchasing over seven million pounds sterling in British military equipment.<sup>89</sup> State officials remained largely skeptical about the state of aviation technology, believing any investments were unlikely to produce practical results for the military.

From 1910 to 1911, a series of foreign and local events only intensified the national clamor for military aviation. In September 1910, France conducted large-scale maneuvers with airplanes and dirigibles. Austria-Hungary and Germany followed suit in 1911.<sup>90</sup> But it was the first successful use of military aviation in the Italo-Ottoman War of 1911-1912 that largely convinced the world of the utility of dirigibles and airplanes.<sup>91</sup> Argentines, well aware of these developments, were also watching their powerful neighbors, Chile and Brazil, whose

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<sup>86</sup> Guerrero, *Jorge Newbery*, 207.

<sup>87</sup> “... no es posible, ni es justo, que la autoridad sirva a los caprichos de cualquier temerario que se aventure, sin fin útil alguno, en empresas audaces y llenas de peligro.” Editorial, *La Prensa*, January 24, 1909.

<sup>88</sup> *Ibid.*

<sup>89</sup> Guerrero, *Jorge Newbery*, 156.

<sup>90</sup> “La cuarta arma, los aeroplanos como exploradores, varias opiniones,” *La Prensa*, October 30, 1910, 5.

<sup>91</sup> “Notas de la guerra, los aviadores explorando,” *La Prensa*, May 5, 1912, 9.

governments seemed more amenable to military aviation.<sup>92</sup> Although the three major South American powers remained at peace for the duration of the twentieth century, there were war scares and all three national governments engaged in an arms race.

1912 proved to be the watershed year for Argentine military aviation. In May, *Caras y Caretas* proclaimed that the “national will” was clear: “the people want an aerial fleet.”<sup>93</sup> *La Nación* argued in an editorial that flight training would improve the officer corps in a process of “natural selection,” preparing the reserves of the nation for a “future [that] has already arrived.”<sup>94</sup> A conglomeration of private and public interests formed in the following months to fund and organize the Escuela Militar de Aviación (EMA) at El Palomar, the first official military aviation institution in Argentina. The ACA and Sociedad Sportiva Argentina formed the Comisión Central Recolectora de Fondos Pro Flotilla Militar Argentina [Central Commission for the Collection of Funds for the Argentine Military Flotilla] in June 1912 to organize the various independent funding drives already underway for the proposed military aviation school. The initiative had been the brainchild of the retired artillery officer Mayor Arturo P. Luisoni, an early advocate of military aviation. Jorge Newbery and Baron Antonio de Marchi directed the commission, whose members were a cross-section of the most important figures in the Argentine military, the civilian aviation community, and the national press. The commission soon received major donations from wealthy individuals and companies like the cigarette manufacturers Piccardo y Compañía (Cía) and the Compañía Argentina de Tabacos Limitada (Ltda).<sup>95</sup>

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<sup>92</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 98, 104-105

<sup>93</sup> “El pueblo quiere una flota aérea,” *Caras y Caretas*, May 25, 1912, 97-98.

<sup>94</sup> “La nueva arma,” *La Nación*, reprinted in the *Boletín del Aero Club Argentino*, June 15, 1912, 133.

<sup>95</sup> See “Acta de la constitución definitiva de la Comisión Central recolectora de fondos pro Flotilla Aero-Militar Argentina,” *Memoria y balance de la Comisión Central Recolectora de Fondos Pro Flotilla Aero Militar Argentina Mayo 1912-Agosto 1913* (Buenos Aires: Imp. “French,” 1913), 7-10. The two cigarette companies engaged in a philanthropic arms race, likely in search of publicity. The Cía Argentina de Tabacos eventually donated three airplanes and paid the salary of a flight instructor for three months, which must have been an enormous sum of money.



Figure 1.6. "Moscias," the winning submission for Luisoni's competition. "Concurso de dibujos alegóricos," *Boletín del Aero Club Argentino*, June 15, 1912, 153.

Yet the most publicly visible efforts involved the common people whose enthusiasm was revealed in their participation in funding drives, or popular "subscriptions" as they were often called. At the behest of Mayor Luisoni, a competition was held for allegorical paintings representing Argentine aviation in May 1912, offering over 1,500 pesos in prize money offered. Eight winners were selected for a series of stamps whose proceeds went to the EAM. 1.5 million of these stamps were printed and sold for twenty centavos [cents] each (see fig. 1.6). In addition, De Marchi and the Sociedad Sportiva had their own stamp drive, printing some five million that sold for five centavos each.<sup>96</sup> Luisoni and de Marchi's efforts were initially directed at the purchase of a dirigible for the military. But the Minister of War, General Gregorio Vélez instead advised them to purchase aircraft based on their successes in the Italo-Ottoman War.<sup>97</sup>

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<sup>96</sup> "Pro-Flotilla Aero-Militar," *La Nación*, May 30, 1912; Biedma Recalde, *Crónica histórica*, vol. 1, 113-115.

<sup>97</sup> Airplanes, despite their high cost for Argentines, were still far cheaper to procure and operate than dirigibles. *La Prensa*, April 12, 1912.

Beyond the stamp subscriptions, the members of the Comisión Central Recolectora de Fondos Pro Flotilla Militar Argentina solicited donations from a multitude of local organizations, such as the Socios de la Bolsa de Cereales [Members of the Cereals Stock Exchange], the Cámara Mercantil [Chamber of Commerce], and the Círculo de Armas [Circle of Arms]. Local cinema theaters, representing the latest in popular entertainment, raised funds. Jorge Newbery's connections to the electrical industry also likely paid off, as dozens of employees from the city's streetlight and electrical management companies donated money. In the final report of the Comisión Central Recolectora, between 1912 and 1913 over four hundred individuals and companies were named donors, each giving anywhere from less than a peso to a 1,000 pesos to the EMA fund.<sup>98</sup> The commission raised almost 18,000 pesos<sup>99</sup> for the EMA, excluding the largest individual contributions such as that by the Cía Argentina de Tabacos Ltda. These funds were more than enough to build the hangars and installations for the EMA, which cost around 10,000 pesos.<sup>100</sup>

On September 8, 1912, the Escuela Militar de Aviación was formally inaugurated at the El Palomar airfield in a suburb of Buenos Aires.<sup>101</sup> Newbery, Castaibert, and others performed fly-bys over the crowd of donors and organizers gathered at the airfield to mark the occasion. General Velez, the Minister of War, proclaimed:

Your work, gentlemen, marks a cycle in the progress of the country and accentuates at the same time the character of the Argentine race long indicated by its history. On the one hand, she incorporates us into the most advanced human evolutionary movement; on the

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<sup>98</sup> *Memoria y balance de la Comisión Central Recolectora*, 8-26.

<sup>99</sup> This total appears not to have included the proceeds of the stamp drives. The money earned by those initiatives remains unclear in the source material.

<sup>100</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 115-119.

<sup>101</sup> El Palomar, originally a military parade ground, had been briefly turned over to an aviation developer just prior to the Centennial celebrations. As will be discussed in the next chapter, this short-lived commercial enterprise failed and its assets were donated to the Comisión for the new school.

other, she shows that the feeling that in 1806 and 1807 animated the people of Buenos Aires [to declare independence] remains unchanged in this land...<sup>102</sup>

Vélez was followed by the president of the Cía Argentina de Tabacos Ltda., León Durán, who declared:

The conquest of the air, already definitive, is one of the most outstanding events of the century in which we live. It is destined to produce true revolutions in all types of human activity, giving wings to the development of modern life of peoples with [such an] aspirational consciousness, like that of the Argentine Republic. For the military institutions, [aviation] presents a progress of great transcendence; it opens new paths to its effectiveness and extends the horizons of its action, possibly [infinitely], [as long as] it responds to the aspirations of men of knowledge and genius.<sup>103</sup>

Yet despite the enthusiasm of a broad swathe of Argentine society, the EMA continued to be underfunded and highly dependent on donations. A columnist for *Caras y Caretas* noted in December 1912 that “Aviators have become fashionable. The Newberys, the Fels and the Mascíases, have given us the example and everyone is anxious to fly, except the politicians who, by letting themselves be dragged along this same mud to get close to the budget, have enough.”<sup>104</sup> The EMA depended on technical support from the ACA, and only employed a small

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<sup>102</sup> “*Vuestra obra, señores, marca un ciclo en el progreso del país y acentúa a la vez los caracteres de raza ya de largo tiempo señalados en la historia argentina. Por un lado, ella nos incorpora al movimiento evolutivo humano más avanzado; por el otro, muestra que permanece inalterable en esta tierra el sentimiento que en 1806 y 1807 animó al pueblo de Buenos Aires [a la independencia nacional]...*” “Inauguración oficial de la Escuela de Aviación Militar: En el aeródromo del Palomar,” *Boletín del Aero Club Argentino*, October 15, 1912, 167.

<sup>103</sup> “*La conquista del aire, definitiva ya, es uno de los hechos más salientes del siglo en que vivimos. Está destinada a producir verdaderas revoluciones en todos los órdenes de la actividad humana, dando alas a su desenvolvimiento de la vida moderna de los pueblos de aspiración consciente, como el de la República Argentina. Para las instituciones armadas se presenta un progreso de alta transcendencia; abre rumbos nuevos a su eficacia y extiende los horizontes de su acción, ilimitada posiblemente, si responde a las aspiraciones de los hombres de saber y de genio.*” “Inauguración oficial,” 167.

<sup>104</sup> “*Los aviadores se han puesto de moda. Los Newbery, los Fels y los Mascías, nos han dado el ejemplo y todo el mundo siente ansias de volar, menos los políticos que, con que los dejen arrastrarse por este mismo suelo para acercarse al presupuesto, les basta.*” “Menudencias,” *Caras y Caretas*, December 14, 1912, 111.

cadre of military mechanics to maintain operations.<sup>105</sup> Newbery and the ACA were ceaseless in their efforts to bring more funds and materials into the EMA. Nevertheless, fuel and oil shortages curtailed flights as early as 1913, a full year before the severe shortages caused by the beginning of World War I.<sup>106</sup> State-supported aviation had arrived in Argentina thanks to the tireless efforts of its aviation community and the public's enthusiasm for flight. But it remained a small-scale and easily disrupted operation until after the Great War.

### **Heroes, Martyrdom, and the Gendered Creation of Meaning at the Dawn of Flight**

The opening of the Escuela Militar de Aviación in 1912, as well as a scattering of other flights schools around Buenos Aires, helped grow the national roll of pilots significantly. From under two dozen licensed pilots in 1910 and 1911, by the middle of the First World War there were over a hundred recognized fliers in Argentina. Dozens more had flown without receiving their own brevets. But as the numbers grew, so too did the list of “martyrs” to Argentine aviation. The first Argentine aviator to die, Lt. Manuel Félix Origone (1891-1913), was followed by at least fourteen more high-profile deaths by 1918, including the most significant loss of the period, that of Jorge Newbery on March 1, 1914. In addition to the sheer number of new pilots, the advent of aerobatic flying added to the already substantial risks of flight. Pilots hoping to win fame and fortune through the adulation of the Argentine crowds pushed the limits of their aircraft, sometimes with tragic consequences. One such *loopista*, the Uruguayan Ricardo Detomassi, arrived in Buenos Aires for a series of spectacular aerobatic flights in April 1915. Within two months he had been killed in an accident.

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<sup>105</sup> “Boletín Militar: Proyecto de Reglamentación de la Escuela de Aviación Militar, Septiembre 18 de 1912,” *Boletín del Aero Club Argentino*, October 15, 1912, 184.

<sup>106</sup> “La aeronáutica Argentina: su movimiento en el mes de Noviembre,” *Boletín del Aero Club Argentino*, November 1913, 504.



With each death came an outpouring of grief by the national aviation community and wider society. Yet the pace of flight activity only intensified as the list of martyrs grew lengthier. This obstinacy in the face of such risks was made possible by the construction of a rich culture of meaning in the aviation community, which lauded the efforts of its heroes—alive and dead—to push the limits of science and technological progress in Argentina, and for all mankind. The adoration of the crowds, the rhetoric of the “conquest of space” as one of humanity’s most ancient dreams, and the lavish funerary practices for the dead all infused the technological practice of flight with moral and spiritual significance, and hence justified its cost in blood.

Pilots were not numb to the risks of flight. Accidents were often traumatic experiences. Some flyers gave up the practice after a brush with death. But many others persisted in spite of the anguish caused by the death of a fellow aviator. Flight was an activity of extreme emotions; ecstasy and horror were always deeply intertwined. Jorge Newbery, after a balloon flight in late 1909, recalled “It is the most intense emotion a human being can experience... An immense, dominating, subjugating impression, took possession of me and in the ascent felt something like a sweet intoxication that caressed the sense and the spirit.”<sup>107</sup> Another pilot, after his first flight, recounted having a “sensation formed of stupor, of enthusiasm, of admiration, of respect, because in hardly any other human conquest were science and art so intimately united...”<sup>108</sup> The socialist politician, Alfredo Palacios, wrote of his first balloon flight in *La Vanguardia*:

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<sup>107</sup> “Es la emoción más intensa que puede experimentar un ser humano... Una impresión inmensa, dominadora, subyugante, se posesionaba de mí y en el ascenso se sentía algo como una dulce embriaguez que acariciaba los sentidos y el espíritu.” Raúl Larra, *Jorge Newbery, el conquistador del espacio* (Buenos Aires: Aerolíneas Argentinas, 1975), 77.

<sup>108</sup> Carlos Perelli, “Mi primer vuelo,” *Boletín del Aero Club Argentino*, February 1913, 237.

At 3,000 meters we witnessed the most beautiful spectacle that the imagination can conceive. Above, the diaphanous blue of the sky...below, the clouds, like immense sheets of burnished silver... Do you know what silence is? No, you do not know.<sup>109</sup>

The wonder of flying through the clouds could produce a sense of “intoxication” at one’s power, and feelings of awe and smallness in the face of the sky’s immensity.

Yet one’s feelings of omnipotence and serenity could end at any moment, as they did for Lt. Manuel Felix Origone on January 19, 1913. A storm descended on his group of aviators completing a cross-country flight from Mar del Plata to Buenos Aires. A burst of turbulence suddenly flipped over Origone’s plane as he flew low to avoid the clouds, and he plunged to his death. His friend and the famous aviator Teodoro Fels (1891-1969) later recalled for the magazine *El Hogar* his moment of “greatest anguish” on that summer afternoon, when he realized Origone had had a fatal crash:

With great difficulty I was able to climb, and, already in the air, balanced in an atrocious way..., my apparatus jumping disorderly, I felt dominated by a strange feeling of anguish and sorrow, mixed with the irresistible image of my dead friend. I clearly saw his martyred face and his broken body;... The terror invaded me little by little, the fear and anguish of the unknown seized my imagination, and I was going to let myself be carried away by that vertigo that... would be lethal, when I made one last effort: I cut the contact [of the engine] and went down...near the starting point.<sup>110</sup>

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<sup>109</sup> “A los 3 mil metros presenciamos el espectáculo más hermoso que la imaginación puede concebir. Arriba, el azul diáfano del cielo; abajo, las nubes, como inmensas sábanas de plata bruñida... ¿Sabe usted qué es el silencio? No, no lo sabe.” Alfredo Palacios, *La Vanguardia*, reprinted in Guerrero, Jorge Newbery, 184-185.

<sup>110</sup> “Con mucha dificultad pude elevarme, y, ya en el aire, balanceado de un modo atroz..., mi aparato dando saltos desordenados, me sentí dominar por un extraño sentimiento de angustia y de pena, entra la que se mezclaba irresistiblemente la imagen de mi amigo muerto. Veía claramente su cara martirizada y su cuerpo deshecho;... El terror invadiame poco a poco, el miedo y la angustia de lo desconocido hicieron presa en mi imaginación, y ya iba a dejarme llevar por aquel vértigo que...me sería mortal, cuando hice un último esfuerzo: corté el contacto y bajé...cerca del punto de partida.” “Todos los sports,” *El Hogar*, May 28, 1915, 44.

Despite this traumatic experience, Fels continued to fly for a few more years before retiring to a quiet life of anonymity. Most of his fellow aviators followed suit, refusing to allow the deaths of their comrades to dissuade them from their efforts.

These aviators were undoubtedly the thrill-seekers of their day. The sense of adventure and excitement was at least partially *because of* the omnipresent possibility of a dramatic death. Yet this willingness to ride such a fine line between life and death was not simply a matter of an adrenaline fix. Aviators and non-aviators alike placed the dangerous deeds of flyers within a narrative of progress and scientific improvement that not only justified their actions and deaths but made them heroes of their age. Aviation and motorized sporting would surely produce untold benefits for everyday life in Argentina, making it “a conquest of definitive social utility.”<sup>111</sup> Mirroring the use of aviation to knit together European empires, Argentina commentators imagined the airplane furthering their country’s conquest of the Pampas and Patagonia. It would serve to break down international boundaries, a perennial dream of aviation boosters.<sup>112</sup>

But such concrete benefits were rarely the focus of the speeches and writings of early Argentine aviation. Instead, the meaning of flight had a broader, less tangible foundation. The dead were martyrs to one of the great causes of modernity: the accumulation of knowledge that enabled mankind’s subjugation of nature.<sup>113</sup> When Louis Blériot crossed the English Channel in 1909, it represented just such a victory for science.<sup>114</sup> Jorge Newbery wrote in *Caras y Caretas* that aviators were “real soldiers of science” who were contributing to the accumulation of

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<sup>111</sup> “Muerte de Francisco Beltrame y Joaquin Oytaben,” *El Hogar*, October 22, 1915, 43. For the practical benefits of motorized sports, see “Todos los sports,” *El Hogar*, January 15, 1915, 6.

<sup>112</sup> “El raid Rosario-Buenos Aires: Un bello triunfo de Cattáneo,” *Boletín del Aero Club Argentino*, July 1911, 11.

<sup>113</sup> The idea of progress was also intrinsic to many of the social clubs of the era. The Jockey Club, for example, furthered progress through the importation of superior breeds of European horses. Losada, *La alta sociedad*, 178-179.

<sup>114</sup> “La travesía de la Marcha: Inauguración de un monumento conmemorativo,” *Boletín del Aero Club Argentino*, September 10, 1911, 8.

knowledge and discovery that was enlarging “like a snowball.” To die for such a cause was “far superior” than a martyrdom “sheltered by the flag of patriotism and that often served to defend particular interests and purely despotic feelings.”<sup>115</sup> When an advice columnist for *El Hogar* needed an example of why one must not quit in the face of failure, he used aviation: “An airplane can break, and an aviator too: but, even if they break, aviation does not die.”<sup>116</sup> Upon the founding of the EMA, the Minister of War General Gregorio Vélez countered the idea that aviators “were crazy, foolish...men” by arguing that they were taking part in the “conquests of knowledge” and forging the “humanity of the future.”<sup>117</sup>

Despite being such a new practice in Argentine society, aviators and aviation enthusiasts harnessed the rhetoric and imagery of scientific and material progress to create a sense of a long and storied past for flight. Flyers were fulfilling the long-held dreams of a tragically earth-bound mankind dating back to antiquity. Modern man was vindicating the basic impulse that doomed Icarus. Jorge Newbery, upon publicizing his intention to cross the Andes in 1913, was compared to Hannibal crossing the Alps. His flights were an extraordinary “reincarnation emerging from a forgotten Homeric myth.”<sup>118</sup> Argentine aviators were a “phalanx” who “will live on eternally” upon the Argentine republic’s “moral pedestal.”<sup>119</sup> The poet Ramon Aguirre wrote of the young Teodoro Fels as a “prodigious gladiator” and “king of the skies” whose “achievements and victories are etched in history as a world record man.”<sup>120</sup> By transforming myth into reality,

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<sup>115</sup> Jorge Newbery, “La conquista del espacio,” *Caras y Caretas*, November 16, 1912, 54.

<sup>116</sup> “Un aeroplano puede romperse, y un aviador también: pero, aunque se rompan, la aviación no muere.” “Sinfonia,” *Caras y Caretas*, February 19, 1910, 50.

<sup>117</sup> General Gregorio Vélez, “Escuela de aviación y aerostación militar,” *Boletín del Aero Club Argentino*, October 15, 1912, 169.

<sup>118</sup> E. Rodríguez Mendoza, “Jorge Newbery,” in *Jorge Newbery: Homenaje*, 61.

<sup>119</sup> César Viale, “Jorge Newbery,” in *Jorge Newbery: Homenaje*, 5-6.

<sup>120</sup> Ramón Aguirre, *El aviador argentino* (Rosario, AR: Longo y Argento, 1914), 1.

modern men were surpassing the achievements of the ancients, a clear and unquestionable representation of the triumphs of European (and Argentine) civilization.

Though flight represented the pinnacle of the achievements of modernity, as early as 1911 Argentine social commentators perceived the airplane as a technology uniquely able to transcend the woes of modern life. Eduardo Perotti, a key member of the ACA and journalist for *La Nación*, saw aviation as an antidote to the bourgeois, materialistic lifestyle of cosmopolitan *porteños*. Perotti was part of a growing cadre of reactionaries who characterized modern life as a form of servility devoid of spiritual meaning:

Our spirit[,] worked by the crudities of everyday life, constantly loses some of the ideality that once made it serene and deep ... The law of material existence exhausts our bodies and binds our souls...This African slavery is accentuated every day...<sup>121</sup>

Flight, through its sense of “absolute dominance,” offered a “manumission” from such slavery, and would surely provoke “a new exodus across the skies.” Having flown a few times, he recalled:

The earth from above looks better; it is no longer the oppressive cell...; it is just a familiar and beloved cage whose doors never close behind our spirit... We also suffer, a profound transformation of our [personalities], as if we reintegrated into our bodies all that we lost in the long days of servility, and we are made better and stronger.<sup>122</sup>

Perotti’s disillusionment with modern, bourgeois life and exaltation for its transcendence through aviation presaged the European reactionary and fascist sentiments around flight after World War

I. The socialist politician Alfredo Palacios, albeit far less critical of Argentine society, still

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<sup>121</sup> “Trabajado nuestro espíritu por las crudezas de la vida cotidiana, pierde constantemente algo de la idealidad que le hizo antaño sereno y hondo...La ley de la existencia material rinde nuestros cuerpos y maniatada nuestras almas...Esta esclavitud africana se acentúa cada vez más...” Eduardo Perotti, “Impresiones de vuelo,” *Boletín del Aero Club Argentino*, September 10, 1911, 13.

<sup>122</sup> “La tierra desde arriba se ve mejor; no es ya la celda opresora...; es tan sólo una jaula familiar y querida cuyas puertas no se cierran nunca detrás de nuestro espíritu... Nosotros sufrimos también, una transformación profunda de nuestra personalidad, como si reintegrásemos en nuestro cuerpo todo lo que se sano perdiéramos en largo días de servilismo, y nos hacemos mejores y más fuertes.” Perotti, “Impresiones de vuelo,” 14.

remarked after his first balloon flight that “I recommend balloon ascensions for the youth. Above, the character is fortified. Before the grandiose impression of sublimity, the spirit becomes great and man learns to love life, and gains strength to fight to improve it...”<sup>123</sup> Flight was thus a crucible of modernity, home to the great “bird-men” of the present, and creator of that energetic youth so intrinsic to *belle époque* visions for the future.

The rhetoric of sacrifice and progress needed an audience for its fullest powers to be felt. Just as in Peru, “Oligarchs could not perform their modernity without crowds.”<sup>124</sup> Aviators risked life and limb to win the praise of the Argentine crowds. They were popular heroes, not simply anonymous agents of progress in the form of an engineer or industrial worker. And sure enough, when aviators announced new flights, the people came. It was not uncommon for crowds of over 30,000 to gather around airfields for big events by famous pilots like Jorge Newbery and Bartolomé Cattaneo.<sup>125</sup>

The young “conscript” aviator Teodoro Fels gave no announcement for his daring first flight over the Rio de la Plata to Montevideo on November 3, 1912. A pilot of the EMA, his superiors denied him permission to take the attempt thinking it too dangerous since no pilot in the world had flown so far over open water. Fels, embodying the youthful pluck intrinsic to the early popular depictions of aviators, ignored his superiors and without informing anyone took off for Uruguay. Two hours and twenty-two minutes later he landed on a beach outside Montevideo. Word quickly spread of the aviator’s accomplishment and thousands of Uruguayans rushed to greet the new Argentine hero. He was soon named an ambassador of the people of Uruguay.

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<sup>123</sup> “Las ascensiones en globo las recomiendo a la juventud. Arriba se fortalece el carácter. Ante la grandiosa impresión de sublimidad, el espíritu se hace grande y el hombre aprende a amar a la vida, y cobra fuerza para luchar por mejorarla...” Alfredo Palacios, *La Vanguardia*, reprinted in Guerrero, *Jorge Newbery*, 184-185.

<sup>124</sup> Hiatt, *The Rarified Air*, 36.

<sup>125</sup> “Ascensión del globo Buenos Aires, en la Sportiva,” *Boletín del Aero Club Argentino*, June 1, 1911, 20; “El raid Rosario-Buenos Aires: Un bello triunfo de Cattáneo,” *Boletín del Aero Club Argentino*, July 1911, 11.



Figure 1.7. Fels upon getting his license on the left, and after arriving in Montevideo on his historic flight on the right. "La hazaña del conscripto Fels," *Caras y Caretas*, December 7, 1912, 91-92.

Nearly a month later, upon his return to Buenos Aires, he landed at a distant airfield and only arrived by train in the city the following day at dawn. Well over ten thousand *porteños* were waiting to greet Fels. His popularity reached such heights that the military, intent on punishing Fels for his blatant disregard for military discipline, was forced to drop all charges after President Sáenz Peña called for a national celebration for the young pilot.

For years afterwards, Fels remained the toast of the town, photographed at dozens of events in his honor. His name became a “synonym for courage and valor little equaled.”<sup>126</sup> When he entered the theater, people would spontaneously cheer and clap for him. Eventually, the young aviator found the fame too much to bear and he became increasingly reclusive. He later recalled, “I thought that the people had no right over me, but I was wrong: the people seized hold

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<sup>126</sup> “El primer doble cruce del río de la Plata en aeroplano,” *Caras y Caretas*, May 27, 1933, 113-4.

of me.”<sup>127</sup> Years later, Fels again found peace when he retired from aviation and moved to Rosario to fix taxi meters.<sup>128</sup> Aviators like Teodoro Fels and Jorge Newbery were the earliest popular celebrities who were not politicians or generals in Argentina.<sup>129</sup> Newspapers now made it possible for Argentines to follow their favorite heroes wherever they went, with every event having press coverage and often photographs. Some, like Jorge Newbery, loved the constant attention, while for others it became a burden.

Within the tens of thousands of anonymous aviation enthusiasts who flocked to the airfields, women often played a special role that reveals their importance to early aviation. As already mentioned, women’s charitable organizations were frequent organizers of aviation events as well as fundraisers for aircraft. For high-society women, charitable organizations such as the Sociedad de Beneficencia [Benevolent Society] were one of the few public spaces where married women had agency. As the historian Donna Guy has shown, philanthropic work was “an empowering experience,” even if women’s participation in these societies indicate the lack of opportunities for paid, professional work within a highly patriarchal culture.<sup>130</sup> In 1910, the Sociedad de Damas de la Misericordia de Villa Lugano [Society of Ladies of Mercy of Villa Lugano] sponsored a “*meeting de beneficencia*” featuring three French aviators. Later, the

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<sup>127</sup> “*Pensé que el pueblo no tenía derecho sobre mi persona, pero me equivoqué: el pueblo se adueñó de mi...*” Letter by Teodoro Fels, reprinted in “Héroes olvidados que fueron ídolos de las muchedumbres,” *Caras y Caretas*, September 12, 1931, 129-133.

<sup>128</sup> Fels reappeared in the aviation community by the 1930s, although he was by that time a cheerleader for the industry rather than a participant. The plucky flyer was one of the last surviving pilots of the belle époque era, appearing at aviation events up until his death in 1969.

<sup>129</sup> Larra makes this claim specifically about Newbery, but undoubtedly the fame of Fels was another example of an early non-political celebrity in Argentina. Larra, *Jorge Newbery*, 112. Newbery was also a celebrity in Europe, making a number of high-profile flights. “Georges Newbery,” *L’Aérophile*, November 15, 1913, 1.

<sup>130</sup> Donna J. Guy, *Women Build the Welfare State: Performing Charity and Creating Rights in Argentina, 1880-1955* (Durham, NC: Duke University Press, 2009), 8.



Comisión de Damas Mendocinas [Mendoza Ladies Commission] raised funds to donate an airplane to the EAM.<sup>131</sup>

Beyond the provision of funds and opportunities for flights, women were a crucial part of the performance of early aviation. They were often used as markers of the emotional weight of such flights and served as a necessary feminine opposite to the masculinity of aviators. Teodoro Fels recalled the special role played by women on his famous flights. When he entered the cockpit on December 2, 1912 to take off from Montevideo and return to Argentina, a woman walked up to the airplane in tears and kissed him on the cheek. It caused him to think of his mother, and he suddenly felt the full weight of the risks he was about to take. He remembered the “innocent kiss followed me throughout the voyage.” When he did finally see his mother back in Buenos Aires, he wept as he hugged her in front of the crowd. During the many events given in his honor in the subsequent weeks and months, he recalled how frequently “the girls fought over the honor of paying homage to me: this always flatters the vanity of [a] man.”<sup>132</sup> Women were omnipresent at early events and occasionally took part in the pageantry themselves. At some charitable events, young women and girls decorated the balloons in flowers [*globos floridos*] before their launch (see fig. 1.8).<sup>133</sup>

The pageantry of Argentine aviation reached its maximum when one of the nation’s heroic aviators came crashing down back to earth. The death of a famous civilian pilot or military aviator resulted in a flurry of public remembrances, in the forms of “homage” books, stone monuments, and public gatherings. Origone’s death, for example, was honored by the

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<sup>131</sup> “La fiesta del domingo, en Villa Lugano,” *La Prensa*, April 4, 1910, 14; Biedma Recalde, *Crónica histórica*, vol. 1, 117-118, 132.

<sup>132</sup> “...las niñas se disputaban el honor de rendirme homenajes: esto siempre halaga la vanidad del hombre...” Letter by Teodoro Fels, reprinted in “Héroes olvidados que fueron ídolos de las muchedumbres,” *Caras y Caretas*, September 12, 1931, 129-133.

<sup>133</sup> “El concurso de globos floridos,” *Boletín del Aero Club Argentino*, December 10, 1911, 73.



Figure 1.8. ACA banquet for the young women who decorated the *globos floridos* for an event. “El concurso de globos floridos,” *Boletín del Aero Club Argentino*, Dec. 10, 1911, 74.

construction of a large monument, and the establishment of an aircraft racing competition, the Copa Tte. Origone by the ACA.<sup>134</sup> Funerals among Argentine high society were already ostentatious affairs meant to reflect the deceased’s stature in life.<sup>135</sup> But aviators killed in the line of duty were not simply victims of technology, but “martyrs” to the national and international causes of progress and scientific improvement.

No death left a greater mark on Argentine society than that of Jorge Newbery on March 1, 1914. Newbery was killed on a routine test flight in Mendoza while preparing an attempt to cross the Andes. The fact that their hero-pilot died on an ordinary flight, not on an epic journey over the world’s second tallest mountain chain, made his death all the more painful for the national aviation community. As a correspondent wrote in a special edition of *Caras y Caretas* about the martyred aviator, “Death, challenged and defeated so many times by Newbery, took its treacherous revenge and with an exasperating cruelty.”<sup>136</sup>

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<sup>134</sup> “La Copa Tte. Origone,” *Boletín del Aero Club Argentino*, September 1913, 426.

<sup>135</sup> Losada, *La alta sociedad*, 223-224.

<sup>136</sup> “La muerte, tantas veces desafiada y vencida por Newbery, tomó su desquite traidoramente y con una crueldad desesperante.” “La caída del aviador Newbery en ‘Los Tamarindos,’” *Caras y Caretas*, March 7, 1914, 44.

Immediately upon word of his death, the nation went into mourning. Thousands lined the train tracks between Mendoza and Buenos Aires to watch as the funerary train slowly went by. When his casket finally arrived in the capital, over 50,000 people had gathered to pay their respects. As would be expected for the famous “sportsman,” Newbery’s casket was displayed for public viewing on the grounds of the Sociedad Sportiva. Aviation boosters, poets, and writers heaped praise on their martyred hero. Carlos Delcasse, in the introduction to a book of homages to Newbery, wrote that his character was:

in intimate communion with the soul of the people. It was the essence of his virtues, of his devotion to material and moral courage, of his simple goodness, of his thirst for space, for infinity, for great battles...Brief, brief is life, but it is extended and even immortalized, when death is great.<sup>137</sup>

The newspaper *La Razón*, in its tribute, expressed shock at the possibility that such a hero was dead and recalled of Newbery: “the native audacity, the conquering desire, the restless emulation of all the victories and all the successes, the disinterestedness of the feat, the contempt of danger and the love of life. And all that which is the throbbing heart of [Argentine] nationality.”<sup>138</sup> In the following years, newspapers and magazines often marked the death of Newbery with remembrances and coverage of events honoring Argentina’s great aviation martyr. Monuments soon dotted Buenos Aires and provincial cities across the country. Over thirty years later, the capital’s new domestic airport, colloquially known as “Aeroparque,” would be named after Jorge Newbery.

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<sup>137</sup> “*su personalidad se afirmada homogéneamente en íntima comunión con el alma del pueblo. Era la esencia de sus virtudes, de su culto por el valor material y moral, de su bondad sencilla, de sus ansias de espacio, de infinito, de grandes batallas... Breve, brevísima es la vida, pero ella se alarga y basta se inmortaliza, cuando la muerte es grande.*” Carlos Delcasse, “Jorge Newbery,” in *Homenaje: Jorge Newbery*, 3-4.

<sup>138</sup> “*...la audacia nativa, el ansia conquistadora, la inquieta emulación de todas las victorias y de todos los éxitos, el desinterés de la hazaña, el desprecio del peligro y el amor a la vida. Y todo eso que es la entraña palpitante de la nacionalidad...*” Editorial, *La Razón*, March 2, 1914, in *Homenaje: Jorge Newbery*, 12.



Figure 1.9. The heads of the commission posing in front of the completed monument to Matienzo. *Memoria de la Comisión de Señoritas Pro Monumento a Matienzo, 2.*

Even for less well-known aviators, Argentines strived to keep the memories of their sacrifices alive in monuments and annual remembrances. Here, too, women were essential to imbuing such deaths with meaning. Women's philanthropic societies often organized and fundraised for public tribunes to fallen aviators. One such case involved an almost ten-year project to build an enormous stone monument in honor of Lt. Benjamín Matienzo (1891-1919), who died trying to cross the Andes on May 28, 1919. Soon after, back in his home province of Tucumán, a group of prominent women formed the Comisión de Señoritas Pro Homenaje a Matienzo [Commission of Ladies Pro Homage to Matienzo] to fundraise for a monument. The commission published a book of homages featuring much of the same grandiose language that described Newbery, including frequent allusions to ancient Greek myth, the proceeds of which went to the memorial. Numerous other women's organizations, such as the Liga Patriótica de

Señoras [Patriotic Women's League] and the Sociedad de Damas Pro Glorias Mendocinas [Society of Ladies for Mendozaan Glories], also helped in the effort.<sup>139</sup> Between 1919 and 1927, the Comisión raised over 18,000 pesos, just enough to cover the expenses of the huge monument eventually constructed in the city of San Miguel de Tucumán (see fig. 1.9).<sup>140</sup>

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What had begun as an elite sporting fad was gradually being institutionalized in Argentina. Argentines had been quick to adopt the practice and ethos of aviation, integrating the technology into the prevailing social discourses on progress, science, and gender. Despite the significant possibility of severe accidents or death, young men and women alike strived to take flight. The young elite men who entered the cockpit confirmed their energetic vitality and *sangre fría*, and willingness to risk everything to push the bounds of man's dominion over the sky. The few women who managed to fly signaled their rejection of a patriarchal society that often deemed them psychologically and physiologically unfit for such a modern and violent activity. They too would take part in the "conquest of the sky" despite lacking the institutional support of their male colleagues. Thousands of unnamed Argentines flocked to the airfields or stood on the roofs of their houses and apartment buildings to watch some of their nation's first popular heroes fly by.

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<sup>139</sup> Comisión de Señoritas Pro Monumento a Matienzo, *Memoria de la Comisión de Srtas. Pro Homenaje a Matienzo en el primer aniversario de su trágico vuelo: 1919-28 de mayo-1920* ([San Miguel de Tucumán]: Comisión de Señoritas Pro Monumento a Matienzo, 1920), 33-38, 55.

<sup>140</sup> The provincial and national governments donated only 3,000 pesos to the effort. Comisión de Señoritas Pro Monumento a Matienzo, *Memoria de la Comisión de Señoritas Pro Monumento a Matienzo: con detalle de los siete años trabajo para llevar a cabo la erección del monumento al aviador* ([San Miguel de Tucumán]: Comisión de Señoritas Pro Monumento a Matienzo, 1927), 97.



Figure 1.10. Cartoon entitled "Modern war and what happens yesterday to today." Captions read: "Before... people ran to see an airplane" then "today, upon seeing them, 'he who does not run, flies.'" *El Hogar*, Nov. 26, 1915, 10.

With the death of Jorge Newbery and the advent of the First World War, cracks began to form in the façade of early Argentine aviation. The rudimentary transatlantic supply chains formed in the first decade of flight broke down as European industry switched to war production. Flight activity in Argentina declined steeply as the aircraft and engines procured before the war broke down, could not be repaired, or were destroyed in crashes. The spectacle of aerial bombardment, initially by dirigibles, and later by the first bombers, stoked new fears about the future of aviation even in distant Argentina. Argentine magazines published images of destroyed houses and dead civilians, and fictional stories of sudden death raining from above (see fig. 1.10).<sup>141</sup> Beyond the airplane, the unprecedented savagery of the war dealt a blow to the long-venerated concepts of European civilization and progress.<sup>142</sup> The veneration of European culture now tarnished, Argentines increasingly sought to create their own, native conceptions of progress and the national character—one that would selectively incorporate North Atlantic culture, gender

<sup>141</sup> See, for example, "La visita de la intrusa," *El Hogar*, July 6, 1917, 29; "El terror en la guerra," *El Hogar*, August 24, 1917, 7; "Cómo recibe París al bombardeo enemigo," *El Hogar*, August 23, 1918, 27.

<sup>142</sup> "Un fruto de la ciencia," *El Hogar*, January 1, 1915, 12; "La ciencia y la guerra," *El Hogar*, March 19, 1915, 11.

norms, and racial identities. Argentine aviation would follow in the wake of these cultural and intellectual shifts in wider society. Once the guns finally went silent in November 1918, the national aviation community was poised to spring into action and take full advantage of the approaching “Air Age.”

## Chapter Two **Learning to Fly: Technology Transfer and the Origins of Dependency, 1909-1920**

On a beautiful winter afternoon in late July 1916, a crowd of families, government officials, and enthusiasts filed into the Palermo stadium in Buenos Aires. After a couple hours of preliminary entertainment, the main show began. Seven aviators, all of them young military men, lined up to march—their machines in tow—in front of the grandstands and the government box, where President Dr. Victorino de la Plaza and his ministers oversaw the day's events. The intrepid flyers were about to take part in a 1,040 kilometer "raid" from Buenos Aires to Mendoza that had been organized by the Aero Club Argentino (ACA). The first three to pass the stands were all Argentines, each with a French-made machine. They were followed by three Chileans, also sporting French aircraft. And last came a solitary Uruguayan, Lt. Cesáreo L. Berisso. Berisso walked in front of a Castaibert 912-3, an 80 hp. monoplane that had the distinction of being built in Argentina, with national materials; only its engine came from across the Atlantic. The crowd cheered as each aviator passed by and moved toward the end of the stadium grounds. At 3:45pm, President de la Plaza motioned for the raid to begin, and at two-minute intervals the seven *aviadores* launched themselves skyward.<sup>1</sup>

Over the next three days, the seven aviators faced dangerous weather, frequent engine failures, and unexpected landings due to fuel shortages. In two- to three-hour hops—the practical range of all aircraft then—they made their way across the fertile Pampas and towards the gateway to the Andes, Mendoza. Two pilots crashed and retired from the race. One had such recurrent engine failures that he fell far behind. And another got lost trying to make up ground by flying at night.<sup>2</sup>

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<sup>1</sup> "Raid Buenos Aires-Mendoza," *Boletín del Aero Club Argentino*, October 1916, 4-6.

<sup>2</sup> "Raid Buenos Aires-Mendoza," 7-10.





Figure 2.1. Aviators circling above the Stadium Palermo at the start of the raid. *Boletín del Aero Club Argentino*, October 1916, 6.

On the morning of July 19, fifty-seven hours after the beginning of the raid, only one small plane spurred the crowds of Mendoza to look skyward: Lt. Berisso and his Castaibert 912-3 airplane. He was cheered by throngs of onlookers as he landed his monoplane and jumped out to receive his supporters. ACA president Alberto Mascías, upon hearing the news, telegraphed a statement of congratulations to Mendoza. He deemed the raid a success and claimed it was a proud moment for all of South American aviation, serving to “strengthen the bonds of fellowship” between Argentina and her neighbors. Berisso’s feat was seen as a triumph for Uruguayan aviation, but it was also a victory for Argentina. He learned to fly at the Argentine Escuela Militar de Aviación the year before and had used an Argentine-made machine. It was thus a triumph for the local aviation institutions and for “national industry.”<sup>3</sup> And like so many stories in the history of early aviation, tragedy could easily follow triumph. Berisso took off on a routine flight the following day, only to crash after encountering a vortex of wind. He was nearly

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<sup>3</sup> “Raid Buenos Aires-Mendoza,” 7-10.

killed, saved by two nearby doctors who transported the young pilot to the hospital.<sup>4</sup> Fortunately, he eventually recovered and had a long career in the Uruguayan air forces, directing the main Army flight school from 1922 to 1931.

Berisso and his victory in the Castaibert 912-3 represented the zenith of the local aviation industry during the first fifteen years of flight in Argentina. But more importantly, the young Uruguayan pilot was at the nexus of the prevailing trends of early aviation in South America. His training was transnational, imparted at an Argentine military flight school which itself was based on the methods of an itinerant French pilot, Marcel Paillette. Berisso flew in an airplane made by the most successful pre-war aircraft builder in Argentina, Paul Castaibert, a Frenchman who immigrated to Buenos Aires in 1909 to open an automobile workshop. Castaibert's airplane was based closely on French designs, although he did introduce modifications with each subsequent model. The motor on his airplane—a French Gnome rotary engine—was the only imported component. And just as Berisso's moment of triumph was shortly followed by a nearly fatal accident, Castaibert would within two years give up aviation permanently after the death of a close friend in a crash.

This chapter will chronicle how Argentines first learned to fly and build their own aircraft from the outset of heavier-than-air flight until the aviation boom that followed the First World War. It will trace the multitude of transnational connections that facilitated the practice, as well as how that experiential and technical knowledge was gradually institutionalized in Argentina. As Argentines learned to take to the sky, they also imparted their skills and knowledge to their neighbors, creating an international community that stimulated and sustained aviation in the region.

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<sup>4</sup> "Raid Buenos Aires-Mendoza," 13-4.

Yet this process was anything but straight forward. Early flyers and builders were constantly hamstrung by contingencies inherent both in the technology and in the nation in which they flew. Persistent accidents, a lack of capital, and the ambivalent support of state authorities ensured the aviation industry in Argentina remained in a precarious state until well into the 1920s. Argentines from the beginning strived to escape a dependency on European aircraft, engines, and materials. The aviation industry failed to coalesce into a self-sufficient enterprise capable of meeting the nation's aeronautical aspirations. As we shall see, a comparison with Chilean aviation will find similar dependencies despite a more proactive national government. Nevertheless, the trials and tribulations of these early aviators and builders sowed the seeds that would later blossom into the nation's first true aviation industry and a vibrant flight culture during the interwar years.

The story of early aviation in Argentina is necessarily one of technology transfer. As Edward Beatty describes, "technology is not exogenous to society but emerges out of and is embedded firmly within a social context," and thus the movement of such knowledge and practices from one national setting to another "cannot be a frictionless process."<sup>5</sup> There are a bewildering number of social and technical processes behind technology transfer. New technologies need to be imported—usually an ordeal in-and-of itself—and experts found to instruct locals in their use. The mere purchase of operating manuals or textbooks is not enough—technologies involve tacit knowledge, an intangible and often bodily capability born of hands-on experience.<sup>6</sup> Production, maintenance, and operational methods must be refined, standardized,

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<sup>5</sup> Beatty, *Technology and the Search*, 14.

<sup>6</sup> The original articulation of tacit knowledge comes from Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago: University of Chicago Press, 1974). For a more recent discussion, see Stephen P. Turner, *The Social Theory of Practice: Tradition, Tacit Knowledge, and Presuppositions* (Chicago: University of Chicago Press, 1994). For tacit knowledge as an aspect of technology transfer, see Michael E. Gorman, "Types of Knowledge and Their Roles in Technology Transfer," *The Journal of Technology Transfer* 27 (2002): 219-231; Hagoood, "Why does technology transfer fail?," 86-7.

and institutionalized—especially with a risk-laden technology like flight. Such efforts often require substantial mobilizations of private capital, state resources, and popular enthusiasm. As this dissertation argues more broadly, the incorporation of significant new technologies such as flight require a common cultural understanding that the imported technology will be beneficial on a personal and/or collective level. Technology transfer thus represents an amalgam of cultural and technical developments, of human and physical capital, of specialist knowledge and general enthusiasm.

This chapter reveals the similarities and differences between two fundamental aspects of technology transfer: the transmission of knowledge and the movement of objects—or the ability to make such objects locally—by considering both flight training and airplane construction. While knowledge and skills circulated with relative ease from Europe to Argentina and her neighbors, the flow of materials and objects was far more limited and tenuous. Technical standards and their disseminating institutions arose far more quickly for flight operations than for airplane construction. Aircraft producers could build airframes and make successful modifications to European designs. But they could not match the manufacturing processes of their European counterparts, either in scale or innovation. The situation was even worse with the production of aircraft motors, the most sophisticated, expensive, and difficult to acquire part of an airplane.

As chapter one showed, popular and elite enthusiasm stimulated national aviation at a time when few large firms or the state showed interest in the nascent technology; the industry remained chronically underfunded, small-scale, and vulnerable. Thus by the early 1920s, Argentines were training more flyers than ever, but building almost no airplanes. Yet for all the differences between the transfer of knowledge and that of objects, the two were interrelated in

two key aspects: innovation in both depended on conditions that largely did not exist in Argentina, and innovation in one often spurred development in another. For all their efforts to take to the sky, Argentines remained receivers of this new knowledge and technology, not their creators.

### **Learning to Fly Prior to the First World War**

Flight training in Argentina began in early 1910 with the arrival of European aviators and their machines for the Centenary celebrations. Developments largely in France enabled the first aviation boom in South America, centered on Buenos Aires. European flyers came to Argentina looking for more opportunities to win popular adulation and the prize money offered by newspapers, businesses, and individual enthusiasts. But just as importantly, the French aviation industry rapidly increased the production of airframes and motors. The Voisin brothers, Henri Farman, Louis Blériot, and other prominent builders absorbed the lessons of the Wright brothers' pioneering flyer—an emphasis on aerodynamic control—and began churning out at first dozens, but soon hundreds, of airplanes. By 1911, French industry had produced 1,350 airplanes for military and private customers in France and abroad.<sup>7</sup>

Mounted on the variety of biplanes and monoplanes that were soon tooling around French skies were cutting-edge rotary engines, especially those built by Société des Moteurs Gnome. Developed by the Seguin brothers between 1906 and 1908, the Gnome Omega 50 hp. engine was the iconic motor of the period due to its excellent power-to-weight ratio and smooth operation. The engine became an overnight sensation when a Gnome-powered Farman biplane,

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<sup>7</sup> Christienne and Lissarague, *A History of French Military Aviation*, 42.

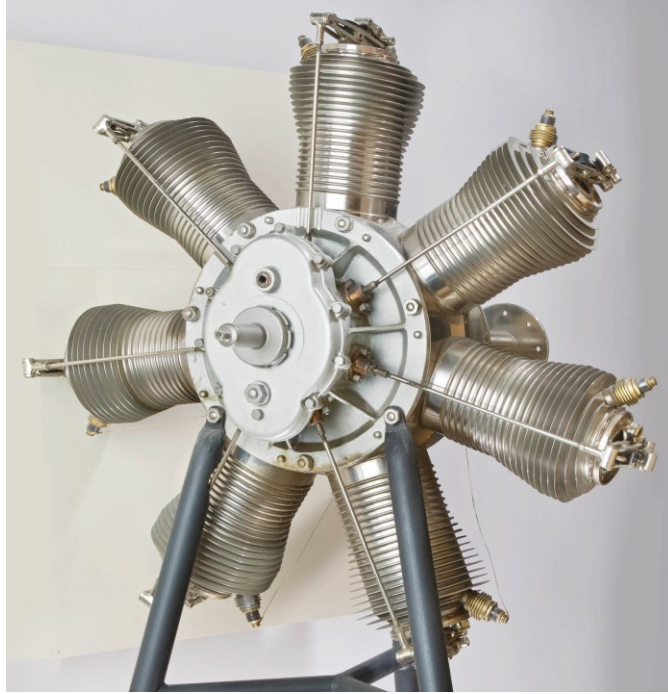


Figure 2.2. The first Gnome Omega 50 hp. engine. "Gnome Omega No. 1 Rotary Engine," 1908, National Air and Space Museum Collection.

piloted by Henri Farman himself, won the distance and duration records at the Rheims meet.<sup>8</sup> Rotary engines were fixed directly to the propeller, and both rotated around a static crankshaft attached to the airframe. The windmilling of the engine gave two significant benefits. First, the rush of air helped cool the cylinders, allowing the engine to be built with lighter materials and without a heavy and unreliable water-cooling system. Second, the inertia of the rotating engine greatly reduced the vibrations imparted on the airframe that plagued early airplanes built of extremely lightweight materials. The Gnome Omega was also the first rotary engine to be produced in large quantities. In 1909, Société des Moteurs Gnome had delivered 35 engines.

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<sup>8</sup> National Air and Space Museum Accession Memorandum, "History of the Gnome Omega No. 1" (Washington, D.C.: National Air and Space Museum, 1999).

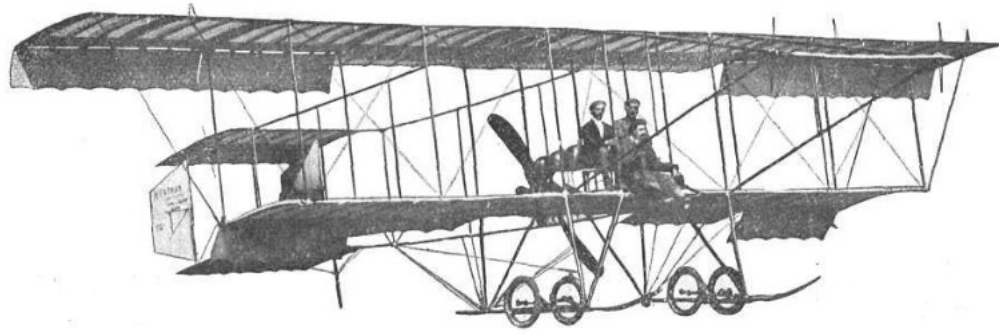


Figure 2.3. The Farman biplane. "Los aeroplanos de guerra," *Caras y Caretas*, October 31, 1914, 39.

Between 1910 and 1911, they went on to build 1,200 Gnome Omega engines, with some ending up abroad in places like Argentina.<sup>9</sup>

When the first European aviators arrived in Argentina, they brought with them a diversity of French aircraft and motors. There were Voisin and Farman biplanes, and Blériot and Antoinette monoplanes. They had Gnome, Antoinette, Anzani, and E.N.V. motors ranging from the bare minimum of 25 hp. up to 60 hp. Just as diverse were their flight instruction methods as they took up the first Argentine student pilots, since flight training was largely based on the techniques used by the manufacturer of their type of airplane, as well as each pilot's personal experience.<sup>10</sup> For most of 1910, flight training was done on an ad-hoc basis, outside of any formal institution. Those who wanted to fly simply found a willing teacher at one of the half-dozen airfields that sprang up around Buenos Aires before and after the Centenary celebrations.

Initially the only institutional option for aspiring flyers was affiliation with the ACA, but in late 1910, the first commercial flight school opened at El Palomar, an old military training ground outside Buenos Aires ceded by the Ministry of War to the firm Mantels & Cía, which had

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<sup>9</sup> Bill Gunston, *The Development of Piston Aero Engines* (Somerset: Patrick Stephens Limited, 1993), 110-111; Samuel D. Heron, *History of the Aircraft Piston Engine: A Brief Outline* (Detroit: Ethyl Corporation, Research and Development Department, 1961), 6-9.

<sup>10</sup> Christienne and Lissarague, *A History of French Military Aviation*, 38.



Figure 2.4. The Blériot XI, an iconic airplane of the earliest era of heavier-than-air flight, was the most widely used monoplane. “Blériot XI,” box 5, folder 5, COR, BNA.

sponsored some of the major aviation events for the Centenary. With the end of the festivities and the return of many of the contracted aviators to Europe, the firm was left with one Farman-Gnome 50 hp. biplane for the purposes of flight training. But in a story oft-repeated in the subsequent history of flight in Argentina, the enterprise lasted only a matter of months when in April 1911 the Farman was destroyed in an accident. Mantels & Cía withdrew from flight training and put up their facilities for sale. Together with the hangars of the defunct Compañía Aérea Argentina at El Palomar (see below), these installations soon became the heart of the Escuela Militar de Aviación when it opened in September 1912.<sup>11</sup>

As it turned out, 1912 was the watershed year for the development of flight training in Argentina. Once again, the French were instrumental in establishing the regulations and norms of early flight. In April 1911, the ACA was granted affiliation with the premier international organization of aviation, the Fédération aéronautique internationale (FAI), the first such club to

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<sup>11</sup> For an overview of this early period, see Biedma Recalde, *Crónica histórica*, vol. 1, 127-135.



do so outside Europe and the United States.<sup>12</sup> Founded in 1905 by France, Italy, Spain, Germany, Great Britain, Switzerland, and Belgium, the FAI admitted one representative flight club from each of its member countries, which together agreed to maintain common standards of practice and materials. Thus an aviator registered with one FAI-affiliated institution could hope to encounter similar flying conditions and practices in any other affiliated aero club. The federation's primary duties were to confirm and tabulate aviation records, and officiate competitive air races and "raids." It acted as the de facto gatekeeper for international aviation. Prior to the First World War, the FAI also began establishing standards for aeronautical maps and creating a central repository for such information accessible by aviators throughout its network.<sup>13</sup> The federation met annually in major European and North American cities; Argentina, harnessing its network of nationals living or visiting abroad, always sent a delegate to represent the Aero Club Argentino.

Although undoubtedly rudimentary by later standards, the FAI and its local representative, the ACA, were driving the technical standardization of aircraft operation, which helped to reduce the new technology's intrinsic uncertainty and risk. The FAI and its partner institutions formed a "voluntary consensus" in the sense that "nobody [was] legally compelled to use" their standards.<sup>14</sup> But the FAI also had the ability to punish those that failed to meet their rules by expelling them from its air races and record competitions, which likely accelerated the propagation of French standards around the world.

From this agreement on norms, the federation created the first international licensing requirements to be granted a FAI "*brevet*" in early 1912, in concert with similar discussions by

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<sup>12</sup> "Aero Club of the Argentine," *Flight*, April 29, 1911, 374.

<sup>13</sup> "FAI: Comisión Internacional del Mapa Aeronáutico," *Boletín del Aero Club Argentino*, October 1913, 482-483.

<sup>14</sup> Russell, *Open Standards*, 18-19.

the French government and Aero-club de France.<sup>15</sup> An aspiring aviator was required to obtain a brevet from the aero club of his or her nationality, although the actual testing could be done in his or her country of residence.<sup>16</sup> The test for a brevet was straightforward yet challenging considering the state of aviation technology at the time. Applicants had to perform a series of timed figure-eights around two pylons at an altitude of 50 meters, totaling a distance of at least five kilometers. Then he or she had to perform an engine-off landing from at least 100 meters, touching down within 50 meters of a prearranged point. In June 1912, Teodoro Fels became the first Argentine (and Latin American living in the region) aviator to pass the test and acquire an FAI *brevet*.<sup>17</sup> By August 1913, fifteen more Argentine pilots had been added to the FAI rolls.

But despite the creation of international standards for flight licensing, flight training itself remained informal and unstandardized in Argentina. This began to change with the founding of the Escuela Militar de Aviación (EMA) in September 1912. The body in charge of raising and distributing funds for the new school selected the French aviator Marcel Paillette to train the first generation of Argentine military pilots. This decision was a defining moment in early Argentine aviation. Paillette became a fixture of pre-World War I aviation not just in Argentina, but in Chile and Uruguay as well. His flight training methods, likely a mixture of techniques used by French airplane manufacturers, became the standard training program in the region until the interwar period.

Marcel Paillette exemplified the mobility of Frenchmen of means at the time, a mobility that allows us to see the transfer of technological knowledge in process. He was born in 1884 in Le Havre, France. After receiving his higher education at the *École des Arts et Métiers*, he

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<sup>15</sup> “Las leyes del aire,” *Boletín del Aero Club Argentino*, February 10, 1912, 106-107.

<sup>16</sup> Reflecting the enthusiasm for French women flyers, women were also eligible for brevets.

<sup>17</sup> “El aviador argentino Teodoro Fels: Otorgamiento del ‘brevet’,” *Boletín del Aero Club Argentino*, June 15, 1912, 138.



Figure 2.5. Paillette before a flight. "Los vuelos de Paillette," *Caras y Caretas*, January 14, 1911, 66.

moved to the US to work on the Mount Wilson Observatory. In 1910, Paillette returned to Angers, France and purchased a Sommer biplane to learn to fly. He was granted his brevet on June 10, 1910 by the Aero-club de France. Six months later, he arrived in Buenos Aires to do a series of public exhibition flights and raids.<sup>18</sup> Paillette, along with the Italian Bartoloméo Cattáneo, were two of the most famous foreign aviators who remained in Argentina during this period. In early 1912, Paillette and Cattáneo traveled to Chile to perform exhibition flights.<sup>19</sup> Both aviators were remembered in a history of Chilean aviation written in 1916 as the first European messengers of the “new discovery of human flight” in Chile.<sup>20</sup>

The hiring of Paillette for the EMA began the process of institutionalizing flight instruction in Argentina. On September 8, 1912, the day of the official inauguration of the EMA,

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<sup>18</sup> Halbritter, *Historia de la industria aeronáutica*, 72.

<sup>19</sup> “Volación, Paillette a Chile,” *La Prensa*, May 9, 1912.

<sup>20</sup> Víctor Contreras Guzmán, *Historia de la aeronáutica militar de Chile* (Santiago de Chile: Imprenta Universitaria, 1916), 7-8.

Paillette joined Jorge Newbery, Teodoro Fels, and Paul Castaibert for a series of ceremonial flights over El Palomar.<sup>21</sup> Within weeks, training had commenced with the first generation of Argentine military (and civilian) pilots, including some who would become fixtures of the local aviation community such as the civilian Alberto Mascías and military officer Pedro Zanni.<sup>22</sup>

Paillette's method, which would later be remembered as the "French method" in military documents, varied depending on the pilot's or institution's preference for biplane or monoplane training. In Argentina, students began training on Farman-Gnome 50 hp. biplanes which had tandem controls. Trainees would take the controls for brief moments from the instructor to get used to the "sensation of the air." They then practiced basic maneuvers close to the ground, developing a bodily sense of equilibrium. Once comfortable with the foundations of flight, students would transition to monoplane training. The most prevalent monoplanes, derivatives of the Blériot XI-Gnome 50 hp., were single-seat airplanes. Students thus had to practice high speed runs on the ground in which they gained familiarity with the management of the motor.<sup>23</sup> A specially-modified Blériot with clipped wings, called a "*pinguino*" or penguin, was often used for this phase of training. This practice was originally developed at the Blériot flight school in France.<sup>24</sup> Once a pilot was accustomed to the ground runs, he or she conducted their first flight by his or herself, or "solo" in today's jargon. From there they honed their skills for the civil aviator's exam.

Managing the extremely temperamental Gnome, Anzani, and later LeRhône engines was one of the most difficult aspects of early flight training. Pilots had to learn to listen to their

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<sup>21</sup> "Inauguración oficial de la Escuela de Aviación Militar: en el aeródromo del Palomar," *Boletín del Aero Club Argentino*, October 15, 1912, 167.

<sup>22</sup> "Inauguración de los cursos de aviación militar," *Boletín del Aero Club Argentino*, December 15, 1912, 219-220.

<sup>23</sup> Col. Enrique Mosconi, "Aeronáutica," *Boletín de Informaciones del Servicio Aeronáutico del Ejército*, December 1, 1920, 35.

<sup>24</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 172.

motors since there were few or no instruments measuring engine performance. They had to distinguish when it was running smoothly and when a failure was imminent. Engine failures were common, and many flights were abandoned on takeoff when the sputters and barks of the motors were not quite right.<sup>25</sup>

Early engines also greatly added to the challenges of training once students were in the air. The noise of these motors, which were less than a meter from the open cockpit, made communication between student and instructor nearly impossible. Thus any discussion of the flight had to happen on the ground, either before or after, an impediment to the effectiveness of training at the time.<sup>26</sup> Rotary engines, through their rotation, imparted strong gyroscopic forces on the airframes during turns, contributing to the wrestling match that was maintaining equilibrium in early Farmans and Blériots.<sup>27</sup> Moreover, despite the rotation helping to dampen vibrations caused by the motor, flying in early airplanes was like “being in a cocktail shaker” according Ambrosio Taravella, a prominent mechanic who flew as a passenger. Taravella recalled staring at the fuel cut-off valve as it danced from the vibration, fearing that it would close of its own accord.<sup>28</sup> And as if the noise, instability, and vibration caused by the motors

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<sup>25</sup> Roland Garros, in an article about the education of pilots, emphasized the importance of proper oversight of the engine, especially once students began taking longer flights that left the relative safety of the airfield. Roland Garros, “Lo que escriben los aviadores: La educación del piloto,” *Boletín del Aero Club Argentino*, March 31, 1915, 19.

<sup>26</sup> Ángel María Zuloaga, “Escuela Corriente,” *Boletín de Informaciones del Servicio Aeronáutico del Ejército*, January 11, 1922, 3.

<sup>27</sup> It does not take a leap of the imagination to understand why. The airframe of a Blériot XI built in 1913 weighed only 417lbs. Its Gnome engine—weighing 168lbs.—spun at 1,200rpm. Pilots today still need to compensate for what is called “P-factor,” the gyroscopic forces imparted on the airframe during turns by a rotating propeller. Adding the mass of the engine must have subjected the airframe to very strong forces, causing dangerous shifts in the flight path. Early accounts of flight in Argentina do not specifically mention this problem, although some pilots complained of a strong tendency for only one wing to suddenly dip, a sign of “P-factor,” even if they did not identify it as such. Antonio M. Biedma Recalde, *Motores nacionales y extranjeros utilizados en el país hasta 1934* (Buenos Aires: Aviación, 1935), 39; Antonio M. Biedma Recalde, *Aviones nacionales y extranjeros utilizados en el país hasta 1934* (Buenos Aires: Aviación, 1935), 24; Andrew Nahum, *The Rotary Aero Engine* (London: Her Majesty’s Stationery Office, 1987), 33-34.

<sup>28</sup> Ambrosio L.V. Taravella, *Setenta años de servicios aeronáuticos* (Buenos Aires: Ediciones Culturales Argentinas, 1982), 19.

were not enough, rotary engines spewed oil all over the aircraft and pilot, which ensured aviators always had goggles and a scarf to cover their mouth and nose.<sup>29</sup>

All this made early flight a physically trying affair. Pilots often became exhausted after only a few minutes in the air if conditions were not optimal. Thus training at the time involved many short flights of ten to fifteen minutes,<sup>30</sup> a practice advocated by famed French aviator Roland Garros:

Each departure must teach something new. Thus the aviator trains more effectively by performing numerous short-term flights than staying in the air for a long time, since fatigue is bothersome and makes [one] fly poorly. It is easy to travel by airplane once one knows how to fly with skill, without fatigue, with freedom of action.<sup>31</sup>

The frequent take offs and landings demanded by many short flights introduced its own risks, as these phases of a flight were the most dangerous. This likely contributed to the high numbers of accidents at the time, and to the constant shortage of aircraft as so many were in repair. Due to the resulting stoppages and frequent bad weather days, most aspiring pilots took around six months to complete their initial training, although a few individuals obtained their *brevet* in a matter of weeks.

After three months training Argentine pilots, Paillette was then hired to help start military aviation schools in Chile and Uruguay, spreading his flight instruction methods across the

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<sup>29</sup> Gnome-type engines saved weight through a novel oil distribution system. The centrifugal forces generated by the spinning motor drew the oil into each cylinder from a feed in the crankshaft. But this meant that when the valves opened for the exhaust phase, oil came spraying out. As a result, Gnome-powered airplanes had to carry a large amount of oil, the consumption of which was one of the main factors limiting the range of the airplane to only two to three hours. Royal Air Force Air Board, *Air Board Technical Notes, Engine Notes—General* (1917; repr., Somerset: Camden, 1997), 2-3.

<sup>30</sup> “Total de vuelos efectuados durante el año,” 1916, and “Total de vuelos efectuados durante el año,” 1917, box varios 1, folder 2, COR, BNA.

<sup>31</sup> “Cada salida debe enseñar algo nuevo. Así el aviador se entrena con más eficiencia realizando numerosos vuelos de pequeña duración que permaneciendo mucho tiempo tiempo en el aire, puesto que la fatiga molesta y hace volar mal. Es fácil viajar en aeroplano una vez que se sabe volar con soltura, sin fatiga, con libertad de acción.” Garros, “Lo que escriben los aviadores: La educación del piloto,” 19.

region. Each country's aviation school institutionalized a slightly different version of Paillette's training. In Chile, students at the Army's Escuela de Aviación y Aerostación (founded in 1913) began on monoplanes, with frequent use of a "*pinguino*" (or as Borcosque called it, a "Blériot '*pinquín*'") trainer airplane.<sup>32</sup> Argentines, on the other hand, disliked training on the *pinguino*, preferring instead to practice mostly on Farman biplanes until making the leap to a Blériot monoplane late in training.<sup>33</sup> Then, whereas the Argentine EMA used the FAI brevet standards for its basic pilot qualification, the Chilean authorities had their own exam.<sup>34</sup> Nevertheless, the similarity of flight training and testing regulations in both countries show the decisive effect of Paillette and the FAI in establishing French methods in the Southern Cone.

Yet learning to fly an airplane was only one aspect of aeronautical knowledge. Pilots also had to learn about the theory of flight, the mechanics of their machines, meteorology, navigation, and more. Whereas the skills of flight training were brought to Argentina by foreign aviators, this theoretical knowledge arrived at the EMA through the mobility of Argentine elites who journeyed to Europe. Upon its founding, the EMA partnered with the Comisión Técnica of the ACA to develop a ground-school curriculum for military pilots. Subjects included—but were not limited to—the construction and management of motors, the mechanics of carburation, the study of the atmosphere, and the reading of aeronautical maps. Leading members of the ACA, such as the engineers Jorge Newbery, Horacio Anasagasti,<sup>35</sup> and Alberto R. Mascías, who had all traveled to Europe at their personal expense to informally study at flight schools and aeronautical

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<sup>32</sup> Carlos F. Borcosque, "Una correspondencia de Chile," *Boletín del Aero Club Argentino*, January 10, 1916, 22-23.

<sup>33</sup> Taravella, *Setenta años*, 36-37.

<sup>34</sup> The Chilean test involved fewer figure-8s and the *brevet* was granted by the Ministry of War, not the FAI. Borcosque, "Una correspondencia de Chile," 23. Chile was only admitted to the FAI in 1921. *Flight*, November 24, 1921.

<sup>35</sup> Horacio Anasagasti, for example, traveled to Europe at least three times, and the US twice, between 1904 and 1915, usually for a month or more, in support of his engineering career and automobile business. Feder, *Un siglo de autos*, 36-37, 40, 43.

laboratories, served as the professors for the first classes at the EMA.<sup>36</sup> The curriculum they established was explicitly based on European practices: "...we have neither wanted nor been able to refuse to pay tribute to our imitation of old Europe."<sup>37</sup>

The transfer of such knowledge to Chile was also largely done by Chileans, not Europeans traveling to South America. But unlike Argentina where government authorities showed little interest in aviation, the Chilean military immediately began sending officials to Europe as well as harnessing their network of attaches already there to gather the needed knowledge. By 1913, nearly two dozen Chilean pilots and military officials had gone abroad to train in French institutions, including two lieutenants who began study at the *École Supérieure d'Aéronautique et de Construction Mécanique de Paris* (founded in 1909), the first aeronautical engineering education institution in the world.<sup>38</sup> An Argentine would not enter the prestigious institution until 1916.<sup>39</sup> The first official Argentine aviation mission to Europe was underwritten by the Navy in 1914, when a pilot and three mechanics were dispatched to study the principal aeronautical institutions in France, England, Belgium, and Germany, an effort that was cut short by the beginning of World War I.<sup>40</sup>

Once the needed knowledge and resources coalesced at the EMA, it quickly became a regional hub for the international aviation community. From 1913 to 1920, four Peruvians, three Bolivians, and two Uruguayans completed their military aviator training at the Argentine

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<sup>36</sup> "Los programas de la Escuela Aeronáutica Militar," *Boletín del Aero Club Argentino*, December 15, 1912, 215-216.

<sup>37</sup> "...ni hemos querido ni hemos podido negarnos a prestar el tributo de nuestra imitación a la vieja Europa." "Cuerpo docente e instructor de la Escuela Militar de Aviación," *Boletín del Aero Club Argentino*, June 1913, 336.

<sup>38</sup> Contreras Guzmán, *Historia de la aeronáutica militar de Chile*, 13-23, 25-29, 31-35, 38, 95.

<sup>39</sup> *Francisco de Arteaga, 1882-1962, el creador de la Fábrica Militar de Aviones* (Buenos Aires: Instituto Argentino de Historia Aeronáutica Jorge Newbery, 1981), 13.

<sup>40</sup> "Aeródromo Naval," *Boletín del Aero Club Argentino*, December 10, 1915, 16-17; Biedma Recalde, *Crónica histórica*, vol. 2, 253.



institution.<sup>41</sup> Dozens more foreign dignitaries, military attaches, and aviation enthusiasts from Latin America, and even from as far away as Germany and Japan, toured the facilities and observed training at the EMA during its early years.<sup>42</sup> The school also directly seeded new aviation institutions at home and abroad. Frigate Lt. Melchor Escola, one of the first pilots trained at the EMA, was a founding member of the Navy air arm, as were the EMA mechanics Jacinto Riera, Juan Guerin, and José Scapuzzi. The Uruguayan lieutenants Cesáreo L. Berisso and Alférez Esteban Cristi, who graduated the EMA in 1915, founded the Escuela de Aviación Militar of Uruguay.<sup>43</sup> A pilot and lead mechanic of the EMA, Ambrosio Garagiola, was sent to Brazil in 1915 to help establish a military flight school at Campo de Alfonsos.<sup>44</sup>

Foreign aviators also trained at many of the civilian flight schools that opened between 1912 and 1916. Five schools began operations in the Buenos Aires area, usually associated with an aircraft builder or famous pilot. Paul Castaibert opened his flight school at Villa Lugano in 1912, granting his first license in January 1913.<sup>45</sup> In addition to training dozens of Argentine pilots, Castaibert instructed Bolivians, Chileans, and Uruguayans.<sup>46</sup> Marcel Paillette and Teodoro Fels created their own quite successful flight instruction center at San Fernando in late 1913, with flyers from the UK, Italy, and Uruguay mixed into the roster of students.<sup>47</sup>

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<sup>41</sup> Biedma Recalde, *Crónica histórica*, vol. 2, 163.

<sup>42</sup> “La aeronáutica argentina: Su movimiento en el mes de julio,” *Boletín del Aero Club Argentino*, July 1913, 360; “La aeronáutica argentina: Su movimiento en el mes de agosto,” *Boletín del Aero Club Argentino*, August 1913, 392; “La aeronáutica argentina: Su movimiento en el mes de octubre,” *Boletín del Aero Club Argentino*, October 1913, 466.

<sup>43</sup> Biedma Recalde, *Crónica histórica*, vol. 2, 197.

<sup>44</sup> “Otra víctima: La muerte de Ambrosio Garagiola,” *Boletín del Aero Club Argentino*, March 1, 1915, 13.

<sup>45</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 159.

<sup>46</sup> “La aviación en Chile,” *Boletín del Aero Club Argentino*, September 10, 1915, 25; Halbritter, *Historia de la industria aeronáutica*, 76.

<sup>47</sup> The three other schools, at Longchamps, Villa Altube, and Villa Germano were far more short-lived and trained only a handful pilots. Biedma Recalde, *Crónica histórica*, vol. 1, 159-162; “Aeródromo de San Fernando: Los nuevos aviadores Larguia y Carrubio,” *Boletín del Aero Club Argentino*, November 10, 1915, 23; “Otorgamiento de un ‘brevet’,” *Boletín del Aero Club Argentino*, January 10, 1916, 10.

As flight training institutions began to proliferate in Argentina, new tensions around the civilian character of military flying took hold. From the outset of heavier-than-air flight, the Argentine aviation community was an eclectic group of amateur enthusiasts, self-taught flyers, and military officials. Three months after the founding of the EMA, the national press was already criticizing the joint military-civilian nature of the school. In an editorial on January 12, 1913, *La Prensa* editors warned that the EMA, a military institution, should not undercut its fundamental mission of national defense by becoming a “hobby and fun center.” The school’s airplanes, much like the Army’s rifles and artillery, were “sacred” and should only be used for military ends.<sup>48</sup> Despite these criticisms, the ACA remained an integral part of the EMA until late 1915, when officials decided the military school had sufficient knowledge and skill to maintain its operations without civilian help.<sup>49</sup>

On the civilian side, institutionalized flight training created new distinctions among pilots. In November 1913, Ismael Bucich Escobar published an article in the *Boletín del Aero Club Argentino* defending the efforts of “amateur and sportsman” pilots like Jorge Newbery to cross the Andes against criticisms that they were only interested in prize money. Escobar distinguished their disinterested efforts from those of the new crop of “professional” pilots who were tied to financial concerns.<sup>50</sup> With the rise of such professional pilots trained using standardized methods at military and civilian airfields came new efforts by the ACA to regulate national aviation. After the death of the self-taught civilian pilot Pablo Libossart (see below) in 1915, the ACA used the authority granted by its affiliation with the FAI to ban such “*aficionado*” [amateur] flyers who trained outside of recognized aerodromes. In its announcement of the

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<sup>48</sup> “La escuela de aviación militar y los paseos aéreos,” *La Prensa*, January 12, 1913, 11.

<sup>49</sup> “La Comisión Técnica de la Aviación Militar,” *Boletín del Aero Club Argentino*, January 10, 1916, 15.

<sup>50</sup> Ismael Bucich Escobar, “Amateurs y profesionales,” *Boletín del Aero Club Argentino*, November 1913, 517.

policy change, the ACA condemned the *aficionado* pilot who “does not know the regulations that govern certified pilots and who generally, having no experience in this sport, is prone to [recklessness], almost always fatal.”<sup>51</sup>

By the outset of World War I, Argentina had all of the ingredients for standardized and effective flight training, both civilian and military. French methods prevailed. Buenos Aires became a center of regional flight instruction, facilitating the creation of flight schools in neighboring countries. Argentines now had the experience to effectively disseminate their knowledge and skills to their countrymen. The transfer of piloting techniques to Argentina from Europe had been a largely successful process. Flight enthusiasts built transnational networks of knowledge, skills, and support that were essential to all industrial and technological enterprises in Argentina at the time.<sup>52</sup> What began as informal networks of elites, military officials, and aviation boosters gradually solidified into more formal networks made by institutions and governments, especially after World War I. Furthermore, this transfer of knowledge cost relatively little for local institutions and individuals. Europeans arrived on Argentine shores largely of their own volition, seeking opportunities in the New World. A vibrant, transnational aviation community formed in Argentina without the need for significant government investment as elite and popular enthusiasm drove the circulation of aeronautical knowledge and objects.

The relative ease of this transmission reveals two aspects of technology transfer in Argentine aviation that stand in contrast to previously studied cases in Latin America. First, in Beatty’s study of Porfirian Mexico, the differences between European/North American and

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<sup>51</sup> “...el conductor del aeroplano es un simple aficionado, que desconoce las disposiciones que rigen para los aviadores diplomados y que por lo general, al no poseer experiencia en ese deporte, se halla propenso a cometer imprudencias, casi siempre fatales.” “Los vuelos de aficionados,” *Boletín del Aero Club Argentino*, December 10, 1915, 4.

<sup>52</sup> Pineda, *Industrial Development*, 55-56.

Mexican culture and politics frequently undermined the popular uptake of technical knowledge.<sup>53</sup> Turn-of-the-century Argentina in contrast proved a far more receptive society for foreign culture and its knowledge. Friction between local and foreign culture and practices certainly existed, but it did not define the experience of Argentine aviation and society more broadly. Second, the need for the formation of transnational networks of expertise—a slow and difficult process for Argentine heavy industry—occurred quickly and with little cost to firms or the state in the case of Argentine aviation.<sup>54</sup> In both cases, the international nature of aviation culture, and its prevalence among elites and common people alike, seems to have facilitated such transfers.

Yet there were limits to this development that soon made themselves known as the frenetic years of *belle époque* Argentina transitioned to the downturn caused by World War I. While the movement of people and their skills to Argentina had been fluid and relatively inexpensive, this was not the case with the other aspect of learning to fly: building airplanes and their powerplants. The latter proved a particularly obdurate challenge for Argentina's underdeveloped metallurgical sector—a problem that would endure well past the confines of this study.

### **Learning to Build Airplanes and Their Engines before the First World War**

Attempts to build aircraft in the Argentina began before the first heavier-than-air flight in 1910. Engineers, mechanics, and aviation enthusiasts learned of the developments in flight abroad through the many newspapers, magazines, and correspondences that connected Argentina to the world. Newspapers such as *La Nación*, *La Razón*, and *La Prensa* began daily reporting on aviation, especially once practical airplanes arrived on the scene in 1909. At a time when few

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<sup>53</sup> Beatty, *Technology and the Search*, 14.

<sup>54</sup> Pineda, *Industrial Development*, 57.

photographs were featured in the media, airplanes, dirigibles, and other spectacular machines were some of the few images reproduced in Argentine papers. Moreover, the advent of the transatlantic telegraph cables and the creation of networks of correspondents overseas ensured that the Argentine public knew of events abroad nearly instantaneously.<sup>55</sup> When Louis Blériot crossed the English Channel on July 25, 1909, *La Prensa* reported on his triumph that same day, hours after he landed in England.<sup>56</sup> More importantly for Argentina's first airplane builders, the newspaper printed images of Blériot's now famous monoplane.<sup>57</sup>

The first major effort to build an airplane locally was undertaken by the Frenchman Enrique Artigalá in July 1909, when he formed the Sindicato Aéreo Argentino with a group of prominent investors. Artigalá hoped to profit from the upcoming centenary exhibitions by promoting their airplane as the "first fully built aviation element in the country."<sup>58</sup> The Sindicato Aéreo Argentino soon had a small group of mechanics and carpenters working under Artigalá who would become essential members of the Argentine aviation industry: Ambrosio L. Garagiola, Pablo Parasovchka, and Pedro Rielo.<sup>59</sup> The airplane they eventually built, the *Argentino I*, did not resemble any of the successful European designs of the time, suggesting that while Artigalá had access to photographs of Voisin, Farman, and Blériot aircraft, he did not take heed of the hard-won lessons inscribed in their designs. At a time when there was little understanding of aerodynamics, copying successful designs could lessen the inevitably painful trial-and-error process.

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<sup>55</sup> Caimari, "News from Around the World," 609-12.

<sup>56</sup> "La travesía de la mancha a vuelo, triunfo de M. Bleriot," *La Prensa*, July 25, 1909.

<sup>57</sup> "La travesía de la mancha a vuelo, triunfo de Bleriot," *La Prensa*, July 26, 1909. Photographs of airplanes were also published in *La Prensa* during coverage of the Rheims aviation meet. "El vencedor de la copa de la champagne, Aeroplano de M. Henry Farman," *La Prensa*, August 28, 1909.

<sup>58</sup> Ramón Miguel Cordero, "Apuntes para la historia de nuestra industria aeronáutica," *Alas de América*, September 1948, 14.

<sup>59</sup> Taravella, *Setenta años*, 7-8; Halbritter, *Historia de la industria aeronáutica*, 57-58.

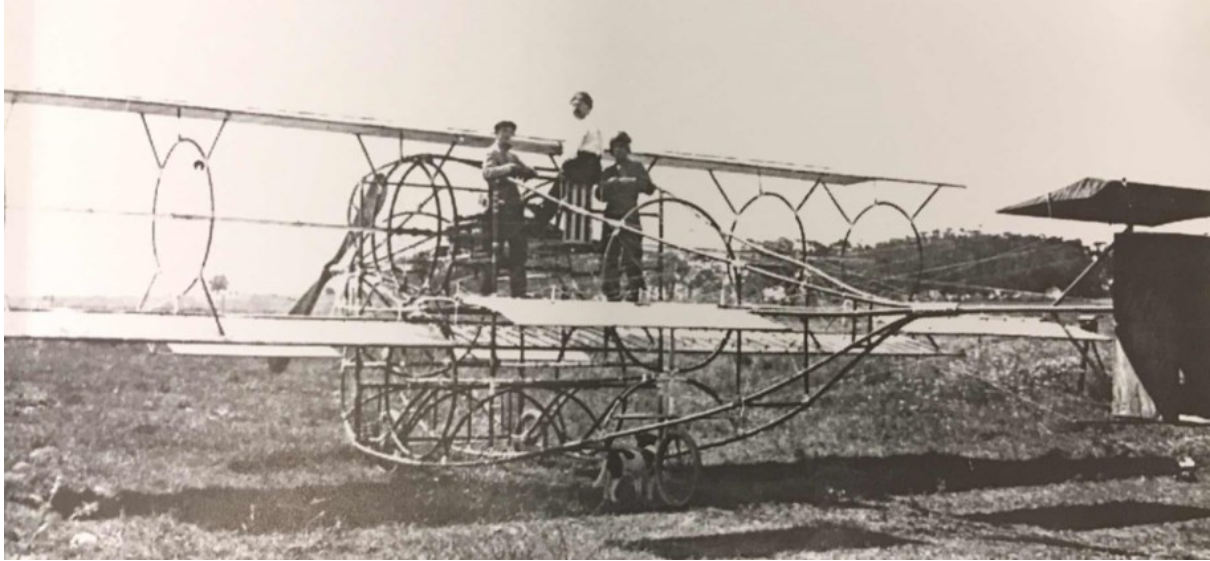


Figure 2.6. The *Argentino I* in February 1912. Halbritter, *Historia de la industria aeronáutica*, 87.

Work progressed slowly, and when the needed motor from France did not arrive in time for the Centenary exhibitions, Artigalá's investors panicked and ordered a French Farman biplane for the syndicate's public display.<sup>60</sup> In the end, despite attempts by Artigalá and later mechanics at the EMA, the *Argentino I* never flew owing to its poor flight characteristics. This failure sunk the Sindicato Aéreo Argentino, even after a subsequent reorganization in 1910 into the Compañía Aérea Argentina, S.A. with new investors. Artigalá spent all of the 100,000 pesos invested in the venture to no avail. His operations ceased in September 1911. The facilities and personnel were transferred to the Escuela Militar de Aviación in 1912.<sup>61</sup>

The next significant airplane builder, Antonio Guido Borello, achieved greater success, if only because he chose to more closely copy European designs. Borello, born in Piamonte, Italy in 1887, immigrated to La Plata, Argentina with his parents in the early 1900s and later graduated from the Universidad de la Plata with a mechanical engineering degree. Borello emulated the Sindicato Aéreo Argentino, forming Aeroplanos Argentinos Borello, S.A. in late

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<sup>60</sup> Cordero, "Apuntes para la historia de nuestra industria aeronáutica," 14-15.

<sup>61</sup> Halbritter, *Historia de la industria aeronáutica*, 58-59.



Figure 2.7. Borello and *El Argentino*. "Los nidos de las aves mecánicas," *Caras y Caretas*, May 11, 1912, 91.

1909 and issuing 280 shares of stock each worth 100 pesos.<sup>62</sup> Borello built his first airplane, *El Argentino*, as a copy of a Voisin biplane, and its first successful flight was on April 17, 1911. The aircraft was destroyed just over a year later in an accident after some design modifications.<sup>63</sup> His second airplane, *El Colorado*, was far more successful as Borello collaborated with the more established and experienced builders and pilots in Buenos Aires such as Paul Castaibert.<sup>64</sup> First flying on February 5, 1913, Borello then used *El Colorado* to open a short-lived flight school, Aeródromo de la Provincia de Buenos Aires, in La Plata.<sup>65</sup> But one year later, Borello suffered a serious crash and retired from aviation, ending his company.<sup>66</sup>

These first two initiatives in the Argentine aviation industry reveal the significant pitfalls for early private, for-profit airplane builders. Airplanes were expensive to make and likely to fail,

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<sup>62</sup> "Aeroplanos Argentinos Borello," *La Prensa*, November 19, 1909, 14.

<sup>63</sup> "En Villa Lugano," *La Prensa*, May 21, 1912.

<sup>64</sup> Halbritter, *Historia de la industria aeronáutica*, 61.

<sup>65</sup> "Nueva escuela de aviación," *Boletín del Aero Club Argentino*, July 1913, 361.

<sup>66</sup> Although *El Colorado* went on to have a long career, being used by various military and civilian pilots and institutions until 1918. Halbritter, *Historia de la industria aeronáutica*, 62.

whether by never lifting off or crashing back down to earth. Enthusiasm for flight in 1909 and 1910 ensured a willing pool of investors although neither company was able to build more than one or two prototypes. Such early ventures reflected the entrepreneurial spirit of the time in Argentina. Aviation was not simply the product of popular donations or state budgets; private entrepreneurs too thought they could make a living through the new technology, which was undoubtedly a premature aspiration at this point.

The fates of Artigalá's and Borello's enterprises demonstrate the difficulties of producing airplanes absent a national market for airplanes or without access to a pool of local aeronautical knowledge. Artigalá developed the *Argentino I* before the arrival of European aircraft in Buenos Aires, and Borello's *El Argentino* was designed in La Plata, away from the centers of the national aviation community at Villa Lugano and El Palomar. Years later, provincial builders still struggled to design aircraft far from Buenos Aires. In 1915, Pablo Libossart built a monoplane in the town of Carlos Pellegrini with only "some photographs and an extraordinary imagination."<sup>67</sup> Named the *Pellegrini*, the airplane did fly successfully, but Libossart eventually had to travel the 500 kilometers to Buenos Aires to acquire a more powerful engine and other imported parts.<sup>68</sup> His aeronautical experiments came to an unfortunate end in September 1915 when he was killed in an accident with his monoplane.<sup>69</sup> Thus, the first truly successful efforts at building aircraft took place in Buenos Aires where there was a critical mass of (largely French) aircraft, parts, and expertise, and by enterprises not dependent on turning an immediate profit from their production.

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<sup>67</sup> "Muerte de un aviador," *Boletín del Aero Club Argentino*, November 10, 1915, 15.

<sup>68</sup> "Los aeroplanos argentinos," *Boletín del Aero Club Argentino*, March 1, 1915, 17.

<sup>69</sup> "Muerte de un aviador," 15.



While Argentina took advantage of the profusion of new aviation products from France, the Argentine market remained a very minor factor in French production. The Argentines only imported dozens of motors and airframes from Europe before World War I, out of the thousands made in France from 1909 to 1914. This was likely due to the small size of the Argentine flight community and the extra costs imposed by the shipping of aircraft across the Atlantic, which raised the barrier to entry for any would-be aviator above those for their European counterparts. Argentines responded to paucity of imported machines with ingenuity and thrift, often reusing motors and parts across multiple airframes. One aviator, Virgilio Carlos Mira D’Ercole, built a monoplane in 1915 that used a Gnome 50 hp. originally brought to Argentina in 1909, and was subsequently used by Bartoloméo Cattáneo in a Blériot XI, and later by Ernani Mazzoleni. Mazzoleni, who could not resuscitate the old Gnome and sold it to Mira for a low price. Mira then rebuilt the entire motor and managed to keep it running in three sequential airframes until 1921, an exceptional feat of mechanical resourcefulness.<sup>70</sup> Many other pilots and builders came to depend on the circulation of used engines and parts between different airframes and institutions in Buenos Aires, and as will be discussed later, much knowledge could be garnered from the meticulous maintenance and reuse of aviation materiel.

Local builders studied the designs of the Voisin brothers, Henri Farman and his siblings, Louis Blériot, and Léon Levasseur of Société Antoinette. Whereas those European builders had spent large sums of money—Blériot reportedly spent 500,000 francs (225,000 pesos) on his designs<sup>71</sup>—and risked their lives flying early prototypes, Argentine builders could copy French aircraft for a fraction of the cost and with relative safety, or as safe as flight could be at the time. Occasionally builders tried to combine different European designs into one distinct airframe,

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<sup>70</sup> Halbritter, *Historia de la industria aeronáutica*, 102-104.

<sup>71</sup> “Las grandes figuras contemporáneas: Luis Blériot,” *El Hogar*, July 2, 1915, 12.

such Juan Alberto Delest's biplane *Porteño* built in 1912. An electrician, Delest had studied under the famous French aviator Louis Paulhan in Europe, before returning to Argentina to build a plane that looked like a Breguet, had the controls of a Voisin, and the landing gear of a Morane. The *Porteño* used a Gnome 50 hp. engine that had been mounted on Henri Brégi's Voisin for his first flight in Argentina in 1910.<sup>72</sup>

Far more frequently, Argentine aircraft builders copied a single design, whether it was a Farman biplane or Blériot monoplane, and introduced small modifications based on their experience or needs. This was the method used by the most productive builders of aircraft in Argentina during its first fifteen years of flight: Edmundo Marichal, Paul Castaibert, Gerardo J. Noni, and the workshops of the Escuela Militar de Aviación. These four builders and the EMA were the core of the national aviation industry at the time, with frequent collaboration between civilian and military workshops. Marichal and Castaibert both built aircraft for the EMA, and they worked with the most prominent members of the military workshops. Lastly, with the exception of Noni's operation, they did not depend on aircraft construction for their solvency, instead relying on state funding, flight training, public exhibitions to raise funds, or their other businesses.

The beginnings of this community of builders in Buenos Aires lay in the defunct Compañía Aérea Argentina, whose principal mechanics and carpenters, Ambrosio L. Garagiola, Pablo Parasovchka, and Pedro Rielo, found new employment with the ACA at its El Palomar facilities. In May 1911, Ambrosio Taravella, another pillar of the Argentine aviation industry, was hired by the ACA's chief mechanic Garagiola as an apprentice. Initially their duties were

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<sup>72</sup> "Un nuevo biplano," *La Prensa*, May 14, 1912; "El biplano argentino: Próximo ensayo," *Boletín del Aero Club Argentino*, June 15, 1912, 152; Halbritter, *Historia de la industria aeronáutica*, 70.

maintaining the club's small fleet of aircraft, but with the start of the funding campaign for the EMA in early 1912, they also began work on the first Farman biplane built in Argentina.<sup>73</sup>

In February 1912, the crew of the ACA workshops started working with the recently arrived Edmundo Marichal. Marichal was born in Chile in 1880, moving to France at an early age. In late 1908, he began working as a carpenter's apprentice at the Farman Frères [Farman Brothers] company. When in early 1910 Farman received its first orders from Argentina, they sent Marichal to represent the company in Buenos Aires. One year later he left Farman Frères for Argentina to open up his own workshop in Palermo, bringing with him plans for Farman and Blériot aircraft.<sup>74</sup>

Marichal soon began work on the EMA's second Farman, which was paid for by the Compañía Argentina de Tabacos Ltd. He was assisted in his workshop by Garagiola, Parasovchka, Rielo, Taravella, and another apprentice that later became the first native Argentine lead builder of aircraft, Gerardo Noni. Once the EMA was established in September 1912, they became the key technicians in the nascent Army air service.<sup>75</sup> Marichal continued building copies of Farman and Blériot aircraft out of his Palermo workshop until 1914, when he opened a new operation and airfield in Quilmes that included a flight school. Between 1912 and 1915, Marichal built eighteen airplanes, fourteen of which were Farman-types, and the remainder Blériot-types. In addition to the EMA, he sold his machines to private customers in Argentina and Uruguay, as well as to the Uruguayan Escuela de Aviación Militar.<sup>76</sup>

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<sup>73</sup> Taravella, *Setenta años*, 7-9.

<sup>74</sup> Halbritter, *Historia de la industria aeronáutica*, 129. It is not clear if this was legal or constituted industrial espionage.

<sup>75</sup> Pedro Rielo, in particular, became well-known for his high-quality propellers built from Argentine woods.

<sup>76</sup> The Blériot-type monoplane, *El Águila*, built for the EAM of Uruguay crashed almost immediately after entering service, and was completely rebuilt under the direction of Marcel Paillette. Halbritter, *Historia de la industria aeronáutica*, 130.

Back at the EMA, Garagiola oversaw the construction of a series of Farman biplanes beginning in 1913. In his memoirs, Taravella remembered the workshops of the school as a flurry of activity. Accidents and overhauls were so frequent that mechanics had to work day and night to keep the small fleet of aircraft in service. The early Gnome rotary engine, for example, needed to be overhauled every ten hours of use, which was considered excellent durability at the time.<sup>77</sup> Even so, mechanics often disassembled sections of the motors between flights to check for any signs of imminent failure.<sup>78</sup> While the EMA appears to have had excellent carpenters and airframe specialists, in its first years of operation it depended on the workshops of the automobile chassis and engine maker Horacio Anasagasti for their engines' replacement parts. Anasagasti, a founding member of the ACA and professor of the EMA, machined parts for the military workshops free of charge. He also donated one of his automobiles, a “*voiturette*” that the mechanics of the EMA named after Anasagasti.<sup>79</sup> Stocked with fabric, piano wire, wood braces and more, this car became the mobile repair station for the EMA, with mechanics always on call to drive out to a downed military aviator.<sup>80</sup>

Between 1913 and 1919, the EMA workshops built thirteen airplanes based on Blériots, Farmans, and Morane-Saulniers.<sup>81</sup> With each successive aircraft, the technicians at the EMA made small modifications of the airframes based on their flight and maintenance experience. For the Farman aircraft, EMA builders strategically added reinforcement to areas of the airframe prone to breaking, and they altered the geometrical structure of the connections between the tail

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<sup>77</sup> Nahum, *The Rotary Aero Engine*, 15.

<sup>78</sup> Taravella, *Setenta años*, 12.

<sup>79</sup> *Ibid.*, 16.

<sup>80</sup> The EMA *voiturette* is still on display at the Museo Aeronáutico de la Fuerza Aérea Argentina in Morón, and is the only surviving example of Anasagasti's automobiles. Feder, *Un siglo de autos*, 49.

<sup>81</sup> “Las construcciones aeronáuticas en el país,” *La revista de aviación y automovilismo*, August 1919, 14.

and the main body. These modified Farman biplanes were called “El Palomar types” after their base of operations and were the backbone of flight training at the military school until 1919.

The knowledge to execute these modifications came from their experience repairing and rebuilding damaged or destroyed aircraft, as well as individual requests from pilots.<sup>82</sup> As Taravella describes in his memoir, crashed airplanes were always returned to the EMA, whereupon mechanics would meticulously comb through the wreckage, identifying the parts that could be reused. They were forced to use such “economical methods” since their budget for repairs was miniscule—it was only 820 pesos in 1913, less than the cost of a single engine. In the process, the mechanics and carpenters came to know “very well to what extent we could work the deformed parts without danger of cracks or dangerous fissures forming or the reduction of [internal strength].”<sup>83</sup> This experience showed in their ability to keep motors running long beyond their supposed lifespan. EMA mechanics maintained some Gnome motors past 1000 hours of use, well beyond the manufacturer’s guarantee of 400 hours.<sup>84</sup>

While EMA technicians updated European designs, they expressly avoided making large design leaps into the unknown, in order to “avoid possible failures.”<sup>85</sup> At a time when the creation of new airplane types was done largely by a process of trial and error, building new airplanes—and test flying them—was very dangerous. Those Argentines who designed new aircraft often found it difficult to find willing test pilots, forcing many of them to learn how to fly so they could test their creations. Even proven European planes, if they were completely new to

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<sup>82</sup> “El Almanaque de nuestra aviación, 1 enero al 1 de marzo de 1916,” *Boletín del Aero Club Argentino*, March 1, 1916, 16.

<sup>83</sup> “Teníamos ya cierta experiencia adquirida en esta clase de trabajos, de manera que sabíamos muy bien hasta qué punto podíamos trabajar las piezas deformadas sin peligro de que se produjeran grietas o fisuras peligrosas en ellas o disminución de resistencia local.” Taravella, *Setenta años*, 26-27.

<sup>84</sup> “El Almanaque de nuestra aviación, 1 enero al 1 de marzo de 1916,” *Boletín del Aero Club Argentino*, March 1, 1916, 16.

<sup>85</sup> “Palomar,” *Boletín del Aero Club Argentino*, June 1915, 10.

local pilots, posed a significant risk and were sometimes left in the hangar until a pilot who had already flown them could be found to teach Argentine flyers. This was the case with the first frontline aircraft purchased by the Argentine Army in 1912, the French Nieuport IV. The Nieuport arrived without documentation or a pilot demonstrator. Marcel Paillette, Teodoro Fels, and others attempted high speed taxis in the airplane, only to stop short of taking off due to its squirrely handling. They were further dissuaded by the high-profile deaths of both Nieuport brothers flying the type in 1911 and 1913.<sup>86</sup> The airplanes sat prudently in a hangar until the Argentine mechanic-turned-aviator Alejo Tinao Planes, who had trained at the Nieuport school at Villacoublay, France, returned to Argentina to teach local pilots.<sup>87</sup>

Without strong design conventions and aerodynamic theory, airplanes were sufficiently idiosyncratic in their flight characteristics that flying new types was an extremely risky endeavor. Indeed as the prominent Argentine military aviator Ángel María Zuloaga later remembered of the time, builders constructed their aircraft “based largely on intuition, since the scientific medium in which [techniques were] developed was poor, and the communication of ideas about [them] was almost non-existent...”<sup>88</sup> Formal technical standards issued by state authorities and/or industry associations were still far over the horizon; there was no “FAI” of aircraft construction. The entities that commercially-built airplanes had financial incentives to keep their proprietary knowledge secret, or at least make others pay for it. Even if an institution like the FAI had existed, the global aviation community still needed years of trial-and-error and research to establish robust best-practices for aircraft design. Copying successful designs was thus a

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<sup>86</sup> Taravella, *Setenta años*, 35.

<sup>87</sup> Biedma Recalde, *Crónica histórica*, vol. 2, 171.

<sup>88</sup> “*Su técnica parecería basada en buena parte en la intuición, ya que el medio científico en que se desarrollaba era pobre, y la comunicación de ideas al respecto casi inexistente...*” Zuloaga, *La victoria de las alas*, 1st ed., 206. Zuloaga specifically says that the work of Castaibert, Mira, and the EMA was done by this intuition, quite successfully.

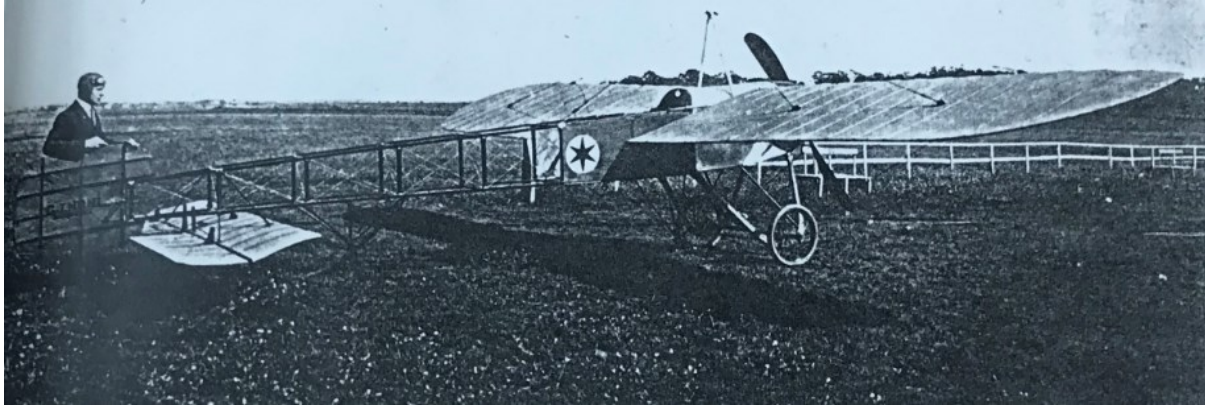


Figure 2.8. Gerardo Noni and one of his monoplanes. “Primer argentino constructor de aviones,” box 13, folder 8, COR, BNA.

sensible surrogate for technical conventions and standards while such knowledge and its disseminating institutions were still in formation.<sup>89</sup>

But the practice of modifying proven designs did not preclude small innovations. Perhaps most noteworthy for the novelty of his modifications—if not the duration of his aircraft building enterprise—was the mechanic Gerardo Noni. Noni was born in Buenos Aires in 1896 and trained as a mechanic at the Escuela Industrial de la Nación. He began work in the aviation industry as an apprentice for Marichal in 1912 at the tender age of sixteen. Noni then worked for Fels, Mazzoleni, and Paillette, gaining considerable experience in the process. In late 1914 he opened his own aircraft business, which in two years produced fourteen Blériot-type monoplanes and two biplanes.<sup>90</sup> Noni was innovative in his construction of wooden airframes. He patented a special arrangement for joining the stringers and upright braces of the airframe that did not require drilling holes in the wooden pieces, greatly adding to their strength.<sup>91</sup> Noni was also the

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<sup>89</sup> See chapters six and eight for the development of technical standards and their dissemination via the Fábrica Militar de Aviones in Córdoba.

<sup>90</sup> Halbritter, *Historia de la industria aeronáutica*, 142.

<sup>91</sup> Patente Nacional No. 19.979, 1916.

first in Argentina to apply a fire-resistant coating to the entire aircraft. These innovations were copied by Castaibert and Mira, outlasting Noni's enterprise itself which closed in 1916.<sup>92</sup>

Paul Castaibert looms large over the history of the period, leaving by far the greatest mark in newspapers, magazines, and histories of Argentine aviation, both at the time and to this day.<sup>93</sup> Although he did not build the most airplanes or foster significant innovations in design, Castaibert was an especially effective promoter of his projects, and was likely the closest any civilian came to a successful aircraft building business before the 1920s.

Paul Castaibert was born in France in 1883 and at a young age became enthralled with mechanical inventions. He caught the aviation bug after witnessing the famous flights by the Wright brothers at Pau, France in 1908. The following year, he immigrated to Argentina to open a workshop for automobiles in Palermo. The workshop grew into a successful chauffeuring and taxi business. Once the success of his Argentine business was assured, as Castaibert explained in his memoir, he opened an aircraft workshop at Villa Lugano in October 1910 with 16,000 pesos in savings to pour into his passion.<sup>94</sup> He soon became friends with Jorge Newbery, Alberto Mascías, Teodoro Fels, and many other key members of the local aviation community.<sup>95</sup>

Castaibert's first successful project, the Castaibert 911-2, was based on the Blériot and Deperdussin aircraft.<sup>96</sup> In early 1912, the airplane was profiled by the *Boletín del Aero Club*

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<sup>92</sup> "Monoplano 'Noni'," box 13, COR, BNA; Halbritter, *Historia de la industria aeronáutica*, 143.

<sup>93</sup> Forty years after Castaibert began his work in aviation, Juan Perón officially recognized Castaibert as a "precursor" of national aviation and invited him as the guest of honor to an exhibition on local aviation called *Alas Argentinas*. The trip from Montevideo to Buenos Aires was apparently draining for the then senior Castaibert, and he died shortly afterward on May 19, 1951. "Nuestro Progreso Aéreo Mostrará la Exposición 'Alas Argentinas,'" *Crítica*, April 5, 1951.

<sup>94</sup> Paul Castaibert, "Como fui piloto y constructor de mis aviones sin haber recibido instrucción alguna, ni siquiera un solo vuelo como pasajero," interview reprinted in Zuloaga, *La victoria de las alas*, 205-206. This same interview was also published in "Nuestro Progreso Aéreo Mostrará la Exposición 'Alas Argentinas,'" *Crítica*, April 5, 1951.

<sup>95</sup> Halbritter, *Historia de la industria aeronáutica*, 119-120.

<sup>96</sup> Castaibert, "Como fui piloto y constructor de mis aviones," 205.



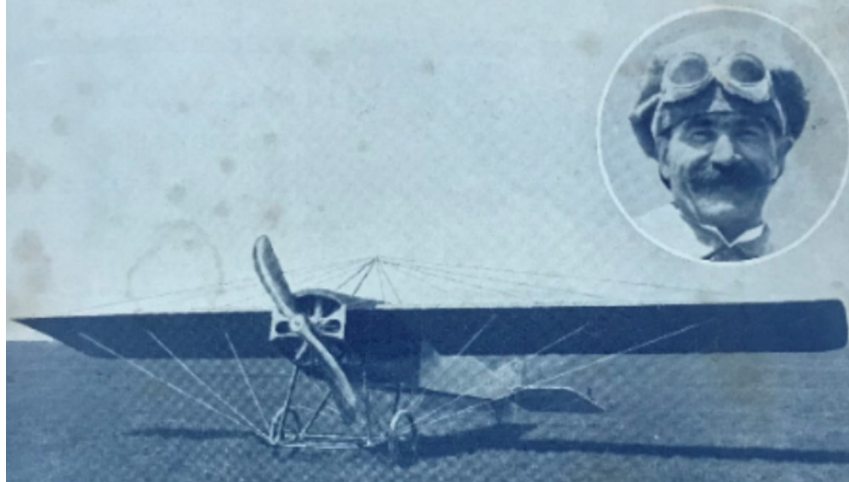


Figure 2.9. Paul Castaibert and a late-model Castaibert 914-5. Its form is similar to the earlier models. *Boletín del Aero Club Argentino*, November 10, 1915, cover.

*Argentino*, which deemed it a “mélange” of good qualities of other aircraft. Although the Castaibert 911-2 was not “constituting an originality,” it was nevertheless considered an elegant aircraft with simple lines.<sup>97</sup> Castaibert could not find a pilot to test his airplane, so he daringly learned to fly it himself in February 1912, eventually earning his *brevet* four months later.

On May 21, 1912, Castaibert completed work on his most significant airplane, the Castaibert 912-3, which was the first locally constructed airplane type to be built in numbers, with sixteen produced (including its close derivative, the up-engined Castaibert 912-4). Although each plane was slightly customized, they were similar enough to be considered a series production by historians of Argentine aviation. All materials, except the engines, were procured in Argentina. The Castaibert 912-3/4 was used in civilian flight schools around Buenos Aires, including Castaibert’s own operation at Villa Lugano, as well as by private aviators and the military flight schools in Argentina and Uruguay. He subsequently built three more types of aircraft, the Castaibert 914-5, 915-6, and 915-7. These later models featured more powerful

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<sup>97</sup> “Paul Casteibert. –su aeroplano,” *Boletín del Aero Club Argentino*, February 10, 1912, 113-114.

engines, dual controls, and structural reinforcements. In the end, Castaibert built twenty-two planes during his seven-year career in aviation.<sup>98</sup>

The Castaibert 915-6 was noteworthy for being built for acrobatic flight. On February 20, 1914, the Swiss aviator John Domenjoz demonstrated the loop in Argentina for the first time, and soon “*loopistas*” [loopers] were all the rage. “Looping-the-loop” as it was called placed great stresses on airframes and flight surfaces, in addition to testing the mettle of pilots. Noni, Marichal and Castaibert all managed to reinforce their aircraft for the maneuvers within months of first loop and soon their planes were being used by daring *loopistas*.<sup>99</sup>

Castaibert had the distinction among builders at the time of becoming a national popular figure.<sup>100</sup> He was seemingly always in motion, whether training one of the dozens of pupils who went through his Villa Lugano school, touring the provinces in his planes, or doing stunts over Buenos Aires.<sup>101</sup> Newspaper announcements of his daily plans brought crowds out to the airfield of “*el maestro Castaibert*” [the master Castaibert].<sup>102</sup> In perhaps his most memorable appearance, on February 7, 1915 Castaibert flew with his wife Elena as a passenger to Palermo stadium, landing on the grounds in front of a roaring crowd. Elena then disembarked, and Castaibert proceeded to race a motorcycle with his airplane, doing circuits around the stadium pitch (see fig. 2.10). As it was reported in the *Boletín del Aero Club Argentino*:

And at a low elevation, tilting his apparatus in a bold and dangerous way, Castaibert always tried to follow the line of the grandstands, achieving it at all times. The race, in

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<sup>98</sup> Halbritter, *Historia de la industria aeronáutica*, 125-128.

<sup>99</sup> “Las construcciones aeronáuticas en el país,” 14; “Volación y aerostación,” *La Prensa*, November 26, 1914.

<sup>100</sup> It probably helped his renown that he named his airplanes after himself.

<sup>101</sup> Castaibert trained, or at least initially taught, many important figures in the history of Argentina aviation, including Eduardo Olivero, Alberto Jarfelt, Amalia Figueredo, Enriqueta Jarfelt, Virgilio Mira, Ricardo Detomasi, as well as the Uruguayan pilots Boizo, Lanza, Berisso, Cristi and Sánez. Castaibert, “Como fui piloto y constructor de mis aviones”; “La aeronáutica argentina: Su movimiento en el mes de agosto,” *Boletín del Aero Club Argentino*, August 1913, 393; “Volación, en Villa Lugano, examen de Perez Arzeno,” *La Prensa*, March 21, 1913.

<sup>102</sup> “Villa Lugano,” *Boletín del Aero Club Argentino*, September 10, 1915, 7.



Figure 2.10. Castaibert racing the motorcyclist Carlos Santiago.  
"Torneo deportivo del Club Motociclista Nacional," *Caras y Caretas*, February 13, 1915, 52.

which the speeds were almost even, soon impressed the audience that began to follow it with growing interest. And it was really a beautiful spectacle, that of the little noisy monster that is the motorcycle, challenging in speed a grandson of Icarus.<sup>103</sup>

Castaibert won two of the ten laps, and after standing for an ovation from the crowd, he and his wife took off from the stadium and returned to Villa Lugano.<sup>104</sup> As discussed earlier, one year later a Castaibert plane piloted by the Uruguayan Lt. Cesáreo L. Berisso won the raid between Buenos Aires and Mendoza. It was these high-profile stunts and aerial victories that cemented Castaibert and his airplanes as household names during the early period of flight in Argentina.

Castaibert, Noni, Marichal and the EMA formed the heart of what may be described as a technical ecosystem of builders, suppliers, and flyers. Their collective knowledge essentially

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<sup>103</sup> "Y a baja elevación, inclinándose su aparato en una forma audaz y peligrosa, Castaibert trataba siempre de seguir la línea de las tribunas, lográndolo en todo momento. La carrera, en que las velocidades eran casi parejas, impresionó pronto el público que empezó a seguirla con creciente interés. Y fué realmente un espectáculo bello el de aquel pequeño monstruo ruidoso que es la moto, desafiando en velocidad a un nieto de Icaro." "Una extraña carrera," *Boletín del Aero Club Argentino*, March 1, 1915, 9.

<sup>104</sup> "Una extraña carrera," 9.

created some modicum of “de facto” technical standardization, which arose not from formal codification and enforcement but common usage and experience. The risk of failure and bodily injury, if not death, certainly served as a powerful incentive to form a collaborative “voluntary consensus” of best-practices within the Buenos Aires design community.<sup>105</sup>

All of their operations were small artisanal workshops, in which half a dozen skilled engineers, carpenters, and mechanics built one airplane at a time.<sup>106</sup> The limited availability of resources for aircraft construction and operation ensured that the various civilian and military enterprises shared rarer materials such as engines and metal components. Nearly all the builders relied on external suppliers of machined parts, such as the EMA with Horacio Anasagasti’s operation and Castaibert with Miguel Mariscal’s machine shop (see below). The facilities and equipment of failed ventures often flowed into new ones, sometimes years later. Matching motors with airframes was a particularly common source of collaboration. In one such case, Gerardo Noni and the operators of a flight school, the Garcia brothers, agreed for the former to provide an airframe, and the latter a motor, in the interest of flight instruction for both parties, at no cost.<sup>107</sup> As already mentioned, Mira’s first airplane used an engine that had two previous owners over five years, and Juan Alberto Delest mounted a motor in his biplane originally imported two years before. It was not infrequent for members of the ACA to scour civilian workshops and warehouses in search of motors for EMA Farmans and Blériots.<sup>108</sup>

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<sup>105</sup> Russell, *Open Standards*, 18-19.

<sup>106</sup> This fits two tendencies of the Argentine economy at the time. First, it was a “dual economy” divided between large and small firms, with few of a middling size. No *belle époque* aviation enterprise in Argentina was even remotely close to the thresholds in capital or employees to be a large firm. Second, skilled immigrants of means such as Marichal and Castaibert generally started their own workshops instead of concentrating into larger operations. Rocchi, *Chimneys in the Desert*, 109; Pineda, *Industrial Development*, 55.

<sup>107</sup> Contract between Gerardo Noni and Enrique and Sebastian Garcia, Escuela de Aviación José C. Paz, September 1, 1916, box 13, COR, BNA.

<sup>108</sup> “Volación military,” *La Prensa*, January 16, 1913, 14.

Sharing knowledge was just as important. The ACA appears to have served as an outlet for the aviation knowledge gained by its prominent members. The club's Comisión Técnica advised aircraft builders on the soundness of their machines once built, and worked with designers on potential modifications to improve performance.<sup>109</sup> Newbery, Mascías, Anasagasti, and other ACA elites were often found at the EMA workshops, providing the latest information on European aircraft and practices gleaned on their frequent trips abroad.<sup>110</sup> The EMA depended on the ACA for technical advisement from its founding until December 1915.<sup>111</sup> Military workshops also learned about new developments in foreign airframe and motor technology by repairing newer airplanes imported by wealthy Argentines that were beyond the meager budget of the EMA.<sup>112</sup> Lastly, while institutions and businesses were often ephemeral at this early stage, the technicians that comprised them largely remained, moving from one venture to another, in the process developing the skills in aircraft maintenance and production that underpinned Argentine aviation for decades to come. Noni worked with Marichal, Mazzoleni, and Paillette before opening his aircraft business. Ambrosio Garagiola worked for the Compañía Aérea Argentina and the ACA before becoming the lead mechanic at the EMA. Some engineers and craftsmen took their skills abroad, as did Garagiola when he left for Brazil in 1915, and the Austrian engineer Andrés Tomisch who first worked for Marichal before heading to Bolivia to help design the first national airplane there.<sup>113</sup>

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<sup>109</sup> The Comisión Técnica originally advised builders based on designs, but soon found that too many designers were simply looking for funding, which the ACA did not possess. After 1911 they only evaluated completed aircraft. "Resumen del Acta, Sesión del día 5 de Mayo de 1911, Proyectos de aeroplanos," *Boletín del Aero Club Argentino*, June 1, 1911, 24; "Los vuelos de ayer," *La Prensa*, January 9, 1913.

<sup>110</sup> Taravella, *Setenta años*, 9; "Volación y aerostación, regreso del ingeniero Newbery, la travesía de los Andes," *La Prensa*, January 15, 1914.

<sup>111</sup> "La Comisión Técnica de la Aviación Militar," *Boletín del Aero Club Argentino*, January 10, 1916.

<sup>112</sup> Taravella, *Setenta años*, 12-13.

<sup>113</sup> Halbritter, *Historia de la industria aeronáutica*, 78-79, 141-142.

## Dependency Becomes a Problem: Argentine Aviation during World War I

The advent of the First World War created new opportunities and constraints on the national aviation industry. Dependency, a natural result of the transfer of aviation technology from Europe, suddenly threatened to significantly hamper Argentine flight activity. Aviation organizations such as the FAI closed their doors as international cooperation fell by the wayside. Argentines were left with an opportunity to lessen this dependence by investing in local industry and creating their own regional aviation organizations. Yet, local officials, pilots, and builders largely failed to capitalize on this opening and flight operations nearly ceased entirely by 1918.

In light of the cessation of FAI congresses, Latin Americans began formulating their own organization to replace the largely European organization.<sup>114</sup> In late 1915, the Aero Club de Chile, with the support of the national government, proposed the Primera Conferencia Aeronáutica Panamericana, during which the Asociación Aeronáutica Pan Americana (AAPA) would be established. Pan-American conferences and organizations were a growing phenomenon of the early twentieth century, although usually such efforts were initiated by the US in the interest of expanding its political and commercial power.<sup>115</sup> But for this aviation conference, the South American states held sway; in fact, the US was represented by Alberto Santos-Dumont, the Franco-Brazilian aviator.<sup>116</sup>

The plans for the AAPA went beyond the regulatory and officiating character of the FAI. It would essentially codify and formalize the connections among the aviation communities of

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<sup>114</sup> Col. Enrique Mosconi, "Aeronáutica," *Boletín de Informaciones del Servicio Aeronáutico del Ejército*, December 1, 1920, 38-39. The FAI paused its activities for the duration of the war, and although it returned in the 1920s, its centrality to the regulation of Argentine aviation was greatly diminished. After the war, license standards were dictated by the International Convention of Aerial Navigation of 1919, not the FAI.

<sup>115</sup> Ricardo Salvatore, "Imperial Mechanics: South America's Hemispheric Integration in the Machine Age," *American Quarterly* 58, no. 3 (2006): 663-691, 666-7.

<sup>116</sup> Aero Club de Chile, *Primera Conferencia Aeronáutica Pan-Americana* (Santiago: Imprenta Gutenberg, 1916), xii.

South and Central America that had already been forming since the outset of heavier-than-air flight. The AAPA was to facilitate the diffusion of aeronautical knowledge throughout the region in conferences and publications. It was to sponsor flight schools and aid in the training of mechanics. Furthermore, it would establish aeronautical laboratories and conduct meteorological surveys.<sup>117</sup>

In March 1916, delegates from Chile, Argentina, Brazil, Bolivia, Ecuador, Peru, Paraguay, Uruguay, and the US arrived in Santiago for a week of deliberation. Alberto Mascías, the delegate for Argentina, helped inaugurate the conference with a speech in which he lauded “the noble and brave France” for establishing the FAI to “[govern] the destinies of [the] new branch of science,” aeronautics. Mascías credited his nation with first joining the FAI and stimulating aviation in the region, and now characterized Argentina’s sister republics as keen to bear the mantle of international aviation. The point of the AAPA was not to replace the FAI entirely, but instead to put Latin America in a favorable position for the inevitable flowering of civil aviation after the war. When peace returned—Mascías argued—the European powers would deploy their wartime gains in “aeronautical science” for the “practical means of locomotion and recreation.” Latin America had to “unite the efforts of all, and then offer Europeans the categorical and indisputable proof of our capacity and our power.”<sup>118</sup> Thus the aviation of “young America” was not to be independent of European influence when peace came, but

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<sup>117</sup> “Primera Conferencia Panamericana: Un hermoso proyecto,” *Boletín del Aero Club Argentino*, January 10, 1916, 26-27. Representation in the organization would correspond to the flight activity of each member country; said activity was measured by the number of licenses granted and by the hours flown each year.

<sup>118</sup> “*Debemos considerar que el viejo continente europeo, cuando le llegue el momento de paz y de concordia..., resurgirá a la ciencia aeronáutica con mayor pujanza...para utilizarla como medio práctico de locomoción y de recreo...Por eso es que, desde el punto de vista de esa finalidad, debemos aunar el esfuerzo de todos, para luego ofrecer a los europeos la prueba categórica e indiscutible de nuestra capacidad y de nuestra potencia.*” “Primera Conferencia Aeronáutica Panamericana: Congreso celebrado en Chile,” *Boletín del Aero Club Argentino*, June 10, 1916), 8.

through a regional organization Latin America might have greater agency in the looming “Air Age.”

Yet despite the success of the conference and promises to meet again the following year, nothing came of the AAPA. One can only speculate as to why the Pan-American organization failed, but tension between civilian and military officials, already evident during the conference, might have played a role.<sup>119</sup> Aviation may have been a transnational enterprise that depended on the free circulation of objects, people, and knowledge around the region, but it was also an instrument of national defense, and war between Latin American states remained a definite possibility. Furthermore, the AAPA was attempting to marshal resources for international aviation at a time when all Latin American nations were facing a shortage of funds and materials due to the war.

The Argentine aviation industry too showed potential, but as the war progressed, it failed to overcome dependency on European manufacturers. The principle builders—Marichal, Castaibert, Noni, and the EMA—all managed to sustain the construction of airframes for the first years of the war. In fact, the period was the most productive for Castaibert and Noni. But airframes were not the primary site of dependency; Argentines had extensive carpentry skills and ample stocks of local woods suitable for aircraft.

The main area of dependency was the powerplant. Argentine industry lacked the capability to machine the needed replacement parts for motors at a rate sufficient to supply the local aviation market. That is not to say local engineers and machinists did not have the skills needed create such parts; a trickle of *repuestos* came out of Argentine workshops. But they depended on imports of high-quality steel and aluminum, along with the necessary machining

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<sup>119</sup> "El congreso de aeronáutica, disidencias entre civiles y militares," *La Prensa*, March 13, 1916, 11.



tools. As a measure of their scarcity, Gnome 80 hp. engines cost nearly twice as much as a new Farman or Blériot in 1915, and even the then outdated Gnome 50 hp. was the same price as a Farman airplane designed to mount the engine.<sup>120</sup> When the Army sent officials to France in 1916 to procure aviation materiel, the acquisition of five Gnome motors cost 40,000 pesos, with one Gnome 80HP costing the equivalent of building four airframes at the EMA workshops.<sup>121</sup>

Manufacturing the Gnome engine, the most popular prewar motor, involved metals and precision techniques little known or practiced in Argentina. It used recently developed nickel steel alloys, which were milled from solid billets weighing 37 kg. into 2.8 kg. cylinders, a process that took eight hours. The cylinder walls were machined to a mere 1.5 mm. thickness to aid in cooling and reduce weight. The 6 kg. crankcase was milled from a 49 kg. cast steel block over three hours. The connecting rods from the crankshaft to the pistons had deep channels carved into them that perfectly optimized strength and weight.<sup>122</sup>

But there was one part that most eluded Argentine industry and was constantly in short supply: the springs of the automatic inlet valves embedded in the center of the piston crowns (a rather unusual arrangement that fell out of use) (see fig. 2.11). The inlet valves opened automatically during the induction stroke due to the falling pressure in the cylinder when the piston moved downwards, releasing the fuel-air mixture. Then when the compression phase began and pressure increased, the valves would close before combustion. The springs that regulated this action had to be made with extreme precision since their elasticity was key to the

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<sup>120</sup> These were the prices at the Aeródromo Longchamps: a Gnome 50HP cost 3,300 pesos, and an 80HP 6,000 pesos. Since a Gnome 80HP was simply two connected 50HP engines, this price is logical. A new Farman two-seater biplane was 3,300 pesos. Advertisement for "Aeródromo Longchamps," *Boletín del Aero Club Argentino*, September 10, 1915. This price for a 50HP in 1915 was still significantly cheaper than the motor's price in 1909, which in England cost the equivalent of 5,954 pesos. Nahum, *The Rotary Aero Engine*, 14.

<sup>121</sup> Escuela Militar de Aviación, "Distribución de los \$80.000 m/n solicitados para reorganización del material de vuelos y arreglos en la Escuela Militar de Aviación," 1916, box varios 1, folder 2, COR, BNA.

<sup>122</sup> Morrow, Jr., *The Great War*, 33; Nahum, *The Rotary Aero Engine*, 21.

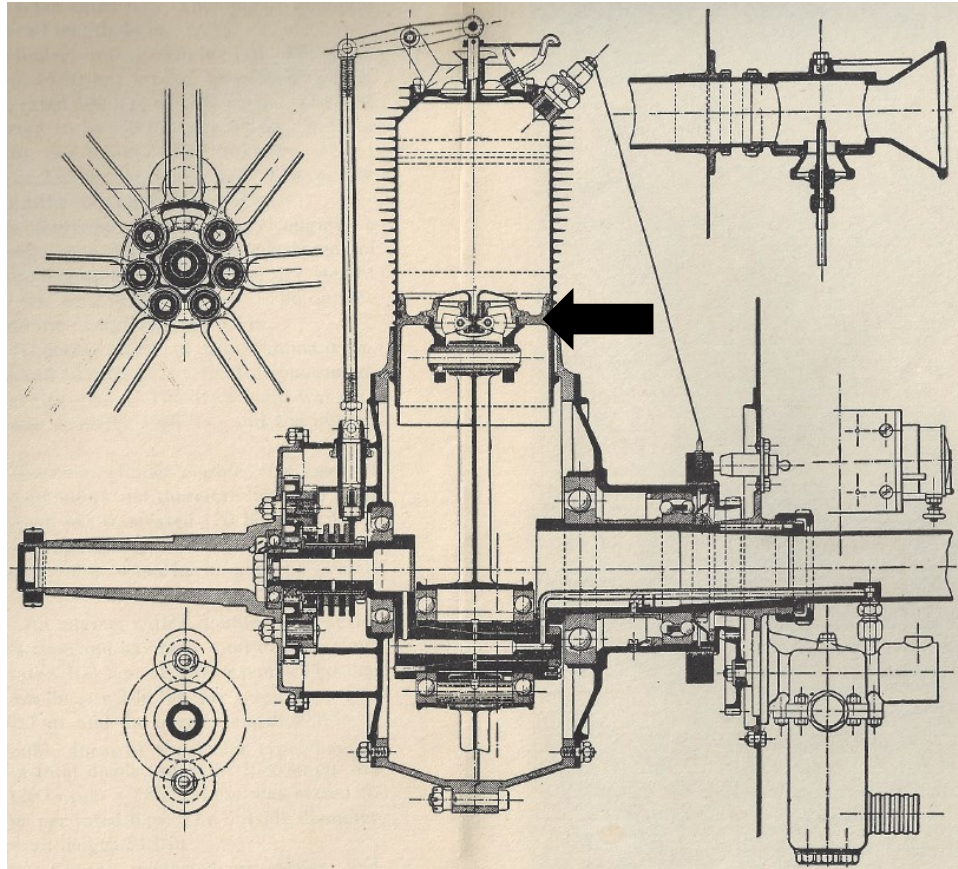


Figure 2.11. A cross-section of the Gnome rotary engine. The arrow indicates location of piston crown and the automatic intake valve. Glenn D. Angle, *Aircraft Engine Encyclopedia: An Alphabetically Arranged Compilation of All Available Data on the World's Airplane Engines* (Dayton, Ohio: The Otterbein Press, 1921), 212.

successful operation of the motor. If the valve stayed open for just a fraction of a second too long, combustion could initiate a fire in the fuel system of the airplane.<sup>123</sup> Furthermore, the springs were constantly wearing out due to their precarious location within the piston, which exposed them to the heat and force of the piston's movement (in addition to the rotary force applied to the whole engine). Ambrosio Taravella recalled how he "jealously guarded" his supply of these springs in a cigar box once owned by Jorge Newbery. He would meticulously extract them from damaged or retired motors as they were always in short supply.<sup>124</sup>

<sup>123</sup> Nahum, *The Rotary Aero Engine*, 15, 43.

<sup>124</sup> Taravella, *Setenta años*, 17.

There were examples of the local production of engines, but they always remained small-scale and artisanal in nature. The most successful engine maker was Miguel Mariscal, a little-known Spanish industrialist in Argentina who in 1915 made Gnome/LeRhône motors. These engines were milled one-by-one from a block of steel, similarly to the operation at Société des Moteurs Gnome, albeit on a much smaller scale.<sup>125</sup> Mariscal's workshop produced around thirty motors, some of which were used by Castaibert, Noni, and the EMA, while others were exported to neighboring countries.<sup>126</sup> When in the summer of 1915 Castaibert mounted a Mariscal Gnome 50 hp. in one of his monoplanes for a successful test flight, it was hailed as the first fully national airplane to fly.<sup>127</sup> Nevertheless, in the posthumous assessment of the EMA official Edmundo Lucius (who replaced Garagiola as head of the EMA workshops in 1915), Mariscal's motors were never perfected and many Argentines were reluctant to use them.<sup>128</sup> In addition to Mariscal, Edmundo Marichal's workshop produced replacement parts for motors for a short time, and the EMA launched a project to build a LeRhône 80 hp. in 1918.<sup>129</sup>

In the theorization of post-war Argentine analysts, the maintenance of motors should have enabled Argentine industry to create new designs and innovate.<sup>130</sup> But this simply did not happen. While engine-makers were able to make Gnome and LeRhône 50 hp. and 90 hp. units, these were already outdated by the start of World War I. European engine developers were rapidly increasing the horsepower of their models. Rotaries were soon abandoned as attempts to increase power ran into an "inherent breathing deficiency" due to the long distance the fuel-air

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<sup>125</sup> Société de Moteurs Gnome, in 1913, employed between 650 and 800 workers, in order to build 1,400 rotaries. It also imported the latest machine tools from the United States. Morrow, Jr., *The Great War*, 33.

<sup>126</sup> Biedma Recalde, *Crónica histórica*, vol. 2, 63-64.

<sup>127</sup> "Villa Lugano," *Boletín del Aero Club Argentino*, September 10, 1915, 7.

<sup>128</sup> Edmundo Lucius, "La implantación de las industrias aeronáuticas en nuestro país," *Boletín de Informaciones del Servicio Aeronáutico del Ejército*, January 1, 1922, 58.

<sup>129</sup> Zuloaga, *La victoria de las alas*, 1st ed., 206-207; "Las construcciones aeronáuticas en el país," 14.

<sup>130</sup> Lucius, "La implantación de las industrias," 59.

mixture had to travel inside the engine.<sup>131</sup> When Argentines were still attempting to build rotary engines under 100 hp., the main allied motor was the in-line, water-cooled Hispano Suiza 8 series. In 1914, the Hispano Suiza 8A could generate 140 hp.; by 1918, the 8F model produced 325 hp.<sup>132</sup> Although at first rotary engines like the Gnome were considered very reliable, by 1917, British officials noted how late-model rotaries needed an overhaul every 40 hours, whereas the latest stationary engines could run for over 100 hours without intensive maintenance.<sup>133</sup>

The war had of course stimulated the allied governments to invest large amounts of money in engine development. Yet even if the Argentines had shown such urgency, the conditions of the local economy likely would have prevented similar successes. Metallurgy was one of the most difficult and esoteric branches of modern industry. The titans of the engine industry, namely the US, France, Great Britain, and Germany, had to invest vast sums of money and knowledge to develop new alloys—and the capability to shape them into precise and durable parts—in order to improve motor performance.<sup>134</sup> The manufacturing of advanced engines in quantity (so as to make them economical) required large amounts of capital and a substantial local market to absorb the costs of development and production.<sup>135</sup>

Argentine firms simply did not have the capital to undertake such an effort, nor a sufficiently large domestic market. Argentine industry was largely divided into a few large

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<sup>131</sup> This was the evaluation of the historian Andrew Nahum in retrospect. Other reasons cited at the time were the rotary's monstrous oil consumption, the increase in the gyroscopic effect as the weights of engines grew, and power loss due to "windage," or the friction of the rotating cylinders against the air. Nahum, *The Rotary Aero Engine*, 32-38.

<sup>132</sup> Morrow, Jr., *The Great War*, 368; Heron, *History of the Aircraft Piston Engine*, 15-16. Hispano Suiza was a Spanish company formed by a team of Spanish and Swiss engineers, originally to manufacture automobile engines. It also developed a significant presence in France.

<sup>133</sup> Royal Air Force Air Board, *Air Board Technical Notes*, 2.

<sup>134</sup> Samuel Heron details some of these advancements, such as the British development of aluminum alloy piston heads over World War I, primarily at the National Physical Laboratory. Subsequent generations of more and more powerful and reliable engines often required new alloys that could handle the increased operating stresses. Heron, *History of the Aircraft Piston Engine*, 24-25, 71-2. See chapter six for more on metallurgy and the aircraft industry.

<sup>135</sup> Lucius, "La implantación de las industrias," 61.

factory operations and many small-scale workshops with only a dozen or so employees. The largest firms tended to be oriented toward consumer goods or food processing.<sup>136</sup> Such was the case with the few large metallurgical operations at the time, such as Talleres Metalúrgicos San Martín (TAMET) and Vasena. These firms manufactured products like iron pipes, nuts, bolts, nails, metal structures for construction, and agricultural machinery, a far cry from the advanced metal working techniques needed for making aircraft motors.<sup>137</sup> Such large enterprises may have had the technical skill to manufacture engines on a large scale. But they too would have faced a common problem for Latin American industries utilizing advanced technology: overproduction due to the limited size of the local market and periodic economic downturns. Thus motor manufacturing remained a small-scale, artisanal endeavor.

The deficiencies of the Argentine metallurgical market also reveal some of the inequalities bedeviling Argentina's efforts at industrialization. Technology transfer—the importation of machinery and expertise for making motors and other products—was expensive. Argentine entrepreneurs had to pay for shipping and handling across the Atlantic, which naturally raised the barrier of entry into aircraft and engine manufacturing. The same problem applied for engine oil, gasoline, coal, iron, and steel, all inputs that had to be imported from abroad.<sup>138</sup> Foreign investment from Britain, Germany, and France did not offset these extra costs. Foreign investors tended to focus on Argentina's power and transportation infrastructure, followed by consumer goods and operations related to agricultural exports. They had little

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<sup>136</sup> Claudio Belini, *Historia de la industria argentina. De la independencia a la crisis de 2001* (Buenos Aires: Sudamericana, 2017), 119; Rocchi, *Chimneys in the Desert*, 109.

<sup>137</sup> Rocchi, *Chimneys in the Desert*, 94, 121.

<sup>138</sup> *Ibid.*, 96; Pineda, *Industrial Development*, 6, 55.

incentive to develop local capabilities for manufacturing when Argentina was the most lucrative market in Latin America for European exports.<sup>139</sup>

Furthermore, the structure of the global economy hindered the development of the heavy industry needed to support the aircraft industry. Argentina's reliance on the international export market ensured constant volatility in its local economy. As the European demand and prices for beef and wheat fluctuated, so did the local economy. Thus investors and entrepreneurs were reluctant to invest large sums for cutting-edge technology that might not run at full capacity due to market instability.<sup>140</sup> Occasionally though, the paucity of heavy industry was an explicit policy of powerful competitors abroad. Steel production—the key input for engine manufacturing—had begun in Argentina in 1896. But it did not move beyond the scale of a small workshop until 1933. This delay was caused by European steel consortiums, first Luxembourg-based ARBED then the International Steel Cartel, blocking the transfer of the needed technology to Argentina, as well as purchasing control of Argentine firms and ending their experiments with steel production.<sup>141</sup>

Despite the efforts of local workshops like Mariscal's, by mid-1915 the EMA had to halt activity due to a lack of working motors.<sup>142</sup> In 1916, operations were only able to continue after a special Army mission was sent to France to acquire five Gnome engines.<sup>143</sup> Taravella, a member of the mission, recalled how they struggled to procure the motors since French manufacturers had moved on to better models—abandoning the production of the “old and fragile” Gnome 50

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<sup>139</sup> Argentines also tended to invest heavily in manufacturing, but in the light consumer goods industry. Rocchi, *Chimneys in the Desert*, 90, 196.

<sup>140</sup> Pineda, *Industrial Development*, 5.

<sup>141</sup> Rocchi, *Chimneys in the Desert*, 95. Claudio Belini adds the lack of state support as another factor the lack of a local steel industry. Belini, *Historia de la industria*, 151-153.

<sup>142</sup> “Palomar,” *Boletín del Aero Club Argentino*, April 1915, 15.

<sup>143</sup> “Distribución de los \$80.000m/n solicitados para la reorganización del material de vuelos y arregios en la EMA,” December 30, 1916, box varios 1, folder 2, COR, BNA.

hp. A special arrangement had to be made with the French War Ministry to find disused motors in storage.<sup>144</sup> Civilian operators suffered even more. Although a number of flight schools had opened in the early years of the war, by 1918 nearly all had closed permanently, and only two or three civilian pilots were actively flying.<sup>145</sup>

This downturn was also experienced in the wider Argentine economy. Against the predictions of dependency theorists—who believed that World War I had spurred local industry—a recession in 1913 and then the end of European supply lines in 1914 hurt Argentine manufacturers.<sup>146</sup> Industry shrunk by twenty percent during the war years, with those firms that depended on foreign inputs struggling the most.<sup>147</sup> The nascent Argentine automobile industry—which many hoped would be the foundation of an aircraft engine industry—experienced a similar fate to that of the aviation community. Horacio Anasagasti, who had hoped to build the first automobile factory capable of producing cars in numbers, found his efforts stymied by 1915 due to a shortage of replacement parts for motors from Europe.<sup>148</sup> Thus, in a pattern recognized by the economists and historians Ezequiel Gallo, Lucio Geller, and Yovanna Pineda, Argentine “industry did well when international trading was strongest.”<sup>149</sup>

Beyond the structural problems in the Argentine economy that hampered engine production, airframe makers too struggled during the war, and by 1918 only the EMA workshops

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<sup>144</sup> Taravella, *Setenta años*, 64.

<sup>145</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 162.

<sup>146</sup> Dependency theory was gradually formulated by Argentine scholars such as the economist Alejandro Bunge in the 1930s and 1940s, Raúl Prebisch and ECLA in the 1950s, and later by the economic historians Andrés Frank, Aldo Ferrer, and Ricardo Ortíz. Dependency theory stipulated that government protectionism and investment were necessary to foster industrialization, and that the failure of the Argentine state to do so before 1930 was responsible for Argentina’s perpetual underdevelopment. But dependency theorists underplayed the importance of international trade for industrial development, which was hampered by protectionist policies. Furthermore, they rarely considered the micro-economic and minute historical factors that affected industrialization in different countries. Pineda, *Industrial Development*, 10-11.

<sup>147</sup> Belini, *Historia de la industria*, 119-120; Rocchi, *Chimneys in the Desert*, 115.

<sup>148</sup> Feder, *Un siglo de autos*, 46.

<sup>149</sup> Pineda, *Industrial Development*, 11.

continued their operations. The local airframe industry had all but disappeared for three major reasons: the perceived superiority of European airplanes, the lack of sufficient state support, and the industry's vulnerability to contingent events from accidents and an exodus of flyers and mechanics to Europe to aid the Allied war effort.

European airplanes and motors had a consistent edge over their Argentine counterparts and ensured that what was already a very small market for aircraft in Argentina was miniscule for local builders. European manufacturers greatly benefitted from the production of hundreds of planes, used by dozens of operators, which gave them unsurpassed experience in how their airframes and motors performed. In the evaluation of Edmundo Lucius after the war, the airplanes of Castaibert and Marichal were of "doubtful quality" in comparison to their European competitors.<sup>150</sup> Even as the Argentines carefully studied and refined their creations, the number of opportunities to learn and improve were greatly limited.

But beyond the material advantages, European builders held a decisive edge in the marketing and promotion of their products. French and German airplanes grabbed international headlines as celebrity pilots like Roland Garros, Enrique Lubbe, and even Jorge Newbery reached ever greater heights and speeds in Blériots, Farmans, Nieuports, Deperdussins, Rumpler-Taubes and Morane-Saulniers. Only Castaibert was able to attain comparable market visibility in Argentina. When Castaibert's airplane won the Buenos Aires-Mendoza raid in 1916, commentators lauded his creation by emphasizing how "while airplanes of world fame like the Deperdussin, Blériot, and Morane-Saulnier could not impose themselves on the strong gusts of

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<sup>150</sup> Lucius, "La implantación de las industrias," 58.



wind...the Castaibert alone...[was] always marching forward. This proves the technical benefits of its construction.”<sup>151</sup>

Even when imports largely halted with the war, a prejudice against locally built airplanes amongst Argentine flyers seemed to persist. In 1915, a Blériot monoplane originally built in Europe cost more than the larger, two-seater Farman biplane built locally. The Aeródromo Longchamps, a vendor of such airplanes, advertised its wares as “on par with the best European [ones].”<sup>152</sup> That same year, the *Boletín del Aero Club Argentino* decried this tendency: “It is...not timely or fair to attribute to the [Argentine] devices defects that they do not really possess.” National airplanes were involved in only two of the thirteen “tragic accidents” since 1910, and responsibility lay with the “imperfection and imprudence” of the aviators, not the machines.<sup>153</sup> Nevertheless, the perceived superiority of European airplanes continued.

The only institution with sufficient funds to support the nascent Argentine aviation industry was the military. The budget of the EMA was pitifully small, a source of constant frustration for local proponents of military aviation. The budget for the Army was overall lower than other South American powers, at about nine percent of the total state budget. Nevertheless, in 1913, when the annual funding of the Army sat at just under 30 million pesos, the budget for aircraft repairs at the EMA was a measly 820 pesos.<sup>154</sup> Even when funds were allocated for new aircraft, the requirements explicitly stipulated that the aircraft be French-made, which led to the

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<sup>151</sup> “...mientras los aparatos de fama mundial como el Deperdussin, Blériot, y Morane-Saulnier no podían imponerse a las fuertes rachas de viento, el Castaibert solo...marchando siempre hacia adelante. Esto prueba las bondades técnicas de su construcción.” “El aviador y constructor nacional Sr. Pablo Castaibert,” *El Auto Argentino*, August 1916, 13.

<sup>152</sup> Advertisement for “Aeródromo Longchamps,” *Boletín del Aero Club Argentino*, September 10, 1915, 1.

<sup>153</sup> “Aparatos de fabricación nacional,” *Boletín del Aero Club Argentino*, December 10, 1915, 4.

<sup>154</sup> “El presupuesto Nacional, Cifras parciales y totales,” *La Prensa*, January 12, 1913, 11; Taravella, *Setenta años*, 15.

acquisition of Nieuport machines.<sup>155</sup> Nevertheless, the size and vibrancy of Argentine aviation, despite the lackluster support of national authorities, reflected the extent and depth of enthusiasm for flight among Argentines and the nation's immigrant communities.

The Uruguayan government proved far more receptive to locally built aircraft. Castaibert became friends with the Uruguayan military aviator Francisco Bonilla, and on June 12, 1916, the Uruguayan military offered Castaibert a position at their flight school. The Escuela de Aviación Militar also purchased four of his airplanes. In January 1917, Castaibert shuttered his operations in Villa Lugano and moved to Montevideo, where he remained for the rest of his life.<sup>156</sup>

That is not to say the Argentine state had no role in the development of national aviation. State support for the EMA, however small, helped maintain a small cadre of technical experts and flyers who would later be key players in the revitalized industry of the interwar period. Such was the case with the conscript-carpenter Domingo Traversi, who after working at the EMA later served as a carpenter for the British airline in Argentina, Compañía Rio Platense de Aviación, from 1920 to 1922 (at least).<sup>157</sup> Two names who would become central to the civilian aircraft scene for decades, the Italian Jorge Sfreddo (1889-?) and the Argentine Luis Paolini (1894-?), had built Farmans at the Aeródromo Longchamps before moving to the EMA after the collapse of that operation in 1916. They remained at the military workshops until 1920, when they decided to establish their own company, Sfreddo & Paolini.<sup>158</sup> And there were the officials who

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<sup>155</sup> "El Aeroplano 'La Argentina': Fallo de la comisión asesora," *Boletín del Aero Club Argentino*, June 15, 1912, 147-148.

<sup>156</sup> Castaibert, "Como fui piloto y constructor de mis aviones," 206; Halbritter, *Historia de la industria aeronáutica*, 120.

<sup>157</sup> EMA Letter for Recommendation for Domingo Traversi, March 22, 1918, and Compañía Rio Platense de Aviación Recommendation Letter for Domingo Traversi, November 12, 1922, both found in box varios 3, folder 3, COR, BNA.

<sup>158</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 44.

would be essential to military aircraft production and maintenance for years to come, such as Lucius, Taravella, Parasovchka, and Rielo.

The final factor that stymied local production before and during World War I was largely outside the control of Argentines. Their aircraft industry was vulnerable to the contingencies of history, and those of the technology of flight. Accidents killed mechanics, engineers, and flight instructors, and the outbreak of war in Europe encouraged many important Argentines of Italian and French descent to return to their ancestral homelands.

As discussed in chapter one, flight was an exceptionally dangerous activity in this early period, and flight instructors were not immune to the risks. In fact, it would be more surprising to encounter a practiced aviator who did not crash. Marcel Paillette had at least one accident, such as a crash landing during a raid between Buenos Aires and Rosario in 1911.<sup>159</sup> Lt. Raúl Goubat, who had been taught by Paillette in 1912, was one of the main instructors at the EMA and a highly experienced pilot. After numerous accidents, on November 11, 1914 Goubat again crashed in a Rumpler-Taube, nearly killing him. His injuries were so severe that he was forced into retirement at a young age.<sup>160</sup> The deaths of instructors sometimes resulted in the end of their schools. Such was the case when Joaquín Oytaben was killed in a crash on October 16, 1915. One year earlier, Oytaben had convinced naval officials to open their first school, the Parque Escuela “Fuerte Barragán,” but the institution did not survive the death of its founder. Five years later, naval aviation experienced another setback when the instructor Martin L. Picó, who

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<sup>159</sup> “La aviación: El accidente de Paillette,” *Caras y Caretas*, February 4, 1911, 64.

<sup>160</sup> Taravella, *Setenta años*, 45-48.

replaced Oytaben in the newly created Escuela de Aviación de la Armada en La Plata in 1916, was killed in a flight over El Palomar in January 1920.<sup>161</sup>

Mechanics and builders were also vulnerable to accidents. Mechanics flew to better understand their charges in flight, to assist pilots in the event of a breakdown (particularly for cross country flights), to promote their products, or simply because they too wanted to learn to fly. In the process, they put themselves at significant risk. Ambrosio Taravella recalled the benefits of seeing an airplane in flight when he first took off as a passenger. Yet he was later almost killed in a bad accident with Raúl Goubat. When the plane came grinding to a halt on the ground, Taravella realized his clothes were soaked in gasoline. By a stroke of luck, the airplane did not catch fire before both men managed to extricate themselves from the wreck.<sup>162</sup> Paul Castaibert had many close calls, including during the same weather event that doomed Origone. In the subsequent years, the number of engine failures and emergency landings by the intrepid aircraft builder reported in *La Prensa* was almost laughable.<sup>163</sup> Castaibert was clearly an extremely skilled—and lucky—pilot.

The first loss to the airplane industry was that of Lorenzo Eusebione, a student of Castaibert. Eusebione had been an important supplier of metal components for aircraft and hoped to develop an 80 hp. engine which Castaibert could use in his planes. But on January 26, 1913, shortly after the death of Lt. Origone, Eusebione was killed in an accident.<sup>164</sup> Ambrosio

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<sup>161</sup> Curiously enough, naval officials had been convinced to open a naval aviation school after Oytaben crashed Antonio Guido Borello's *El Colorado* into the cruiser "General Belgrano" on May 25, 1914. Thus accidents on rare occasions created institutions instead of destroying them. Biedma Recalde, *Crónica histórica*, vol. 2, 257-261, 264-269.

<sup>162</sup> Taravella, *Setenta años*, 45-46.

<sup>163</sup> See, for example, "Las pruebas de ayer," *La Prensa*, May 24, 1912, 15; "Volación militar," *La Prensa*, February 8, 1913.

<sup>164</sup> "Las tragedias de aviación: Origone y Eusebione," *Boletín del Aero Club Argentino*, February 1913, 233.

Garagiola, the head mechanic of the EMA, died doing aerial demonstrations in Brazil in 1915.<sup>165</sup> Francisco A. Beltrame, another important mechanic at the EMA, was killed in an aircraft accident at Longchamps on October 16, 1915. Luis Abel Pardo, a mechanic at the Compañía Aérea Argentina and for the prominent ACA pilot Julio Crespo Vivot, was also killed in an accident in 1916. From 1919 to 1949, nine more mechanics died in crashes, depriving the Argentine aviation community of their knowledge and skills.<sup>166</sup>

Mechanics did not have to be killed to leave the industry. Antonio G. Borello, the builder mentioned earlier, retired from aviation after a bad crash in late 1914, and the Uruguayan aircraft maker Francisco Eduardo Bonilla left the industry for the same reason in 1916.<sup>167</sup> But of even greater consequence for the Argentine aviation industry were the departures of Noni and Castaibert. Gerardo Noni retired from building airplanes after the death of his friend Luis Abel Pardo in 1916. Castaibert permanently ended his aviation activities after his friend Juan Manuel Boiso Lanza, the director of the Uruguayan military flight school, was killed in an accident in August 1918.<sup>168</sup>

Of course European and North American plane builders and mechanics faced the same risks, often resulting in deaths or premature retirements. One famous case for the US was the death of Lawrence Sperry, the son of Elmer Ambrose Sperry, who had started the Lawrence Sperry Aircraft Company. Sperry died in an accident over the English Channel in December 1923, which also ended the independence of his company.<sup>169</sup> But for the most part, European and US aircraft manufacturers had sufficient depth of expertise to weather the contingencies of flight.

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<sup>165</sup> “Otra víctima: La muerte de Ambrosio Garagiola,” *Boletín del Aero Club Argentino*, March 1, 1915, 13.

<sup>166</sup> Biedma Recalde, *Crónica histórica*, vol. 2, 68-69.

<sup>167</sup> Halbritter, *Historia de la industria aeronáutica*, 62, 76.

<sup>168</sup> *Ibid.*, 120, 144.

<sup>169</sup> Thomas P. Hughes, *Elmer Sperry: Inventor and Engineer* (Baltimore: Johns Hopkins University Press, 1971), 322. The Lawrence Sperry Aircraft Company was absorbed by the Sperry Gyroscope Company shortly after Lawrence’s death.

The Société Anonyme des Etablissements Nieuport managed to survive the deaths of both of the company's founders, Edouard de Niéport and his brother Charles in 1911 and 1913 respectively.<sup>170</sup> The Argentine aviation community was so small that every death or retirement had a chilling effect, often ending companies and flight schools.

The final form of contingency was a constant problem faced by the local economy. Argentina benefitted greatly from the migration of millions of Europeans to its shores. As seen earlier, they facilitated the transfer of technological knowledge, skills, and capital at a low cost for local firms and the government. Yet immigrants were also inclined toward returning to their home countries when they had made enough money. According to *Anuario Geográfico*, 47 percent of immigrants returned to their country of origin between 1857 and 1930.<sup>171</sup> World War I caused a particularly pronounced wave of such reverse migrations, especially in the aviation community. Tens of thousands of Italian and French immigrants in Argentina returned to Europe to support their home countries. The Italo-Argentine community was particularly affected, as the Italian War Ministry sent thousands of draft notices to their diaspora abroad.<sup>172</sup> Among the most prominent Argentines in the aviation community to depart for Europe were Baron Antonio de Marchi (see chapter one), the civilian flight instructor Ruggero Franzoni, the mechanic-aviator Bernardo Artigau, the mechanic-aviator Hiram Jaïam, the EMA mechanic Cristóbal Vichi, the soon-to-be famous aviator Vicente Almandos Almonacid, Marcel Paillette and Edmundo Marichal.<sup>173</sup> Some would find great renown fighting in the skies over Europe; Almonacid won

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<sup>170</sup> Kenneth Munson, *Pioneer Aircraft, 1903-1914* (New York: Macmillan, 1969), 150-151.

<sup>171</sup> Cited in Pineda, *Industrial Development*, footnote 47, 55.

<sup>172</sup> Devoto, *Historia de los italianos*, 318-327.

<sup>173</sup> "Argentinos en la guerra," *La Prensa*, September 27, 1915; "El Barón de Marchi en Italia" and "El Piloto Franzoni," *Boletín del Aero Club Argentino*, November 10, 1915, 4, 11; Halbritter, *Historia de la industria aeronáutica*, 72, 129, 152.

the prestigious French Croix de Guerre in 1915.<sup>174</sup> Others died, either in accidents or in combat, such as Hiram Jaian who was killed in 1918.<sup>175</sup> Still more never returned to Argentina, including Vichi and Franzoni.<sup>176</sup> Lastly, the war diverted investment away from Argentine aviation as immigrant communities instead supported their mother countries. In one such case, the British-Argentine community donated two aircraft to the RAF in 1915.<sup>177</sup>

### **The Return of the Europeans: The Post-War Aviation Boom in Argentina**

Yet, the war had created opportunities for the formation of new networks in the international aviation community. Argentines who served abroad often led European aeronautical missions to Argentina, brought back aircraft, or simply returned with new skills. The Navy had sent a contingent of aviators to train at the US Naval Station at Pensacola, who then served on naval combat patrols for the US, Britain, and Italy in 1918.<sup>178</sup> Furthermore, the Argentine aviation community had installed a more formal network of air attaches in the allied countries, who coordinated the acquisition of new aircraft and arranged postings for their personnel.<sup>179</sup>

With the end of hostilities came a race to acquire the aircraft and engines to revitalize South American aviation. Nowhere was this competition more dramatic than in the rivalry between Argentina and Chile over who would be the first to cross the Andes. Technically, the

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<sup>174</sup> “Vicente Almandos Almonacid,” *Boletín del Aero Club Argentino*, December 10, 1915, 4; “Argentinos en la guerra,” *La Prensa*, September 27, 1915.

<sup>175</sup> Biedma Recalde, *Crónica histórica*, vol. 2, 262.

<sup>176</sup> At least their names are never found again in the source material.

<sup>177</sup> “Another Airplane from the Argentine,” *Flight*, December 3, 1915, 938.

<sup>178</sup> Biedma Recalde, *Crónica histórica*, vol. 2, 270.

<sup>179</sup> Whereas before WWI there is no mention of officials posted abroad for aviation purposes, after the war there were numerous reports of Argentine aviation personnel in England. “Low Parachute Diving,” *Flight*, May 20, 1920, 557; “The Air Conference, 1920,” *Flight*, October 14, 1920, 1074; “Air Minister’s Lunch to Foreign Attachés,” *Flight*, December 25, 1924, 804.



Figure 2.12. Candelaria and the Morane-Saulnier used to cross the Andes. Biedma Recalde, *Crónica histórica*, vol. 2, 80.

first crossing of the *Cordillera* was achieved by the Argentine Lt. Luis C. Candelaria on April 13, 1918. Candelaria decided to avoid the most difficult—and prestigious—route across the world’s second highest mountain chain, that between Mendoza, Argentina and Santiago, Chile. Instead, he made his historic flight further south, near Neuquén, where the minimum altitude to clear the passes was 3,500 meters (11,483 feet). The mountain pass between Mendoza and Santiago required clearing Uspallata and Cristo Redentor passes, demanding an altitude of at least 5000 meters (16,404 feet). Candelaria crossed the *Cordillera* in an outdated Morane-Saulnier-LeRhône 80 hp., which made his feat all the more amazing.

Despite Candelaria’s achievement, Chilean and Argentine aviators still dreamed of being the first to make the trip between Mendoza and Santiago, which would presage air service between the two countries. But the pre-war motors both nations had in stock were simply incapable of making the crossing. Rotary engines such as the Gnome and LeRhône 50/80/90 hp. lost fifty percent of their power at an altitude of 5000 meters.<sup>180</sup> Jorge Newbery had traveled to Europe twice in 1913 in search of a motor capable of the journey. Although he returned with a

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<sup>180</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 145.



specially modified LeRhône 80 hp., neither he, nor anyone else after his death, could reach the needed altitude.<sup>181</sup>

As hostilities drew to a close in 1918, both countries immediately sought to import more powerful motors. In the end, Chile came out ahead. The British government had confiscated a Chilean-ordered warship, the dreadnought *Cochrane*, which had been under construction in a British dockyard when the war broke out. As compensation for the vessel, the British sent twelve Bristol-LeRhône 110 hp. aircraft to Chile. Using one of those airplanes, Lt. Dagoberto Godoy made the first crossing between Santiago and Mendoza on December 12, 1918, reaching an altitude of 5,100 meters (16,732 feet).<sup>182</sup> This first influx of European machines was a harbinger of the years to come. Soon, European machines and aviators came flooding into South America.

As soon as peace returned, Europeans began disseminating the lessons learned during the war to nations around the world. In Argentina, this first meant a revolution in flight training. On March 2, 1919, British Major Frank P. Scott arrived at El Palomar with an Avro 504K-Gnome 100 hp. biplane. Scott was on his way to Uruguay and then Chile, where he had been contracted to improve flight training at their military flight school.<sup>183</sup> He brought with him a new training technique developed during the war in England called the “Gosport Method,” after the airfield where it was first put into practice.

In 1916 and 1917, the British air forces were renowned for their aggressiveness on the Western Front. While France and Germany largely used defensive tactics, English pilots had aggressively pursued enemy planes over enemy lines. The result was particularly high attrition

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<sup>181</sup> Taravella, *Setenta años*, 51-52.

<sup>182</sup> “Aviation in Parliament. Gift of Aeroplanes to Chilean Government.” *Flight*, July 11, 1918, 777; Biedma Recalde, *Crónica histórica*, vol. 1, 147-8.

<sup>183</sup> Julio Víctor Lironi, *Misiones aeronáuticas extranjeras 1919-1924: beneficios y consecuencias de su proceso en la evolución de la aviación militar y civil en nuestro país* (Buenos Aires: Instituto Argentino de Historia Aeronáutica Jorge Newbery, 1980), 15-16.

among their air crews, and training was not keeping pace with the losses.<sup>184</sup> Thus in December 1916, Col. Robert Smith-Barry began work at the Gosport airfield to develop a better method of instruction, in order to produce more—and better trained—pilots. By October 1917, his new method had solidified, which he published in a pamphlet, “General Methods of Teaching Scout Pilots.” What became known as the “Gosport Method” had two major innovations. The first was the use of a “Gosport tube” audio device which enabled the pilot and pupil to communicate during a flight. No longer would discussion of events in the air have to wait until after the flight. This naturally improved and streamlined instruction. Second, Smith-Barry advocated for pilots to purposely perform dangerous maneuvers in training, such as loops, spins, and side-slips to landings.<sup>185</sup> Earlier methods, such as the French-style in use in Argentina and Chile before 1919, largely avoided these maneuvers, instead teaching pilots how not to get into such dangerous situations.<sup>186</sup> Smith-Barry believed students needed to confront these risks head on, and that pilots would in turn gain greater proficiency over their aircraft, as well as confidence.<sup>187</sup>

Smith-Barry’s “Gosport Method” proved a success and soon it was being used in dozens of countries.<sup>188</sup> Major Scott transplanted the method to both Argentina and Chile, who would use it until at least the 1930s.<sup>189</sup> The Avro 504K biplane was also an enduring feature of interwar flight training. The two-seater aircraft had dual controls and the all-important “*tubo acústico*” [acoustic tube] which enabled in-flight communication.<sup>190</sup> It was also a stable and reliable

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<sup>184</sup> Morrow, Jr., *The Great War*, 196, 273.

<sup>185</sup> “Robert Smith-Barry,” *Flight*, May 5, 1949, 541.

<sup>186</sup> Mosconi, “Aeronáutica,” 36.

<sup>187</sup> Robert Smith-Barry, “General Methods of Teaching Scout Pilots,” October 1917. Or at the very least, confronting such maneuvers early on would weed out students unsuitable for combat flying.

<sup>188</sup> Morrow, Jr., *The Great War*, 238.

<sup>189</sup> Scott was still employed by the Chilean military three years later in 1922. “Eleva proyecto inquisitos Piloto Militar,” January 25, 1922, vol. 3, SA, ARNAD; Mosconi, “Aeronáutica,” 36; Biedma Recalde, *Crónica histórica*, vol. 1, 204-205.

<sup>190</sup> Ángel María Zuloaga, “Escuela Corriente,” *Boletín de Informaciones del Servicio Aeronáutico del Ejército*, January 11, 1922, 3.

machine with great handling and performance. Avro and “Gosport” instruction helped initiate a major shift in Argentine aviation away from French methods and machines to British ones. Another important factor, though, was that Argentina simply had more British currency than French to pay for the importation of such machines.<sup>191</sup>

The transfer of new flight instruction techniques reveals a pitfall in the movement of knowledge and skill that flowed so easily prior to World War I: such circulation does not automatically engender innovation, a key aspect of technological “core competency” in adopter firms and nations.<sup>192</sup> Why did Argentines not create their own improved flight instruction methods? Two reasons come to the fore. First, the conditions that fostered such innovation in Europe were not occurring in Argentina. Argentina was not engaged in a titanic war that demanded unprecedented investment in blood and treasure in aviation. The state had no incentive to pour anything even remotely close to the estimated 2.2 billion francs France invested in military aviation during the war.<sup>193</sup> It did not need to develop a way to train thousands of pilots quickly due to the horrific attrition in aerial combat. Second, new knowledge was tied to new objects. As Europeans invested funds in military aviation and improved their aircraft, so too did the methods for flying and training for such machines. The “Gosport” method was contingent on the “Gosport tube” and the Avro 504K, two technologies derived from the British experience in World War I. As shown throughout this chapter, innovation in aircraft was particularly difficult for Argentine builders due to the costs, small market, and dangers of testing new designs. Furthermore, once the war ended, new war-surplus models arriving on Argentine shores flooded the local market, chilling the drive for independent innovation in Argentina.

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<sup>191</sup> Mosconi, “Aeronáutica,” 36.

<sup>192</sup> Pineda, *Industrial Development*, 56.

<sup>193</sup> Morrow, Jr. *The Great War*, 375.

While the British ended up dominating Argentine aviation in the 1920s, the Italian and French governments certainly tried to develop a market abroad. Both nations created “aeronautical missions,” often with Argentines at their heads, to travel to South America. They went with their own aviators, mechanics, and machines. The missions were sent to find customers for the vast quantities of war surplus aircraft. In France alone, more than 8,000 airplanes and 11,000 engines were sitting disused in government warehouses. The French War Ministry elected to liquidate its stocks by selling units at 60% of their original price.<sup>194</sup> France sent official missions to Argentina, Brazil, Japan, Peru, Poland, Finland, Serbia, Czechoslovakia, and Turkey, with one such mission costing 100,000 francs, not including donated aircraft. Italy also sent missions to Argentina, Brazil, Ecuador, Spain, and the Scandinavian countries.<sup>195</sup> The Italian mission to Argentina alone cost 574,200 pesos to organize, and nearly 40,000 pesos for each of the six months it remained there. The Italians arrived first in March 1919, led by Baron Antonio de Marchi, and returned to Italy in September that year. The French mission, which included Almonacid, arrived in September 1919 and remained in Argentina until February 1920.

The Argentine flight community certainly benefitted from the influx of aviators and machines. Argentines were again flocking to local airfields to see the intrepid young military flyers from France and Italy. They were a source of great pride for their respective immigrant communities. Thousands greeted the steamers that delivered the missions to Buenos Aires.<sup>196</sup> They brought Italian Ansaldo SVA, Aviatik (SAML) and Caproni aircraft, and French Spads, Breguets, and Nieuports with Renault, Lorraine, and Hispano-Suiza engines capable of 120 hp.

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<sup>194</sup> Morrow, Jr., *The Great War*, 357.

<sup>195</sup> “Civil Aviation-October, 1919, to March, 1920,” *Flight*, August 12, 1920, 893, 913; “Civil Aviation Abroad,” *Flight*, December 18, 1919, 1625.

<sup>196</sup> “Regreso de reservistas italianos y llegada de la misión de voladores: Entusiasta recepción de los viajeros en la dársena norte,” *La Prensa*, March 14, 1919, 8; “Volación: El homenaje en honor de la misión italiana,” *La Prensa*, August 10, 1919, 12; “Llegada de la misión francesa—Elocuentes manifestaciones, Ovaciones del público al capitán Almonacid,” *La Prensa*, September 21, 1919.

to 350 hp., among other machines. Some of the missions' personnel chose to remain in Argentina, establishing new aviation enterprises such as the Escuela Ítalo-Argentina de Aviación and the short-lived Compañía Franco Argentina de Aviación.<sup>197</sup> The donation of Italian seaplanes enabled the reestablishment of the naval air arm, which had lain dormant since May 1918 due to lack of flight materiel.<sup>198</sup> Two Italian mission mechanics, Mario Mariuzzo and Aurelio Neri, worked for the new Argentine naval flight school.<sup>199</sup> Civilian European aviators also established new institutions, most notably the Centro Pro Aviación Civil, founded in December 1919 entirely by foreigners, which would be at the heart of civil aviation until the 1930s.<sup>200</sup>

Yet this revitalization of Argentine aviation also had the effect of crushing any hopes for local industry. The inflow of war-surplus airplanes amounted to trade dumping, as Argentine producers could not hope to compete with the low prices offered by the European governments and manufacturers.<sup>201</sup> The only major builder of the pre-war period to restart operations in Argentina, Edmundo Marichal, simply opened an aviation supply company using connections he had made in France, never again to make his own airplanes.<sup>202</sup> Col. Enrique Mosconi wrote in 1920 that "In our country the aeronautical industry does not exist."<sup>203</sup> The same dependencies that existed before the war still plagued Argentine aviation. Edmundo Lucius lamented in 1922 that "Regarding raw materials and accessories for motors, we will [continue to] be... tributaries

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<sup>197</sup> Lironi, *Misiones aeronáuticas extranjeras*, 18, 50-51.

<sup>198</sup> Biedma Recalde, *Crónica histórica*, vol. 2, 269.

<sup>199</sup> Lironi, *Misiones aeronáuticas extranjeras*, 43.

<sup>200</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 182.

<sup>201</sup> Notably, this was a problem in the US too, as the inflow of European aircraft hurt the already inflated North American aviation industry. *Flight*, July 1, 1920.

<sup>202</sup> Marichal maintained a warehouse in Paris stocked with engines and replacement parts for sale in South America. Edmundo Marichal & Cía, Letter to the Director de la Escuela Militar de Aviación del Chile, February 18, 1923, n.p., vol. 5, SA, ARNAD; Halbritter, *Historia de la industria aeronáutica*, 129.

<sup>203</sup> Mosconi, "Aeronáutica," 51.

to foreigners, because the metallurgical industry and precision mechanics have not yet been undertaken in an industrial manner.”<sup>204</sup> Materials that had to be procured abroad included “wires, steel cables, aluminum, copper and steel tubes, aluminum, bronze and steel sheets, bolts, varnishes, on-board equipment, rubber articles, [and] electrical materials...”<sup>205</sup>

The Chilean military air arm also found itself struggling with dependency after World War I, despite having a far more developed mining sector. Officials needed to order engines, replacement parts, radiators, rubber materials, steel cabling, and specialized chemicals from abroad.<sup>206</sup> By 1922, flight operations were hampered by the number of motors out of service awaiting replacement parts from Europe. Mechanics had calculated that 60 percent of their motors required new parts after 300 hours of service.<sup>207</sup> The introduction of wireless telegraphy to airplanes also created new dependencies. Local technicians proved unable to troubleshoot problems with wireless equipment imported from abroad, requiring foreign expertise.<sup>208</sup> Furthermore, Chilean officials discovered that the motors currently used were not powerful enough to run the alternators needed to power wireless kits in flight. Consequently, new engines had to be purchased abroad.<sup>209</sup> Lastly, when one of their SVA aircraft refused to cooperate with

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<sup>204</sup> “En lo referente a materia prima y accesorios para motores, serenos [seremos?], como hoy por mucho tiempo, tributarios del extranjero, porque las industrias metalúrgicas y la mecánica de precisión no se han emprendido aún en forma industrial.” Lucius, “La implantación de las industrias,” 61.

<sup>205</sup> Lucius, “La implantación de las industrias,” 60.

<sup>206</sup> Dirección de Aeronáutica Militar, Sección Maestranza, Letter to the Inspección General de Aviación, August 12, 1922, vol. 3, SA, ARNAD; “Relación de las especies que es necesario pedir con urgencia en el extranjero,” October 24, 1922, vol. 3, SA, ARNAD; Dirección de Aeronáutica Militar, Sección Maestranza, “Lista de consumos y repuestos que se solicitan con urgencia para ser pedidos por cable,” November 20, 1922, vol. 3, SA, ARNAD.

<sup>207</sup> Dirección de Aeronáutica Militar, Sección Maestranza, “Estado de los motores de cargo en la sección maestranza en la fecha,” October 27, 1922, vol. 3, SA, ARNAD; Dirección de Aeronáutica Militar, Sección Maestranza, Letter to Dirección de Aeronáutica Militar, November 30, 1922, vol. 3, SA, ARNAD.

<sup>208</sup> F. Montenegro Figueroa, Title page missing, Report on wireless telegraphy, 76-78, vol. 2, SA, ARNAD.

<sup>209</sup> Escuela de Aeronáutica Militar de Lo Espejo, Letter to the Inspector General de Aviación, April 20, 1922, vol. 3, SA, ARNAD.

Chilean mechanics, the plane and a local technician had to be dispatched to Italy to find a solution.<sup>210</sup> Dependency was alive and well in the postwar Southern Cone.

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Connections to Europe reenergized aviation in Argentina and Chile after World War I, but local activities were still reliant on foreign manufacturers. This would be a growing problem in the minds of some Argentine military authorities who wondered what would happen if war cut off access to foreign suppliers once again. Figures like Col. Enrique Mosconi and Edmundo Lucius decried the nation's dependence on foreigners. Their concerns would find a far more receptive audience as the interwar period progressed. More and more Argentines believed that the liberal era before World War I may have transformed Argentina into the most prosperous nation in Latin America, but it was failing to produce the wealth and development similar to the industrial countries of the north. To truly meet Argentina's potential as a "United States of South America,"<sup>211</sup> the government would need to take on new interventionist roles in the economy. Civilian and military proponents of national aviation saw the advancement of a local airplane industry and commercial air service as one way to facilitate industrialization and development from Buenos Aires to the fringes of Patagonia. Seven years after Mosconi declared that "In our country the aeronautical industry does not exist," the cornerstone of the state's first aircraft factory and aviation laboratory was laid down in Córdoba. It would be Argentina's first significant effort to overcome dependency in aviation and to realize the dreams long promised by the "conquest of the air."

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<sup>210</sup> Although such detailed documentation—to my knowledge—does not exist for Argentina during this time period, they likely faced that same problems in supplying military aviation.

<sup>211</sup> Rocchi, *Chimneys in the Desert*, 4.

Part II

Interwar Aviation

1920-1940



### Chapter 3

#### **Heroic Aviation, Gender, and Biological Fitness for Modernity, 1920-1940**

*“Rasga el papel del cielo un aeroplano;  
es el hombre que va a buscar a Dios  
para volcarle, audaz, en el oído  
una palabra: “Civilización”...*

“An airplane tears the paper of the sky;  
it is the man who goes to seek God  
to tell Him, boldly, into His ear  
one word: “Civilization”...

*A ti vayan mis gracias, aeroplano,  
pájaro amigo de la libertad,  
por quien alzamos la cabeza al cielo,*

To you go my thanks, airplane,  
friendly bird of freedom,  
for whom we lift our heads to the sky,

*por quien sentimos casi un mismo afán  
todos los hombres de dejar la tierra  
y volar y volar...”*

for whom we feel almost the same desire  
[of] all men to leave the earth  
and fly and fly...

Excerpt from “Pasa un aeroplano” by César  
Tiempo, *El Hogar*, May 22, 1925, 33.

On sunny fall day in early April 1920, Argentines gathered for a celebration little seen in their country since the death of Jorge Newbery in 1914. Thousands of men, women, and children lined the Avenida de Mayo and Plaza del Congreso in downtown Buenos Aires. They waited in eager anticipation to catch a glimpse of day’s three heroes: Capitan Pedro Zanni, Capitan Antonio Parodi, and Lieutenant Marcos Zar. When the aviators were spotted walking down the avenue, “the crowd cheered enthusiastically... and from balconies, female hands threw in their wake a veritable shower of flowers.” The journalist for *Caras y Caretas* wrote that for the “young soldiers” the acclamation was a “most beautiful and worthy compensation for the wonderful effort made for the glory of national aviation.”<sup>1</sup>

The previous month, the three aviators had independently conducted the first great international “raids” since Teodoro Fels crossed the Rio de la Plata in 1912. The Army pilots Zanni and Parodi had completed the first double crossings of the Andes without landing in

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<sup>1</sup> “El Homenaje Popular Tributado a los aviadores Zanni, Parodi y Zar,” *Caras y Caretas*, April 3, 1920, 40-1.

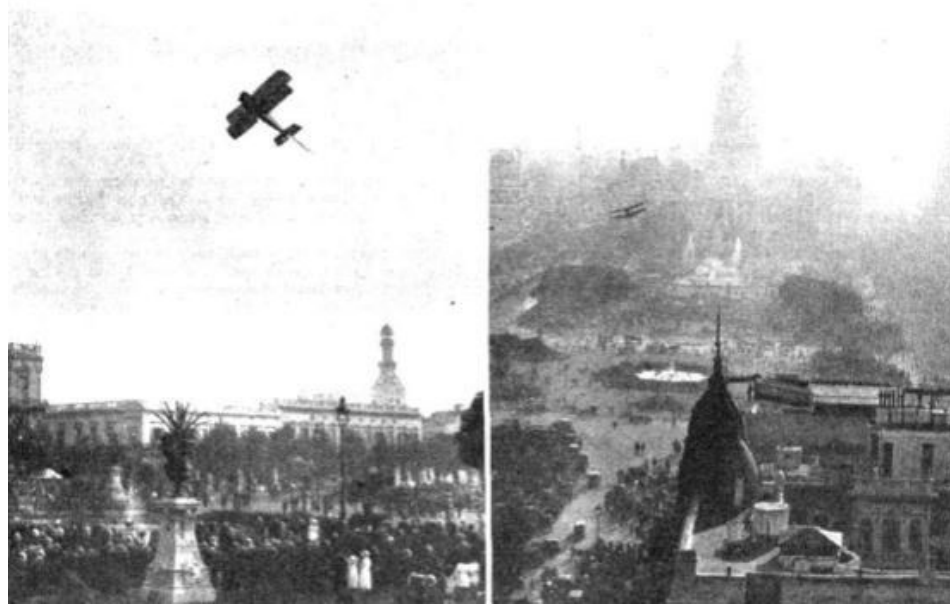


Figure 3.1. Images from the aerobatics show after the parade. *Caras y Caretas*, April 3, 1920, 41.

Santiago to refuel. *Caras y Caretas* declared the feat “a triumph” that “highlights the degree of advancement and expertise that [our] pilots... have achieved.” When Zanni first returned to Buenos Aires, he was greeted with a “delirious ovation.”<sup>2</sup> Shortly afterward, their naval comrade Marcos Zar flew in an Italian flying boat from Buenos Aires to Asunción, Paraguay in twelve long hours.<sup>3</sup> With their burst of activity, the three military men had renewed the “Heroic Age” of aviation in Argentina.

Twenty years later on April 22, 1940, another crowd gathered to celebrate a great aviator at the Sixth of September airport outside Buenos Aires. So many people showed up at the field that traffic ground to a halt. Police and military personnel had to be called in for crowd control. The national press had been tracking Carola Lorenzini’s month long raid to all fourteen Argentine provinces. As Lorenzini finally arrived over the airfield in her Argentine-made Focke-Wulf biplane, she conducted a series of dramatic aerobatic maneuvers to thrill her admirers.

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<sup>2</sup> “Los Andes son cruzados por el capitán Pedro Zanni,” *Caras y Caretas*, March 27, 1920, 35-6.

<sup>3</sup> “El Teniente Marcos Zar en Asunción,” *Caras y Caretas*, April 3, 1920, 4.



Figure 3.2. Lorenzini waving to the crowd. *La Prensa*, April 22, 1940.

Upon landing, the crowd surged around her airplane. *La Prensa* newspaper reported “The little girl Evoé Costa Alvarez, daughter of the aviator with that surname, gave a bouquet of flowers to Miss Lorenzini, who had to lend herself to sign many autographs for various [female] admirers.”<sup>4</sup>

Although none that day knew it, Lorenzini’s raid marked the end of the Heroic Age of aviation in Argentina. The twenty-year span from 1920 to 1940 represented the apex of popular enthusiasm for flight and aviators. The great pilots who risked life and limb to complete significant raids were almost universally hailed as heroes, as examples for their countrymen to emulate.

The Heroic Age of aviation was a global phenomenon. Distance, altitude, and speed records were being shattered on a monthly basis. Whereas before and during World War I pilots could achieve lasting fame by flying over a mountain chain or between regional cities, aviators

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<sup>4</sup> “Una Crecida Cantidad de Público Recibió Ayer en Seis de Septiembre a la Aviadora Carola Lorenzini,” *La Prensa*, April 22, 1940.

were now conquering oceans and continents on their great raids. Soon most nations had a famous local aviator to idolize. For the North Atlantic countries, this era began with British Captain J. Alcock and Lieutenant A. Whitten-Brown's direct flight from Newfoundland to Ireland in 1919 and culminated in Charles Lindbergh's solo Atlantic crossing in May 1927. Aviators like Lindbergh were held up as ideal members of their nations, races, and humanity as a whole. Their heroic acts were examples for their countrymen to follow if the promises of progress were to be realized.

In Argentina, the events of the Heroic Age of aviation were a simultaneous source of inspiration and anxiety. Popular media, from general interest magazines to children's publications, increasingly used pilots and airplanes in titillating stories of adventure and danger. In these stories, the airplane was a tool of exploration, escape, and dominance. Readers learned that with flight came power, especially over those that lacked wings. Such narratives seemed to be confirmed in the real world. In the popular perception heroic flights of daring aviators were a new benchmark with which to measure national capability and biological fitness.

Interwar Argentina was deeply immersed in the international fixation on ostensibly scientific notions of race and eugenics. Government officials, medical elites, and intellectuals all expressed consistent anxiety that the national "race" was at risk of "degradation" due a myriad of factors such as unrestricted immigration, poor hygienic practices, and even the velocity and chaos of modern life itself. New medical and scientific concepts of public health, criminology, and eugenics were marshaled by authorities to control the negative "social pathologies" threatening the Argentine national "body."

These biological and racial discourses were profoundly gendered. Public health officials, policymakers, and intellectuals intensely debated the biological capabilities of men and women,

and how such concerns should steer the future of masculinity and femininity in their society. The rapid material and social transformation of the early twentieth century convinced many commentators that Argentine men needed unprecedented levels of energy and willpower to contend with the velocity of modern life. The performance of the male heroic pilots was thus cast in the light of this persistent anxiety about the biological fitness of Argentine men for the dawning mechanical age.

The historiography of modern Argentina has generally focused on the perceived *negative* physical and psychological qualities elites and the state sought to mitigate through public health, criminal justice, and other forms of social control.<sup>5</sup> The hero aviator, on the other hand, represented a clear example of the *positive*, or normative, qualities men needed to succeed in the new technologized world. Heroic aviators were believed to have tremendous reserves of physical and emotional energy and willpower—all ingredients deemed essential for modernity.

The narratives around women pilots proved much more contentious. The prevailing wisdom concerning the biology of women claimed they were incapable of sustaining the energy and strength required by flight. When an international profusion of female pilots undermined this argument, most Argentine intellectuals maintained that women had a duty and “natural” predisposition to uphold the moral and spiritual qualities of the nation. They thus had a moral obligation to stay out of the cockpit and in the home. Nevertheless, the pressures of modernity seeping in from the North Atlantic created a small window of opportunity for the *aviadora*. Women like Carola Lorenzini could be celebrated for their technological feats, but only because they were extraordinary in the eyes of the public and press. By the end of the Heroic Age of

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<sup>5</sup> A major exception has been research on “matrimonial eugenics” in the region, especially in Stepan, *The House of Eugenics*,” chapter four. For the history of social control, public health, and Argentina, see dissertation introduction, footnote 32.

aviation, the media had enshrined this selective incorporation of feminist ideas and images as a core tenet of a uniquely Argentine form of progress.

This chapter will investigate why the Argentine people were so transfixed by and invested in heroic aviation—in essence—what meaning they ascribed to *aviadores*, *aviadoras*, and their great raids in popular culture. It will first chronicle the postwar boom in aviation activity and enthusiasm before delving into the feats of Argentina's great male aviators and their representations in the popular media. In the second half, I will investigate the cultural associations around women pilots as an incarnation of *la mujer moderna* [the modern woman] in the Argentine popular imagination.

In the midst of tremendous social and technological change, Argentines were asking themselves deep questions about what it meant to be a proper man and woman. They projected these self-interrogations onto their *aviadores* and *aviadoras*: Who could or should be a pilot? What made them great? Do we have what it takes to thrive in the recently-dawned technological age? The answers—it seemed to many—were written in the sky.

### **Popular Culture and the Post-War Aviation Boom**

Within months of the armistice, European aviation missions from Britain, Italy, and France began arriving in Buenos Aires to celebrate their victory, to highlight the contributions of Argentines who had enlisted in the Allied forces, and to sell war surplus aircraft. The *Misión Aeronáutica Italiana* [Italian Aeronautical Mission] was the most influential due to its size, lasting influence on local aviation institutions, and connection to the large Italian immigrant community. Thousands of Italians and Argentines gathered to greet the Italian Mission when they arrived on March 13, 1919. Local Italian committees, associations, and mutual aid societies

organized dozens of banquets, dances, and festivals to celebrate the flyers. Italian aviators participated in military parades and conducted spectacular aerobatic displays over Buenos Aires.<sup>6</sup>

Italian Lt. Antonio Locatelli (1895-1936) was the first mission aviator to win headlines and public laurels. Locatelli was a renowned Italian war “as” [ace]. On July 30, 1919, Locatelli flew directly from Santiago de Chile to Buenos Aires, over the *Cordillera*, in an Ansaldo SVA 10 in seven hours.<sup>7</sup> Hundreds showed up at El Palomar airfield outside Buenos Aires to greet the “heroic pilot” who had “[honored] his country and his race.”<sup>8</sup>

One year later, the French “aviatrix” Adrienne Bolland (1895-1975) arrived in Argentina to attempt her own crossing of the Andes in a light sport aircraft. Bolland, then at the tender age of twenty-three, had already secured the women’s world altitude record and had done a double crossing of the English Channel. The national press was incredulous when she announced her intention to fly from Mendoza to Santiago in an underpowered Caudron G.3 biplane. On April 1, 1921, Bolland became the first woman to make the flight over the Andes, stunning the world and Argentine public. Upon her return to Buenos Aires, she received a hero’s welcome. Bolland was featured on advertisements (see fig. 3.3) and was the headline event for dozens of social occasions in Chile, Argentina, and Brazil. *Caras y Caretas* magazine declared “Mlle. Bolland has elevated the value of the female sex; her admirable feat has all the characteristics of the marvelous.”<sup>9</sup>

The Argentine public was inspired by the feats of Locatelli, Bolland, and the aforementioned Zanni, Parodi, and Zar. Men, women, and children sent letters to popular

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<sup>6</sup> Untitled, *Caras y Caretas*, May 31, 1919, 39.

<sup>7</sup> Lironi, *Misiones aeronáuticas extranjeras*, 34-6.

<sup>8</sup> Untitled, *Caras y Caretas*, August 16, 1919, 33. Locatelli was eventually killed during combat operations over Ethiopia in 1936. Lironi, *Misiones aeronáuticas extranjeras*, 34.

<sup>9</sup> “Mlle. Bolland ha enaltecido el valor del sexo femenino; su admirable hazaña tiene todos los caracteres de lo maravilloso.” “Mlle. Bolland cruza los Andes en aeroplano, un maravilloso rasgo de audacia,” *Caras y Caretas*, April 9, 1921, 37.



Figure 3.3. Bolland featured in an engine oil advertisement. *Caras y Caretas*, May 7, 1921, 120.

magazines hoping that their great aviator heroes would find success. Many girls and women wrote in that their “greatest happiness” would be to marry a handsome aviator. Others were more modest in their aspirations, dreaming of a flight with a great aviator; María Elena Melli wrote in that “My greatest happiness would have been to have crossed the Andean peaks in the company of the intrepid Italian flyer Lt. Locatelli, whose great feat recently carried out is the most glorious page... [of] flight in Argentina.”<sup>10</sup> But above all, men, women, and children wished they too could take to the air and win the adulation of their countrymen. In frequent appeals to patriotism,

<sup>10</sup> María Elena Melli, “La página de los lectores,” *Mundo Argentino*, September 3, 1919, n.p.





Figure 3.4. The caption reads: “The best tribute.” Cover, *Mundo Argentino*, August 21, 1929.

they dreamt of giving “one more laurel to Argentine history.”<sup>11</sup> Many children, when asked what they would like to be when they grow up by the magazine *Billiken*, responded with a variation on “an aviator like the brave Locatelli” or “a heroic *aviadora*.”<sup>12</sup>

The prominence of pilots was approaching its zenith in Argentine society. Over the next decade, celebrity pilots would be mobbed by ever greater crowds, even as flight as a sport and elite activity rapidly declined in the second half of the 1920s (see chapter four). Men and women flocked to airfields to see famous flyers. They held social gatherings to honor them and raised

<sup>11</sup> Valiente Argentina, “La página de los lectores,” *Mundo Argentino*, April 28, 1920, n.p.

<sup>12</sup> “Qué quiere Vd ser cuando sea grande?” *Billiken*, March 29, 1920, 15; “Qué quiere Vd ser cuando sea grande?” *Billiken*, April 5, 1920, 9; “Qué quiere Vd ser cuando sea grande?” *Billiken*, April 26, 1920, 8.

money to further their careers. Male pilots became sex symbols. Dozens of girls and women wrote into *Mundo Argentino* dreaming of marriage to a handsome and athletic aviator. Such fantasies often referenced a tall, light-haired and “*norteamericano*” [North American] pilot as the “ideal man”—likely a signal of the growing popularity of Hollywood films in Argentina. But they also idolized local heroes like Zanni, Parodi, and Candelaria. Women’s magazines frequently featured photographs of groups of enthusiastic *señoritas* and *señoras* gathered around a triumphant pilot.

This public fascination with celebrity aviators produced an aviation boom at the start of the interwar period. In October 1920 a group of civilian aviation enthusiasts, led by Horacio Anasagasti, formed the Comisión Nacional Pro Aviación Civil y Militar to encourage and coordinate a donation campaign in support of national aviation. In their 1920 promotional pamphlet, the prewar emancipatory rhetoric surrounding the promises of flight remained remarkably intact: “Aeronautics ennobles human sentiments, because it brings us closer to God... It shortens distances, erases material borders and brings peoples’ hearts closer.”<sup>13</sup> To fall behind in aviation would dishonor the “many sacrifices” of Argentine aviators and damage the economy. But more consequentially, Argentina would be out of step with the most current “means of mobility,” which with every new level of “perfection... marking stages on the path of progress, according to the state of civilization and culture reached.”<sup>14</sup> As will be discussed in chapter five, this association between velocity of movement and the level of civilization was beginning to take hold in an increasingly politically active Army officer corps.

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<sup>13</sup> “*la aeronáutica ennoblece el sentimiento humano, porque nos acerca a Dios... Acorta las distancias, borra las fronteras materiales y acerca los corazones de los pueblos.*” Comisión Ejecutiva Nacional Pro-Aviación Militar y Civil, *Comisión Ejecutiva Nacional Pro-Aviación Militar y Civil* (Buenos Aires: Imp. L. Gutierrez, 1920), 8.

<sup>14</sup> “*...el perfeccionamiento de los medios empleados, fueron marcando etapas en el camino del progreso, de acuerdo con el estado de civilización y cultura alcanzada.*” Comisión Ejecutiva, *Comisión Ejecutiva Nacional Pro-Aviación Militar y Civil*, 18-19.

Spurred by the commission's call, landowners and townships around the country donated land to serve as airfields. Twelve aero clubs were founded between 1919 and 1922, mostly in provincial capitals and cities like Córdoba (1919), Rosario (1919), Mendoza (1921), and Mar del Plata (1922). But others were established in small towns and the underdeveloped regions of the northwest and far south. Provincial aviation was boosted by numerous cross-country raids by the European missions visiting their dispersed national diasporas and by the Argentine military aviators honing their skills. In the wake of raids and serendipitous encounters with aviators, communities formed new associations to promote local aviation and construct basic infrastructure.

The aviation community in the capital was undergoing a revitalization of its own. The restored Aero Club Argentino began offering flight lessons again in 1922. Several new institutions were founded in the immediate years after the war, like the Centro de Aviación Civil—created by recently-arrived immigrants in December 1919—and a handful of flight schools like the influential Curtiss School at San Fernando which were formed by foreign companies or missions.<sup>15</sup>

Argentines were taking to the air in greater numbers than ever before on war surplus aircraft. Some, like a well-known doctor of Las Flores don Ramón Alcorta, even incorporated aircraft in their everyday lives. Dr. Alcorta built an airstrip, which later became the Aero Club Las Flores, so he could fly around the region to deliver medical care to isolated communities.<sup>16</sup> Another doctor, Enrique Loncán, toured the province of Santa Fe in an airplane to promote his

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<sup>15</sup> Other operations include the Compañía Río Platense de Aviación, Sociedad Ítalo-Argentina de Aviación, and Sociedad Anglo-Argentina de Aviación. Biedma Recalde, *Crónica histórica*, vol. 1, 180.

<sup>16</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 186.

political campaign.<sup>17</sup> Civil flight activity reached 6,645 hours a year by 1921.<sup>18</sup> The growth was astonishing, considering that the most active aviation institution in 1917, the Escuela Militar de Aviación, struggled mightily to reach just 677 hours.<sup>19</sup>

Argentina, like the United States, had a “barnstormer” craze where youthful daredevils performed dangerous stunts like wing-walking or hanging from a trapeze below an airplane.<sup>20</sup> When such flights were over major cities, the crowds were often enormous. In May 1920, the jewelry firm Trust Joyero Relojero paid the US aviator Lawrence León to fly over a plaza in Buenos Aires and drop one hundred watches with little parachutes as a publicity stunt, attracting a crowd of over ten thousand people.<sup>21</sup> For smaller events staged at aero clubs, the number of spectators was usually fewer than the thousands seen before World War I. But on occasion huge crowds gathered to see famous pilots returning from their raids or inaugurate a new club or airfield—over thirty thousand people witnessed the inauguration of the Rosario Aerodrome in May 1921.<sup>22</sup>

Aviation imagery, themes, and narratives increasingly permeated Argentine popular culture as well. Popular entertainment, beyond airshows and meets, featured air machines or “flights.” The Parque Japónes in downtown Buenos Aires, an amusement park that styled itself “the best center for fun in South America” had two aviation-themed rides, the “Looping the

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<sup>17</sup> “La aviación y la política,” *Caras y Caretas*, January 31, 1920, 36.

<sup>18</sup> Civil flight activity, as this point, includes commercial aviation. This would change in official statistics by the late 1920s. In 1921, one commercial operator, the British Compañía Río Platense de Aviación, accounted for 26% of national civilian flight time. Official statistics do not report any other single operator. For a comparison, the Escuela Militar de Aviación reported 3,973 flight hours. “Al año aeronáutico 1921,” *Aviación*, January 1922, 5.

<sup>19</sup> “Total de vuelos efectuados durante el año,” 1917, box varios 1, folder 2, COR, BNA.

<sup>20</sup> “Fantástica exhibición de acrobacia sobre un biplano en Córdoba,” *Caras y Caretas*, September 3, 1921, 73; “Acrobacia Aérea,” *Aviación*, December 31, 1921, 9-10.

<sup>21</sup> Untitled, *Caras y Caretas*, May 22, 1920, 22.

<sup>22</sup> “Inauguración del Aeródromo de Rosario,” *Aviación*, May 1921, 7-10.

Loop” and “el Aeroplano.”<sup>23</sup> A popular “*teatro de atracciones*” [variety show] at the Teatro Casino in 1920 featured an electrically-powered model dirigible created by a local inventor. During the show, the miniature dirigible conducted a mock “night bombing” with paper bombs. *Caras y Caretas* reported that there were long lines of curious spectators waiting to get into the theater, including “men of study” and an “infinity of children.”<sup>24</sup>

While adults were certainly not immune to excitement around flight, aviation imagery and narratives found an immediate and durable home in the culture of childhood. Boys and girls were dressed as aviators for Carnival costume contests, with some even featuring elaborate model airplanes.<sup>25</sup> Cheap novels that followed the sensationalized exploits of eighteenth- and nineteenth-century detectives, explorers, and pirates now included daring aviators who whisked between adventures with unprecedented speed. Such novels were soon joined by the new phenomenon of serial print media explicitly marketed to children. Editorial Haynes, which led the Argentine home and general magazine markets with *El Hogar* and *Mundo Argentino*, started the first local children’s magazine *Billiken* in 1919. *Billiken* featured cartoons, games, fun facts, and short stories. Articles showed kids how to draw dirigibles or make little toy airplanes from cork and cardboard. On its pages toy companies advertised simple wooden airplane models alongside bicycles and dolls, while stores specializing in children’s clothing lured potential customers with promises of free toy airplanes.<sup>26</sup>

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<sup>23</sup> The capital’s “*élite*” often flocked to the park on Tuesdays and Fridays, but the 0.50 peso entrance fee for children and 1 peso for adults put the rides within reach of many. “Parque Japones: El mejor centro de diversiones de Sud América,” *Caras y Caretas*, January 3, 1920, 34.

<sup>24</sup> “La gran temporada de atracciones del año: En el Teatro Casino se exhiben los mejores números del género,” *Caras y Caretas*, May 8, 1920, 6.

<sup>25</sup> Of course, the more elaborate costumes likely reflect the parents’ enthusiasm for flight just as much as their children’s. “Amiguitos de Billiken,” *Billiken*, April 4, 1921, n.p.; “Concursos de máscaras infantiles organizados por la Dirección General de Plazas de Ejercicios Físicos,” *Billiken*, February 27, 1922, n.p.

<sup>26</sup> See, for example, “Pequeñas lecciones de dibujo,” *Billiken*, January 30, 1922, n.p.; “El hidroavión,” *Billiken*, January 31, 1921, n.p.; Ad for “Juguetería Burlando Hermanas,” *Billiken*, May 14, 1928, 23; Ad for “Lo Niño Argentino,” *Billiken*, April 8, 1935, 12.

Aviation was a frequent subject of short informational articles, colorful cross-section diagrams, and stories of adventure and daring. Occasionally short stories were explicitly about a pilot. The three most recurrent such narratives were the wartime dogfight, tragic crashes, and—perhaps surprisingly—the ghost airplane or dirigible.<sup>27</sup> But as the decade progressed, the far more common usage of aviation imagery was as a window dressing for older narrative traditions. Detectives now chased down their suspects in airplanes, pirates preyed on dirigibles instead of galleons, and patriotic soldiers hopped into the cockpit instead of onto the saddle.<sup>28</sup> Many of these short stories were originally published abroad, especially in Britain, France and Spain. Thus, pieces in *Billiken* often reflected the prevailing discourses on aviation in those countries. By the late 1920s, Argentine children were reading stories about European aviators braving the deserts of the Sahara and jungles of the Congo.<sup>29</sup> The regular presence of autogiros in articles and images in the 1930s may have resulted from the magazine's connections to Spain, where Juan de la Cierva first invented the peculiar flying machine.<sup>30</sup>

A new feature of popular media—the comic strip—proved even more susceptible to the aviation craze sweeping youth culture during the interwar period. *Billiken* published dozens of serial comic strips over its first twenty years, with some lasting only a few issues, while others like *El Hijo Adoptivo* endured for the whole period. As opposed to the humorous cartoons more

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<sup>27</sup> See, for example, “Aventuras Trágicas: Caídos de las Nubes,” *Billiken*, March 15, 1920, n.p.; “Perdidos en la niebla,” *Billiken*, November 28, 1932, 20; “El Avión Fantasma,” *Billiken*, May 15, 1933, 20; “El Avión Fantasma,” *Billiken*, November 13, 1933, 5-6, 14; “La Última Hazaña de Luis Howe,” *Billiken*, July 16, 1934, 5-6, 14.

<sup>28</sup> By the 1930s this trend was sometimes bordering on the absurd, with one author managing to fit airplanes into his story entitled “Simba, The King of the Jungle.” *Billiken*, July 9, 1934, 5-6, 14. For examples of such fiction pieces, see T.C. Bridges, “En Medio de la Tormenta,” *Billiken*, March 20, 1922, n.p.; “Aventuras de Pinocho: Nuevas Andanzas del Famoso Muñeco de Madera, Detective. Parte III,” *Billiken*, March 12, 1923, 26; “Piratas del Aire,” *Billiken*, October 5, 1931, 5.

<sup>29</sup> Lucien Marviel, “Los misterios del Sahara,” *Billiken*, January 16, 1933, 39; Percy Westerman, “El falso árabe,” *Billiken*, June 12, 1933, ran over multiple issues; “Una Amistad Heroica,” *Billiken*, July 31, 1933, 5-6, 14.

<sup>30</sup> “El Hijo Adoptivo,” *Billiken*, July 1, 1929, 11; “El Dentista Diabólico,” *Billiken*, June 25, 1934, 20, 28, 32; “La Última Hazaña de Luis Howe,” *Billiken*, July 16, 1934, 5-6, 14; “Historia de la aviación,” *Billiken*, December 16, 1935, n.p., special inset.



Figure 3.5. Rin-Tin-Tin pursues a villain in an airplane (top) while Roberto of *El Hijo Adoptivo* and his friend escape the "savages" with the help of an airplane (bottom). "Rin-Tin-Tin," *Billiken*, May 20, 1929, 33; "El Hijo Adoptivo," *Billiken*, September 29, 1930, 11.

frequently found in daily newspapers, the serials in *Billiken* were dramatic adventure stories, often focused on unraveling mysteries, discovering wonders in the wilderness, and catching villains. Initially, characters like *El Hijo Adoptivo*'s Roberto or Manucho of *Manucho y su perro* only occasionally found themselves in an airplane on their adventures.<sup>31</sup> But by the late 1920s, comic strips were saturated with airplanes. *El Hijo Adoptivo*'s heroes now lived on the airplane which whisked them from one exotic locale to another. The German Shepard Rin-Tin-Tin somehow rode straddling the tails of airplanes (see fig. 3.5). There were also new strips expressly about pilot protagonists, such as *Los aventureros del aire* (1930) wherein brother and sister pair Víctor and Margarita went on adventures in their seaplane. By the 1930s, artists were

<sup>31</sup> See, for example, "El Hijo Adoptivo," *Billiken*, December 19, 1921, n.p.; "El Hijo Adoptivo," *Billiken*, March 27, 1922, n.p.; "Manucho y su perro Calderita," *Billiken*, January 15, 1923, n.p.

increasingly realistic in their drawings of airplanes, often depicting specific models, perhaps as the importance of aviation to their stories and audiences grew.<sup>32</sup>

At the same time, there was a small increase in the representation of girls and women as aviators. As will be discussed below, women showed a keen interest in flight in the interwar period, and the image of the female aviator became relatively common in popular culture. In 1927, Roberto of *El Hijo Adoptivo* was joined by Dorotea, who in her first appearance swoops down in a flying boat to rescue castaways in the middle of the ocean. Dorotea seems to have been a particularly transgressive character—she continued to fly even after joining forces with Roberto.<sup>33</sup> For most female flyers in children’s media, they rarely flew when in the company of men. Characters like Dorotea and Margarita also still performed the traditionally feminine labor—primarily cooking—or were relegated to supporting the male pilot-in-command as navigators or assistants.<sup>34</sup>

Aviation imagery and narratives, whether the object of a story or simply a plot mechanism, were suffused with themes of adventure, danger, excitement and escape. Protagonists could escape mundane reality, whether it was burdensome social expectations, unwanted relationships, or simply the monotony of routine. The adventurers like Roberto, Víctor, and Margarita used airplanes to journey instantaneously from “civilized” cities to wild deserts, jungles, and mountains. There they dismounted their aerial steeds—often forcibly in a crash—and engaged in some form of high jinx with indigenous tribes, angry Arab raiders, or East Asian villagers. And when hope seemed lost, when the heroes found themselves marooned on a life raft

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<sup>32</sup> This trend was noticeable during my review of *Billiken* by 1933, especially in *El Hijo Adoptivo*.

<sup>33</sup> “El hijo adoptivo,” *Billiken*, December 12, 1927, 11.

<sup>34</sup> “El hijo adoptivo,” *Billiken*, December 19, 1927, 11; “Los aventureros del aire,” *Billiken*, March 3, 1930, 30; “El hijo adoptivo,” *Billiken*, March 14, 1932, 11; “El hijo adoptivo,” *Billiken*, May 22, 1933, 11.



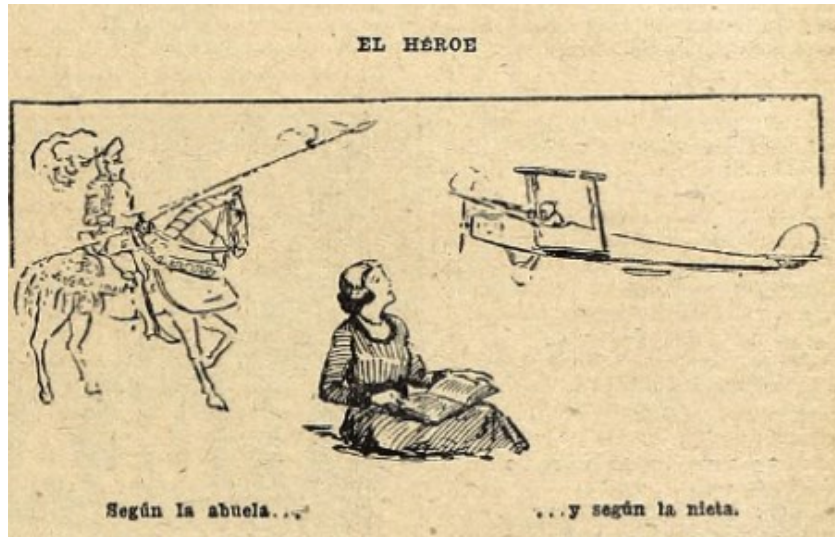


Figure 3.6. "The Hero. According to the grandmother... and according to the granddaughter." "El Héroe," *El Hogar*, December 24, 1920, n.p.

or surrounded by murderous savages, an airplane would swoop down from above, saving the day.

For these comic strips and short stories, the adventure lay less in the flight itself, than in the adventures that resulted when an airplane whisked characters back and forth between a safe, civilized, and familiar home, and a novel, dangerous, and foreign realm beyond. Certainly, this narrative trope reflected European racialized colonial discourses. For the young readers of *Billiken*, airplanes were a tool that white, European, and largely male characters used to impress, frighten, or outwit black and brown savages, heathens, and villains. In essence, the practice of flight was a benchmark that distinguished their protagonists (and implicitly the reader) from the “uncivilized” or “backward” peoples of the world. This technological measurement of national, ethnic, or racial capability was not simply a quirk of children’s media, but instead a prevailing discourse in wider society (if not the world).<sup>35</sup>

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<sup>35</sup> Adas, *Measure of Man*, especially Introduction and chapter three.

## Male Heroic Aviation in Argentina during the 1920s

While at the outset of the decade the future of Argentine aviation looked bright, a sense of backwardness increasingly burdened the community, spurred on by fears of racial degradation or inferiority. As Argentines grappled with such anxieties, they forged new narratives of modern masculinity and femininity. The male heroic pilot pointed the way forward for the Argentine man in a world of tremendous change. But as I will discuss further below, the female pilot would largely be left out of the narrative of modern Argentine femininity.

For all of the popular engagement with aviation after the arrival of the foreign missions, the flying boom of the immediate postwar period quickly subsided. From a high of 6,645 hours in 1921, civil flight hours contracted by 97 percent, to a mere 214 hours by 1923.<sup>36</sup> Civil flight activity would not match its 1921 peak for another ten years. There are several possible reasons for this sudden drop. The economy struggled in the early part of the decade, with a negative trade balance from 1921 to 1924.<sup>37</sup> The government declined to substantially support the civilian aviation industry and infrastructure. Even the military faced inconsistent budget allocations. Although military and civilian institutions received new airplanes from the European missions and government purchases of war surplus airplanes, long-term budgets did not sufficiently expand to maintain these resources, much less continue to grow. With the benefit of hindsight, the postwar boom seems more an aberration than a natural outcome of the industry's growth.<sup>38</sup>

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<sup>36</sup> This also reflected the closure of many of the commercial flight operations started by the members of the European missions, such as the Compañía Río Platense de Aviación. "Memoria del Departamento de Aviación Civil de Servicio Aeronáutico del Ejército: Año 1924," *Aviación*, April 1925, 20.

<sup>37</sup> "Balanza Comercial Argentina. Años 1910-2015," *Instituto Nacional de Estadística y Censos de la República Argentina* (INDEC), 2015, accessed May 27, 2020. <<https://www.indec.gob.ar/indec/web/Nivel4-Tema-3-2-40>>

<sup>38</sup> Data was not always consistently reported during the period though, I am currently missing flight hours from 1919, 1920, 1922, 1926, and 1943.

From 1923 onwards, flight activity expanded more gradually and consistently, with any large increases reflecting greater government financial support for flight training or fuel subsidies.<sup>39</sup>

Frustration rapidly built in the aviation community. Heroic aviators were fashionable, the people loved them, businesses used their likenesses.<sup>40</sup> Yet there was a feeling among aviation industry commentators that the wave of aviation activity and new heroes were overly dominated by foreigners. Indeed, nearly all of the new aviation institutions created immediately after World War I were founded by recent arrivals from the US and Europe. As Antonio Biedma Recalde recalled about the period, most pilots were young men separated from their families and single, since loved ones could not convince a prospective flyer to remain earthbound. Thus, “the foreigner who came to the country in search of a future and whose family continued to reside in their homeland was in better condition” to fly.<sup>41</sup> Although as time went on, and Argentina naturalized more of its enormous immigrant community, a greater proportion of aviators crisscrossing the nation’s skies were Argentines.<sup>42</sup>

Nevertheless, the vast majority of aviators who achieved lasting fame and recognition in the 1920s were visiting foreigners. Only three Argentine pilots gained a substantial public recognition during the period: Pedro Zanni, Guillermo Hillcoat, and Eduardo Olivero.<sup>43</sup> The highs and lows of their careers in aviation reveal the narrow opportunities and significant barriers to their attainment of success and heroic status in the eyes of the Argentine people. Each

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<sup>39</sup> See chapter five on the state and aviation.

<sup>40</sup> “Retratos en los escaparates,” *El Hogar*, November 14, 1919, n.p.

<sup>41</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 181.

<sup>42</sup> According to government data reported in the magazine *Aero*, an average of 74% of newly licensed pilots were native Argentines each year from 1931 to 1935. Statistics compiled from licensing exam announcements in *Aero*, May-June 1930, November 1930-November 1931; April 1932-September 1933; June-July 1934; April-May 1935.

<sup>43</sup> See chapter four for an account of Eduardo Olivero’s great raid from New York City to Buenos Aires in 1926.

struggled with funding, access to proper aircraft and resources, and the whims of fate inherent to heroic aviation.

Captain Pedro Zanni (1891-1942) was an Army pilot who first attained national recognition for his flights over the Andes. Zanni was born in provincial town of Pehuajó to Italian parents. He enrolled in the Colegio Militar de la Nación in 1906, graduating as a lieutenant in the artillery three years later. In 1913, he entered the Escuela Militar de Aviación where he soon earned the seventeenth national *brevet*.

In 1922, Pedro Zanni set his sights on a prize far bigger than the crossing of the *Cordillera*: the aerial circumnavigation of the world. Around-the-world flights with descents were just coming into the realm of technological and logistical possibility with the longer range and greater reliability of new aircraft, the development of long-range navigation aids, and improved international infrastructure for flight. A number of countries in Europe and North America had teams of aviators preparing for their attempt, with the US taking the lead. In December 1922, Zanni assembled a team of supporters into an organizing committee, the Comisión Nacional Pro Vuelta al Mundo en Aeroplano por el mayor Pedro Zanni, which featured many of the great figures in national aviation such as Antonio Biedma Recalde, Antonio De Marchi, Almondos Almonacid, Julio A. Noble, Jorge Duclout, and Ángel Zuloaga.<sup>44</sup> Zanni soon managed to secure the sponsorship of the ACA. With his base of support assembled, the aviator started planning his route with the aid of officials at the Oficina Meteorológica Nacional [National Meteorology Office].<sup>45</sup>

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<sup>44</sup> [National Commission for [the Trip] Around the World by Airplane by Major Pedro Zanni]. Bradley and Zuloaga became national figures after a historic balloon flight across the Andes in 1916.

<sup>45</sup> Pedro Leandro Zanni, *Raid aéreo Amsterdam-Tokio. Su desarrollo* (Buenos Aires: Imp. Ferrari Hnos., 1926), 4-5.



Figure 3.7. Captain Pedro E. Zanni just after crossing the Andes in 1920. "La aviación argentina," *El Hogar*, March 26, 1920, 29.

Beyond the obvious challenges for Zanni as a pilot, a circumnavigation flight was primarily a struggle of resources. It was now far more expensive and complicated to participate in the cutting edge of international heroic aviation. Three members of Zanni's committee calculated that the flight would cost 250,000 pesos, the equivalent of the government's annual civil aviation budget in 1923.<sup>46</sup> Beyond the funds, the circumnavigation required landing and flyover permissions and access to fuel, engine oil, and replacement parts in over twenty countries, sometimes in remote locations.<sup>47</sup> The flight would be a true test of Argentine diplomacy, organization, and fundraising.

The Argentine people proved more than willing to open their pocketbooks for Zanni's cause. The Comisión Nacional Pro Vuelta al Mundo en Aeroplano organized benefits, aviation

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<sup>46</sup> Zanni, *Raid aéreo Amsterdam-Tokio*, 5.

<sup>47</sup> The successful US Army Air Service team completed the circumnavigation having landed in 22 countries. Kat Eschner, "How the US Won the Race to Circumnavigate the Globe by Air," *Smithsonian Magazine*, September 25, 2017. <<http://pioneersofflight.si.edu/content/first-flight-around-world>>

festivals, and a national subscription drive. By the start of his flight, popular donations reached over 357,262 pesos, almost twenty times the money brought in for the founding of the Escuela Militar de Aviación in 1912. Promotional events in the interior raised another 15,000 pesos, and various government entities donated almost 200,000 pesos. In the end, the commission raised the enormous sum of 567,000 pesos.<sup>48</sup> The sheer expense of the effort did raise eyebrows in some sectors of the national media. One such editorial in *El Hogar* complained that:

Many scientists, many illustrious sages, never had such a sum in all the days of their lives... and [they] did really useful things... We do not see what benefits the difficult enterprise can bring to our country. If the feat is accomplished, all the laurels will go to the intrepid aviator. The Argentine Republic, at best, will have the pleasure of being mentioned in some European newspapers. And you have to agree that pleasure is getting expensive.<sup>49</sup>

Yet even within that critique, there are clues to the motivations behind the popularity of Zanni's effort. The editors of *El Hogar* said Zanni was simply trying to take a "trip around the world, just like a Jules Verne character would."<sup>50</sup> The prospect of an Argentine surmounting a great international challenge like a fictional adventurer from their novels must have been inspiring for many Argentines. As one aviation journalist expressed, the flight around-the-world was the heroic benchmark of its time. It was a "work of Titans." Zanni, through this undertaking, revealed "his faith, energy, tenacity, spirit of sacrifice and sacred love for all that represents the glories of the homeland."<sup>51</sup>

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<sup>48</sup> Zanni, *Raid aéreo Amsterdam-Tokio*, 5-6.

<sup>49</sup> "Muchos hombres de ciencia, muchos sabios ilustres, no tuvieron jamás una suma semejante en todos los días de su vida... e hicieron cosas realmente útiles... Nosotros no vemos qué beneficios puede reportar a nuestro país la difícil empresa. Si la hazaña llega a cumplirse, todos los laureles serán para el intrépido aviador. La República Argentina, en el mejor de los casos, tendrá el placer de que se la mencione en algunos periódicos europeos. Y hay que convenir en que el placer le está saliendo caro." "Un viaje alrededor del mundo," *El Hogar*, April 4, 1924, 1.

<sup>50</sup> "Un viaje alrededor del mundo," 1.

<sup>51</sup> "La vuelta al mundo en aeroplano: Partida de la misión argentina," *Aviación*, February 29, 1924, 6-7.

In a testament to the relative wealth and international prominence of Argentina, Zanni succeeded in putting together the pieces by early 1924. Zanni and his mechanic Felipe Beltrame left for Europe on February 23, where they acquired three Fokker C.IV-Napier 450 hp. airplanes that could fly for 18 hours or 3,200 kilometers without stopping.<sup>52</sup> His timing could not have been more perfect. 1924 was the year of aerial circumnavigations. By June there were four teams from the US, France, Portugal, and Britain working their way around the world.<sup>53</sup> On July 26, Zanni took off from Amsterdam with Beltrame heading first to Paris before turning southeast to cross the northern Mediterranean and Middle East. He followed a similar path to the European teams, which all flew east over the southern edge of Asia, cutting across the Indian subcontinent, then using Indochina to reach the Chinese mainland coast.<sup>54</sup> Japan was the last port of call before the most difficult part, the crossing of the Pacific Ocean. Zanni—like the others—planned to chart a course across the northern Pacific, using Soviet, Japanese, and American islands and remote settlements to refuel and navigate.<sup>55</sup>

If Zanni needed any more convincing of the difficulty of his task, before he had even left Europe three of the four competing flights had ended in failure. A French raid by the aviators Pelletier D'Oisy and Lucien Besin ended with a crash landing onto a golf course in Shanghai. The Portuguese pilots José Manuel Sarmento de Beires and António Jacinto da Silva Brito Paes

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<sup>52</sup> Naval navigator Nelson T. Page was also slated to go but fell ill and could not join Zanni and Beltrame. It is also not clear if Felipe Beltrame had any relations to Francisco Beltrame, a mechanic-pilot killed in 1915 that was mentioned in chapter one. Biedma Recalde, *Crónica histórica*, vol. 1, 254-5.

<sup>53</sup> The first attempt at the feat was made in 1922 by a British team. It ended with the crew as castaways, clinging to the floating wreck of their capsized seaplane for two days in the Bay of Bengal. Derek O'Connor, "Foredoomed to Failure: An Ill-Prepared British Crew Set Out in 1922 on the First-Ever Attempt to Fly Around the World," *Aviation History*, January 2014, 38-42. <<https://www.historynet.com/foredoomed-to-failure-an-attempt-to-fly-around-the-world.htm>>. For an accounting of the various attempts in mid-1924, see "La Vuelta al Mundo y los Grandes Raids," *Aviación*, August 10, 1924, 17-18.

<sup>54</sup> The US Army team chose to travel west from Seattle, Washington, surmounting the treacherous Pacific crossing first.

<sup>55</sup> The range of aircraft and navigation aids precluded the Central Pacific route pioneered by Pan American in the 1930s.

were forced to buy a new airplane after an accident in India. After battling misfortune all along the route, they reached the skies over Macau only to find inclement weather prevented their landing. The Portuguese flyers eventually crash landed in a cemetery in Shenzhen.<sup>56</sup> And the British Royal Air Force team led by Archibald MacLaren saw their chances evaporate after being forced to land their Vickers Vulture seaplane into the Bering Sea in dense fog. Although the crew had spent days dodging fog and bad weather around the Aleutian Islands, this time their luck ran out and the airplane was too damaged to fly. They were forced to taxi their way back to land and retire from the competition. Even the US Army Air Service team, which on September 28 completed the first aerial circumnavigation of the world in 175 days, only finished with two of their original four airplanes, the others crashing or ditching along the way without fatalities.<sup>57</sup>

Despite battling bad weather, Zanni and Beltrame managed to cross the Middle East and South Asia without incident, arriving in Hanoi on August 18. But the following day, one of the aircraft wheels suddenly sank into the mud, preventing the airplane from reaching take off velocity. The Fokker languished in its take-off roll before hitting the edge of the airfield. It then cartwheeled sixty meters into a nearby rice patty, throwing both men out of their cockpits and into the water. Fortunately neither was badly injured, but the flight was delayed until one of the replacement airplanes they had sent ahead to Japan could be delivered to Hanoi.<sup>58</sup> On October 11, 1924, Zanni and Beltrame touched down in Kasumigara, Japan, the last stop before the Pacific crossing.

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<sup>56</sup> H.A. d'Assumpção, "From Portugal to Macau," *Club Lusitano*, April 17, 2018. <<http://www.clublusitano.com/from-portugal-to-macau/>>

<sup>57</sup> Derek O'Connor, "All in the Game," *Aviation History*, September 2010, 54-59. <<https://www.history.net.com/all-in-the-game.htm>>

<sup>58</sup> Zanni, *Raid aéreo Amsterdam-Tokio*, 27-8.



There the great enterprise's luck finally ended. According to Zanni's recollection published two years later, the flight halted because they could not get steamships to deposit supplies along the Aleutian Islands and Alaskan coast before winter set in. The original shipping contractor had delayed sending ships to Japan after news broke of the accident in Hanoi.<sup>59</sup> The national media began calling on Zanni to give up the dangerous effort, or at least change to a different objective. On November 3, he officially suspended the raid. According to the media, Zanni was devastated by the turn of events. The newspaper *Crítica*, an ardent supporter, reported that the pilot would have "preferred to have died in the attempt to cross the Pacific, before abandoning the flight, against his will."<sup>60</sup>

Despite having flown thousands of kilometers—and matching the efforts of all the European teams—the unfortunate ending, not in a dramatic accident but a logistical blunder, deflated the whole enterprise. Julio A. Noble, a prominent organizer of the raid, said to a *Crítica* journalist the day after the announcement: "It is regrettable that the entire program has not been achieved. This, of course, diminishes the romantic value of the action, carried out with such remarkable energy and with such exact technique." The failure to properly organize the Pacific crossing was a "technical error."<sup>61</sup> Although Noble insisted this did not lessen Zanni's heroism, the somewhat muted response to his eventual return to Argentina via steamship in September 1925 reveals that the public was quick to forget attempts at greatness that came up short.<sup>62</sup>

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<sup>59</sup> Zanni, *Raid aéreo Amsterdam-Tokio*, 35-6.

<sup>60</sup> "Zanni lamenta abandonar el raid," *Crítica*, November 3, 1924, 3.

<sup>61</sup> "Es lamentable que no se haya logrado cumplir todo el programa. Esto disminuye, por supuesto, el valor romántico de la acción, llevada con tan notable energía y con tan exacta técnica." "Zanni debió hacer el cálculo de probabilidades antes de comenzar su raid," *Crítica*, November 4, 1924, 5.

<sup>62</sup> There was little press coverage from the main newspapers, although Zanni was celebrated within the aviation community. "La llegada del aviador Zanni," *El Hogar*, September 18, 1925, 34. According the *New York Times*, the Argentine aviator tried to revive his flight in Spring 1925 but failed to secure permission to enter Soviet airspace in the Northern Pacific. "Zanni May Fly Via Murakami," *New York Times*, May 15, 1925.

Following closely on Zanni's heels came another heroic effort, this time of a markedly smaller scale. On November 26, 1924, Guillermo Hillcoat (1895-1960) took off in a Curtiss Oriole headed for Lima. The twenty-nine year old son of an English father and an Argentine mother was hoping to arrive in the Peruvian capital in time to commemorate the centennial of the Battle of Ayacucho.<sup>63</sup> The 4,402 kilometer route to Lima was a treacherous one, especially for an aircraft as small as the Curtiss Oriole. He battled wind, clouds, and long stretches over remote mountains and deserts. But he persevered, reaching his destination on December 4 after 34 hours of flight time.<sup>64</sup>

Hillcoat was born in Trenque Lauquen, a town on the western edge of the Province of Buenos Aires. He learned to fly from the well-known representative of The Curtiss Aeroplane Company, Lawrence León, early in the 1920s. Hillcoat proved an adept and active pilot, flying competitively in many of the local air competitions throughout the decade. When León had to return to the United States, Hillcoat took over his operation at San Fernando, serving as director of the flight school from 1925 to 1932. He eventually trained dozens of local pilots, many of whom became important aviators in the 1930s and beyond.<sup>65</sup>

Hillcoat was already a well-known pilot due to participation in air festivals and races. But his raid to Lima made him a national celebrity. Along with Zanni's raid, the two aerial feats were "successes that with such joy celebrate the Argentine people."<sup>66</sup> The press seemed particularly thrilled by the symbolic gesture of Hillcoat's flight. Editorials proclaimed the raid a symbol of

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<sup>63</sup> Wherein the Spanish Army was decisively defeated by a coalition of South American forces, effectively ending the Wars of Independence.

<sup>64</sup> "Buenos Aires – Lima, 26 Nov – 4 Dic, 1924, Guillermo Hillcoat, Curtiss Oriole 160 HP," *Aviación*, April 10, 1925, 3-5.

<sup>65</sup> Lironi, *Misiones aeronáuticas extranjeras*, 79-80, 212-14.

<sup>66</sup> "Los Deportes Mecánicos durante el Año 1924," *Caras y Caretas*, January 3, 1925, 44.



Figure 3.8. Hillcoat shortly after his Buenos Aires-Lima raid (left) and one year later (right). "Figuras del momento," *El Hogar*, December 12, 1924, 41; "Homenaje a los héroes del espacio," *Caras y Caretas*, November 21, 1925, 1.

South American fraternity. According to *Caras y Caretas*, "thousands of *aficionados* [enthusiasts]" paid tribute to the aviator when he returned by train in late January 1925.<sup>67</sup>

Yet much like for Zanni, the spotlight quickly moved away from Hillcoat. In August 1925 he announced a plan to fly to New York City, but the funds never materialized. Three years later, in an article with the *Revista Auto-Aérea*, his interviewer recalled:

[Hillcoat] never talks about the problem of 'our aeronautics'... But sometimes something like a complaint escapes him: ten years flying from here to there, making [himself] known even in the most remote corners of our homeland, without official help and at the cost of his pocket.<sup>68</sup>

<sup>67</sup> "Auto-Moto-Aviación," *Caras y Caretas*, January 24, 1925, 99.

<sup>68</sup> "No habla nunca del problema de "nuestra aeronáutica"... Pero algunas veces se le escapa algo como una queja: diez años volando de aquí para allá, dando a conocer hasta en los más apartados rincones de nuestra patria los aviones, sin ayuda oficial y a costa de su bolsillo." "El gaucho relámpago," *Revista Auto-Aérea*, August 1928, 15.

He had succeeded in “obtaining if not silver, popularity and prestige.”<sup>69</sup> This was a common problem for heroic aviators in Argentina, a harsh reality explained in a 1927 article by the aviation journalist Miguel P. Tato in *Mundo Argentino*. For many of the famous aviators of Argentina’s early aerial age, such as Fels, Candelaria, Zanni, and Hillcoat, heroic flight simply did not pay. While most found stable employment in the small aviation industry, none could consistently marshal the resources to continue practicing heroic flight. Some even descended into destitution after their great feats, as was evidently the case with Lt. Candelaria. Hillcoat was quoted as saying “Airmen are a sacrificed class. Sooner or later we fall... We fall to the ground or we fall into oblivion and misery.”<sup>70</sup>

The public proved quick to forget Zanni and Hillcoat. Only Zanni managed to make it onto a 1931 list of “Forgotten heroes that were popular idols,” joining pilots such as Candelaria and Teodoro Fels.<sup>71</sup> Hillcoat was all but forgotten, even though the latter had a long career in aviation. Despite the efforts of these pilots, the popular and aviation press continued to lament the lack of heroic aviation in Argentina. Retrospectives of the history of local aviation were already framing the pre-World War I era as *the* heroic age of Argentine flight. The ghost of Jorge Newbery cast a long shadow, and none of the pilots of the interwar period was able to come close to matching the great sportsman aviator. By 1927, one journalist for *Crítica* found himself asking, “And us? Where are the Argentine heroes?... All of the peoples of the earth are preparing to take possession of a piece of the sky. And us?”<sup>72</sup>

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<sup>69</sup> “El gaucho relámpago,” 15.

<sup>70</sup> “*Los aviadores somos una clase sacrificada. Tarde o temprano caemos... Caemos al suelo o caemos en el olvido y la miseria.*” Miguel P. Tato, “¿Por qué los aviadores argentinos no salen a conquistar gloria?” *Mundo Argentino*, March 16, 1927, 7.

<sup>71</sup> “Héroes olvidados que fueron ídolos de las muchedumbres,” *Caras y Caretas*, September 12, 1931, 129-132.

<sup>72</sup> “Y Nosotros...” *Crítica*, February 22, 1927, 3.

## The Hero Aviator, Masculinity, and Argentine Racial Anxiety

The anxiety surrounding a perceived lack of great aviation achievements remained a persistent theme in the aviation and national presses. Heroic aviation drew the attention of social commentators, journalists, and writers because it was the newest measure of national aptitude. Great feats were not simply the result of an individual's expertise and training. They were a reflection of a nation's collective technological capability and biological fitness for the modern age.<sup>73</sup> It was thus a worrying sign to have aviation dominated by foreign pilots like Antonio Locatelli and the many other visiting aviators during the interwar period. One writer in *El Hogar* protested that "foreigner aviators... have come to teach us lessons in our own country." Aviation was not simply a "matter of courage" as had been supposed. Instead the triumphs of aviators like Locatelli and Bolland were "collective feats," the "fruit of a work in which all the forces of the nation have collaborated, and to which industry, technology, and science are most directly linked." Argentina had to stop being a "longing spectator" and "be an actor" in world aviation.<sup>74</sup> But this technical assessment of the needs of flight was not the prevailing sentiment of the public. In the same year Francisco S. Torres complained that the public ignored the achievements of the local aviation industry: "the public, who with so much passion usually judges the meritorious efforts of our pilots... ignores... that modern, fully furnished airplanes have already been built in our workshops."<sup>75</sup>

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<sup>73</sup> Another common area for competition and the demonstration of national ability was international sporting competitions, a growing phenomenon at the time. Argentine social commentators often found Argentina's performance at such competitions more confidence inducing than the national record in aviation. See, for example, Carlos Muzio Saenz Peña, "1904 – Veinte años de deportes – 1924," *El Hogar*, January 4, 1924, 66.

<sup>74</sup> "Nosotros y la aviación," *El Hogar*, April 8, 1921, 3.

<sup>75</sup> "...el público, que con tanto pasionismo suele juzgar los meritorios esfuerzos de nuestros pilotos, cuando el éxito no responde a la medida del anhelo popular, ignora, en cambio, que ya se han construido en nuestros talleres aeroplanos modernos..." Francisco Torres, "Aviación y aviadores nacionales," *Aviación*, June 1921, 30.

The public's gaze was fixed firmly on the attributes of the pilots themselves. Since the time of Jorge Newbery, pilots were lauded for their manly energy, willpower, strength, and courage. The "*hombres-pájaros*" [bird-men] were extolled as agents of the future of mankind, willing to risk everything in the furtherance of progress. By the early 1920s, this discourse of masculine capabilities was increasingly medicalized and quantified as the field of aviation medicine arrived in Argentina.

Argentine aviators and military officials returning from Europe brought back new ideas in flight training and aviation medicine generated by the unprecedented demand for pilots during the war. All the major combatants instituted medical exams for prospective pilots, testing for physiological and psychological deficiencies that suggested an individual would be unfit for intensive flight training or aerial combat. Argentine military officials in the newly created Servicio Aeronáutico del Ejército [Aeronautical Service of the Army] were well-aware of these developments, and quickly sought to implement similar medical screenings locally.

On January 29, 1922, the Gabinete Psico-Fisiológico de la Aeronáutica Militar [Psychophysiological Cabinet of Military Aeronautics] was opened under the Direction of Dr. Agesilao Milano (1877-1937), the official tasked with studying the newest trends in aviation medicine in Europe. Milano, himself an Italian, focused on the recent publications coming out of Italy, such as "*Ricerche Biologiche sull'Aviazione*" [Biological Aviation Research] by the professors Dr. Gradenigo and Dr. Gemelli.<sup>76</sup> These studies attempted to quantify physical and mental traits, such as the sense of balance, reaction times, and attention span, using electro-mechanical medical devices. Such machines were used to create a statistical representation of not only deficient prospective pilots, but of those most likely to excel under the most difficult conditions

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<sup>76</sup> Agesilao Milano, *Cómo debe seleccionarse el personal militar de la aviación. Métodos modernos usados con ese objeto* (Córdoba, AR: "La Semana Médica," Imp de Obras de E. Spinelli, 1921), 5.



Figure 3.9. Apparatus for testing reaction times. Agesilao Milano, *Examen médico de los aviadores* (Buenos Aires: Casa Editora de A. Guidi Buffarini, 1923), 26.

experienced by a military aviator. Medically screening pilots offered a way, according to the proponents of aviation medicine, of avoiding the “numerous accidents that would be the result of the march of progress and the vulgarization of aviation.”<sup>77</sup>

In the process, practitioners in Europe and Argentina were attempting to formally and medically define the ideal man for flight. As Dr. Milano emphasized in a 1925 article for *Aviación* magazine, military pilots “constitute a group of chosen men who enjoy a special prestige before their comrades and the general public, which is explained not only by the courage and fearlessness they give daily, but, and especially, because they must have a select psychic and physical constitution.”<sup>78</sup> As humans are terrestrial creatures, aviators had to muster “not only all

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<sup>77</sup> “Las Dos Primeras Conferencias del Curso Actual,” *Aviación*, August 10, 1925, 16.

<sup>78</sup> “Los aviadores militares constituyen un conjunto de hombres escogidos que gozan ante sus camaradas y ante el público en general de un prestigio especial, lo que se explica no solamente por la valentía e intrepidez de que dan muestra diariamente, sino, y muy especialmente, porque deben tener una constitución psíquica y física realmente de selección.” Agesilao Milano, “Instrucciones para el Régimen Higiénico Navegante,” *Aviación*, August 10, 1925, 11.

their physical energy, but also and in great proportion all of the moral energy, all of their intelligence..." They need "inalterable *sangre fría*," the ability to stay calm under duress. Physiologically, "it is essential in aviation to have absolute integrity of the sense organs, of the respiratory, circulatory, urinary and locomotor systems, as well as the perfect play of nerve functions."<sup>79</sup> Any blockages or narrowing in the sinus system, for example, risked the possibility of the "sickness of the aviators," which was described as a form of dizziness and hypertension caused by rapid changes in air pressure.

According to Dr. Milano, the ideal candidates for pilots were thus young, energetic men with quick reaction times, preferably under thirty years old. Older men were less desirable as they reportedly were more sensitive to the cold and suffered from poorer kidney function at high altitude. By the end of the 1920s, such medical exams were extended to civilian pilots as well, since "a weak person, a crazy person, a childish person [*un chiquilín*], cannot pilot an airplane."<sup>80</sup> With the "most modern apparatuses available to science," those people unfit for flight could be weeded out. Articles in the popular media asked their readers, "Could you serve as an aviator?" They warned of the dangers of "*el mal de los aviadores*," described the electro-mechanical medical devices, and sometimes encouraged their readers to try at home equilibrium tests to see if they were up to snuff.<sup>81</sup>

The emphasis on the biological qualities of pilots and heroes reflected deep anxiety about the fitness of the national character and population for modernity. The interwar period was the apex of an "obsession with eugenics" and social Darwinist ideologies that understood the world

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<sup>79</sup> Agesilao Milano, "Fisiología-Inaptitud e Higiene del Aviator," *Aviación*, February 28, 1922, 29.

<sup>80</sup> "El sentido del equilibrio. ¿Sirve usted para aviator?" *El Hogar*, May 18, 1923, 5.

<sup>81</sup> "Pruebas para la aviación. Cómo puede hacerse un aviator," *El Hogar*, August 22, 1919, n.p.; "Pruebas a que debe someterse todo aspirante a aviator militar," *Aviación*, April 1921, 26; "El sentido del equilibrio. ¿Sirve usted para aviator?" 5; "El mal de los aviadores," *El Hogar*, May 16, 1924, 34; "El mal de los aviadores," *El Hogar*, December 19, 1924, 53.



as divided into a racial hierarchy. As the historian Julia Rodriguez describes, “Race, the salient term of its time—and considered a scientific category—provided to Argentine’s elite a rationale for conceptions of group superiority and inferiority and justification for control.”<sup>82</sup>

Argentine elites since the mid-nineteenth century had been fixated on questions of immigration and race. Seminal figures in Argentine history such as Domingo Faustino Sarmiento and Juan Bautista Alberdi advocated for an open immigrant policy for Europeans, exemplified in Alberdi’s famous slogan, “to govern is to populate.” Liberal elites opened the flood gates to Europe in the hopes it would “bring us its fresh spirit, its work habits, and its civilized ways with the immigrants it sends us.”<sup>83</sup> They looked down upon the Spanish heritage, seen as a backward remnant of the colonial era, and denigrated the vestiges of the once larger Afro-Argentine and indigenous communities. According to men of Sarmiento and Alberdi’s generation, civilization in the *Pampas* could only be forged by those who came from the fountain of progress in Europe, not from within Argentina.<sup>84</sup>

But the arrival of millions of Europeans over the ensuing decades only created new tensions in Argentine society. Elites and government officials complained that they were receiving “lesser” Latin peoples from Italy and Spain, as opposed to the supposedly more industrious Anglo-Saxon and Germanic peoples.<sup>85</sup> They saw the waves of new arrivals as

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<sup>82</sup> Rodriguez, *Civilizing Argentina*, 5.

<sup>83</sup> Alberdi, “Immigration as a Means of Progress (1853),” 95.

<sup>84</sup> The question of the level of Argentine civilization had stakes beyond the egos and pocketbooks of the governing oligarchy. As the historian Arnulf Becker Lorca has shown, within international law the “standard of civilization” determined a nation’s degree of sovereignty. Countries that did not meet the European’s self-serving definition of civilization risked military and commercial intervention. Any perceived backwardness represented a threat to Argentine sovereignty. Arnulf Becker Lorca, *Mestizo International Law: A Global Intellectual History, 1842-1933* (New York: Cambridge University Press, 2014), 23-37. This menace persisted into the interwar period, as at least one journalist feared that if Argentina did not pursue modern progress and its associated technologies with the upmost vigor, it might find itself under the yoke of direct European domination once again. Sr. Samaniego, “La Conquista del Aire,” *Aviación*, May 1921, 51-54.

<sup>85</sup> Rodriguez, *Civilizing Argentina*, 4-5.

unhygienic, possibly diseased, and politically radicalized. Argentine government officials increasingly turned to medicine to “cure” these perceived “social pathologies.” New medical institutions were founded based on ideas from “the Italian school of criminal anthropology, along with French degeneration theory, both of which found pathology in the essence or physical traits of the person.”<sup>86</sup>

By the postwar period, the growing “*higienista*” movement was not concerned with replacing the original population but preserving it in the face of supposed racial degeneration. In their eyes, only the power of modern, scientific public health could combat the “illnesses” of “poverty, vagrancy, crime, hysteria, and street violence...”<sup>87</sup> and thus save the national race. The perception of relative hygiene and fitness was defined by notions of racial, national, and even regional difference and hierarchy. Some groups of immigrants or preexisting populations were better for the health of the “national body” than others. Ideas of regional and ethnic difference meant that even within people considered “white,” like Hispanics, there was a complex inner hierarchy, such as between Castilians, Basques, Galicians and Catalonians. Thus one source of racial deterioration, especially according to nationalists advocating for immigration restrictions, was having too high a population of less desirable people.

Fears of racial degeneration were stoked by ideas of racial competition and social Darwinism that were all the rage in early twentieth century Argentina. The historian Adriana Novoa has shown how the concept of Darwinian extinction deeply permeated the worldviews of Argentine scientists and intellectuals. After the arrival of Darwin’s theory of natural selection, “races” were in competition and the process of progress demanded sacrifices. The evolution of mankind and civilization required the extinction of inferior races: “The extinction of the Indians

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<sup>86</sup> Rodriguez, *Civilizing Argentina*, 249.

<sup>87</sup> *Ibid.*, 6.

and of people of African descent pointed to the terminality of time for those deemed inferior, a fact that confirmed the continuation of progress. Selection was not possible without loss, but this loss was now experienced as grounds for celebration.”<sup>88</sup>

At the heart of this ideology was the idea that some people were inherently unfit for modernity. Argentines soon wondered if they too would pass into a history, a casualty on the unending march of progress. Novoa points to the short story of Franco-Argentine writer Paul Groussac that warns of such a possibility. In “El Centenario” (1896) a man time travels to a future, “ultramodern” Buenos Aires. There he finds himself invisible to its inhabitants, “Just as the Indians were driven to extinction because they could not be reconciled with a modern country, the protagonist cannot coexist with the reality of a truly civilized city.”<sup>89</sup> Popular media, in periodic summations of Darwin’s theory of natural selection, emphasized that “*darwinismo*” was still at work on the human species. One such popular science article stressed that natural selection “has been applied to the struggle between nations.”<sup>90</sup> Another in 1929 concluded: “The process of racial evolution began with rigid selection. The weak, succumbed; the strong, conquered...”<sup>91</sup>

This racial anxiety, a fear of degeneration or lack of fitness for modernity, underpinned the veneration for the hero aviator. Two qualities—consistently at the fore in popular and industry media—were central to the positive evaluation of pilots: energy and, closely related, willpower. Medical exams at the Gabinete Psico-Fisiológico tested a candidate’s resistance to fatigue. The doctors demanded that pilots avoid an “excess of food, alcohol, tobacco, women,

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<sup>88</sup> Novoa, “The Act or Process of Dying Out,” 237.

<sup>89</sup> *Ibid.*, 239.

<sup>90</sup> Pedro Gamboa, “La ciencia al alcance de todos. La selección natural,” *El Hogar*, Feb. 21, 1919, n.p.

<sup>91</sup> “La Teoría General de la Evolución Animal,” *Crítica*, November 2, 1929.

etc.,” all of which threatened to weaken the body’s resistance to the forces of flight.<sup>92</sup> Repeated exposure to such stresses risked “the aviators’ neurosis” caused by the “excessive expenditure of nervous energy.”<sup>93</sup> Willpower, required for moral and hygienic discipline, enabled the pilot to overcome his environment. “Nervous” individuals were unsuitable for flight because they lacked such willpower, and “the slightest disappointment takes on unexpected proportions for them and their state of health suffers.”<sup>94</sup>

As seen in chapter one, Jorge Newbery was depicted in the popular and aviation press as a “poet of energy.”<sup>95</sup> Col. Enrique Mosconi, an avid supporter of national aviation at this time, gave a speech with similar language to honor a “raid” by Anglo-Argentine Eduardo Hearne from Rio to Buenos Aires in 1921. Hearne’s feat, by “Facing fatigue, vicissitudes, brokenness, to give a day of satisfaction to the country,” was “worth more than a library of writings about education.” He showed that “in the young Argentine breast the sacred fire is lit and longingly burns the desire to always face the fatigue and struggle of life.”<sup>96</sup> According to *Caras y Caretas*, Pedro Zanni’s successful flight across Europe and Asia revealed him to be “an essentially strong and healthy organism to face fatigue for long weeks, at the same time as variation in climate, heights, air currents, etc.” Only the “best aviators” of a nation could hope to handle such conditions.<sup>97</sup>

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<sup>92</sup> Milano, “Fisiologia-Inaptitud,” 31. This call for discipline and moderation was a common feature of Latin American “eugenic hygiene” practices. As Nancy Leys Stepan has shown, public health officials and scientists across the region adopted Neo-Lamarckian notions that linked hygiene and racial health. Thus things like alcohol, tobacco, drugs, and sex, if unchecked, could be “racial poisons” that undermine the long-term health of the user’s race. See Stepan, *The House of Eugenics*, chapter three.

<sup>93</sup> “La enfermedad de los aviadores,” *Caras y Caretas*, June 12, 1920, 18.

<sup>94</sup> “Las Dos Primeras Conferencias del Curso Actual,” *Aviación*, August 10, 1925, 16.

<sup>95</sup> Perotti, “Jorge Newbery,” 57-59.

<sup>96</sup> “*Afrontar fatigas, vicissitudes, quebrantos, por dar un día de satisfacción a la patria, vale más que una biblioteca de escritos sobre educación. ... en los jóvenes pechos argentinos se enciende el fuego sagrado y arda perennemente el anhelo de afrontar siempre las fatigas y luchas de la vida...*” Speech by Col. Enrique Mosconi from February 1921, quoted at length in Lironi, *Misiones aeronáuticas extranjeras*, 108.

<sup>97</sup> “Zanni,” *Caras y Caretas*, August 30, 1924, 54.

In effect, aviation medical authorities were going beyond the efforts of mainstream eugenics in Argentina, which through the increasingly popular program of biotypology sought to define male and female biological normativity across different racial and ethnic “types.”<sup>98</sup> The heroic pilot represented the biological elite. But crucially, he was not separated from the wider “race” or nationality he represented—the *aviador* now lacked the superhuman connotations of the “bird-man” archetype from before World War I. Instead, he was the embodiment of the biological potential for Argentine men, even if most could not hope to live up to the demands of heroic flight.

Women, rarely referenced in aviation medicine publications from the 1920s, represented the antithesis of these qualities—they were supposedly burdened by a biologically-determined lack of willpower, discipline, and emotional and physical resilience. Thus the qualities necessary for modernity were fundamentally masculine in the eyes of the aviation community and Argentine public.

Energy and willpower were also deemed essential for men in wider society. In the popular media, energy was the currency of modernity. It was what enabled individuals to weather the storm of social and material change experienced since the late nineteenth century, particularly in Buenos Aires. Embedded in discussions of energy and modernity were usually critiques of the perceived violence and chaos of velocity. Velocity both in the new machines zipping over Argentine roads or across her skies, and in the demographic and cultural changes rocking the nation. One prominent social critic who wrote for *El Hogar* wrote in his 1920 column entitled “The problem of life”:

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<sup>98</sup> The focus for most biotypologists was the female body and fertility. For the history of biotypology in Argentina, see Eraso, “Biotypology, Endocrinology, and Sterilization.”

And now velocity is everything. We live in a continuous race, hurrying to get to a place where we have nothing to do. It is a violent, horrible rush, full of urges, of frights, of violence. A telegraph put here, gasoline over there, cars, electricity, trains, airplanes, submarines, gliders... total chaos! Where are we going? What do we live for? How can we live happily?<sup>99</sup>

Even if expressed positively, there was a sense that the pace of movement was only going to quicken, that progress was an unstoppable accelerating force, as articulated by another columnist in 1928:

The last hundred years constitute a formidable leap in civilization... The differences with everything are so surprising that the finest imagination would not have been able to foresee them... The past is dead. We are in a wonderful and promising present. And the only thing that is evidently true is that this present will disappear much sooner than the past time to which we refer.<sup>100</sup>

Aviation officials, at the center of such change, were characteristically jubilant in their assessments of this acceleration. As the military officer Jorge Crespo declared in a 1923 speech, “the pace of life is accelerating every day in such a way that the smallest break in today’s dizziness is going to distance us faster than yesterday’s. Progress is the child of human ingenuity and does not know the limits of time or space.”<sup>101</sup>

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<sup>99</sup> “Y luego, esa velocidad para todo. Vivimos en una disparada continua, apurados por llegar a donde nada tenemos que hacer. Es un trajín violento, horrible, de carreras, de apremios, de sustos, de violencias. Meta telégrafo por acá, nafta por allá, automóviles, trenes eléctricos, aeroplanos, submarinos, deslizadores, ¡el caos!...¿A dónde vamos?...¿Para que vivimos? ¿Cómo vivir felices?” “El problema de la vida,” *El Hogar*, April 9, 1920, 15.

<sup>100</sup> “Los cien últimos años constituyen un salto formidable en la civilización... Es tan sorprendente la diferencia de todo, que la imaginación más afinada no sería capaz de haber previsto los sucesos... El pasado ha muerto. Estamos en un presente maravilloso y promisor. Y lo único evidentemente cierto es que este presente desaparecerá mucho más pronto aún que el pasado a que nos referimos.” “Las transformaciones del mundo en cien años,” *El Hogar*, December 14, 1928, 189.

<sup>101</sup> “...el ritmo de la vida se acelera cada día en forma tal, que la menor tregua de hoy nos aleja vertiginosamente del ayer. Es que el progreso es hijo del ingenio humano y éste como aquél no conocen límites ni en el tiempo ni en el espacio.” Untitled speech by Jorge Crespo, quoted at length in Lironi, *Misiones aeronáuticas extranjeras*, 165.

The intensity of the experience of modernity, primarily in cities, was linked to the prevailing public health discourse on mental illness. This was most noticeable in the diagnosis of “hysteria” in women, often deemed as a “side effect of modern urban stresses” on the supposedly more fragile female constitution and psyche.<sup>102</sup> The common belief expressed in popular and medical literature that women were more prone to fatigue was a frequent justification to prevent them from working outside the home, participating in organized sports, and being an equal member of civil society.

Eventually this anxiety over psychological degeneration extended to society as a whole. One author in his 1925 short story “The man of the future” feared for the effects of “scientific and industrial development” on the human race:

Many indications make us fear that man is decaying pitifully, that [he] has paid very dearly for his acquisitions, and that maybe the time will soon come of the bankruptcy of body and brain... There is no doubt that, overall, those who live in big cities are increasingly losing their physical energy... As for nervous diseases and madness, they grow beyond what could be feared.<sup>103</sup>

He imagined a far future “with buildings of such marvelous height, that the sky will appear among them like light through cracks... The machines will never rest.” But these machines must run silently because “the weak nerves of the inhabitants will not be able to hear any noise.” Men only expend mental energy as cars, airplanes, and other mechanical contrivances keep them immobilized. After traveling a few more centuries into the future, the world is depopulated. So many people had broken down into madness that civilization had collapsed. But after the end of

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<sup>102</sup> Rodriguez, *Civilizing Argentina*, 74.

<sup>103</sup> “*Muchos indicios hacen temer que el hombre decae lastimosamente, que ha comprado muy caras sus adquisiciones, y que tal vez no tarde en llegar a la bancarrota de cuerpo y cerebro... Es indudable que, en conjunto, los que viven en las grandes ciudades van perdiendo cada vez más sus energías físicas... En cuanto a las enfermedades nerviosas y a la locura, van creciendo más allá de lo que pudiera temerse.*” “El hombre del futuro,” *El Hogar*, January 2, 1925, 55.

“our race,” a new civilization could be born based on Christian values of fraternity, love and faith.<sup>104</sup>

These apprehensions about the consequences of modernity on male bodies continued in the 1930s and prompted new policies at the national level. As the historian Yolanda Eraso shows in her study of negative eugenics practices at the time, the creation of the National Department of Maternity and Infantile Hygiene (1938)—primarily concerned with women’s reproductive health—was partially justified by concerns over the health of male bodies and minds. In the 1936 Senatorial debate to establish the new department, a Socialist deputy argued “One Argentinian in three grows up to be an inferior man” and “the energies of the nation are in danger.”<sup>105</sup> New laws such as the infamous 1936 law of anti-venereal prophylaxis, which “criminalized and penalized venereal contagion and ordered the mandatory treatment of male venereal patients,” brought new scrutiny to male bodies to prevent the “degeneration of the race.”<sup>106</sup>

Regardless of the moral judgment attributed to the direction of material progress, energy was essential to surviving the present and future, and the pilot was seen as particularly amenable to such a “kinetic modernity.”<sup>107</sup> If a rapidly changing world demanded heroic efforts of energy and willpower, without which a people risks elimination in the evolution of mankind and its civilization, then it is easy to see why so much stock was placed in the performance of pilots on raids. After all, as one commentator wrote in 1923, that the “Argentine condors...must proclaim what a race can [do], when their individuals nest in their breasts healthy and strong hearts,

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<sup>104</sup> “El hombre del futuro,” 55.

<sup>105</sup> Eraso, “Biotypology, Endocrinology, and Sterilization,” 793.

<sup>106</sup> Milanesio, “Redefining Men’s Sexuality,” 463-91, 463-4.

<sup>107</sup> To borrow a common phrase from Mobility Studies.



dominating with their skill and will [*anima*].”<sup>108</sup> In late 1924, in the wake of Zanni’s and Hillcoat’s raids, one *Caras y Caretas* writer was left hopeful for the future of the Argentine “race”:

The interesting thing is to verify that men of the fortitude of Hillcoat and Zanni abound in this land. Let us see in the effort of this brave new man not only the purpose of cheap exhibitionism but rather the impetus of a new race that wants to emerge imposing itself against all the obstacles that big enterprises demand.<sup>109</sup>

The greatest jubilation over the biological implications of heroic flight came in early 1926 when Ramón Franco and two crewmembers, Julio Ruiz de Alda and Pablo Rada, flew from Spain to Buenos Aires via West Africa and Brazil. Franco’s flight caused a national sensation, likely the most extensive celebration ever put on for an aviator. As will be discussed in chapter four, the flight of the *Plus Ultra* was an important moment in the articulation of an Argentine identity even though the aviators were foreign. The growth of the “Hispanist” movement, which sought to rehabilitate the national Spanish identity, had effectively rendered the Spaniards culturally identical to Argentines in the popular imagination. But many took this a step further, arguing that Argentines belonged to a Hispanic race, simply called “*la raza*.” By donning such a pan-Hispanic racial identity, Argentine social commentators were able to claim Franco’s feat as a signal of their own racial fitness for modernity. As one characteristic article in *La Prensa* declared, “an exceptional dose of physical energy and, above all, an unwavering will, were

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<sup>108</sup> “...los cóndores argentinos... han de pregonar lo que puede una raza, cuando sus individuos anidan en sus pechos corazones sanos y fuertes, dominando con su pericia y anima.” “La vuelta al mundo en aeroplano: Partida de la misión argentina,” *Aviación*, November 30, 1923, 2.

<sup>109</sup> “Lo interesante es comprobar que hombres del temple de Hillcoat y Zanni abundan por esta tierra. Veamos en el esfuerzo de este nuevo valiente no ya el propósito de exhibicionismo chabacano sino más bien el ímpetu de una nueva raza que desea surgir imponiéndose contra todos los obstáculos que las grandes empresas exigen.” “El esfuerzo del aviador Hillcoat,” *Caras y Caretas*, December 6, 1924, 46.

imposed to crystallize in fact the almost fantastic adventure.” In the end, “Commander Franco and his companions have given the world a beautiful example of energy and practical spirit...”<sup>110</sup>

According to some media outlets, the racialized reassurances provided by the raid extended beyond *la raza*. The editorial board of *El Hogar* believed the flight would have a far greater impact than the other notable achievements of the decade. It represented the “future of the white race” as a whole. The flight had been “a jolt of the Spanish-American consciousness,” an “awakening of Latin America.” As the editorial then described:

The great statesmen of the end of the last century and the beginning of the present used to live preoccupied with the idea of the awakening of the Chinese conscience. However, the old yellow empire was not the only thing that slept in the world: Spain also slept, the Hispano-American countries... The white race, obsessed with the yellow danger, forgot their own reserves. Perhaps the flight of Franco serves to remind them.<sup>111</sup>

A revitalized Hispanic world “would completely modify Europe’s ideas about the situation and the future of the white race. She would understand then that now the Mediterranean Sea of western civilization is the Atlantic Ocean.”<sup>112</sup> Thus Franco’s great flight not only confirmed the fitness of Hispanic-descended peoples, but it also reinforced that the reins of history and progress would continue to be in the hands of the white race, including Argentines.

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<sup>110</sup> “Una dosis excepcional de energía física y, más que todo, una voluntad inquebrantable, se imponían, para cristalizar en hecho la casi fantástica aventura. En buenas palabras, el comandante Franco y sus compañeros han dado al mundo un hermoso ejemplo de energía y de espíritu práctico...” “La Enseñanza Moral del Vuelo de Franco,” *La Prensa*, February 5, 1926, 15.

<sup>111</sup> “Los grandes estadistas de fines del siglo pasado y comienzos del presente salieron vivir preocupados con la idea del despertar de la conciencia china. Sin embargo, no era el viejo imperio amarillo lo único que dormía en el mundo: también dormía España, también dormían los países hispanoamericanos... La raza blanca, obsesionada con el peligro amarillo, se olvidaba de sus propias reservas. Quizá el vuelo de Franco sirva para recordárselas.” “La repercusión mundial del vuelo de Franco,” *El Hogar*, February 5, 1926, 3.

<sup>112</sup> “El despertar hispanoamericano sería el acontecimiento más importante de este siglo, y modificaría completamente las ideas de Europa acerca de la situación y el porvenir de la raza blanca. Ella comprendería entonces que ahora el Mar Mediterráneo de la civilización occidental es el Océano Atlántico.” “La repercusión mundial del vuelo de Franco,” 3.

These discourses of a racialized biological fitness rarely explicitly referenced their gendered nature. When a male aviator did a great feat, it was characterized as an example for all Argentines to follow. But the reality behind the rhetoric was highly gendered. Male aviators were heroes for boys and men to emulate. Modern masculinity—which espoused energy and willpower—was needed to ensure the material progress of the nation. The gendered nature of this discourse, as is so often the case with masculinity, was much more apparent in the discussion of women, flight, and modernity.

Just as the male hero pilot was at the peak of his social cachet, the age of male heroic aviation was entering its twilight years. For the long-prophesized “Air Age” to truly begin, the Heroic Age had to end. In essence, male celebrity pilots were victims of their own success, an irony understood by pilots at the time.<sup>113</sup> Their efforts were making the promises of aviation an everyday reality, which undoubtedly lessened the romantic sentiments and entertainment value around flight. The narratives pushed by the aviation industry itself were changing, and with it the image of the male pilot. Whereas the industry was initially happy to trumpet the new technological capabilities of airplanes on great raids, by the 1930s they were emphasizing the safety and regularity of commercial aviation.<sup>114</sup> Refraining from narratives of “extraordinary” aviation, they now asserted that the future of their industry was ordinary, so ordinary that the everyday person would soon be flying as passengers, and someday, pilots themselves.

The *aviador* was transforming from an exceptional individual for the common man to emulate, to an identity *of* the common man. Thousands of pilots would be needed for the coming “Air Age,” whether in the context of peace or war, and they would be cast more in the light of

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<sup>113</sup> Wohl, *The Spectacle of Flight*, 201, 293.

<sup>114</sup> For the decline of the Heroic Age of aviation in the North Atlantic nations, see Wohl, *The Spectacle of Flight*, chapter six, and Corn, *The Winged Gospel*, epilogue.

machine operators than the exceptional men of heroic aviation. In Argentina, this change melded with a developing masculine culture in the working and middle classes which promoted technical skill, knowledge, and inventiveness as a means to socioeconomic upward mobility and dignity (see chapter four).

### **The Aviadora, Modern Femininity, and the Articulation of Argentine Progress**

Whereas modern masculinity was deemed essential for the nation, intellectuals and government officials were ambivalent at best about the possibilities offered by “*la mujer moderna*”—the modern woman. As I will now show, the narratives of heroic aviation and biological fitness created a space for a handful of prominent women flyers in the 1930s. But in the end, Argentine intellectuals and media outlets largely rejected *la mujer moderna*. They constructed a narrative of national progress that venerated material improvement while pushing back on the interwar period’s most divisive social question, the role of women in the modern age.

Argentine women had always shown an interest in aviation, whether as spectators, enthusiasts, or pilots. Women of all social classes were markers of the emotional weight of great flights and served as a necessary feminine opposite to the masculinity of aviators. Celebrity pilots were mobbed by groups of women, inflating their social cachet. The admiration of *señoritas* was written into the script of heroic aviation, like when a beautiful woman would dramatically kiss the aviator’s cheek before departure.

Yet when it came to women hopping into the cockpit themselves, the situation was quite different. Aviation largely remained an exclusively male space—all of the social clubs dedicated to the activity barred women members until the late 1920s. Prospective *aviadoras* had to find

individual instructors willing to train them, which a handful succeeded into doing. The nation had its first licensed female pilot in 1914, and about a dozen more women would follow her by 1930. But they rarely flew after receiving their licenses, and none became prominent national figures. Women pilots did not fit the prevailing narrative of aviation, which was still steeped in the *belle époque* discourse of a masculine conquest of nature. In the media, when men flew, it demonstrated their bold and courageous dedication to this scientific conquest. When a woman took to the skies, her flight was invariably a poetic and emotional journey with little to do with the furtherance of progress.

At the outset of the interwar period, women were largely seen as biologically unfit for the cockpit. Their bodies and minds were supposedly too fragile to handle the velocity, violence, and risk. As seen above, aviation was perceived as a quintessentially masculine activity, and thus according to the prevailing wisdom was incompatible with female biology. One representative article in *El Hogar* in 1919 declared women unfit for “masculine professions” because of their inherent weakness and lack of willpower. The gravest ostensible shortcoming was the latter, since it made women easily frightened, overemotional, and more susceptible to fatigue. To dissuade any notions of nurture over nature, the author emphasized that these characteristics were “fixed by inheritance in the nervous system.” Such medicalized arguments for gender difference frequently warned that women in masculine environments often develop “grave physiological and moral disorders.”<sup>115</sup> Thirteen years later, this narrative was still present in the popular media. A *Mundo Argentino* columnist wrote that “life is everyday more dizzying” for women, and that all this activity “causes much more fatigue in the nerves and brain.” They are

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<sup>115</sup> “La emotividad femenina,” *El Hogar*, April 18, 1919, 10.

more frequently experiencing chronic exhaustion and “modern neurasthenia” because “women are attacked by the vertigo of speed, hectic life, driving and sports.”<sup>116</sup>

In the early narratives of Argentine aviation, women were depicted as sentimental and naturalistic. Their love was counterproductive to the male aviators’ progressive mission that demanded total dedication and sacrifice unto death. E. Ramirez Angel’s 1916 short story “A long flight”—wherein a pilot crash lands in a fantastical land, meets a mystical, naturalistic woman, and is seduced away from flight and civilization—was reprinted by *El Hogar* in 1925. A more morose version of this narrative appeared in *Mundo Argentino* in 1933. The short story “Longchamps...Longchamps” by Carlos E. D’Alkaine features a young, handsome airmail pilot on the Buenos Aires-Jujuy route who falls in love with a beautiful woman. His life increasingly consumed by love, the two eventually decide to get married. But on the day of his wedding the pilot finds himself stuck in Jujuy, blocked by a line of storms. Rashly, he takes off to avoid delaying the wedding, and the airplane never arrives in the capital.<sup>117</sup>

This hostility toward feminine sentimentality in aviation literature was not unique to Argentina. In the most famous interwar literary work by the French aviator and writer Antoine de Saint-Exupéry, *Vol de Nuit* [Night Flight] (1931), the needs and emotions of women are depicted as antithetical to the forging of progress—in this case represented by the delivery of airmail. Saint-Exupéry’s novel was based on his experiences working for *La Ligne* [the line], as the French airline Aeropostale was called by its lionizers, which arrived in Argentina in 1928. During the climatic drama of *Vol de Nuit*, the station manager Rivière desperately works to find a missing pilot. When the pilot’s worried wife arrives at the station, Rivière turns her away, rebuking her for having distracted his effort with her womanly concern. As she leaves, the

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<sup>116</sup> “Charlas femininas, Mujeres Modernas,” *Mundo Argentino*, November 9, 1932, 52.

<sup>117</sup> Carlos E. D’Alkaine, “Longchamps...Longchamps,” *Mundo Argentino*, June 21, 1933, 20-21, 23.

station manager thinks to himself: “To love, only to love, leads nowhere. Rivière knew a dark sense of duty, greater than that of love.”<sup>118</sup> According to the historian Robert Wohl, Saint-Exupéry perfectly captured the culture of *La Ligne*, which often shared rhetorical and ideological similarities to the vehement misogyny of their Fascist counterparts in Italy and Germany. In *Vol de Nuit*, masculine duty must take precedence over all else, including personal happiness and love.<sup>119</sup>

The combination of biological arguments against women flyers and such narratives that depicted their “nature” as antithetical to flight kept most avenues for the advancement of women pilots closed. Yet the real existence of *aviadoras* in Argentina and around the world ensured that the woman aviator had a place in local popular imagination. When a woman (fictional or real) insisted on flying anyway, she was embedded in a narrative of liberation and—as I will discuss further below—tragedy.

By the interwar period, flight in an airplane was a frequent metaphor for the liberation of women from social obligations and restrictions.<sup>120</sup> Girls and young women were writing into *Mundo Argentino* that their “greatest happiness” would be to fly away from their life in an airplane.<sup>121</sup> In popular fiction, the narrative around the *aviadora* was remarkably consistent. A young girl, on the verge of adulthood and marriage, dreams of a different life. Her soul craves “grand things.” Flight offers a metaphorical and literal escape from her natural destiny as a

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<sup>118</sup> Antoine de Saint-Exupéry, *Night Flight* (1932; repr., New York: Harcourt, Inc., n.d.), 66.

<sup>119</sup> For a discussion of *La Ligne* and its culture see Wohl, *The Spectacle of Flight*, chapter four.

<sup>120</sup> Liberation was a frequent theme of aviation culture around the world and with men as well. As Robert Wohl reveals about the depiction of flight in interwar Hollywood movies: “flying was essentially a form of masculine escape from the bonds of earth, humdrum existence, and the constraining responsibilities of everyday life, especially the demands of nagging women.” Wohl, *The Spectacle of Flight*, 152.

<sup>121</sup> There are numerous examples of this in the biweekly “Page of the Readers” [*la página de los lectores*], which *Mundo Argentino* maintained from 1919 or earlier to 1922.

mother and wife.<sup>122</sup> Liberation seems implied in Beatriz Eguia Muñoz's 1927 poem entitled "El aeroplano," published in *El Hogar*: "Forget the roots that tie us to the ground, / Forget for a moment this hard oppression / Of the crushing earth that holds us in its arms, / And dream that we are really going to the sun."<sup>123</sup>

This narrative was reinforced by the frequent usage of the *aviadora* in popular culture to represent "la mujer moderna," or the "Modern Girl" archetype of the North Atlantic. Argentine media during the interwar period was flooded by images and stories from the United States depicting a modern womanhood of greater freedom and empowerment. *La mujer moderna* was wealthy, active, athletic and independent. She wore lighter and more revealing clothing. She smoked cigarettes in public, drove motor cars, and flew airplanes. The young and beautiful woman pilot, dressed in a flight suit with pants, posing alongside her aerial steed, was one of the most radical depictions of North American modernity (see fig. 3.10). They were stand-ins for both the material progress represented by the sleek new aircraft and the radical social progress represented by the female presence in the cockpit.

Elite feminist organizations which advocated for women's suffrage and basic economic and legal rights began to form in Argentina around the turn-of-the-century. Yet feminist

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<sup>122</sup> See the below discussion of Amadeo Tovia, "Lia Wood" from *Caras y Caretas* and "La colegiala y el aviador" in *La Prensa*.

<sup>123</sup> "Olvidar las raíces que nos atan al suelo, / Olvidar un instante esta dura opresión / De la tierra aplastante que nos tiene en sus brazos, / Y soñar que de veras nos marchamos al sol." Beatriz Eguia Muñoz, "El aeroplano," *El Hogar*, March 11, 1927, 4.





Figure 3.10. *La mujer moderna*, on and off the airfield, was a staple of interwar advertising. Left, *El Hogar*, September 27, 1929, 30; right, *Caras y Caretas*, December 27, 1924, 38.

organizations struggled to attain the success of their male counterparts, who secured male universal suffrage in 1912—women did not receive the vote until 1947.<sup>124</sup> The historian Silvana A. Palermo has shown how Congressional debates around suffrage oscillated between enlightenment ideals of political equality and liberty, and other ideologies which allocated different people “natural” places in society. Detractors of political equality for the genders argued the supposedly inherent characteristics of women—“self-sacrifice, emotional sensitivity, and sentimentality”—made them better suited to the domestic sphere. The “natural” rationality of men gave them a disposition for the “art of governance.”<sup>125</sup> Elite suffragists often countered

<sup>124</sup> For the history of the women’s suffrage and feminist movements in Argentina, see Introduction, footnote 22.

<sup>125</sup> Palermo, *Los derechos políticos*, 11.

this rhetoric by arguing that women should be able to vote *because* of their essential position as the mothers and wives of the nation. In essence, they reasoned that political empowerment did not need to involve a re-evaluation of the role of women in the domestic sphere. Through such rhetoric, elite suffragists attempted to minimize the real locus of conflict with changing gender norms: women in the workforce.

The work of US and Argentine scholars has shown how women's labor was essential to industrial modernity, both in their domestic and extra-domestic work.<sup>126</sup> Yet their presence in the public sphere was seen as threatening to traditional gender hierarchies and notions of social cohesion. The dislocations of modernity drove women into new forms of industrial and sexual labor. Lower income women were supplanted by men and machines in many of their traditional forms of employment. Thousands of women were also migrating from the countryside to the city in search of opportunities. Some feminists argued that political and legal rights should reflect the reality of women in the workforce.<sup>127</sup> Meanwhile detractors lamented the supposed weakening of the social bonds of family as more and more young women entered the "morally compromising" urban workforce.<sup>128</sup> Reformists and conservatives alike mobilized secular and religious sentiments to justify various forms of medical and legal control over women's labor, behavior, and health.

Furthermore, women were seen as key actors in creating and maintaining the bourgeois, middle-class family, the strongly gendered ideal family structure in North American and

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<sup>126</sup> For the history of women's labor in the modern economy of Argentina, see Introduction, footnote 34. For the importance of laboring women for industrial modernity in the North Atlantic, see Marie Hicks, *Programmed Inequality: How Britain Discarded Women Technologists and Lost its Edge in Computing* (Cambridge, MA: The MIT Press, 2017), introduction; and Maxine Berg, "What Difference Did Women's Work Make to the Industrial Revolution?," *History Workshop* 35 (Spring 1993): 22-44.

<sup>127</sup> "Charles femeninas: El porvenir," *Mundo Argentino*, July 23, 1930, n.p.; "Ha llegado el momento de que la mujer argentina vaya a las urnas," *Mundo Argentino*, January 27, 1932, 3.

<sup>128</sup> Pite, "Engendering Argentine History," 46.

European industrial modernity.<sup>129</sup> The powerful collection of bourgeois social expectations carried along in popular media and advertising became an essential aspect of the Argentine identity.<sup>130</sup> This created a fundamental tension within gender relations of the period: the realities of modernity drove women into the industrial workplace just as constructed gender norms reinforced that in the interest of Argentine society the woman's place was as a bourgeois *ama de casa* [housewife].

The archetype of *la mujer moderna* represented by radical figures like the *aviadora* largely shunned the role of the *ama de casa*. Despite her high-class status in the popular imagination, *la mujer moderna* had more to do with the thousands of humbler women laboring in the newly-expanded industrial economy. They were connected through their independence outside of the home and the use of their bodies in pursuits usually ascribed to men. As one commentator wrote, “the modern woman, the youth of today...want exercise, movement, muscles, fresh air, and liberty.”<sup>131</sup> The physicality of *la mujer moderna* seems to have been particularly galling for traditionalists. Although most social commentators admitted that some organized physical activity was important for the development of the female body and character, they almost universally derided women who participated in “athletics, like that practiced by men.”<sup>132</sup> Attempting athletic records was deemed definitively unfeminine. Flight for women was still characterized in the sporting mold, with popular *aviadoras* frequently called “sportswomen” and “recordwomen” in the media.

While there was little cross-class solidarity among Argentine women, *argentinas* all faced heavy resistance to their new social and political prominence. Their detractors harnessed

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<sup>129</sup> See Cowan, *More Work for Mother*, especially chapter two.

<sup>130</sup> For the middle-class housewife in Argentina, see Pite, *Creating a Common Table*, 7-25.

<sup>131</sup> “Charlas Femeninas: La Juventud,” *Mundo Argentino*, July 4, 1934, 40.

<sup>132</sup> “1904 – Veinte años de sociabilidad – 1924,” *El Hogar*, January 4, 1924, 58.

the same biological-racial discourses that promoted male aviation, although to a different effect. The gravest threat brandished by social traditionalists was the “masculinization” of women, in their bodies, fashion, habits and labor. While for some such “masculinization” was merely an unfortunate “fashion,” others warned of the consequences for human evolution. One particularly apocalyptic article in *La Prensa* in 1926 entitled “Feminism and Science” argued that masculinizing women was an “aberration” and was harmful for “our collective evolution.” According to the analysis, feminism would inevitably “feminize men..., masculinize women, and form in everyone an androgenous psychology.”<sup>133</sup> If the separation of genders into distinct “spheres” had been an intrinsic aspect of human evolution for millions of years, what risks were there for the future of mankind in a world without such distinctions? Of course radical gender equality was a distant possibility in Argentina, so such pronouncements only served as scaremongering. But they were effective, and as we shall see, journalists and intellectuals went to great lengths to emphasize that their heroic *aviadoras* were still fundamentally feminine despite their masculine qualities.

Although *aviadoras* were exceptionally rare in Argentine society, the web of popular associations among liberation, athletics, and feminism meant flight was frequently invoked in discussions of femininity and its main purview, modern love and sentimentality. The airplane, and the speed it represented, was drawn into seemingly unrelated social debates on gender relations. For some commentators, modern love was shaped by velocity. A prescient article for *Caras y Caretas* observed that “a journey in this age that created the car and the airplane... is not the separation of yesteryear” for lovers. It then asks, “Distances have diminished on the wings of speed, has the fire of love diminished [too]?” The author argues that such speed has been

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<sup>133</sup> “El Feminismo y la Ciencia: Masculinizar a la mujer equivale a marcar a la extinción de la especie en término relativamente,” *La Prensa*, January 14, 1926.

beneficial, stripping romance of the “literary excesses” caused by long-lasting separations. The periodic, extended separations between traveling lovers created the “damaged, hysterical love” of the past. The article concludes that with modern transportation ending such painful good-byes, “there is greater mutual faith and a calm and confident joy.”<sup>134</sup>

In an article more characteristic of intellectual responses to velocity and romance, a columnist for *Mundo Argentino* created an imaginary conversation between two women, one a traditional “sentimentalist” and the other a modern “materialist”. The traditional woman begins with a broadside against modern gender relations: “Everything is gross materialism. The youth today already do not know how to look, nor speak, nor court. They know sports.” The modern woman then replied: “I am a girl of my time. It’s true, flirting has entered materialistic terrain. And it is logical. For we live in the century of the airplane, the submarine, and the Charleston.” She continues that although “man is distancing himself more and more from women,... he is stronger in industries, more practical... [He] is also more positive and less false every day.” Any women who feel alienated from modern men should “learn sports, dance the shimmy, and drink a good cocktail.”<sup>135</sup> But the traditionalist got the last word, declaring, “Materialism has killed idealism. Sports [have killed] love. There is no time for flirting, there is no time to waste.”<sup>136</sup> Modern love was one of dancing, sports, and perpetual motion.

The discourse around the demands of modernity for women centered on energy and willpower too. But whereas such qualities were essential for the modern man, in popular

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<sup>134</sup> “De nuestro tiempo, la despedida,” *Caras y Caretas*, December 25, 1920, 193.

<sup>135</sup> “Soy una muchacha de mi tiempo. Es verdad, el flirt ha entrado en un terreno materialista. Y es lógico. Para eso vivimos en el siglo del aeroplano, del submarino y del charleston. El hombre se aleja cada vez más de la mujer, pero es más fuerte en industrias, más práctico, más útil. Además es cada días más positivo y menos falso. Las que se quejan de la indiferencia de los hombres; que aprendan deportes, que bailen un shimmy, que beban con alegres risas un buen cocktail.” “El amor y los deportes,” *Mundo Argentino*, July 29, 1931, n.p.

<sup>136</sup> “El materialismo ha muerto al idealismo. El deporte al amor. No hay tiempo para el coqueteo, no hay tiempo que perder...” “El amor y los deportes.”

narratives they were dangerous for women. When it came to *la mujer moderna* and especially the *aviadora*, one word consistently came to the fore: *inquietud* or restlessness. She was unsatisfied with her traditional social roles and had an unstoppable desire for greater things. Most of the famous foreign pilots like Adrienne Bolland and Ely Jonescu were described as unusually driven and stubborn in their desire to fly.<sup>137</sup> In popular narratives, this supposedly created a fatal tension between the *aviadora*'s natural femininity and unnatural masculine drive. Her restlessness invariably resulted in her death, or the death of a loved one.

The 1921 short story by Amadeo Tovia tells of a young, intelligent, and charismatic woman named Lia Wood who from an early age did not fit in with her peers. She “attracted the curiosity and envy of women and the most devoted admiration of men.” Lia declares to her father that she will only marry for love, not just for economic security. After a chance encounter with an aviator, “the haunting idea of flying, of detaching herself, if only for moments from the earth, where everything bored and tired her, clung to her brain.”<sup>138</sup> Lia, through her willpower, completes her flight training: “It was, after all, her own dominating blood that spoke for her, her same will, the same determination to achieve the end, even if it was against the whole world.” On the eve of her licensing exam, she decides to adorn her airplane in flowers, announcing “I will marry the sky. It is my boyfriend; my adored boyfriend.” On the last requirement for her exam, a climb to altitude, Lia flies too high and plunges to her death. The story ends with her

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<sup>137</sup> “Con la aviadora Bolland. Una mujer audaz,” *El Hogar*, March 25, 1921, 36; “La mujer que no tiene miedo,” *El Hogar*, April 14, 1922, 7; “Amelia Earhart, la aviadora que asombró al mundo,” *Mundo Argentino*, August 11, 1937, 62.

<sup>138</sup> “la idea obsesionante de volar, de despegarse, aunque por momentos de la tierra, donde todo la aburría y cansaba, se aferró en su cerebro...” Amadeo Tovia, “Lia Wood,” *Caras y Caretas*, October 1, 1921, 45-46.



Figure 3.11. Eulalia watches as the airplane swoops over her Catholic School. Illustration in *La Prensa*, October 18, 1931.

epitaph: “Such a creature has never been and will never be in [this] world.”<sup>139</sup> Her masculine will and “dominating blood” made the feminine Lia a doomed chimera.

Another story published ten years later in *La Prensa* featured a wealthy young woman named Eulalia on the verge of graduation who “loves solitude” and is resisting an arranged marriage. One day an airplane swoops down low over the courtyard of her Catholic school while she is bemoaning her fate (see fig. 3.11). Eulalia instantly falls in love with the aviator. During an upscale dinner party, she hallucinates the sound of a propeller, and is lost in a fantastical flight with her beloved pilot: “The airplane no longer existed. They were only two bodies that merged into a single; [an] arrow of fire that followed, ascending.” But the next day at school she learns that the pilot that flew over the courtyard had died in a crash. Eulalia fell into a deep depression.

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<sup>139</sup> “*Criatura semejante no la hubo ni habrá jamás en el mundo.*” Tovia, “Lia Wood,” 46.

After weeks she starts to feel better, and declares “Now yes, now all life would seem [too] short to look at the sky.”<sup>140</sup> In these stories, the woman pilot—or even a woman who dreams of liberation as a passenger—was doomed to fail, often with tragic ends.

This narrative seemed to be borne out in reality, or at least that was how it was depicted in the media. The first prominent woman aviator in Argentina, Myriam Stefford, was the perfect incarnation of *la mujer moderna*, an image she purposely cultivated. Born Rosa Martha Rossi in Switzerland in 1905, she became a famous actress in European cinema at a young age, changing her name to Myriam Stefford. In 1930 she married the well-known Argentine writer and millionaire Raúl Barón Biza and moved to Buenos Aires. Stefford soon decided to take up aviation, training with the World War I German fighter pilot Luís [Ludwig] G. Fuchs. As would later be remembered, “her desire was as strong as her will. And her will was so unyielding that she was sure to triumph: she would be a great aviator.”<sup>141</sup> In a mere two months she earned her license.

But Stefford was not content to end her aviation career there, reportedly declaring: “I cannot limit myself to the tranquil life of the lady who has obtained a *brevet*.”<sup>142</sup> She decided to attempt the heroic, a raid to all fourteen Argentine provincial capitals in a light airplane.<sup>143</sup> The “Circuit of the Fourteen Provinces” as it was known was a challenge created by Centro de Aviación Civil in 1926 to promote the creation of flight infrastructure in the interior.<sup>144</sup> For most

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<sup>140</sup> “*Ahora sí, ahora toda la vida le parecería corta para mirar al cielo.*” Valetín de Pedro, “La colegiala y el aviador,” *La Prensa*, October 18, 1931.

<sup>141</sup> *Myriam Stefford* (Buenos Aires, 1931), 7. Many of the details of Myriam Stefford’s life and endeavors for this section come from this posthumous “homage” book published in 1931 in response to her death. The booklet was published anonymously, but inside are first-hand recollections of private conversations and letters, which suggests the author was Stefford’s close associate (although it is unlikely it was written by her husband).

<sup>142</sup> “*No puedo limitarme a la vida tranquila de la dama que ha obtenido un brevet de piloto.*” *Myriam Stefford*, 10.

<sup>143</sup> According to the anonymous source, she wanted to fly to Rio de Janeiro, but her husband refused her permission saying it was too dangerous. *Ibid.*, 10-11.

<sup>144</sup> At the time, there were only fourteen provinces, with the remainder of regions being territories.





Figure 3.12. Stefford in 1931 on the eve of her great raid. *Caras y Caretas*, August 15, 1931, 79.

of the interwar period, many of the provinces still lacked paved runways, navigational aids, and weather reporting services. By 1931, two teams of male aviators had completed the Circuit in 1926 and 1927, and one team had died preparing an attempt.<sup>145</sup>

Stefford elected to use her B.F.W.m 23, two-seater monoplane she named “*Chingolo*.”<sup>146</sup> Much like Bolland’s airplane ten years earlier, the *Chingolo* was woefully underpowered for a heroic flight with its Siemens Sh.11 producing a mere 80 hp. But Stefford evidently loved her “*avioneta*” [little airplane] as the press called it. During interviews she frequently called it her “*pajarito gaicho*” [little gaicho bird] and would repeat her slogan: “Little bird with wings of

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<sup>145</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 195-8.

<sup>146</sup> The *Chingolo* is a type of Andean sparrow, known as the rufous-collared sparrow. Although as I will later show Argentine society considered her decidedly foreign, Stefford embraced the nascent Argentine identity, especially of a rural nature, at least superficially. For more on this identity, see chapter four.

paper and a heart of steel.”<sup>147</sup> Stefford also decided to bring along her instructor Fuchs for assistance, although he emphasized in the press that she could have done the raid by herself.<sup>148</sup>

On August 18, 1931, Stefford and Fuchs took off from Morón Airport outside Buenos Aires. Over the next three days, they flew to Corrientes and Santiago del Estero. But on their way to Salta, Stefford had to make an unexpected stop at Los Cerrillos due to weather. On take-off a few hours later, the *Chingolo* failed to gain enough lift, crashing into a grove of trees. Stefford and Fuchs were unharmed, but their *avioneta* was destroyed. In a seeming stroke of luck, the wealthy “sportsman” Mauricio Debuchy decided to help the stranded flyers, sending another identical airplane to Los Cerrillos by train. Three days later, Stefford and Fuchs took off for Salta in the newly baptized “*Chingolo II*”. Despite more inclement weather, they managed to reach La Rioja on August 25.

The following morning Stefford and Fuchs set off for San Juan. At around 9:00am on August 26, the *Chingolo II* crashed in a “sad and desolate plain” of scrub brush near the town of Marayes, killing both pilots instantly. Initial reports suggested the airplane’s engine caught on fire and they were killed attempting a forced landing. But later inquiries established that the *Chingolo II* dove to the ground after a bolt failed in the control system.

The public was shocked by the news of Stefford’s death. When her casket arrived in Buenos Aires, thousands showed up at the train station to pay their respects. As *Caras y Caretas* remembered one year later, seemingly “all of the people of Buenos Aires” visited her memorial at the Centro de Aviación Civil.<sup>149</sup> In a romantic gesture that likely would have pleased

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<sup>147</sup> “Pajarito bueno con alas de papel y corazón de acero.” “Corrientes-Santiago del Estero,” *Jornada*, August 24, 1931, reprinted in *Myriam Stefford*, 25-26.

<sup>148</sup> *Myriam Stefford*, 11.

<sup>149</sup> “Recordando a Miryam Stefford. La influencia maléfica de un brillante,” *Caras y Caretas*, August 27, 1932, 11.

Stefford's sense of drama, her widower Raúl Barón Biza eventually commissioned a massive marble mausoleum in her honor outside of Córdoba.<sup>150</sup>

For the press and in the words of her remembrances, Stefford's life and death were a confirmation of the narrative around women and flight. She was wealthy, foreign, and feminine, yet with an "unstoppable" will. Journalists fell over themselves to emphasize her femininity in light of her heroic death, "The desire to perform a magnificent feat did not kill in her the delicacy of her feelings as a woman and as an artist."<sup>151</sup> According to the newspaper *La Razón*:

She presented that interesting duality: a very eighteenth-century woman, worthy of shining in the halls of the Sun King, and a woman of her time, eager for glory and triumph in the middle of this twentieth century... For being feminine she fell in love with glory and with masculine recklessness she wanted to conquer it.<sup>152</sup>

This duality, a masculine drive for glory and feminine beauty, killed her—at least according to the editors of *Socialista Independiente* newspaper: "She was brave and she was beautiful; she was beautiful and bold and risky; That is why she had to die like this, struck down by an atrocious blow from destiny bent on punishing her audacity and destroying her beauty."<sup>153</sup> Even as social commentators remarked on her masculine drive, they painted it in feminine terms. According to *La Razón*, "she fell in love with glory." After her death, some friends claimed that she was motivated to take on the Circuit to make her adventurous husband proud. It was "her romantic

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<sup>150</sup> The monument was completed in 1935, and still stands today. "Una historia de amor y tragedia," *La Voz*, January 30, 2018, accessed December 20, 2020. <<https://www.lavoz.com.ar/ciudadanos/una-historia-de-amor-y-tragedia>>

<sup>151</sup> "El ansia de realizar una magnífica proeza, no mató en ella la delicadeza de sus sentimientos de mujer y de artista..." "Myriam Stefford," *La Unión de Buenos Aires*, reprinted in *Myriam Stefford*, 73.

<sup>152</sup> "Presentaba esa dualidad interesante: mujer muy siglo XVIII, digna de brillar en los salones del Rey Sol, y mujer muy de su hora, ansiosa de gloria y triunfo en medio de este siglo XX, pleno de nerviosidades... Por femenina se enamoró de la gloria y con masculina temeridad quiso conquistarla pagando a muy caro precio su osadía." "Mujer antes que todo," *La Razón*, reprinted in *Myriam Stefford*, 84.

<sup>153</sup> "Era valiente y era hermosa; era bella y audaz y arriesgada; por eso debía morir así, abatida por un golpe atroz del destino empeñado en castigar su audacia y en destrozarse su belleza." "La muerte de Myriam Stefford," *Socialista Independiente*, reprinted in *Myriam Stefford*, 82-3.

soul” that drove her to great things.<sup>154</sup> Stefford’s life was now firmly embedded in the tragic narrative of the *aviadora*, a woman who “lacked nothing, but dreamt of glory.”<sup>155</sup>

The cautionary overtones of these memorials reflected the growing rejection of *la mujer moderna* in popular culture and politics.<sup>156</sup> As the 1930s wore on, mainstream social thought increasingly separated material and social progress. Previously, most intellectuals argued that social progress, in this case represented by feminism, inevitably followed material modernization—for better and for worse.<sup>157</sup> But the crises of the Great Depression, the rise of Fascism and Communism, and the possibilities of global war eroded this narrative. Social conservatives, who were ascendant in this period, argued that feminism—particularly in the form of women in the workplace—was a failed experiment. One correspondent for *La Prensa* wrote in 1931 that *la mujer moderna* was a rarity even in the supposed heartland of modernity, the United States. In her recent visit to the US, she found that North American women had largely turned their backs on “masculine professions.” The writer argued that the vogue for such activities was drawing down as *norteamericanas* decided that being homemakers was “easier and more favorable.” She concluded that there should be different “models” of women for different societies—in other words that social progress should be tailored to local culture.<sup>158</sup>

As the decade progressed, commentators went a step further, arguing that the lack of social progress for women was one of the reasons their society was relatively stable and peaceful. An editorial for *El Hogar* magazine in June 1936 claimed that Buenos Aires was “one of the cities with the greatest moral cleanliness in the world.” As it continues, “Our time is

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<sup>154</sup> “La ingrata Perdida” *El Eco*, reprinted in *Myriam Stefford*, 75.

<sup>155</sup> “Recordando a Miryam Stefford. La influencia maléfica de un brillante,” *Caras y Caretas*, August 27, 1932, 11.

<sup>156</sup> Eraso, “Biotypology, Endocrinology, and Sterilization,” 796; Hammond, *Women’s Suffrage Movement*, 140.

<sup>157</sup> See, for example, “Los Estados Unidos,” *El Hogar*, December 21, 1928, 3.

<sup>158</sup> “La mujer norte americana,” *La Prensa*, December 20, 1931.

characterized neither by faith, nor by tolerance, nor by tranquility. The airs from outside, which still nourish us, arrive loaded with terrible omens.” The abandonment of the household by women in other countries had led to unemployment, diminishing public religiosity, and an emptiness in the “soul of the family.”<sup>159</sup> But in Argentina, as another columnist wrote, “the Argentine woman has not returned to her home because she never abandoned it.” Almost as if written about *aviadoras*, a journalist for *El Hogar* in 1937 sought to reassure any disillusioned women of the importance of their role in society:

Queen of the home, teacher of her children, angel of charity, script of beauty, idealism and moralization, her task will not be showy, nor outstanding, nor worthy of applause from the street, but she is clothed with greatness, she is holy like no other, and necessary in such a way that it is irreplaceable if the entire social structure is not to tremble and end up collapsing... [The complaint of] female servitude, in civilized societies, is a hysterical tirade [*alegato de histéricas*].<sup>160</sup>

In essence, the role of women as the guardians of ostensibly pre-modern values like the primacy of family and religion made Argentina a beacon of calm, tolerance, and morality for the world.

Yet the modern aspirations of the Argentine identity made it difficult to disentangle material and social progress completely. There was too much uncertainty over the direction of these forces. In a future “Air Age,” women might have to fly. The commercial aviation industry was already marketing towards women to convince them to fly as passengers.<sup>161</sup> More

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<sup>159</sup> “Buenos Aires es esencialmente una de las ciudades de mayor limpieza moral del mundo. Y no hace falta mucho para comprenderlo así. Nuestro tiempo no se caracteriza ni por la fe, ni por la tolerancia, ni por la tranquilidad. Los aires de afuera, que todavía nos nutren, llegan cargados de presagios funestos.” “Moral de Buenos Aires, moral Argentina,” *El Hogar*, June 19, 1936, 3.

<sup>160</sup> “Reina del hogar, maestra de sus hijos, ángel de caridad, guión de belleza, de idealismo y de moralización, su tarea no será llamativa, ni destacada, ni digna del aplauso callejero, pero está revestida de grandeza, es santa como ninguna otra, y necesaria de tal modo que resulta insustituible si no se quiere que toda la armazón social trepide y concluya por venirse al suelo. Eso de la servidumbre femenina, en las sociedades civilizadas, es un alegato de histéricas.” “Feminismo y feminidad,” *El Hogar*, August 6, 1937, 3.

<sup>161</sup> See, for example, Luis Pozzo Ardizzi, “El aeroplano y la mujer,” *El Hogar*, November 1, 1929, 11; “Guía de la mujer práctica. Para viajar en avión,” *El Hogar*, December 27, 1929, 68-9.

consequentially, most industrialized nations had at least one famous woman aviator. Women like Amelia Earhart were clearly demonstrating their capabilities in the cockpit.<sup>162</sup> What did it say about the fitness of the Argentine race for modernity that they lacked great *aviadoras*?

This problem was clearly evident in the coverage of Myriam Stefford's death. Remembrances of Stefford in her homage booklet emphasized her fundamental foreignness—using English words like “sportswoman” or “recordwoman”—and describing her drive to perform masculine activities as unlike her Argentine counterparts, “who only think of ‘pleasing’ and conquering a [social] position, either through their beauty or the solution of marriage.”<sup>163</sup> Yet at her funeral, a civil aviation department official declared Stefford “the prototype of her sex in the modern age” and a “precursor of the woman of the future, that which, alongside of men will tomorrow be a very powerful factor in the perfecting of mankind.”<sup>164</sup> This discrepancy between the supposed future of humanity as a whole and the desired role of women in Argentine society remained a source of tension for the aviation community and public.

The answer for most Argentines was to celebrate the local woman pilot, but only within the heroic mold of the 1920s. Argentine women could fly if they were extraordinary, proof of the biological capabilities of the *raza*. But the *aviadora*, unlike the *aviador*, did not become an identity of the *common* Argentine—at least according to the national media. The narrative of women and flight shifted away from claiming that women were incapable of being pilots during the 1930s. Even the conservative writers at *El Hogar* magazine largely dropped biological

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<sup>162</sup> A fact noted in the Argentine media. See for example, “Amelia Earhart, la aviadora que asombró al mundo,” *Mundo Argentino*, August 11, 1937, 62; “La mujer pájaro,” *Ciencia Popular*, June 1937, 367.

<sup>163</sup> *Myriam Stefford*, 10.

<sup>164</sup> “...el prototipo de su sexo en la edad moderna... ella fue una precursora de la mujer del futuro, la que, al lado de los hombres mañana serán un factor poderosísimo para el perfeccionamiento de la humanidad.” Speech by Sr. Mundin Schaffter, quoted in *Myriam Stefford*, 58.

arguments for the physical inadequacy of women, with one article declaring in 1937 that “the myth of the inferiority of women has passed out of fashion.”<sup>165</sup>

But that is not to say that biological thinking was no longer underpinning the justifications for discrimination against women. Instead, it was merely the language that was changing.<sup>166</sup> Whereas in the 1920s and early 1930s it was common for social commentators to speak of the dangers to the “evolution” of a national “race,” toward the end of the interwar period the popular media largely returned to the older rhetoric of “civilization” and “spiritualism.” In short, “masculinized” women were not so much a threat to human evolution as to human civilization.<sup>167</sup> Thus the narrative had changed to one arguing that women could but should not fly for the sake of Argentine society. The presence of a heroic *aviadora* was taken as evidence that Argentine women were fit for modernity but had made the choice to largely abstain from North Atlantic feminism.

Just as these ideas were solidifying, the first authentically local woman hero pilot emerged on the national scene, Carola Lorenzini (1899-1941). Lorenzini was Argentina’s Amelia Earhart or Amy Johnson. She was an international celebrity and the first woman to receive a commercial aviator’s license in Latin America. Lorenzini was undoubtedly a hero in

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<sup>165</sup> “Modificará el concepto del mundo la cultura femenina?” *El Hogar*, February 5, 1937, 3.

<sup>166</sup> For example, the article “Feminismo y feminidad” in *El Hogar* on August 6, 1937, argues that women have always been essential for the maintenance of civilization and that they should remain in their role as the “queen of the home.” Although the article features none of the biological buzzwords so frequently utilized in the 1920s, the author begins by quoting the well-known French eugenicist Alexis Carrel: “Women should develop their skills according to their own nature, without trying to imitate men. Her role in the progress of civilization is far greater than that of man.”

<sup>167</sup> The reason for this shift is unclear since eugenics programs were alive and well at the time. My suggestion is that anti-feminists and conservatives found the older rhetoric of “civilization” to be more politically appealing, especially in heavily Catholic Argentina. This type of non-scientific language was evident within the eugenics community itself. Eraso’s study of biotypology references a speech by the prominent Argentine eugenicist Dr. José Beruti at the 1934 Second Pan-American Conference of Eugenics in Buenos Aires: “Women are overwhelmingly those primarily responsible for the bodily and *spiritual health of the people...*” Italics my own. Eraso, “Biotypology, Endocrinology, and Sterilization,” 793.

Argentine society, a source of inspiration for women and men alike. But hero status could be just as constraining as empowering.

Carola Lorenzini was born in 1899 in a rural town in the province of Buenos Aires. From an early age, Lorenzini was described as an “Amazon” due to her large size and boyish enthusiasm for athletics and mechanics. She broke in horses on her family’s ranch and learned how to drive cars. According to her biographer Vicente Bonvissuto, she self-consciously adopted the mythical rural horsemen figure of the *gaucho* as her part of identity. During her school years she was known for her dominance on the tennis court and for her frequent portrayal of Juan Manuel de Rosas in theater productions. Her friends and family remembered Lorenzini as physically gifted, disciplined, and hard-working.<sup>168</sup>

After leaving home, she worked as a dactylographer for the Unión Telefónica telephone company in Buenos Aires. In 1930 Lorenzini took her first “aerial baptism” thanks to a mutual friend and never looked back. On October 2, 1931, she managed to arrange admittance into the ACA, although they refused her requests for flight training until May 1933. Her instructor José Ignacio Cigorraga remembered his pupil as unusually dedicated.<sup>169</sup> On flight days she would wake up at 3:30am to fly before work. According to her instructor, she was a “diligent student, always attentive to my explanations and [she] never [made] a technical mistake....” Lorenzini’s devotion paid off—she earned her license in three months and with twenty hours flight time.

The following year, Lorenzini approached military aviation authorities, offering to fly one of the models recently produced by the state aircraft factory for an attempt at the South

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<sup>168</sup> In my account of Lorenzini’s life I depend on Bonvissuto’s very sympathetic biography of the *aviadora*. In the tradition of Argentine histories at the time, Bonvissuto reproduced many of his primary sources—letters, newspaper articles, speeches—in full in the text. Vicente Bonvissuto, *¡Adiós Carola!* (Buenos Aires: Círculo de Suboficiales de las Fuerzas Armadas, 1978), 13-6.

<sup>169</sup> Bonvissuto, *¡Adiós Carola!*, 22.



American women's altitude record.<sup>170</sup> Aircraft manufacturers in the US and Europe during the period frequently harnessed the image of the woman flyer to sell their wares. They recognized the value of the popular spectacle generated by "aviatrices," both for brand recognition and to demonstrate the safety of their aircraft. Argentine military authorities were amenable to such socially-adventurous marketing as they increasingly worried about the prospects for their aircraft factory in Córdoba.<sup>171</sup> The head of the civilian aviation department Ángel M. Zuloaga agreed to Lorenzini's proposal and gave her access to an Ae.C.3 state-designed and built monoplane. On March 31, 1935 she secured the record of 5,381 meters (17,654 feet).<sup>172</sup> Shortly afterward, authorities rewarded her with a military aeronautics "gold medal."

Although her relationship with military authorities began on good terms, it was always tenuous. Less than a year after her record flight, officials rashly suspended Lorenzini's license for six months for flying to Montevideo across the Río de la Plata without permission. The press harshly criticized the authorities for their rush to judgment, especially since it was later revealed Lorenzini had received the necessary permissions for three days earlier but was delayed by weather. The suspension was lifted after almost four months.<sup>173</sup>

Once again in the air, Lorenzini soon became a fixture of the national aviation community. The press always noted her presence at aviation events such as the arrivals of foreign aviators or inauguration of new airports. To support her flight activities, Lorenzini made arrangements with local institutions and community organizations, receiving free flight hours for

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<sup>170</sup> Bonvissuto, *¡Adiós Carola!*, 30-6.

<sup>171</sup> See chapter six.

<sup>172</sup> "Una aviadora argentina bate el récord sudamericano femenino de altura," *Caras y Caretas*, April 13, 1935, 48.

<sup>173</sup> Lorenzini's experience with her employer was frustratingly similar. When she initially received her license, the publicity department at *Unión Telefónica* created press releases promoting their typist-aviator. But Lorenzini was later denied permission to change her work schedule so she could be one of the pilots who greeted the *Graf Zeppelin* in June 1934. Bonvissuto, *¡Adiós Carola!*, 31-2.



Figure 3.13. Lorenzini in 1935. *Caras y Caretas*, April 13, 1935, 48.

evaluating new airplanes, earning small donatives for her presence at events, and holding modest personal funding drives.

Her popularity was such that in December 1936, the National Deputy Dr. Arquímedes Soldano proposed a bill to buy an airplane for Lorenzini for 15,000 pesos. In his speech to the Chamber of Deputies, Soldano remarked that Argentina had a history of successful “female activities in sport” with “international transcendence” that were sponsored, at least in part, by the state.<sup>174</sup> But local women’s aviation lacked official support, which Soldano blamed for the woeful lack of Argentine *aviadoras*. He then argued that “in the new orientations of the modern woman—who if she intends to share the rights of men does not avoid the burden of obligations

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<sup>174</sup> It is not clear to me what official support for women’s athletics Soldano is referring to here.

and her lot of responsibility—you can see clearly her effectiveness in aviation.”<sup>175</sup> Women were conquering flight records, crossing oceans, and working on airlines. Soldano emphasized that Lorenzini, a “modest employee of a private business,” was the only example of such a woman from Argentina. He then concluded:

Our people, a little forgetful and a little ungrateful, did not have the impulse to provide those who had just delivered patriotic satisfaction with the essential elements for their [national] improvement, which would...perhaps open a route for other Argentine women in commendable and profitable emulation to participate in the struggles for the dominance of the air.<sup>176</sup>

The bill was defeated in the subsequent vote, but Lorenzini remained ceaseless in her campaign to secure official patronage. She repeatedly petitioned military and civilian authorities to sponsor new raids, such as a flight from New York City to Buenos Aires. Yet these proposals largely fell on deaf ears.

In 1938 events finally began to move in Lorenzini’s favor. Early that year she learned aerobatics from the military pilot Santiago Germanó. Lorenzini quickly became known as a talented aerobatic pilot. Her stick-and-rudder skills impressed her fellow aviators and the many crowds that gathered to watch her displays. As a journalist later described after witnessing one of her aerobatics displays:

It seems that space itself responds to the demands of the *aviadora*; and the stability of the machine, easily achieved after a series of spectacular [maneuvers], gave the exact

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<sup>175</sup> “En las nuevas orientaciones de la mujer moderna --que si pretende compartir los derechos del hombre, no elude la carga de obligaciones y su lote de responsabilidad--se diseña nítidamente su eficacia en la aviación.” Speech reproduced in full in Bonvissuto, *¡Adiós Carola!*, 51-2.

<sup>176</sup> “Nuestro pueblo, un poco olvidadizo y otro poco ingrato, no tuvo el impulso de suministrar a quien acababa de proporcionarle una patriótica satisfacción, los elementos indispensables a su perfeccionamiento, que le permitieran ampliar su campo de acción y abrir acaso una ruta para que otras mujeres argentinas en encomiable y provechosa emulación participasen en las luchas por el dominio del aire.” Ibid.

impression that the airplane was...moved by the harmony of nature and not by the feminine hand that guided it.<sup>177</sup>

In August 1938, Lorenzini won a local air race in a loaned military trainer recently produced by the Córdoba factory, the Focke Wulf Fw-44J, beating all of her male opponents. Inspired by her recent successes, Lorenzini once again wrote to the Commander of Army Aviation Antonio Parodi to ask permission to use the same Focke Wulf biplane for a heroic raid far greater than an altitude record. She planned to take up the mantle of heroic women's aviation left vacant since the death of Myriam Stefford with her own attempt on the Circuit of the Fourteen Provinces.

In her letter to Parodi, Lorenzini informed him of her dedication to her flight training and her contributions to the national aviation community. But due to her poor economic situation, it was unlikely she could continue the advancement of her training. Lorenzini then emphasized in her concluding arguments: "The Commander must not forget that I am the only woman in the country who assiduously and persistently dedicates herself to aviation."<sup>178</sup> In his response granting Lorenzini permission to prepare for such a raid, Parodi stressed that she was indeed "the only woman who practices this sport to the extent that she does..." Furthermore, her recent successes had shown that "her ability as a pilot is indisputable."<sup>179</sup>

In November the Ministry of War formally outlined their agreement. The ministry would pay for her flight training and give her access to the requested Focke Wulf 44J airplane. In exchange, she would fly over the fourteen provincial capitals and perform aerobatics displays "in order to demonstrate to the entire country the [qualities] of [the Fw-44J], since the layman will

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<sup>177</sup> "Pareciera que el espacio mismo respondiera a las exigencias de la aviadora; y la estabilidad de la máquina lograda fácilmente luego de una serie de espectaculares pruebas, daban la exacta impresión de que el aeroplano era parte integrante del espacio, movido por la armonía de la naturaleza y no por la femenina mano que lo guiaba." Article from *La Capital* of Santa Rosa on January 28, 1940, reprinted in Bonvissuto, *¡Adiós Carola!*, 124.

<sup>178</sup> "No debe olvidar el señor Comandante que soy la única mujer que en el país se dedica con asiduidad y perseverancia a la aviación." Letter reproduced in Bonvissuto, *¡Adiós Carola!*, 69.

<sup>179</sup> Letter reproduced in Bonvissuto, *¡Adiós Carola!*, 70.

not stop reflecting on the conditions of said plane, when seeing it carry out, and in the hands of a woman, a tour of that magnitude.”<sup>180</sup>

Even as she began her training Lorenzini was still battered by setbacks. In 1939 she was fired from her job at Unión Telefónica because of her aviation activities. Her arrangement with the military did not provide a salary for living expenses, forcing Lorenzini to turn to a supportive uncle. Despite acknowledging her “indisputable” ability, officials stalled when she asked to take the exam for the professional “C” license that would enable her to work as a regular pilot in the industry. When she was finally granted an exam in December 1939, she was denied the license. In a fruitless letter of protest to the Director General de Aeronáutica Civil Francisco de Arteaga, Lorenzini complained that her examiners had added irrelevant and unfair questions to ensure her failure.<sup>181</sup>

Despite these obstacles, Lorenzini managed to arrange all of the details for her attempt on the Circuit. On Sunday, March 24, 1940, she took off from the Sixth of September airfield outside of Buenos Aires. At each major provincial city Lorenzini performed dramatic aerobatics displays, often over downtown areas (a practice normally prohibited by this time). Women’s organizations across the interior used Lorenzini’s visit to promote their causes. Nearly every stop featured parties, banquets, and honorifics. In a gesture that touched many Argentines, Lorenzini flew over the site where Stefford and Fuchs had been killed and dropped a wreath of flowers.

Although the raid seems to have generated significant goodwill among the Argentine public, some media sources were hostile to the effort. The editors of *La Prensa* magazine, who showed a strong interest in aviation, were particularly unsympathetic. Throughout her flight they

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<sup>180</sup> “...con el objeto de demostrar al país entero la bondad de la misma, puesto que los profanos no dejarán de reflexionar sobre las condiciones de dicho avión, al verlo efectuar y en manos de una mujer, una gira de esa magnitud.” Bonvissuto, *¡Adiós Carola!*, 70.

<sup>181</sup> Her letter of protest is reprinted in full in *Ibid.*, 121.

insisted on referring to Lorenzini as an “*aviadora aficionada*” [amateur aviator] or just “*aficionada*” to emphasize that she was not a professional pilot. In a thinly veiled reference to increasingly antiquated notions of female physical incapability, *La Prensa* argued that military officials were endangering her life by requiring so many aerobatics displays.<sup>182</sup> They predicted that all of the flying alone would be too tiring and create the opportunity for mistakes.<sup>183</sup>

Lorenzini proved them wrong, completing the entire Circuit in less than a month and without a single incident or deviation from the original plan. When she finally arrived back in Buenos Aires on April 21, a huge crowd gathered to celebrate, reminiscent of the greetings extended to male aviators ten years earlier. The media noted the hundreds of girls and young women who showered Lorenzini with flowers and begged for her autograph. *Crítica* celebrated the flight for its precision navigation, “extraordinary punctuality,” and a “high grade of efficiency.”<sup>184</sup> Even *La Prensa* admitted that the flight “[had] been completed with admirable regularity by the popular *aviadora*.” But its editors still insisted the propaganda effort by the military “is not the kind of aeronautical demonstrations, apart from what is advisable, that national aviation requires to guide itself in its progress.” Much as male heroic aviation eventually lost its social relevance, *La Prensa* argued that similar heroic efforts by women flyers should become a thing of the past, supplanted by the coming “Air Age.”<sup>185</sup>

Lorenzini’s life inspired a powerful cognitive dissonance in the Argentina media. She was difficult to fit into a gendered mold. She had the physical presence of a man, clearly possessing the strength to battle the tremendous forces involved in aerobatic flying. Lorenzini

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<sup>182</sup> “Censurables métodos de propaganda de la Fábrica Militar de Aviones,” *La Prensa*, March 25, 1940. I highly doubt they would have had such reservations had Lorenzini been a man.

<sup>183</sup> “Los vuelos de propaganda oficial encomendados a una *aviadora*,” *La Prensa*, March 28, 1940.

<sup>184</sup> “Carola Lorenzini Dió Fin a Una Hazaña de Singular Significación,” *Crítica*, April 21, 1940.

<sup>185</sup> “*Tampoco debe considerarse en manera alguna satisfactoria la campaña de propaganda cumplida. No es esa clase de manifestaciones aeronáuticas, al margen de lo aconsejable, lo que requiere la aviación nacional para orientarse en su progreso.*” “Finalizó una campaña de propaganda aérea oficial,” *La Prensa*, April 22, 1940.

was characterized as disciplined, diligent, and hardworking, traits usually associated with laboring men. She also remained single, a fact routinely noted by interviewers. When asked on March 6, 1941 about this, Lorenzini responded,

Aviation was not incompatible with housework, but it would take away many hours and therefore one of the two things would be half done. Marriage is not the only purpose of the woman...and there are many things that could constitute [such] a purpose, but [women] do not carry [them] out for fear of being single.<sup>186</sup>

Yet all commentators noted her lovely smile, warm demeanor, and feminine qualities.<sup>187</sup>

Lorenzini—who was forty-one in 1940—was older than most famous pilots—male or female. Her credentials as an authentic Argentine were unquestioned due to her rural upbringing and self-financing of her flight training, which distinguished her from the wealth and foreignness of the archetypical *aviadora*.<sup>188</sup>

In the wake of her triumphant flight, Lorenzini was likely the most popular living Argentine aviator of either gender. Officials knew that she would guarantee crowds, and they all but required her to appear at nearly every major aviation event. But as Lorenzini came to realize all too well, her heroic status had strict limitations. Aviation authorities still refused to admit her into the fold of professional aviation. Although vague promises were made, including hints of a job as an “airport inspector,” officials stonewalled her. After her completion of the Circuit, authorities granted her a commercial license—a fact they trumpeted as a South American first. Then in a betrayal that shocked even the national press, there were rumors that military authorities were revoking Lorenzini’s access to the Focke Wulf airplane she made famous.

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<sup>186</sup> Article reprint from *La Palabra* of San Pedro on March 6, 1941, reprinted in Bonvissuto, *¡Adiós Carola!*, 200. Some journalists harnessed the trope of Lorenzini “falling in love” with her Focke Wulf airplane.

<sup>187</sup> Bonvissuto, *¡Adiós Carola!*, 54, 76, 129; see also coverage of Lorenzini’s death in *Crítica* on November 24, 1941.

<sup>188</sup> Reprint of *Mundo Argentino* article from November 30, 1938 in Bonvissuto, *¡Adiós Carola!*, 77; “A Costa de Muchos Sacrificios Carola Llegó a ser Aviadora,” *Crítica*, April 21, 1940.

Although they reversed course, for Lorenzini this was the last straw. She arranged for a salaried job in the private sector promoting a reseller of Piper aircraft, turning her back on state authorities.<sup>189</sup> As was so often the case in the history of women in Argentina, the gendered division of labor stood firm even as women were granted new freedoms, rights, and voices in the public sphere.

Tragically, a week before she was finally to begin her career as a salaried pilot, Lorenzini was killed in a flight accident. On November 22, 1941, military officials invited Lorenzini to perform aerobatics to honor a contingent of women flyers from Uruguay. Her Focke Wulf airplane had just come back from maintenance when she hopped in the cockpit. In the midst of an aerobatic maneuver, there was a sudden problem with one of the control surfaces. Lorenzini, already in a steep dive, could not recover and she was killed instantly on impact.

Over the next two days, more than 17,000 Argentines filed past her casket to pay their respects. *Crítica* continued its tradition of extensive and emotional coverage of martyred aviators. One article declared Lorenzini “an authentic *gaucha*. The Argentine woman had in her, her best example. Her highest representation.”<sup>190</sup> Another emphasized her remarkable drive to surmount the many obstacles to her aviation career: “In the first place, she was a woman; in addition she was poor and had to work. But the will of Carola overcame everything.”<sup>191</sup> Even in death she could not escape the tensions of her life as journalists emphasized the foundational femininity behind her obviously masculine qualities. As one writer concluded, “her creole soul never denied the condition of her sex, although [her] vocation was something at odds with love

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<sup>189</sup> Bonvissuto, *¡Adiós Carola!*, 220-1.

<sup>190</sup> “Homenaje Silencioso y Conmovidó,” *Crítica*, November 24, 1941.

<sup>191</sup> Untitled, *Crítica*, November 24, 1941.



and home.”<sup>192</sup> Lorenzini’s mother lamented in an interview: “She had too much courage to be a woman.”<sup>193</sup> Nevertheless, the most moving piece published in *Crítica* sought to reassure readers that the message of Lorenzini’s life would endure:

The reality is tremendous and harsh; Carola Lorenzini has died, but as the best tribute to her glory, ten determined and generous Argentine girls like her must come immediately to take up her post to pick up her lesson in boldness and courage.<sup>194</sup>

This was not to be. Lorenzini died flying for free to promote women in flight, invited by the very authorities that had spurred her. In perhaps the ultimate tragedy, she was the last of her kind. No woman pilot in Argentina ever matched her public persona, and it would be nearly forty years before they would be accepted into the fold of professional aviation in Argentina.

Lorenzini’s life was a reminder of what Argentine women *could do*, but chose not to, at least according to the mainstream press.

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The direction of Argentine modernity, its progress, was no longer defined by the unbridled acceptance of material and social change. While the men of the nation forged material modernity with their energy and willpower, women were left to safeguard the supposedly pre-modern national soul. Concerns of biological fitness created space for heroic Argentine women

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<sup>192</sup> “*Ha habido también ternura femenina, afectos filiales y hasta desvelos maternos en su alma de criolla, que no negaba jamás la condición de su sexo, aunque la vocación suprema de su existencia fuese algo tan en pugna con el amor y el hogar como el riesgo del vuelo y la aventura del aire.*” “La Gloria Nos Ha Robado Una Hija,” *Crítica*, November 24, 1941.

<sup>193</sup> “*Tenía demasiado coraje para ser mujer.*” Ibid.

<sup>194</sup> “*La realidad es tremenda y dura; Carola Lorenzini ha muerto, pero como el mejor homenaje a su gloria, diez muchachas argentinas resueltas y generosas como ella deben acudir en seguida a ocupar su puesto para recoger su lección de audacia y de valor.*” “Estaba en el Corazón del Pueblo,” *Crítica*, November 24, 1941.

to fulfil the role of *la mujer moderna* in their society—and even be celebrated for it. But their presence was only tolerated because they were extraordinary. In the popular imagination, when women took flight, liberation became tragedy. And according to many social commentators, this mirrored the overall trajectory of North Atlantic feminism. For the betterment of their society, a woman like Carola Lorenzini had to remain the exception to the rule; the future of the average Argentine woman had to remain largely the same as her forebearers. As a result, progress was effectively rendered Argentine through a gendered articulation of social change—the promotion of the modern man and the rejection of *la mujer moderna* and its most visible representative, *la aviadora*.

Notions of normative gender and racial hierarchy were thus intrinsic to the creation of a modern Argentine identity. The great pilots of the age were powerful representatives of this contested identity. The men and women who sat in the cockpit captured the public's imagination in a way little equaled in the early twentieth century. Yet gender and race, while foundational, were but two aspects of the building sense of *Argentinidad*. We will now turn to the other pieces of the national dialogue on identity brewing during the interwar period. Aviation was just as important in the cultural reactions to two profound transformations of the time: mass immigration and the rise of the laboring classes as a cultural and political force in Argentine society.

**Chapter 4**  
**Culture, Class, and Aviation in the Search for *Argentinidad*, 1920-1940**

“*El dominio del aire es el dominio del futuro.*”

“The domain of the air is the domain of the future.”

Ad for “Boston Studio” correspondence school, *Ciencia Popular*, October 1935, 643.

In the first hours of daylight on February 10, 1926, Buenos Aires was already abuzz with expectation. Soon traffic came to a standstill as thousands of people flocked toward the city’s docks. “Argentines and foreigners, men and women” gathered in an “immense crowd” on the fishermen’s pier, the main breakwater, and on the lawn of the Yacht Club Argentino. They waited for hours despite the intense late-summer heat, brimming with “a single collective emotion, a single enthusiasm, evident in that murmuring expression of the great multitude moved by a single thought.” Soon there grew an “impulse of impatience... to see the great air machine appear.” The sky was already dotted with local civilian and military airplanes waiting to greet the honored guests. A few minutes past one o’clock in the afternoon, a new black dot appeared on the horizon, prompting the many expectant heads to crane skywards. Suddenly, a siren set up by the newspaper *La Prensa* sounded and the crowd knew that after weeks of anticipation, the flying boat “*Plus Ultra*” had finally arrived.<sup>1</sup> What followed was the unprecedented spectacle of national celebration that would never again be repeated, at least in honor of aviators.

The *Plus Ultra*, a Dornier Do J “Wal” flying boat, had left Huelva, Spain on January 22 and flew 59 hours and 39 minutes to Buenos Aires via the Canary Islands, Cape Verde, Fernando

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<sup>1</sup> “Triunfalmente Llegó Ayer a Buenos Aires el Hidroavión Español ‘Plus Ultra’,” *La Prensa*, February 11, 1926, 13.

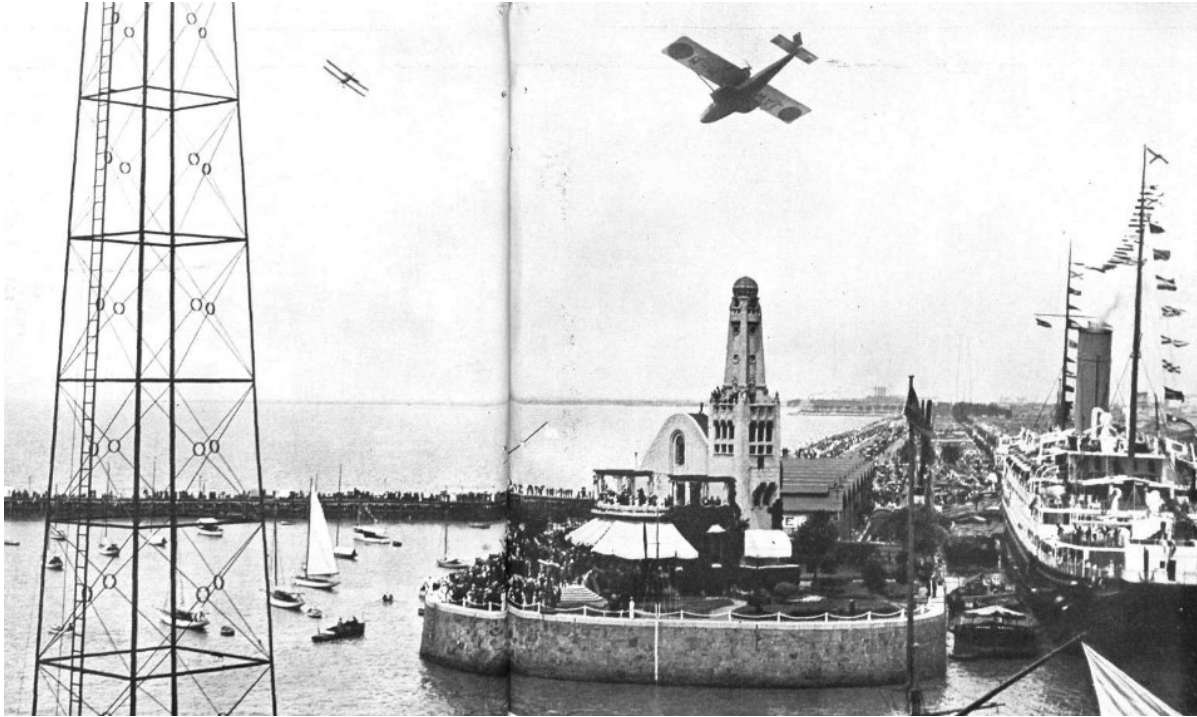


Figure 4.1. The *Plus Ultra* dipping low over the gathered crowds at Buenos Aires' docks.  
Untitled, *Caras y Caretas*, February 20, 1926, 74.

de Noronha, Recife, Río de Janeiro and Montevideo. On board were three Spanish military aviators, Ramón Franco, Julio Ruiz de Alda, and Pablo Rada. Franco, the commander, was soon an international celebrity, and received a hero's welcome little equaled in Argentina. At every stop, the Spanish aviators were honored with banquets, parties, and the adulation of massive crowds. When the intrepid aviators made the leap from Cape Verde to the New World across the expanses of the South Atlantic (still a dangerous feat at the time), hundreds of people gathered outside the *La Prensa* office and its "lighthouse" which lit up whenever there was news of the aviators. Emotions ran high across the Hispanic-American world, with at least one stabbing occurring after an argument over whether the Spaniards would make it.<sup>2</sup> When news finally arrived that the flying boat had reached the island of Fernando de Noronha off the coast of northeast Brazil, the "public anxiety" transformed into a "collective happiness... and the name of

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<sup>2</sup> "Franco va a llegar como vos..." *Crítica*, January 29, 1926.

Franco, the hero of the day, could be heard, proclaimed by thousands of voices...<sup>3</sup> When Franco and his companions arrived in Buenos Aires, a journalist for *La Prensa* wrote that the flight had stirred the “Argentine soul,” uniting a diverse nation into a single impulse of “*Argentinidad*” which was “singing the thriving hymn of the future and progress.”<sup>4</sup>

While the mainstream and elite newspapers like *La Prensa* and *Caras y Caretas* were fixated on the aristocratic figure of Franco, the working-class tabloid *Crítica* emphasized the overlooked heroism of the humble Pablo Rada. Rada, a working-class mechanic, had kept the motors of the *Plus Ultra* humming for the many hours of the flight with his “noble hands of the worker.”<sup>5</sup> *Crítica*’s journalists proclaimed the “soldier-worker” [*soldado-obrero*] a “modest child of the people.”<sup>6</sup> Addressing its readers—“all this Buenos Aires that dreams and works”—the tabloid asserted “All of us must contribute with our might to reward... this hero of work, who is our hero, the one who is closest to our heart.”<sup>7</sup> The common, laboring Argentine had a new idol to emulate and he was an aviation mechanic.

The celebrations of the flight of the *Plus Ultra* were the apex of public enthusiasm for aviation in Argentina during its “Heroic Age.” All heroic flights to Argentina after 1926 were compared to Franco, Alda, and Rada’s great adventure. Even though they were foreigners, much of Argentine society found the event deeply meaningful for their national, ethnic, and class identities. Chapter three revealed how male celebrity aviators were depicted as markers of biological fitness for the modern age. For women aviators, even as they proved their physical

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<sup>3</sup> “La llegada de Ramon Franco a Fernando de Noronha produjo intenso jubilo en Buenos Aires,” *La Prensa*, January 31, 1926.

<sup>4</sup> “Vibración del Alma Argentina,” *La Prensa*, February 11, 1926.

<sup>5</sup> “Pablo Rada, Héroe Oscuro de la Brillante Empresa,” *Crítica*, January 30, 1926.

<sup>6</sup> “Pablo Rada Debe Recibir de Esta Ciudad Laboriosa un Homenaje Perdurable,” *Crítica*, January 31, 1926.

<sup>7</sup> “Crítica Inicia una Simpática Suscripción. Hay que regalarle una Casita a Rada,” *Crítica*, February 11, 1926.

capabilities in the cockpit, Argentine society largely deemed the feminist icon of the *aviadora* as detrimental to the project of national “civilization.” These gendered and ostensibly biological identities were conceived as society-wide; all people in Argentina, regardless of background, should strive to match the normative masculinity of the aviator, or the femininity of the *ama de casa* [housewife].

But aviation was also harnessed to promote specific, cultural identities associated with immigrant communities, the growing nationalist movement, and the laboring classes. The vast waves of immigration since the late nineteenth century produced a society in flux. Argentina was transforming its sense of self, or *Argentinidad* [Argentineness]. As a majority-immigrant society, different ethnic and socioeconomic groups all vied to earn their place—or exclude their rivals—in cultural depictions of the Argentine identity. Italians and Spaniards took the feats of their countrymen as opportunities to emphasize their value to Argentine society as conduits for modernity.

Simultaneously, the long-brewing nationalist movement attained greater prominence after the tumult of the *Semana Trágica* [Tragic Week] in 1919. The prevailing vision of Argentine identity had long been that of a diverse, economically liberal society with closer ties to Paris and London than its own countryside. But since the late nineteenth century, a new, nationalist conception of *Argentinidad* increasingly venerated a romanticized rural identity represented by the mythical “gaucho.” Nationalists also found an opportunity to harness the image of the aviator as the embodiment of the “gaucho” archetype in modern society.

Yet even as nationalists promoted a narrow Argentine identity, the realities of assimilation were pushing the national culture toward one of diversity, not unity. Pilots of Italian, Spanish, English, and Irish descent were all hailed as authentic local heroes. The most profound

fault line in Argentine society was not between Spaniards or Italians, or nationalists and immigrants, but between the elites and common people. While aviation certainly began as a sporting activity for the well-to-do, it lost the veneer of elitism remarkably quickly. Few of the great aviators of the 1920s were independently wealthy. Elites largely lost interest in the materialistic endeavor of flight, instead maintaining their traditional fascination with the arts, letters, and other “high” culture. As we shall see, the locus of aviation culture shifted from elite social clubs to the hearts and minds of the lower and middle sectors of society. The future of aviation was increasingly one for the common man, whether as a pilot or a mechanic. In the process, working- and middle-class Argentines used the prestige accorded to aviation to advocate for a greater social valuation of their traditional purview: technological knowledge, skills, and labor.

This chapter will first elucidate the role of heroic aviation in the competition between immigrant communities from 1919 until the flight of the *Plus Ultra*. It will then reveal how flight was embedded in a narrative of a romanticized rural *Argentinidad* characterized by tenacity in the face of bad luck with the 1927 heroic flight by the Eduardo Olivero. Next, I will show how interrelated understandings of immigrant and class identities created a cultural expectation of upward social mobility through self-taught technical skills, exemplified by the aviation mechanic, and later by the glider pilot. Using the pages of *Ciencia Popular*, a technology enthusiast magazine, I show how the culture of autodidactic uplift centered on the bourgeois, masculine figure of the “*aficionado*” [hobbyist, amateur] who used his leisure time for self-improvement through technological projects. Lastly, as the difficulties of autodidactic socioeconomic uplift became increasingly apparent, enthusiast media began to advocate for new educational institutions to help Argentina’s humbler men find their place in the modern

economy. *Ciencia Popular*'s focus shifted from the “*aficionado*” to the more educated and specialized “*técnico*” [technician] by the late 1930s. Crucially this building discourse facilitated the creation of a bona fide aviation industry, staffed not with dozens extraordinary heroes, but hundreds of career professionals from the non-elite sectors of society.

### **Immigrants, Nationalists and Aviators: Defining the Argentine Cultural Identity**

Ramón Franco's transatlantic flight could not have come at a better time. He captured the public imagination on both sides of the ocean. Franco was of course proclaimed a national hero in his home country of Spain, as one journalist declared: “For the first time, Spain will speak to the Hispanic-American peoples in the name of the present...writing a glorious page where they will newly record the will, strength, and heroism of the race.”<sup>8</sup> Civic organizations around Spain held hundreds of events commemorating the great raid, with all the nation's great political figures delivering celebratory speeches and press statements.

Yet the reception of Franco in Argentina seems to have been equally jubilant. The aviator could not have imagined the symbolic importance his flight would have for Argentines, who at that moment were in the throes of reformulating their national identity. As an immigrant society—like that of the United States—Argentina's national sense of identity was constantly in flux. The incredible pace of demographic, economic, and social change in the early twentieth century only intensified the public and intellectual debates over the national “soul”. Did the true *Argentinidad* reside in the modern, multiethnic city? Or was it located in the countryside, in the nation's pre-modern roots? By the time Franco landed by the docks of Buenos Aires, the answer—according to many prominent Argentine intellectuals—was the latter. In a paradox

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<sup>8</sup> “Un Argentino en Madrid se ocupa del gran vuelo,” *La Prensa*, January 22, 1926, 11.



evident in Argentine aviation culture since its beginning, the Spanish aviator's most modern of feats, a preview of the future, caused Argentines to look to the past. The future was bright, because the spirit of premodern age was alive and well in the Hispanic peoples of the Old and New World.

Argentine identity by the interwar period was a tangled web of highly-politicized sentiments that blended ostensibly scientific ideas of race with more nebulous cultural notions of heritage and kinship.<sup>9</sup> While it is tempting to focus only on biological notions of identity, they were not necessarily the dominant basis for the construction of Argentine sense of self. As the historian José Moya emphasizes, other notions of “spiritual” affinity and a cultural “soul” of the nation were equally important to the public debate at the time.<sup>10</sup> The fundamental identity of Argentina was as “white”—*la raza blanca*.<sup>11</sup> Although Argentina had a sizable Afro-Argentine, indigenous, and mixed-race population in the nineteenth century, they were nearly rendered invisible by the massive influx of European immigrants and an active campaign of “*blanqueamiento*” [whitening] by the governing elite.<sup>12</sup> Mixed-raced people—*criollos*—were considered white, by virtue of their Spanish heritage. Instead of darker skin color being a marker for a distinct racial group, it was perceived as an indicator of a lower socioeconomic class.<sup>13</sup>

Within the “white” identity, there were a multitude of minute stratifications. This hierarchy was determined by perceived differences of “geographic origin, appearance, education, and class affiliation, and its attendant cultural forms and behaviors, among others.”<sup>14</sup> There was

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<sup>9</sup> For the history of race in Argentina, see Alberto and Elena, *Rethinking Race*. For the region, see Stepan, “*The House of Eugenics*”; Rodriguez, “A Complex Fabric.”

<sup>10</sup> Moya, *Cousins and Strangers*, 350.

<sup>11</sup> In one illustrative article that described the world's races, the “*raza blanca*” was joined by the “yellow,” “black,” “red,” and “Malaysian” races. “Razas humanas,” *El Hogar*, October 11, 1929, 53-4.

<sup>12</sup> For this process of rendering invisible racial minority in Argentina, see Andrews, *The Afro-Argentines; Cottrol, The Long, Lingering Shadow*, especially chapters 1, 4, and 9.

<sup>13</sup> We will return to the theme of class in the third section. Oscar Chamosa, “People as Landscape,” 54.

<sup>14</sup> Alberto and Elena, “Introduction: The Shades of the Nation,” 9.

*la raza Latina*, a pan-Latin identity that included Italy, Portugal and France, which of course was a common conception used by Italo- and Franco-Argentines. Increasingly prevalent was a revived sense of Hispanic identity, often called simply “*la raza*.” Within the Italian and Spanish immigrant communities were then regional stratifications, such as the perception of northern Italians being superior to their southern countrymen. These identities were malleable and often shifted with the political winds.<sup>15</sup> The conception of *criollo*, for example, was harnessed by nationalist writers to mean Spanish, rural, or the unique aspect of a “*raza nueva*”—a race distinct to Latin America.<sup>16</sup> The feats of heroic aviators—in addition to signaling the racial-biological fitness discussed in chapter three—were analyzed through the prism of these competing identities in the popular media. Through this process, foreigner aviators like Ramón Franco could be hailed as emblems of the Argentine national identity.

Franco’s raucous reception had its roots in the “Hispanist” movement which first developed among Argentine intellectuals, artists, and public figures in the late nineteenth century. For most the nineteenth century, Argentina had experienced a period of “Hispanophobia” dating back to the independence struggles.<sup>17</sup> Anti-Spanish sentiment was of course the foundation of the independence movement as Argentines bristled under the renewed imperial control of the late eighteenth century Bourbon reforms. Locals resented the privileged position *peninsulares* [peninsulars, those born in Spain] automatically received in colonial society. After the war, intellectual elites portrayed the Spanish colonial heritage as a backward

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<sup>15</sup> Eduardo Elena has emphasized the political and flexible nature of racial categories in his study “Argentina in Black and White: Race, Peronism, and the Color of Politics, 1940s to the Present,” in *Rethinking Race in Modern Argentina*, eds. Paulina L. Alberto and Eduardo Elena, 184-209 (New York: Cambridge University Press, 2016). Although of a later period, the article is nonetheless revealing about the interwar period as well.

<sup>16</sup> Ramón Giner, “La raza sintética (Del futuro ignoto),” *El Hogar*, January 26, 1923, 8; “Lo que valen los mestizos,” *El Hogar*, May 23, 1924, 17; “La Patria,” *Billiken*, May 21, 1928, 2. For the growth of the positive sentiments around racial mixture, particularly in Brazil, see Cottrol, *The Long, Lingering Shadow*, especially chapters 5 and 8.

<sup>17</sup> Moya, *Cousins and Strangers*, 337.

burden that had to be overcome with immigrants and culture from the northern European states. Enlightenment philosophy from Europe condemned Spanish mercantilism as a deleterious historical legacy, fusing with older anti-Spanish propaganda known as “the Black Legend.” Furthermore, *porteño* elites associated the “traditional Hispano-Creole culture” with the rural *caudillos* that were so often a thorn in the plans of Buenos Aires.<sup>18</sup>

Yet as José Moya makes clear, the roots of the rehabilitation of Spanish culture in Argentina lay in the very liberal, modernizing philosophy that initially condemned it. Liberal Argentine society allowed the small mid-nineteenth century Spanish community to organize and counter Hispanophobic ideology. The arrival of over two million Spanish immigrants by 1930 amplified this campaign enormously. In 1914, more Spaniards lived in Buenos Aires than in any other city except for Madrid and Barcelona. By the interwar period, they equaled the Italians, the other great immigrant community in Buenos Aires.<sup>19</sup>

Italians made up the single largest group of immigrants in the late nineteenth century, with millions arriving on Argentine shores. Another 1.3 million Italians emigrated to Argentina between 1900 and 1925.<sup>20</sup> By 1909, 29% of the residents in the federal district of Buenos Aires were Italian nationals, more than Spaniards (11%) and Argentines (17%) combined.<sup>21</sup> While initially local elites were happy to encourage immigration from the industrial northern Italian regions, the greater and greater proportion of southern Italians gradually transformed the whole community into the most significant “Other” in the local media. Argentine intellectuals began

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<sup>18</sup> Moya, *Cousins and Strangers*, 340.

<sup>19</sup> *Ibid.*, 1, 158-9.

<sup>20</sup> *Ibid.*, 348.

<sup>21</sup> James R. Scobie, *Buenos Aires: Plaza to Suburb, 1870-1910* (New York: Cambridge University Press, 1974), 260.

debating the benefits of new, skilled workers versus a perception that the “*italianización*” [Italianization] of the country was degrading the national “race” and identity.

A small but growing nucleus of nationalist thinkers increasingly promoted the latter view by the late nineteenth century.<sup>22</sup> In 1899, the prominent psychologist José María Ramos Mejía published his well-known medical text, *Las multitudes argentinas* [The Argentine Crowds]. Mejía described Italian immigrants as “amorphous and protoplasmic,” and that their minds were “I would say ‘cellular,’ in the sense of their complete remoteness from anything resembling progress in the mental organization.”<sup>23</sup> Twenty-five years later, Carlos Nestor Maciel channeled Mejía’s ideas into an even more anti-Italian diatribe, *La italianización de la Argentina* [The Italianization of Argentina]. According to Maciel, Italians were inferior and outside the “white race”: “We do not believe, however, that any Italian individually surpasses any white man, much less a Spaniard.”<sup>24</sup> Using the latest language in scientific racism, he emphasized that “each race has a mental constitution as permanent as his anatomical constitution...”<sup>25</sup> This “constitution” was the legacy not simply of an individual’s parents, but all of their ancestors, and by generations of “common sentiments” and “common interests” forming them into a “indestructible block.”<sup>26</sup> Maciel then argued that the nation was sacrificing its spiritual identity for the sake of economic progress sustained by Italian immigration.

For the growing nationalist movement, the answer to the “Italianization” of the country was to promote its Spanish heritage, as well as immigration from newly-recognized “Mother

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<sup>22</sup> According to the historian David Rock, the nationalist movement in Argentina—while being very influential—did not coalesce into a bona fide political movement in its own right due to consistent internal disunity. Rock, *Authoritarian Argentina*, 27-37.

<sup>23</sup> Mejía’s quotation in Moya, *Cousins and Strangers*, 349.

<sup>24</sup> Carlos Nestor Maciel, *La italianización de la Argentina. Tras la huella de nuestros antepasados* (Buenos Aires: Librería y Casa Editora de Jesús Menéndez e Hijo, 1924), 159.

<sup>25</sup> “*Hemos dicho que cada raza posee una constitución mental tan permanente como su constitución anatómica*” Maciel, *La italianización de la Argentina*, 218.

<sup>26</sup> Maciel, *La italianización de la Argentina*, 219.

Spain.” Both Mejía and Maciel argued that Spaniards and their culture was greatly preferable. Maciel described the Spanish as not “a kindred race [i.e. Italians] but our own race.”<sup>27</sup> “Iberian blood” was essential for fortifying *Argentinidad* in the “*lucha de razas*” [struggle of races].

Other factors than the Italian “invaders” were also playing out in Maciel’s text. Spain had long since lost its reputation as the primer imperial threat in the region. After the wars of independence, Argentine intellectuals feared a resurgent Spain would try to retake its lost colonies. But the Spanish-American War of 1898 fully dispelled any perceived threats of imperial domination. Instead, the United States increasingly took up the mantle of the major imperialist threat looming over Latin America. By 1924, Maciel was able to wave off any concerns of Spanish aggression, arguing:

Spaniards in America are Americans, today as yesterday. The identity of feelings, of language, of blood, of traditions and even of surnames, immediately transforms them into Argentines so deeply rooted in this soil, that they only lack birth to be our brothers with all the prerogatives of consanguinity.<sup>28</sup>

He argued, in effect, that Spaniards in the New World were instantly made American, whereas Italians remained essentially foreign. Maciel’s text, although undoubtedly on the extreme side of the xenophobic spectrum, was nevertheless representative of the blending of ideas surrounding race and national heritage. He combined nominally scientific ideas of social Darwinism and eugenics with notions of common language, culture, and spiritual roots.

The result of the blossoming nationalist and Hispanist movements was a competitive atmosphere between immigrant communities, each looking to establish itself as part of the

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<sup>27</sup> Maciel quoted in Moya, *Cousins and Strangers*, 349.

<sup>28</sup> “*Los españoles en América son americanos, hoy como ayer. La identidad de sentimientos, de idioma, de sangre, de tradiciones y hasta de apellidos, los transforma inmediatamente en argentinos tan arraigados a este suelo, que sólo les falta el nacimiento para ser hermanos nuestros con todas las prerrogativas de la consanguinidad.*” Maciel, *La italianización de la Argentina*, 157.

national identity. Heroic aviators naturally fit into this competitive public discourse. The Italian Aeronautical Mission of 1919-1920 was a tremendous boon to the Italo-Argentine community at a time when nationalist sentiments were surging. In January 1919 Buenos Aires experienced the worst stretch of rioting in its history after a series of labor disruptions led by local anarchists and communists. In what became known as the *Semana Trágica* [Tragic Week], hundreds of people were killed in clashes between rioters and the police. The association of labor agitators with Italian immigrants created the conditions for renewed xenophobia.<sup>29</sup> The arrival of the Italian aviators not only gave local Italians an opportunity to celebrate their heritage, but also served to associate Italy with the most modern instruments of progress, the airplane. The ability to pilot an airplane was a clear challenge to the racist accusation of mental inferiority leveled by nationalist thinkers like Maciel.<sup>30</sup>

The Italian Mission and pilots like Antonio Locatelli were astutely conscious of their roles as representatives of their diaspora in Argentina. The Italian pilots built a close relationship with the Argentine military pilots like Pedro Zanni and Antonio Parodi. They frequently paid homage to the “martyrs” of local aviation. And when the mission wrapped up its activities in Argentina, the Italian government donated a significant number of airplanes to the Argentine Army and Navy.<sup>31</sup>

The apex of goodwill generated by the flight undoubtedly came in the wake of an accident which killed two Italian service members and an Argentine. The three men were killed by a mid-air collision over El Palomar airfield on June 10, 1919. The lavish funeral to honor the

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<sup>29</sup> Romero and Brennan, *A History of Argentina*, 31-7.

<sup>30</sup> Maciel, who wrote after the Italian Mission, was not impressed. He wrote that “although we accepted the Italian superiority to excel in all the orders of modern civilization, this did not constitute a merit from our point of view, and yes, on the contrary, a serious danger.” Maciel was arguing that material progress needed to play a secondary role to “spiritual” development, an increasing common critique of liberal, capitalist progress during the interwar period. Maciel, *La italianización de la Argentina*, 158-9.

<sup>31</sup> Lironi, *Misiones aeronáuticas extranjeras*, 86-7.



Figure 4.2. Ruiz de Alda (1) and Franco (2). See Figure 4.11 for Rada. "El vuelo glorioso," *El Hogar*, February 12, 1926, 41.

dead was attended by many prominent government officials and representatives of Italian mutual aid societies. The main oration by Dr. Andrés Calcagno was melodramatic even by the standards of the time. Dr. Calcagno described the Italian people as “that Homeric race, which under all the latitudes of the globe, always marked its way with the luminous trail of its glories.”<sup>32</sup> Dr. Calcagno emphasized that “There are plenty of prejudices. There is a lot of regionalism, there is too much intolerance [toward Italians].” Yet he hoped that “emanat[ing] from those ashes [of the accident]” were the words of “union, peace, and harmony” addressed to the “Italian colony.”<sup>33</sup>

When Ramón Franco (1896-1938) announced his intentions to cross the Atlantic in late December 1925, it seemed the time had finally arrived for Spanish aviators to make their mark in Argentina. Spanish authorities agreed to sponsor a flight from Spain to Buenos Aires using a

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<sup>32</sup> “Pájaros gigantescos, llevaban en los rezongos de sus hélices un festivo madrigal a la raza latina; esa raza homérica, que bajo todas las latitudes del globo, marcó siempre su camino con la estela luminosa de sus glorias.” *Homenaje a las víctimas del Palomar* (La Plata: Taller de Impresiones Oficiales, 1919), 19-20.

<sup>33</sup> “Yo distingo otra voz, que emana de esas cenizas. Va dirigida a la colonia italiana, y les dice: unión, paz y concordia! La colonia italiana en la Argentina no ha realizado aún del todo el ideal de esa unión, que debe ser la estrella polar de su voluntario destierro. Hay sobrados prejuicios. Hay harto regionalismo, hay demasiada intolerancia.” *Homenaje a las víctimas del Palomar*, 26.

twin-engine Dornier Do J flying boat named the “*Plus Ultra*.” Commanded by Franco,<sup>34</sup> the crew included a navigator—Captain Julio Ruiz de Alda (1897-1936), and a mechanic—Sublieutenant Pablo Rada (1901-1969).<sup>35</sup> They would fly southwest from Huelva, Spain to the Canary Islands, then Cape Verde, before making the dangerous crossing of the South Atlantic to the coast of Brazil. After a stop at the Brazilian capital, Río de Janeiro, the *Plus Ultra* was to make its way to Argentina.<sup>36</sup>

Excitement began to build across the country as newspapers started their coverage of the flight. *La Prensa* and *Crítica* maintained front page coverage of the raid for the duration of the flight. *La Prensa* sent correspondents to all of the intermediate stops. Almost as soon as Franco and his crew had left Spain, Argentine mutual aid and civic associations began planning events to promote and celebrate the flight. The Asociación Patriótica Española [Spanish Patriotic Association] named a commission to organize the national festivities two weeks before the *Plus Ultra* made its historic flight over the South Atlantic.<sup>37</sup> *Porteño* and national authorities prepared infrastructure to receive the airplane at the city’s harbor and a police escort was arranged to guide a motorcade through downtown Buenos Aires. The incredible enthusiasm Franco, Alda, and Rada encountered along the route led one journalist to implore his fellow Argentines not to

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<sup>34</sup> Ramón Franco was the younger brother of General Francisco Franco, who in 1926 was known only as “the youngest general of the Spanish Army.” Ramón would eventually die in an aircraft accident during the civil war begun by his older brother. “Francisco Franco & Ramón Franco,” *Caras y Caretas*, February 13, 1926, 67.

<sup>35</sup> Originally there were four crewmembers, but the fourth was left at the Canary Islands.

<sup>36</sup> This was not the first time the South Atlantic had been crossed by a seaplane. The same flight from Porto Praia, Cape Verde to the islands of Fernando de Noronha over the northeastern tip of Brazil was done by the Portuguese aviators Gago Coutinho and Sacadura Cabral in 1922. They crashed when landing by the Brazilian archipelago and had to wait for a new airplane. Thus in 1926 Franco, Alda, and Rada were the first to cross the South Atlantic in a single airplane. For the story of the Portuguese fliers, see Manuel Cambeses Júnior, “A Primeira Travessia Aérea do Atlântico Sul,” (Rio de Janeiro: Instituto Histórico-Cultural da Aeronáutica, 2008).

<sup>37</sup> Included in the roster were executives from the Club Español, Institución Cultural Española, Asociación Española de Socorros Mutuos, Sociedad Española de Beneficiencia, and more.



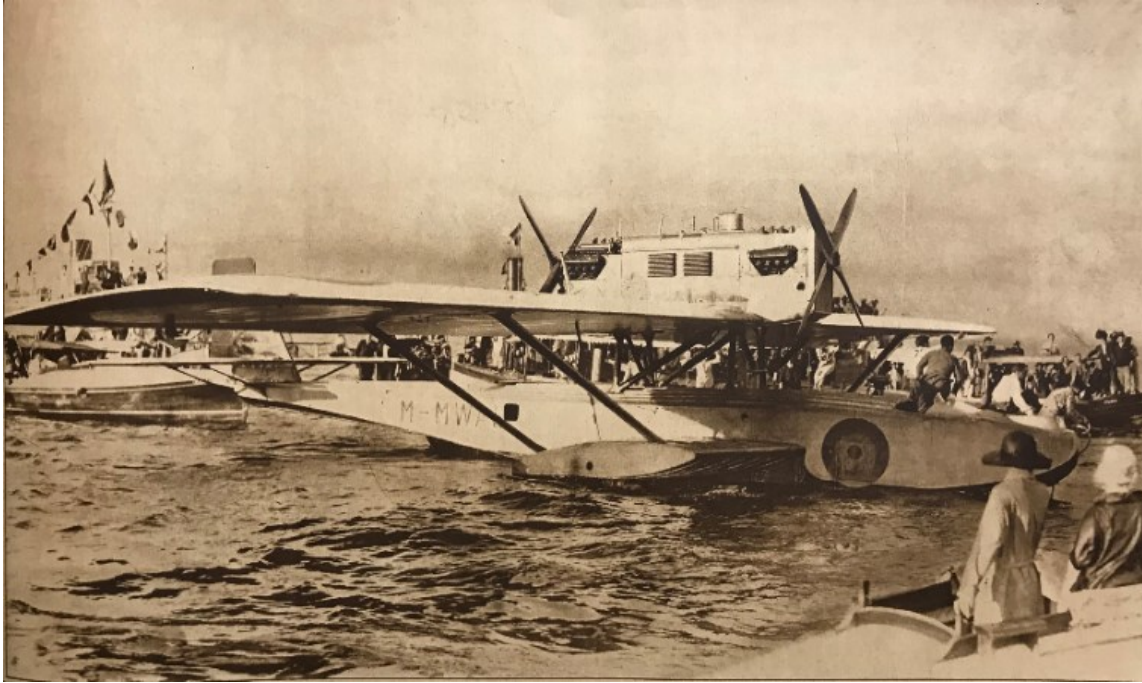


Figure 4.3. The *Plus Ultra* moored in the Buenos Aires harbor. *La Prensa*, February 14, 1926, sección en rotograbado.

be “childish” and mob the aviators: “Heroes must be greeted at a respectable distance, which is what is done with quality ladies or with very expensive jewels.”<sup>38</sup>

When the aviators successfully crossed the Atlantic on January 30, the accolades began pouring in from around Europe and the Americas. Heads of state, prominent royals, and celebrities were all quoted on front page articles extolling the virtues of the Franco and his crew. It was an unquestioned triumph for Spanish military aviation. Little discussed was the fact that the airplane was German made. In the popular perception, the crossing from Porto Praia to the New World was an achievement of the Spanish crew. One Argentine writer described the crew almost as an organic machine, surmounting the fatigue and weight of uncertainty that hung over them on the many hours over the Atlantic:

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<sup>38</sup> “A los héroes hay que saludarles a respetable distancia, que es lo que se hace con las damas de calidad o con las joyas muy ricas.” “Con permiso...” *Crítica*, February 9, 1926.



Figure 4.4. A retailer's contest, 1000 pesos to whoever guessed the exact time of Franco's arrival (left) and one of many examples of Plus Ultra-themed advertising (right). "Los Gobelinos" Ad, *La Prensa*, January 24, 1926; "Lutz, Ferrando y Cía" Ad, *La Prensa*, February 10, 1926.

Children of the Hereafter, children of *Plus Ultra*..., Franco and his companions live to be a single symbol of a perfect organism. From Ruiz de Alda's highly sensitive and irreproachable intellectualism to Rada's patient and sure mechanics, it passes through Franco in whom is the synthesis.<sup>39</sup>

As the president of the Club Español told a correspondent for *Crítica*, the crew was opening "the new routes of progress." It was "one of those acts that contributes to form the true history of human beings."<sup>40</sup>

<sup>39</sup> "Hijos del Más Allá, hijos del Plus Ultra, Plusultrátidas, Franco y sus compañeros viven a ser un solo símbolo de organismo perfecto. Desde el cerebralismo sensibilísimo e irreproachable de Ruiz de Alda hasta el mecanismo paciente y seguro de Rada, se pasa por Franco en quien se produce la síntesis." "Franco, Amo del Espacio, Domina el Tiempo," *Crítica*, February 9, 1926.

<sup>40</sup> "El Presidente del Club Español nos Habla del "Raid," *Crítica*, February 5, 1926.

As a *Crítica* editorial noted, in Argentina “Franco!... Is the name that is on [everyone’s] lips, in all the conversations, in all the commentaries.”<sup>41</sup> Businesses took advantage of the excitement, running contests—such as prize money for whichever customer guessed the exact minute of the aviator’s arrival—or selling binoculars and commemorative memorabilia (see fig. 4.4). Songs were written in Franco’s honor.<sup>42</sup> There was evidently a flowering of amateur poetry about the raid that lasted for months afterward and many newspapers published reader submissions.<sup>43</sup> In one example, *Crítica* published a poem entitled “A Franco” by its fourteen-year-old reader Dolores Martín. Using language frequent in such submissions, she concluded: “Glory to the genius of your race: / glory to the people that await you; / Franco: this land embraces you, / with its true passion.”<sup>44</sup>

When the flying boat was finally spotted over the skies of the Rio de la Plata on February 10, 1926, tens of thousands of people had gathered at the water’s edge to greet the intrepid aviators. A *La Prensa* correspondent described the scene that erupted:

There were twenty, thirty, it is not known how many incalculable thousands of souls that expressed in the unparalleled instant that they were alive, their joy and their love for the beauty of gestures, for heroic lives....<sup>45</sup>

What followed were weeks of events, festivals, and public homages for the three aviators. They were shepherded around Buenos Aires and to nearby provincial cities like Mar del Plata, always followed by the flashbulbs of the news media. Evidently the rigors of the post-raid celebrations

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<sup>41</sup> “Hoy,” *Crítica*, January 31, 1926.

<sup>42</sup> Such as “Himno a Franco,” published in *Crítica* on February 8, 1926.

<sup>43</sup> “Hoy: La poesía y el vuelo de los aviadores españoles,” *Crítica*, August 6, 1926.

<sup>44</sup> “Gloria al genio de tu raza: / gloria al pueblo que te espera; / Franco: está tierra te abraza, / con su pasión verdadera.” “Franco Ídolo Femenino,” *Crítica*, February 6, 1926.

<sup>45</sup> “Eran veinte, treinta, no se sabe por incalculable cuántos miles de almas las que expresaban en el instante sin par que se vivía, su regocijo y su amor por la belleza de los gestos, por las vidas heroicas...” “La Gloria y el Héroe,” *La Prensa*, February 11, 1926, 13.



Figure 4.5. The aviators' motorcade passing through downtown Buenos Aires. "En la Avenida de Mayo," *Caras y Caretas*, February 20, 1926, 74.

were so demanding that some members of the press wondered if the Spaniards had the stamina to keep going.<sup>46</sup> Perhaps in an act of mercy, the Spanish government eventually decided to officially end the flight in March, forgoing a planned journey up the Americas.

Franco and his companions undoubtedly achieved a great feat and with a theatricality often missing from the other major raids by Argentines. At the heart of the enthusiasm around the raid lay more profound sentiments evident in dozens of articles published in most of the major news outlets. The flight was a powerful symbol of the perceived revival not just of Spain's greatness, but that of "*la raza hispana*" as a whole. The once powerful Spain and her descended peoples, who had opened the New World for Europe, were now again at the forefront of progress. And thanks to the Hispanist movement, more Argentines than ever proudly saw

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<sup>46</sup> "¿Quedó terminado el raid?" *El Hogar*, March 5, 1926, 3.



Figure 4.6. The caption reads: "Commander Franco, enthusiastically monopolized by the fair sex, during his visit to the *Circulo Militar*. There were even those who surrendered at his feet..." *El Hogar*, February 26, 1926, 35.

themselves as members of "*la raza*." The flight was frequently compared with Christopher Columbus' discovery of the New World. Franco was described as a "conquistador," whose name was now etched in the roll of the great Spanish heroes like Cortés, Pizarro, and Magellan.<sup>47</sup> As one writer for *El Hogar* mused:

Historically, we are the children of the conquerors, their blood boils in our veins, our mouths speak their language. And Franco is the synthesis of the maximum virtues of the glorious grandparents, it is the redeeming value of Pizarro, the tenacity of Hernán Cortés,

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<sup>47</sup> "Una Gloria Más se Agrega a las Muchas Conquistadas por Bizarros Hijos de la Madre Patria," *Crítica*, February 6, 1926.

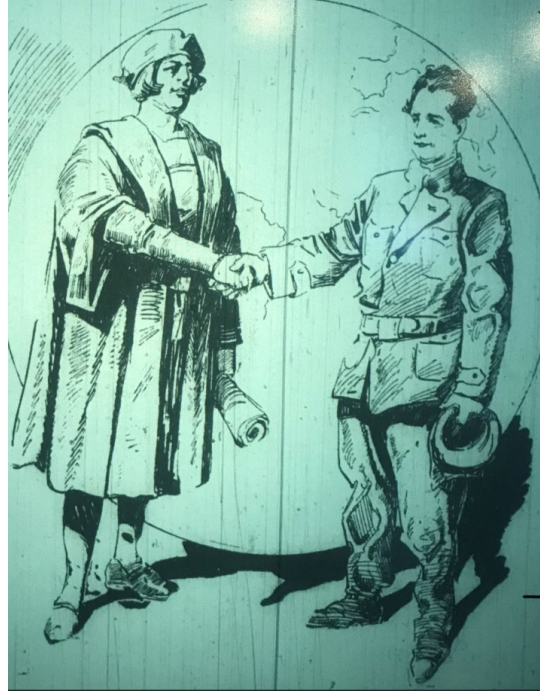


Figure 4.7. Franco and Columbus shake hands. "Colón y Franco, Discutieron en Palo la Noche en que el 'Plus Ultra' fué velado," *Crítica*, January 29, 1926.

the indomitable courage of Alvar Núñez... How can we not surrender vibrant emotion before the intrepid adventurer of today...?<sup>48</sup>

Spanish authorities had invoked this homage to its early modern era by naming the Dornier flying boat the "*Plus Ultra*," the motto of Spain since the sixteenth century. The phrase, meaning "Further beyond," was said to have been written on the Pillars of Hercules at the Strait of Gibraltar, marking the boundary of the known world during antiquity.<sup>49</sup> Franco also mimicked

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<sup>48</sup> "*Históricamente, somos los hijos de los conquistadores, hierve en nuestras venas su sangre, hablan nuestras bocas su idioma. Y Franco es la síntesis de las virtudes máximas de los gloriosos abuelos, es el valor redivivo de Pizarro, la tenacidad de Hernán Cortés, el arrojo indomable de Alvar Núñez... ¿Cómo no rendirnos de vibrante emoción ante el intrépido aventurero de hoy, que desde el cielo de nuestra patria viene a conquistar nuestros corazones...?*" "Emoción..." *El Hogar*, February 5, 1926, 3.

<sup>49</sup> It certainly fit Spanish interests to focus the flight's propaganda on the initial founding of their American empire, and not on the independence wars of the nineteenth century. But the fact that Spaniards could arrive in Argentina and be celebrated as "conquistadors" shows how remote any threat of Spanish imperial resurgence appeared to Hispanic-Americans. The conquest itself did not have negative connotations in the mainstream, public discourse at this time. The main motivation behind the revisionist accounts of the Columbian Exchange—accounting for the unimaginable loss of life, cultural destruction, and cruelty experienced by the native peoples of the Americas—was ignored or seen as a necessary step in the process of progress by the Argentine media.

the story of Columbus' discovery of the New World when the aviators finally set foot on the South American continent in Recife. In front of a huge crowd of curious onlookers, Franco yelled "*Viva América!*" and "as Columbus did on the day of his arrival in America, Franco kissed the earth, and then thanked God."<sup>50</sup>

The comparison between Franco and Columbus was reinforced by a narrative of progress increasingly prevalent in the ideology of military and civilian aviation officials.<sup>51</sup> These influential policymakers saw the history of mankind as a struggle against time and space, and velocity as the metric of a civilization. In 1929 the well-known Argentine novelist and poet Pablo Rojas Paz perhaps best articulated the connection of this ideology to Columbus and Franco:

Man has always fought against time and space; but his triumphs have been like water slipping from his hands. The discovery of America has been an offensive of humanity against time and space... Now man struggles to conquer space in the air. In the epic of discoveries, Spain occupied a principal place.<sup>52</sup>

Whereas early modern Spanish galleons had laboriously crossed the sea, airplanes were promising the definitive conquest of the Atlantic. Soon would be "dawn of a new day" when commercial flights would transform the relationship between the Old and New World.<sup>53</sup>

Airplanes would reduce the entire Atlantic Ocean into the Mediterranean Sea of the next century.<sup>54</sup>

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<sup>50</sup> "Un triunfal recibimiento se tribute en Recife a los Valientes Aviadores Españoles," *La Prensa*, February 1, 1926.

<sup>51</sup> See chapter five.

<sup>52</sup> "*El hombre ha luchado siempre contra el tiempo y el espacio; pero sus triunfos han sido como agua que se va de las manos. El descubrimiento de América ha sido una ofensiva de la humanidad contra el tiempo y el espacio... Ahora el hombre lucha por conquistar el espacio en el aire. En la epopeya de los descubrimientos España ocupó un principal lugar.*" Pablo Rojas Paz, "El alba de ayer y el alba de mañana," *El Hogar*, November 29, 1929, 7.

<sup>53</sup> Paz, "El alba de ayer y el alba de mañana," 7.

<sup>54</sup> "La repercusión mundial del vuelo de Franco," *El Hogar*, February 5, 1926, 3.

Franco's flight served to dispel the dogged notion of Hispanic backwardness. Since "the conquistador of Nature belongs not only to humanity, but to a race that is made vain with his talents..." the lack of great Hispanic "scientific conquests" had been a persistence anxiety for the many Argentines concerned with the perceived competition between races.<sup>55</sup> Just as in the era of Jorge Newbery, heroic aviation was characterized as a "scientific" endeavor.<sup>56</sup> To Spaniards and Hispanic-Americans alike, the flight of the *Plus Ultra* had proven to the world that members of *la raza* could not just participate, but lead in the scientific conquests pushing the boundaries of progress.

Grand pronouncements were also accompanied by far humbler descriptions of a nascent local identity, an *Argentinidad* nestled within *la raza*. The sheer extent of the celebrations across the country caused many commentators to note the unity of the Argentine people during their exultations of modern progress. As one reporter noted, Argentines, with their "clear tradition," were joining "the enormous hive of men from all parts of the world who live and work with [a single impulse], singing the thriving hymn of the future and progress... in unison with the Argentine soul."<sup>57</sup>

Yet this depiction of Argentine identity generated by Franco's flight did little to distinguish it from Spaniards and other Latin Americans. Clues to the relationship between

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<sup>55</sup> "El conquistador de la Naturaleza no solamente pertenece a la humanidad, sino a una raza que se envanece con sus talentos..." Santiago Ramón y Cajal, "En qué consiste el verdadero patriotismo," *El Hogar*, August 8, 1919, n.p.

<sup>56</sup> See, for example, "La vuelta al mundo en aeroplano: Partida de la misión argentina," *Aviación*, February 29, 1924, 6-7; "Un Argentino en Madrid se ocupa del gran vuelo," *La Prensa* January 22, 1926; "Franco, Amo del Espacio, Domina el Tiempo," *Crítica*, February 9, 1926; "Falto emoción popular en amarre del Graf," *Crítica*, June 30, 1934.

<sup>57</sup> "y con la argentinidad, en un solo impulso, la enorme colmena de hombres de todas las latitudes del mundo que con ella conviven y trabajan, cantando el himno pujante del porvenir y del progreso; y en esta colmena, desde luego en primer término, el núcleo importantísimo y valeroso de españoles que todos conocemos, al unísono con el alma argentina." "Vibración del Alma Argentina". See also, "Buenos Aires Sabe Demostrar que Todavía es un Pueblo Joven," *Crítica*, February 1, 1926.



*Argentinidad* and aviation are sprinkled in media accounts of the flight. During *Crítica*'s coverage of the Atlantic crossing, a journalist sought to reassure readers of the flight's success: "[The] whimsical teaching of destiny has been, by all accounts, the most suggestive demonstration of the sentiment that animates, at bottom, our compatriots. Doubt is an Argentine heritage, but certainty will soon become our spirit..."<sup>58</sup> In the background of the heroic feats of aviation of the 1920s, intellectuals, journalists, and writers were increasingly articulating an *Argentinidad* based on overcoming bad luck and exhibiting tenacity in the face of long odds and tragedy. This narrative, although present throughout the early part of the decade, found its most complete expression in aviation not with the successes of Franco, but the trials and tribulations of the last heroic Argentine aviator to complete a great international raid: Eduardo Olivero (1896-1966).

### **Aviators, Gauchos, and the Hard-Luck of Modern Argentinidad**

Eduardo Olivero's life seems to have been defined by luck, whether good or bad. Born in the provincial city of Tandil in 1896, he had learned to fly in Pablo Castaibert's first group of pupils at the tender age of sixteen.<sup>59</sup> A second-generation Italian immigrant, Olivero left for Italy to join her armed forces in 1915. But as his mother later recounted in 1926, he still self-identified as an Argentine: "[He] is Argentine. And so Argentine that, to serve Italy while retaining his

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<sup>58</sup> "Esta enseñanza caprichosa del destino, ha sido, a todas luces, la más sugerente demostración del sentimiento que anima, en el fondo, a nuestros compatriotas. La duda es un patrimonio argentino, pero la certeza se convierte bien pronto en el espíritu nuestro..." "Buenos Aires Sabe Demostrar que Todavía es un Pueblo Joven," *Crítica*, February 1, 1926.

<sup>59</sup> He trained alongside Lorenzo Eusebione, the first civilian killed in local aviation.

nationality, he rejected the offer to make him a second lieutenant, upon admission, preferring to enter as a private soldier.”<sup>60</sup>

In Italy Olivero gained distinction as a fighter pilot, flying Nieuports and Spads against the Austrians. He befriended the famed poet and Italian nationalist Gabriele D’Annunzio, which was one of Olivero’s greatest points of pride fourteen years later.<sup>61</sup> During the war Olivero’s luck held, and the intrepid pilot managed to survive his combat missions relatively unscathed.<sup>62</sup> After the armistice, he returned to Argentina with the Italian aeronautical mission. In 1920, while on a routine flight with a passenger over his hometown of Tandil, his cockpit was suddenly engulfed in flames. Although Olivero managed to land the airplane, he was permanently disfigured by the burns. The following year he was in a severe car accident, injuring his head and eyes. According to the account in *Aviación* magazine, Olivero almost lost his vision.<sup>63</sup> For the rest of his life he wore sunglasses to cover some of his facial scarring.<sup>64</sup> His reputation as a hard-luck pilot had been solidified as early as 1921, as a *Caras y Caretas* journalist lamented: “[An] admirable pilot this captain Eduardo Olivero, so ironically punished by luck.”<sup>65</sup>

Despite these many brushes with death, Olivero continued not just to fly, but attempt the heroic. In 1920 he captured the South American altitude record, reaching a height of 8000 meters in an Italian Ansaldo A.1 Balilla-220 hp. Six months after the accident, he again managed to

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<sup>60</sup> “*Es argentino. Y tan argentino que, para servir a Italia conservando su nacionalidad, desechó el ofrecimiento de hacerle subteniente, al ingreso, prefiriendo ingresar como soldado raso.*” “La madre del héroe. Doña Margarita G. de Olivero,” *Caras y Caretas*, June 19, 1926, 66. The implication, seen in multiple sources, is that officers in the Italian Army had to be Italian nationals, at least at the outset of the war. Olivero would finish the war as a captain.

<sup>61</sup> “Eduardo Olivero, el hombre que vivió horas de gloria en el corazón de las multitudes,” *Caras y Caretas*, October 22, 1932, 54-55.

<sup>62</sup> “Eduardo Olivero, el hombre,” 53.

<sup>63</sup> “Comentarios: Cuidemos de Nuestros Pilotos,” *Aviación*, December 1921, 5.

<sup>64</sup> The accident also prevented him from returning to Italy to continue his active service. “Eduardo Olivero, el hombre,” 55.

<sup>65</sup> “*Admirable piloto este capitán Eduardo Olivero, tan irónicamente castigado por la suerte.*” “El aviador Eduardo Olivero,” *Caras y Caretas*, June 18, 1921, 62.

reach an altitude of 7000 meters in a test flight, which the aviation press deemed a clear demonstration that the setbacks “have had no influence on his physical endurance, which enabled him to set the South American record for altitude.”<sup>66</sup>

By 1924, Olivero set his eye on a far greater feat than an altitude record. As his friend Jorge Luque Lobos wrote in 1927, Olivero could not sit still: “this noble knight of space lives tormented by the thirst for infinity... That intimate restlessness is for him the most cruel and sweet torture. He loves danger and likes the rounds with death...”<sup>67</sup> Olivero decided to fly from New York City to Buenos Aires, and brought onto the project his third-generation Irish-Argentine friend Bernardo Duggan. Duggan, who agreed to finance the flight, was cast in the mold of the pre-World War I sportsman aviator in popular media.<sup>68</sup> After almost two years of planning, the success of Franco’s flight spurred Duggan and Olivero to accelerate their efforts. They left for Italy where they bought a Savoia-Marchetti S.59 single-engine flying boat with a 450 hp. Lorraine Dietrich engine, which they named the “*Buenos Aires*”. On advice from the famed Italian long-distance aviator Francesco de Pinedo, they modified the airplane to increase its autonomy to 8.5 hours. Olivero and Duggan also hired de Pinedo’s well-known mechanic, Ernesto Campanelli, to accompany them on their transit of the Americas.

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<sup>66</sup> “Vuelo de altura del capitán Olivero,” *Aviación*, January 31, 1922, 32.

<sup>67</sup> “*Por eso, este noble caballero del espacio, vive atormentado por la sed de infinito... Esa inquietud íntima es para él, el más cruel y dulce de los suplicios. Ama el peligro y gusta de las rondas de la muerte...*” Prologue by Jorge Luque Lobos in Eduardo Olivero, *Mis impresiones* (Buenos Aires: Talleres Gráficos Tuduri, 1927), 6.

<sup>68</sup> “Duggan y Olivero,” *Caras y Caretas*, August 21, 1926, 75. The international press evidently saw Duggan as the protagonist of the flight, despite Olivero being the experienced pilot and navigator.



Figure 4.8. From left to right, Duggan, Olivero, and Campanelli. “Los tripulantes del “Buenos Aires”,” *La Prensa*, August 11, 1926, special inset.

The risks presented by a flight from New York City to Buenos Aires were clear to the aviators at the outset. They had selected a flying boat to compensate for the lack of infrastructure along their route. When Olivero made the decision, he had never flown a water-based airplane and he did not know how to swim.<sup>69</sup> The aviators were particularly worried about the tropical weather at the equator. They added an enlarged radiator and water-cooling system to help the airplane’s single engine keep them aloft over the tropical jungle. Lastly, Duggan and Olivero

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<sup>69</sup> He learned how to fly a flying boat at the Savoia factory in Italy, but it is unclear if he learned how to swim too. Olivero, *Mis impresiones*, 16.

elected to leave their radio behind to save space and weight, a decision they would come to regret.<sup>70</sup>

On May 24, 1926, Olivero, Duggan, and Campanelli took off in the *Buenos Aires* from Miller Field outside New York City to much fanfare in the international press. According to *The New York Times*, the aviators anticipated reaching Buenos Aires in seventeen to twenty days.<sup>71</sup> In the end, their aerial “odyssey”—as it was later dubbed—took almost three months. They first headed down the American east coast before flying out over the Caribbean Sea. There they encountered incessant tropical storms. Numerous times, as they continued south and east along the northern coast of South America, their airplane was lightly damaged on landings or take-offs, causing delays for repairs. As Olivero recalled in his 1927 memoir in chapters entitled “A turbulent leg” [*Una etapa accidentada*] and “A terrible odyssey,” the journey was a jarring combination of elegant dinner parties with local dignitaries and near-death experiences in remote jungles, rivers, and ocean inlets.<sup>72</sup>

The most dramatic period came in late June when the three men disappeared for over a week in the Amazon jungle. While flying from Paramaribo, Guyana to Para, Brazil, the aviators encountered a sudden storm which exhausted the airplane’s fuel reserves. They were forced to land by the remote island of Maraca on the Amazonian coast of Brazil just as night was coming upon them. There Duggan, Olivero, and Campanelli met an “Indian” fisherman, who helped tow the airplane to a safe cove with his boat. While the flyers were unharmed, they found themselves in a region of Brazil without “wired communications,” and they had left their radio behind. For the next week the international press speculated wildly about their fate. Large crowds of well-

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<sup>70</sup> Olivero, *Mis impresiones*, 30.

<sup>71</sup> “Arrive Here to Try Argentine Flight,” *New York Times*, May 13, 1926.

<sup>72</sup> Olivero, *Mis impresiones*, 131-59.

wishers and journalists gathered around Olivero's mother's house as the nation waited for news. Brazil dispatched naval vessels to search for them, to no avail. The aviators eventually reached the town of Vigia onboard their new friend's boat, where they managed to make contact with a steamship chartered by the Argentine newspaper *La Nación*.<sup>73</sup>

The flight resumed shortly after their reappearance, but the bad luck continued. As they made their torturous journey down the Brazilian east coast, the *Buenos Aires* again disappeared for days, causing more fatalistic speculation in the press. This time they had run out of fuel in a storm between Araranguá and Rio Grande do Sul in southern Brazil. The aviators were stranded on the bank of a remote river for four days before Brazilian authorities found them.<sup>74</sup> Having definitively proven to the world the utility of radios in such endeavors, the three beleaguered aviators finally landed in Buenos Aires after 109 hours flight time, 14,856 kilometers, and eighty-one days. In an end befitting the journey, they arrived on Friday, August 13.<sup>75</sup>

The reaction to Duggan and Olivero's trials and tribulations seems to have been mixed in Argentina. Certainly, their great adventure over the wilds of Latin America captured the public imagination. Argentines read about the "truly marvelous" landscapes they passed over.<sup>76</sup> The adventure on the island of Maracas could have been torn from the pages of *Billiken*. Leopoldo Lugones wrote in *La Nación* that "this has not been, therefore, the 'raid' of sports lingo... but something that links it with the old enterprises of conquest: an exploration."<sup>77</sup> Eduardo Encina of *Caras y Caretas* hailed the aviators as "masters of perseverance and serenity."<sup>78</sup>

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<sup>73</sup> "Duggan Party Safe at Vigia in Brazil," *New York Times*, June 21, 1926.

<sup>74</sup> "Duggan Found Near Mastardas Bay," *New York Times*, August 5, 1926.

<sup>75</sup> A fact that one *Crítica* correspondent found very amusing. "Hoy: ¡Viernes 13 de agosto! ¿Llegarán los aviadores?" *Crítica*, August 13, 1926.

<sup>76</sup> "El vuelo del Buenos Aires sobre las tres Guayanas," *Caras y Caretas*, July 31, 1926, 105.

<sup>77</sup> Leopoldo Lugones, "Los nuestros," *La Nación*, August 12, 1926.

<sup>78</sup> "Maestros de la constancia y la serenidad." "Desde el Mirador," *Caras y Caretas*, July 17, 1926, 165.

But according to journalists sympathetic to the flight, the men had become the butt of jokes among *porteños*. When their arrival seemed assured, one *Crítica* correspondent noted that “The fine ironies and jokes of the Buenos Aires spirit, capable of sacrificing their dearest idols in a phrase of wit, [have] also ended.”<sup>79</sup> Another columnist similarly castigated his countrymen: “What are the airmen going to say then they learn that instead of laurel wreaths waiting for them, they are awaited with a tremendous stock of jokes and ridicule?”<sup>80</sup>

Their fears proved overblown once the aviators actually arrived in Buenos Aires. The national press hailed them as heroes and the setbacks of their journey were now harnessed to emphasize the greatness of their feat. The prominent journalist and novelist Ricardo Rojas wrote: “I declare, however, that exceptional and generous flights like that of the Buenos Aires, please me greatly, for what they reveal about the capacity of the human spirit to create instruments of improvement, . . . unanimously in favor of everything that is or seems heroic.”<sup>81</sup> For Lugones, “this Argentine effort” in surmounting so many challenges was “a lesson in practical morality far superior to success. . . . It is an imposition of the will: that is to say, a victory of the spirit.”<sup>82</sup> Although not of the scale inspired by Franco’s arrival, thousands of Argentines nevertheless crowded at the river’s edge to greet the Argentine aviators and their Italian mechanic. They were honored at dozens of banquets, sporting events, and parades.<sup>83</sup>

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<sup>79</sup> “Terminaron también las finas ironías y los chistes del espíritu porteño, capaz de sacrificar a sus más caros ídolos en una frase de ingenio.” “Hoy: ¡Ya están!” *Crítica*, August 11, 1926.

<sup>80</sup> “¿Qué van a decir los aviadores cuando sepan que, en vez de esperarlos con coronas de laurel, se les aguarda con un stock tremendo de bromas y de burlas?” “La Verdad Sobre el Raid del Buenos Aires,” *Crítica*, August 11, 1926, 14.

<sup>81</sup> “Declaro, sin embargo que vuelos excepcionales y generosos como el del Buenos Aires, me agradan sobremedera, por lo que ellos revelan sobre la capacidad del espíritu humano para crearse instrumentos de superación, y unánime en favor de todo lo que es o le parece heroico.” “Ricardo Rojas Expresa para “Crítica” su Opinión Sobre el Raid,” *Crítica*, August 12, 1926. The tone of disapproval in Rojas’ language was due to his frustration that instances of “artistic” heroism were not being recognized like the aerial variety.

<sup>82</sup> “Así este esfuerzo argentino es una lección de moral práctica muy superior al éxito. . . . Es una imposición de la voluntad: vale decir una victoria del espíritu.” Lugones, “Los nuestros.”

<sup>83</sup> Evidently, they received particular attention from Argentine women, especially the more attractive Duggan. “Duggan, Olivero y Campanelli. El entusiasmo femenino,” *Caras y Caretas*, August 21, 1926, 65.

But some articles took this rhetoric a step further, arguing that the struggles of the crew mirrored that of the Argentine people, and their tenacity in the face of such trials was representative of the true Argentine spirit, even if this was not always recognized. *Crítica*'s journalists favorably compared the two Argentines to Franco who—they claimed—was simply blessed by good fortune. One columnist argued that “The Spaniard Franco was nothing more than a lucky pilot: instead, our boys have shown that they are phenomenal, patient, suffering, persevering, impenetrable to fear and impervious to despondency.”<sup>84</sup> Another article asked its readers which Homeric character deserved greater praise: Achilles, who is partly divine and almost invulnerable, or Ulysses, who in his mortal frailty overcame great obstacles? The answer “should be Ulysses, then, the prototype of the hero that we must admire.”<sup>85</sup>

These authors felt that the public's mockery of the flight revealed its failure to grasp the meaning of the flight. The pilots were exhibiting the very essence of what it meant to be Argentine:

It is necessary to exalt the tenacity, ingenuity and patience, quintessential *criollo* virtues, which are manes that have precedent over the feat of our brave pilots... How many obstacles they have had to overcome in the long months that their Odyssey has lasted. But, like the little *criollo* horse, slowly no more, and without fainting, they have reached the goal.<sup>86</sup>

The newspaper's editors reinforced this rhetoric in their “greeting” to the aviators:

Yes, let's make it clear: from the beginning the raid was not as popular as desired.

Adversity and bad luck prompted skeptical comments from those who believed the native

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<sup>84</sup> “*El gaita Franco no fué más que un piloto afortunado: en cambio, nuestros muchachos han dado pruebas de que son unos fenómenos, pacientes, sufridos, perseverantes, impenetrables al temor e impermeables al abatimiento.*” Last Reason, “La Verdad Sobre el Raid del Buenos Aires,” 14.

<sup>85</sup> “Heroísmo y Buena Suerte,” *Crítica*, August 12, 1926.

<sup>86</sup> “*Es necesario exaltar la tenacidad, el ingenio y la paciencia, virtudes criollas por excelencia, que son los manes que han presidido la hazaña de nuestros bravos pilotos... cuántos obstáculos no han tenido que vencer en los largos meses que ha durado su Odisea. Pero, como el caballito criollo, despacito no más, y sin desfallecer, han llegado a la meta.*” “Heroísmo y Buena Suerte.”





Figure 4.9. On the left, "Juan Pueblo" looks on in tears as the aviators embrace their mothers and wives. On the right, a gaucho on a horse. *Crítica*, August 13, 1926 and August 14, 1926.

Argentines were better, by inheritance, at sitting astride on the backs of unbridled foals with capacity and audacity rather than bearing the tension of a steering wheel of an airplane while the engines bellow... in the uncertain pampas of the sky... It was necessary to reiterate up to the point of exhaustion the safety and faith in the native virtues, as well as the confidence in our own effort and its value for all.<sup>87</sup>

*Crítica's* contributors harnessed the imagery and rhetoric of the countryside, and in particular the myth of the "gaucho," the landless horsemen of the pre-modern Pampa. Alongside renderings of the aviators were drawings of gauchos and rural peasants wearing traditional clothes (see fig. 4.9). A banner over the coverage of their arrival read "It is the Gaucho they

<sup>87</sup> "Sí, digámoslo claro: el raid sin ser impopular, tampoco fué, al iniciarse, lo popular que se deseaba. La adversidad, la mala suerte, inclinaban al comentario escéptico de quienes suponían que todavía no existía en los nativos, aptos hasta por herencia para aguantar corcovos enhorquetados sobre el lomo de los potros, la capacidad y la andancia suficientes como para dejar las bridas, y aguantar la tensión de un volante mientras los motores braman aceptando el reto de los vientos, en las pampas inciertas del cielo... Fué preciso reiterar hasta el cansancio, la seguridad y la fe en las virtudes nativas, la confianza en el esfuerzo, propio y el valor de lo que es nuestro." "Crítica Saludó Desde el Cielo, Ayer, la Llegada de los Héroes," *Crítica*, August 14, 1926.

carried inside that made them arrive.”<sup>88</sup> Olivero and Duggan were not the first Argentine aviators to be associated with the famed horsemen. Guillermo Hillcoat, by the time of his 1924 flight, was known in the aviation community as “*el gaucho relámpago*” [the lightening gaucho]. A 1928 retrospective article declared Hillcoat “the most gaucho of the pilots and the most pilot of the gauchos” who “when sitting on the plane, he appears, in different clothing, modernized by civilization, one of our legendary horse-tamers.”<sup>89</sup>

Over the course of the early twentieth century, the gaucho—reminiscent of the US cowboy archetype—was resurrected as symbol of Argentine identity. In a sad irony, this cultural rebirth came only after a series of military campaigns in the late nineteenth century had largely eliminated the gauchos as a segment of Argentine society. At that time, the rural horsemen, often of mixed race and associated with the “backward” Spanish colonial heritage, were condemned by the Liberal *porteño* elites as “unmodern and racially and culturally barbaric.”<sup>90</sup> Gauchos further drew the ire of modernizing elites through their support of the rural *caudillos* [strongmen]. But by the turn of the century, nationalist writers began resurrecting a romanticized version of the gaucho. These writers saw the horsemen as archetypal representatives of a non-cosmopolitan, nativist, and rural *Argentinidad*. Nineteenth-century literary works such as José Hernández’s epic poem *El Gaucho Martín Fierro* were frequently invoked and praised by nationalist commentators like Leopoldo Lugones and Manuel Gálvez.<sup>91</sup> These mythical gauchos were portrayed as fundamentally Spanish and white in their comportment and culture by the Hispanist writers of the interwar period, largely rendering invisible the indigenous and Afro-Argentine

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<sup>88</sup> See *Crítica*, August 13, 1926, 5<sup>th</sup> Edition, front page.

<sup>89</sup> “*Es además, el más gaucho de los pilotos y el más piloto de los gauchos...cuando se sienta en el avión parece, con distinta indumentaria, modernizada por la civilización, uno de nuestros domadores legendarios.*” “El gaucho relámpago,” *Revista Auto-Aérea*, August 1928, 14.

<sup>90</sup> Rodríguez, *Civilizing Argentina*, 17-18.

<sup>91</sup> Rodríguez, *Civilizing Argentina*, 17-18.

heritage of the horsemen.<sup>92</sup> By the interwar period, nationalist writers commonly wrote of the gaucho as “the original type, characteristic of our society.”<sup>93</sup>

Despite the continued, real existence of mixed-race rural peasants, nationalist writers characterized the gaucho as a *historical* aspect of the nation. They were painted as tragic figures who helped realize Argentine independence from Spain, only to be marginalized and eventually eliminated by Europeanized elites. Yet they doggedly resisted these forces against all the odds, fighting until the end. Alongside *Crítica*'s coverage of Olivero and Duggan was reprinted a segment from *El Gaucho Martín Fierro*:

If we are to be saved or not—  
No one can tell,  
Right where the sun goes down  
We must go,  
Someday we shall arrive...  
And only then we will know where.<sup>94</sup>

When people expressed their doubts about the *Plus Ultra*'s crossing of the Atlantic, *Crítica* had also invoked the famed poem:

Here we are  
Poised to depart;  
We shall not give up  
As hard as luck gets,  
We should not think about death  
But of enduring life.<sup>95</sup>

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<sup>92</sup> See Chamosa, “People as Landscape.”

<sup>93</sup> Pedro Goyena, “El gaucho,” *El Hogar*, December 14, 1928, 22.

<sup>94</sup> “*Si hemos de salvar o no- / De esto nadie nos responde, / Derecho ande el sol se esconde / Tierra adentro hay que tirar, / Algún día hemos de llegar... / Después sabremos adónde.*” *Crítica*, August 13, 1926.

<sup>95</sup> “*De ese modo nos hallamos / Empeñaos en la partida; / No hay que darla por perdida / Por dura que sea la suerte, / Ni que pensar en la muerte / Sino en soportar la vida.*” *Crítica*, February 1, 1926.

Battling long odds, facing tragic defeat but persevering, were thus Argentine narratives borne out by the struggles of the great Argentine aviators. Similarly to Duggan and Olivero, Guillermo Hillcoat was deemed in 1928 a “good *criollo*” since “his steed may have rebelled throwing him to the ground but he never hit it completely: he always knew how to fall on his feet.”<sup>96</sup>

The equation of Olivero, Duggan, and Hillcoat with gauchos reveals how *Argentinidad* was both a racial-biological *and* a cultural designation. Hillcoat seems to have gained his moniker of “*el gaucho relámpago*” because of his appearance more than his experiences in aviation. While the 1928 article did mention his ability “to always land on his feet,” there is little evidence that the public perceived Hillcoat to be an unlucky pilot like Olivero. In fact, Hillcoat routinely found success in aviation competitions and triumphed on his well-known Buenos Aires-Lima raid. Instead, it was the fact that he was “Tall, stocky, dark in color and faded hair” that seems to have cemented his nickname.<sup>97</sup> Hillcoat’s interviewer expressed disbelieving amusement when the aviator claimed to have blond hair: “He says he is blond, so pretentious!”<sup>98</sup> Importantly, Olivero and Duggan were never actually called “gauchos” in the press coverage. He and Duggan were said to have simply embodied the spirit of the gaucho. Since all three men were second or third generation immigrants (Hillcoat was the son of an Englishman), it seems likely that the whiter skin and more “European” features of Olivero and Duggan kept them from being formally dubbed “gauchos.”

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<sup>96</sup> “*Y como los buenos criollos, habrá corcobeado el pingo, se habrá tumbado alguna vez, pero nunca dió con el ancho del lomo en tierra: siempre supo caer de pie.*” “El gaucho relámpago,” 14.

<sup>97</sup> “*Alto, fornido, de color oscuro y pelo desteñado (él dice que es rubio ¡pretensioso!)*” “El gaucho relámpago,” 14. A common stereotypical depiction of *criollos* was as tall and burly men. See, for example, Carlos Muzio Saenz Peña, “1904 – Veinte años de deportes – 1924,” *El Hogar*, January 4, 1924, 66.

<sup>98</sup> To what degree Hillcoat played into this image is unclear, but at the very least his airplane was known as his “*alazán tostao*” [toasted chestnut]. By dropping the “d” in “tostado,” this can signal a rural dialect or accent. “*él dice que es rubio ¡pretensioso!*” “El gaucho relámpago,” *Revista Auto-Aérea*, August 1928, 14.

It is never explicitly stated in the *Crítica* coverage why the experiences of these aviators could be applied to the modern *Argentinidad*—in other words why tenacity was the essential ingredient of the Argentine character. But the implication was that Argentines have always faced tremendous obstacles in their efforts to stay abreast of the latest development of material progress and secure greatness on the international stage. Three years after the flight of the *Buenos Aires*, the journalist and author Juan José de Soiza Reilly expressed this idea by comparing gauchos to the “*niño bien*” [rich boy] of the early twentieth century. Soiza Reilly’s conception of the “*niño bien*” was essentially the “sportsman” or “clubman” archetype embodied by Jorge Newbery. He argued that the clubman was “a posh soul that talks in French,” like the famed gaucho Juan Cuello but wearing a smoking jacket. The nineteenth-century gauchos had sacrificed themselves in the wars of independence, only to find themselves cut out of modern Argentina.<sup>99</sup> The “*niño bien*” carried out a similar role in the conquests of progress, especially in their “flights of audacity” pushing the frontier of “aerial machines.” Thus “the blood of the ‘*niño bien*’—as the gaucho’s blood—soaked our land.” But just like the gaucho, the elite sportsman and clubman were no longer relevant at that point, pushed out by changes in cultural fashion, and, in the case of aviation, by professional flyers.<sup>100</sup> Thus the entire history of Argentine aviation, beyond the experiences of pilots like Olivero, could be cast as a tragic yet inspiring narrative emphasizing sacrifice and tenacity in the service of progress.

When *Crítica* hailed Olivero and Duggan as embodying the “gaucho” spirit, it might have seemed a victory for the growing nationalist movement. Two heroic Argentines were being draped in the laurels not of European civilization and progress, but a mystical spirit emanating

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<sup>99</sup> Soiza Reilly wrote that they were thankless soldiers in the “service of civilization.”

<sup>100</sup> It is revealing of the tension of Argentine identity that Soiza Reilly could find a common national narrative using two archetypes—the rural gaucho and the technologized urban elite—that were so diametrically opposed in their culture and life experiences. Juan Jose Soiza Reilly, “El ‘niño bien’,” *El Hogar*, April 20, 1928, 23.

from the countryside. The eruption of enthusiasm around Franco's raid might also suggest that the intellectual nationalist campaign to equate Argentina with Hispanic culture was succeeding.

But the construction of such a narrative was in reality far less exclusionary than anti-cosmopolitan writers in the vein of Leopoldo Lugones had hoped. This "hard-luck" version of *Argentinidad* could be applied to any ethnic group or nationality in the country. Even if a rural archetype of the gaucho was becoming a national symbol, all of the aviators so far mentioned were second-generation immigrants and yet many supposedly embodied "authentic gaucho qualities."<sup>101</sup> Zanni, Parodi, Lorenzini, and Olivero were second-generation Italo-Argentines. Hillcoat was a second-generation Englishman and Duggan was a third-generation Irish-Argentine. Even at the height of Hispanist jubilation over Franco, the frequent comparison of the event to Columbus' discovery of the New World gave Italians an opportunity to insert themselves into the national conversation.<sup>102</sup>

Despite a rising hostility to the policy of open immigration in the 1920s, cultural assimilation remained the order of the day. As the historian Samuel Baily emphasizes, the nationalist movement in Argentina, although significant, did not hamper the development of the local Italian community. Mainstream culture emphasized assimilation and the "negotiation of differences" amongst Argentina's enormous immigrant class.<sup>103</sup> Italians formed their own mutual aid societies and sporting clubs, in addition to participating in more generalized associations. By the interwar period, it was clear that Italians had "adjusted more rapidly, effectively, and completely" than their counterparts in the United States.<sup>104</sup> The historians Beatriz Sarlo and

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<sup>101</sup> Except Stefford, who was a first-generation immigrant.

<sup>102</sup> See, for example, "Colón y Franco, Discutieron en Palos la Noche," *Crítica*, January 29, 1926, wherein Franco and Christopher Columbus fictitiously discuss their mutual heroism and its implications for their countrymen.

<sup>103</sup> Baily, *Immigrants in the Lands of Promise*, 82.

<sup>104</sup> *Ibid.*, 217.

Matthew Karush found that the nationalist dream of a monolithic and unique Argentine culture largely faded away in the 1930s. The diversity of Argentine society and the continuous influx of foreign culture, technology, and people made it a virtual impossibility. Instead, the nation's sense of self was defined by a "culture of mixture," with Spanish, Italian, Jewish, criollo, and other influences.<sup>105</sup> The culture of aviation reflected this shift as the Heroic Age of aviation waned in the late 1920s. The discourses swirling around flight were increasingly focused not on negotiating ethnic or national differences, but on reinforcing or transcending the class hierarchy so intrinsic to Argentine society. Aviation, despite its undoubtedly elitist origins, was rapidly becoming a technology of the common man.

### **Pablo Rada, the Heroic Mechanic, and the Popular "Technical Imagination"**

The primary division in Argentine society had always been—and continued to be—class.<sup>106</sup> As José Moya found in his meticulous study of immigrant communities in Buenos Aires, the Argentine capital was one of the least "ethnically segregated cities" in the world. Instead neighborhoods were segregated by class, not by national origin or ethnicity. Even nominally nativist organizations like the Liga Patriótica Argentina aimed their ire primarily at radical labor and political activists, not specific immigrant communities. The Liga Patriótica Argentina sponsored a heroic flight by Eduardo Hearne in 1921, who was culturally more English than Argentine, but he was the son of a wealthy landowner. Immigrants were frequently near the bottom of the social hierarchy, or at least rarely found themselves at the pinnacle of

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<sup>105</sup> The continued prevalence, if not dominance, of nationalist sentiments was due to the unavoidable reality of the "nation's visibly subordinate position in global economic, political, and cultural circuits," or its "peripheral modernity." Karush, *Culture of Class*, 6, 10. For the "culture of mixture" in Argentine literature and popular media, see Sarlo, *Una modernidad periférica*, 28.

<sup>106</sup> For this section, I am particularly indebted to the work of the Argentine cultural historian Beatriz Sarlo, whose many publications since 1980s have laid the foundation for academic and lay understanding of Argentine elite and popular culture in the twentieth century.

Argentine society. Thus immigrant and poor identities blended together, creating a class consciousness that would become increasingly evident in the 1930s. This consciousness was primarily divided between the popular and elite sectors as a defined “middle class” identity was still coalescing.<sup>107</sup>

Despite the perception today that early aviation was primarily an elite endeavor, flight culture and the technological literacy it promoted was essential to the construction of a popular identity in Argentina. The emphasis in the popular imagination and academic historiography of aviation has always focused on the few people who owned airplanes or could afford passenger tickets in the first forty years of flight. By those measures alone, exceptionally few Argentines ever interacted with aviation in a meaningful way. But for every heroic pilot, there was a support crew of trained mechanics, navigators, communication and logistics personnel, and more. For every passenger on an early commercial flight, there were likely hundreds of Argentines angling for a career in one of the world’s newest and most technologically glamorous industries. They may not have been producers or consumers of aviation technology, but they were essential contributors nonetheless as maintainers, administrators, and supporters.

From the beginning, common Argentines participated in the tens of thousands in aviation events and fundraising drives. One journalist noted as early as 1920 the “suggestive and flattering fact” that aviation was already “practiced on a grand scale in the interior.” He reported that women and “*campesinos*” [peasants] had a greater enthusiasm for flight than the

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<sup>107</sup> Scholars of Argentina are still debating whether there was a “middle class” consciousness in the interwar period, despite the presence of a large middle sector in Argentine society. Detractors argue that there were no major political or social organizations formed around the promotion or defense of “middle class” interests at this time. In my research, media sources tended to distinguish mainly between the “elite” and “popular” sectors. While there was undoubtedly social stratification within the “popular” sector, where one “class” began and ended was extremely vague. This would begin to change with the advent of Peronism. I will refer to the lower half of Argentine society as the “working classes,” “popular classes,” and “common people” to reflect these blurred distinctions. See Karush, *Culture of Class*, 36-7, 216; Adamovsky, *Historia de la clase media argentina*, chapters six and seven.



“landowners and wealthy people.” Ranch hands immediately “[surrounded] without fear” any airplane that landed in the countryside. The crowd would “[reach] the extreme of trying to eat the wings, which suffered damage due to this cause on several occasions.”<sup>108</sup>

The elitist culture of early aviation in the time of Newbery and the Aero Club Argentino barely limped out of the downturn during the First World War. From the very beginning, the alliance between aviation enthusiasts and Argentina’s high society was strained. High-society culture had always eschewed artisanal labor, and its modern incarnation, technical labor. Despite the immense popularity of a quasi-elite figure like Jorge Newbery, few of Argentina’s landowning class would be sending their sons to engineering schools.<sup>109</sup> The avenue to elite status remained in the traditional, intellectual aspirations like law, medicine, and writing practiced in universities and high-society social clubs.<sup>110</sup>

Elites never quite abandoned aviation wholesale during the interwar period, but they acted mainly as patrons, not participants. The most visible vestige of the old alliance between aviation and “high society” was the annual “*Baile de los Aviadores*” [Ball of the Aviators] held every February during Carnival. Begun in 1922 by the ACA, the nation’s top aviation enthusiasts, officials, and pilots were joined by entertainers, *porteño* celebrities, and elite socialites for a night of ostentatious revelry to raise money for national aviation causes. The annual tradition continued until at least the late 1930s. By 1932 the *Baile* featured comedy and dance routines by university students, miniature balloon launchings, and dance, costume, and

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<sup>108</sup> “*La hacienda es en extremo curiosa: apenas descende el avión acuden y le rodean sin temor alguno, llegando al extremo de intentar comerse las alas, las cuales sufrieron desperfectos debido a esta causa en varias ocasiones.*” “La difusión de la aviación,” *Caras y Caretas*, August 7, 1920, 6. Despite the “flattering” message, one cannot help sensing a strong connotation of condescension in the piece.

<sup>109</sup> I say “quasi-elite” since Newbery was not a member of the highest echelons of Argentine society dominated by the landed and political elite. Despite his wealth and fame, Newbery is better thought of as a “darling” of these elites, not a bona fide member in his own right.

<sup>110</sup> Sarlo concisely labels this elite knowledge as “literary artistic culture” which stood at the top of the social hierarchy. Sarlo, *The Technical Imagination*, 5.

beauty contests, including one specifically for women dressed as aviators. Winners were awarded free airline tickets to Montevideo, flight “baptisms,” medals and more. At the end of the evening, a “*Reina de los Aviadores*” [Queen of the Aviators] and her “prince consort” were elected to reign until the next Carnival.<sup>111</sup>

But the heart of the old pseudo-aristocratic order of aviation, embodied by the flagging ACA, continued its decline in the 1920s. The ACA clung to its association with the heroes of the pre-World War I era and its prestigious origins under the elite Jockey Club Argentino. They continued to sponsor aviation races and festivals throughout the interwar period, but the club was hobbled by periodic infighting among its governing members and by competition from new organizations like the Centro de Aviación Civil. Articles on the ACA invariably focused on the illustrious past of the club, not its decidedly less prestigious present.<sup>112</sup>

Elite vanguardist culture represented by the towering figures of Argentine literature like Jorge Luis Borges and Victoria Ocampo continued to largely ignore the tremendous material change in the cities. They chose to focus on mythic and heroic reconstructions of the colonial past and rural spaces to define the modern Argentine experience.<sup>113</sup> When the wave of popular enthusiasm for Olivero and Duggan’s flight swept over the country, the lone voice of grumbling dissent in *Crítica* came from Ricardo Rojas. Rojas—a well-known nationalist writer from an elite family in Santiago del Estero—said in his interview: “I am not very sensitive to sporting emotion and little apt to improvise a rhetorical enthusiasm about these kinds of things that so please the crowds of our time.” He was “very pleased because of what [such flights] reveal about

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<sup>111</sup> “Se Realiza Hoy la Fiesta de los Aviadores,” *Crítica*, January 30, 1932, 6.

<sup>112</sup> The main conflict, as will be discussed in chapter five, was over leadership of the national aviation community.

<sup>113</sup> This endeared them to nationalist thinkers, even if the novelists themselves did not espouse nationalist ideologies. Vanguardist literary figures like Borges, anxious about the perceived lack of “phantoms” or a defined past for the Argentine identity, used fanciful representations of the colonial order—and its continued incarnation in the countryside—to create a mythical past for the nation. See Sarlo, *Una modernidad periférica*, chapter 2.

the ability of the human spirit to create instruments of self-improvement...<sup>114</sup> But with an air of pompous self-pity that likely did not ingratiate him with *Crítica*'s readers, Rojas concluded:

I regret, however, that the crowds, here as everywhere, need to [have] these reactions, more or less theatrical acts of force[,] and that human culture has not penetrated the social mass enough to illuminate and lead with equal emotion in favor of the invisible heroism of sages and poets.<sup>115</sup>

By the time Juan José de Soiza Reilly wrote about the parallels between the “gauchos” and the “rich boys” [*niño bien*] in 1929, it was a given that the elite “sportsman” aviator in the vein of Jorge Newbery was gone, killed by changing cultural tastes among “high society.” As the careers of Pedro Zanni, Eduardo Olivero, Guillermo Hillcoat, and Carola Lorenzini have shown, the aviators of the interwar period—as well as most of their supporters, advisors, and technicians—came from the middle and lower sectors.<sup>116</sup>

As the historian of Argentine literature and popular culture Beatriz Sarlo has described, the realm of science and technology was that of the common person; technical literacy was “poor people’s knowledge.” The immigrants of the late nineteenth century were on the whole more skilled than their counterparts in the United States. Many of the millions of Spaniards and Italians already had artisanal and technical skills when they arrived.<sup>117</sup> They established

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<sup>114</sup> “Yo soy poco sensible a la emoción deportiva y poco apto para improvisarme un entusiasmo retórico sobre este género de cosas que tanto complacen a las multitudes de nuestro tiempo. Declaro, sin embargo que vuelos excepcionales y generosos como el del Buenos Aires, me agradan sobremanera, por lo que ellos revelan sobre la capacidad del espíritu humano para crearse instrumentos de superación, y unánime en favor de todo lo que es o le parece heroico.” “Ricardo Rojas Expresa para ‘Crítica’ su Opinión sobre el Raid,” *Crítica*, August 12, 1926.

<sup>115</sup> “Lamento, no obstante, que las muchedumbres, aquí como en todas partes, necesiten para esas reacciones, actos de fuerza más o menos teatrales y que la cultura humana no haya penetrado suficientemente la masa social como para iluminaria y conduciría con idéntica emoción en favor del heroísmo invisible de los sabios y de los poetas.” “Ricardo Rojas.”

<sup>116</sup> The last celebrity aviator in Argentina who fit the archetype of the elite sportsman in the minds of the media seems to have been Bernardo Duggan due to his wealth. Most of the major figures in male aviation by this time were military pilots by virtue of their access to the greater resources of the Army and Navy.

<sup>117</sup> Moya, *Cousins and Strangers*, chapter five; Baily, *Immigrants in the Lands of Promise*, 67.

hundreds of small workshops in the major cities. As we saw, Paul Castaibert was just one such example.

Much of the immigrant population shared a common belief in the power of science and technology to generate societal and individual improvement. The faith in material progress and their place within it was evident in the working-class tabloids of the era. Newspapers like *Crítica*—which self-consciously positioned itself as a working-class publication—continued to espouse the promises of a technological utopia long after elite culture in Argentina had become wary of material change. Such common belief in the possibility of science and technology bound together the different immigrant communities in opposition to reactionary sentiments in the conservative and nationalist sectors of society.<sup>118</sup>

According to Sarlo, the aura of science, technology, and progress conferred “respectability and esteem” onto those who possessed technical skills but lacked formal education. The increased social valuation of self-taught mechanical skills was driven by the mystique of the heroic inventor—personified in Argentine media by Thomas Edison—who used his artisanal knowledge to develop *new* technologies. Since material progress was the order of the day, “the lay use of technology was bringing about the reorganization of a hierarchy of knowledge.” A powerful “technological imagination,” which was a “blend of probability and imagination, of possible feats and invention,” fed a largely fantastical narrative of quick wealth and prestige through autodidactic technical wizardry.<sup>119</sup>

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<sup>118</sup> At least this is what the editors of *Crítica* believed and their tabloid grew to be one of the successful publications in the country. Sarlo, *The Technical Imagination*, 61-75. Nationalists frequently decried the direction of material progress, claiming it was removing a critical “spiritual” element from society and placing the nation under the yoke of European and North American capitalist imperialism. See, for example, “Cartas de un argentino que se enoja: El progreso mecánico nos alegra cada vez más de nosotros mismos,” *Mundo Argentino*, June 20, 1934, n.p.; “La argentinización del país,” *El Hogar*, November 6, 1936, 3.

<sup>119</sup> Sarlo, *The Technical Imagination*, 3-5.

But the heroic inventor was only one popular representation of the opportunities for humbler people to remake themselves in the modern age. While the image of the inventor was certainly omnipresent in popular technical literature and the tabloids, there were few national celebrations or funding drives for popular inventors. Writers for *Ciencia Popular*—a magazine dedicated to science and technology—lamented throughout the 1930s the lack of support for, and thus deficiency of, the inventive spirit in Argentine society.<sup>120</sup>

Another incarnation of greatness through technical mastery grabbed hold of the popular imagination far more intensely, at least in the middle years of the interwar period: the heroic aviation mechanic. The immense prestige heaped onto great raids and their executors naturally enhanced the reputation of the humble mechanic. Pilots on great raids like those of Zanni, Franco, and Olivero always brought along a mechanic whose technical skills kept the temperamental engines of the day running for hours on end. They risked their lives alongside their more famous commanders. In the mainstream, more elitist media represented by publications like *La Prensa*, *La Nación*, and *Caras y Caretas*, the labors of the mechanics were largely invisible. While the pilots were whisked off to banquets and photo-ops, the mechanic frequently stayed behind to fix the airplane for the next leg.

But in newspapers and magazines more sympathetic to—or explicitly allied with—working class interests and culture brought the spotlight on the mechanic. No publication exemplified this trend more than the tabloid *Crítica*, the self-described “voice of the people.”<sup>121</sup>

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<sup>120</sup> See, for example, “Algo de Novela de Hoy y Realidad Mañana,” *Ciencia Popular*, November 11, 1930, 372-6; “Inventos Argentinos,” *Ciencia Popular*, November 1933, 241; “El Ingenio Argentino,” *Ciencia Popular*, November 1934, 543; “Los Inventos Argentinos,” *Ciencia Popular*, January 1935, 7.

<sup>121</sup> Sarlo and the historian Sylvia Saïtta found in their studies of *Crítica* that the tabloid was unusually plugged into the popular zeitgeist, frequently advocating for their interests or publishing stories relevant to working-class lives. The paper also created social programs to help their readers. See Sarlo, *The Technical Imagination*, 5-6, and chapter three; Sylvia Saïtta, *Regueros de tinta: el diario Crítica en la década de 1920* (Buenos Aires: Siglo Veintiuno Editores, 2013), chapter two.

The Argentine popular classes, benefiting from European immigration and an early system of universal basic education, had unusually high literacy. The new medium of the tabloid—cheap newspapers lavishly adorned with images, cartoons, and sensationalist headlines—took advantage of this huge potential base of readers. *Crítica* recognized the affiliation between working-class culture and technology. It maintained an “ideology of commitment to modernity,” publishing exciting stories of material and social progress which often blended science and science fiction. Without any concern for the risks of technification to traditional forms of working-class labor, *Crítica* promised a “wage earners’ utopia” just over the horizon.<sup>122</sup>

One area where *Crítica* demonstrated such a commitment to modernity was in its coverage of aviation. Other newspapers like *La Prensa* were certainly interested in aviation, especially during the peak of the Heroic Age from 1924 to 1926. But none matched the exuberant enthusiasm of *Crítica*’s pages when chronicling such great raids. It was *Crítica* that most vividly and pointedly described Zanni’s disappointment in Japan, the meaning of Olivero and Duggan’s flight, and the devastating death of Lorenzini. The tabloid not only featured dozens of articles on aviation, but commissioned comics to depict the raids, perhaps to aid any illiterate customers or children.<sup>123</sup>

When the *Plus Ultra* made its journey from Spain to Argentina, *Crítica* distinguished itself not in its coverage of Franco, but its unique fixation on the humblest member of the crew, Pablo Rada, the enlisted mechanic. The son of a cabinetmaker, Rada had learned traditional artisanal skills until the death of his father compelled him to join the military. Working at a naval aviation workshop, Rada came to the attention of Franco during operations over Morocco.<sup>124</sup>

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<sup>122</sup> Sarlo, *The Technical Imagination*, 61-2, 73-75.

<sup>123</sup> See *Crítica* coverage of Franco from January to February 1926, and Olivero from June to August 1926.

<sup>124</sup> “Un tío del mecánico nos habla de él,” *Crítica*, January 31, 1926.



Figure 4.10. One of the few photographs of Rada. "Nuestros ilustres huéspedes," *El Hogar*, February 19, 1926, 41.

Franco seems to have had tremendous affection for the twenty-three year old "soldier-worker," declaring Rada "the greatest mechanic in the world!"<sup>125</sup> Rada was described in *Crítica* as "a modest son of the people, and as such poor," yet he had a "heroic soul." He was the "obscure hero of the brilliant feat."<sup>126</sup> The Argentine working-class was evidently inspired by the young Spaniard; an association of chauffeurs organized a funding drive to give Rada a financial bonus for his achievement. *Crítica* joined in the effort, creating a fund to buy Rada a house in Spain.<sup>127</sup>

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<sup>125</sup> "Crítica Inicia una Simpática Suscripción. Hay que Regalarle una Casita a Rada," *Crítica*, February 11, 1926.

<sup>126</sup> "Pablo Rada Debe Recibir de Esta Ciudad Laboriosa un Homenaje Perdurable," *Crítica*, January 31, 1926.

<sup>127</sup> "Crítica se dirige muy especialmente a sus lectores, a todo este Buenos Aires que sueña y que trabaja, a toda esa masa formidable, que elabora anónima pero firmemente la grandeza de la nación. Todos nosotros debemos contribuir con nuestro óbolo a premiar, por nuestra parte, a este héroe del trabajo, que es nuestro héroe, el que está más cerca de nuestro corazón." "Crítica Inicia una Simpática Suscripción," *Crítica*, February 11, 1926.

Yet even in the context of much lavish praise, the status of the mechanic was still unclear in the eyes of some Argentine journalists. Nearly every mention of Rada felt the need to express surprise at his level of “culture.” *La Prensa*—characteristically—was the most condescending:

Rada is certainly of a higher culture than what could be attributed to him without knowing him, on the basis of his status as a mere mechanic soldier. However, his conversation is pleasant, is expressed clearly and concisely, and is not at all pretentious.<sup>128</sup>

But even some of the writers at *Crítica* could not help but embed an air of supremacy while praising Rada: “...behind that blue workers’ blouse, and under that face smudged by lubricant, hides a soul as great, as heroic and as brave as that of the chief pilot [Franco]...”<sup>129</sup> Many emphasized that the nature of Rada’s greatness was his loyalty to Franco, his social better. He was the Sancho Panza to Franco’s Don Quixote, having like “the legendary squire, spirited loyalty, long-suffering modesty and limited ambition. And above all, he is fully aware that his humble contribution must be decisive for the success of the company.”<sup>130</sup>

*Crítica*’s correspondents were also unclear about the nature of Rada’s brilliance as a mechanic. His “artisanal” skills were described in a quasi-mystical manner, as an almost inexplicable ability to understand and nurture his mechanical charges:

...the “Plus Ultra” is a small world, full of secrets that only he deciphers; it is a little monster, who speaks a language that only he understands... you have to see him walk meticulously,... adjusting complicated machinery, to understand the transcendental scope

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<sup>128</sup> “Rada es, ciertamente, de una cultura superior a la que se le podría atribuir sin conocerlo, sobre la base de su condición de simple mecánico soldado. Sin embargo, su conversación es agradable, se expresa clara y concisamente, y no es nada pretencioso.” “El Mecánico del ‘Plus Ultra’, Pablo Rada, es de cultura superior,” *La Prensa*, February 6, 1926. This was the only major discussion of Rada in *La Prensa*.

<sup>129</sup> “Que detrás de esa blusa azul del obrero, y bajo ese rostro tiznado por el lubricante, se esconde un alma tan grande, tan heroica y tan bizarra como la del piloto jefe...” “Pablo Rada, Héroe Oscuro de la Brillante Empresa,” *Crítica*, January 30, 1926.

<sup>130</sup> “Tiene, del legendario escudero, la lealtad animosa, la modestia sufrida y la ambición limitada. Y tiene, sobre todo, la conciencia plena de que su humilde aporte ha de ser decisivo para el buen éxito de la empresa.” “Pablo Rada...,” *Crítica*, January 30, 1926.



of his work... His hands, his noble workman's hands, stained and calloused, know the secret of all tensions, of all adjustments, and his ear, sharpened by experience, knows how to discover what is the normal palpitation of those innumerable monsters that roar and shudder in the soul of the engines.<sup>131</sup>

Rada's skills were denied any scientific legitimacy. A revealing article described the crew of the *Plus Ultra* as a "symbol of [a] perfect organism." The navigator Julio Ruiz de Alda provided the "highly sensitive and irreproachable cerebralism" of the mission: "In his hands, the route chart, the compass, the hygrometric and meteorological devices, radiotelegraphy and radiotelephony... are... obedient gods and geniuses... For him, the journey is the work of science."<sup>132</sup> Rada, on the other hand, was positioned on the opposite end of the spectrum as a feminine caretaker awash in sentiment not scientific exactitude:

Rada, the modest, the tireless, the fertile obedience, is the other extreme. For him, the motors are like docile children, like friends who have no secrets. Before leaving, they tell him their hopes and wishes, they tell him about their needs and their troubles... With the expertise of a doctor and the passion of a mother, Rada tends to his engines, cleans them, gives them rest.<sup>133</sup>

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<sup>131</sup> "...el *"Plus Ultra"* es un pequeño mundo, lleno de secretos que sólo él descifra; es un pequeño ser monstruo, que habla un lenguaje que sólo él entiende. Y hay que verlo recorrer minuciosamente, escrutando pieza por pieza, ajustando complicada maquinaria, para comprender el trascendental alcance de su labor...Pablo Rada está en todo eso. Sus manos, sus nobles manos de obrero, manchas y encallecidas, conocen el secreto de todas las tensiones, de todos los ajustes, y su oído, agazado en la experiencia, sabe descubrir cuál es la palpitación normal de aquellos innumerables monstruos que rugen y se estremecen en el alma de los motores." "Pablo Rada...", *Crítica*, January 30, 1926.

<sup>132</sup> "En sus manos, la carta de ruta, la brújula, los aparatos higrómetros y meteorológicos, la radiotelegrafía y la radiotelefonía, son otros tantos dioses y genios sumisos, aprisionados por el cálculo y por la inteligencia... Por él, el viaje es obra de ciencia." "Franco, Amo del Espacio, Domina del Tiempo," *Crítica*, February 10, 1926.

<sup>133</sup> "Rada, el modesto, el infatigable, el de la obediencia fecunda, es el otro extremo. Para él, los motores son, como hijos dóciles, como amigos que no tienen secretos. Antes de partir, le cuentan sus esperanzas y sus deseos, la hablan de sus necesidades y de sus tribulaciones... Con pericia de médico y pasión de madre, Rada atiende a sus motores, los limpia, les da descanso." "Franco, Amo del Espacio."

The feminization of Rada's skills undoubtedly diminished their prestige, considering the subordinate status of femininity in the hierarchy of modernity discussed in chapter three. Finally, Franco represented the heroic synthesis of his two crewmates:

Franco is the director, the hero, because in him there is much of Ruíz de Alda's mind and Rada's craftsmanship. In him the geometer and the "chauffeur" are joined. His hands are those of Rada's, his head is that of Ruíz de Alda. The abstract and the concrete, pure knowledge and resounding action come together in the *Plus Ultra* commander.<sup>134</sup>

The emphasis on Rada's "ear" for the engine revealed the nature of mechanical work at the time. As the historian Kevin L. Borg detailed in his study of US auto mechanics over the twentieth century, mechanics depended on their senses to diagnose problems with car engines, transmissions, and drive trains. They developed a tacit, bodily knowledge that could use the various hums, squeaks, shimmies, and other noises, vibrations, and smells to determine the types of repairs needed prior to the laborious processes of stripping down the automobile. In the age before computerized diagnostic tools and internal sensors, mechanics depended on tacit knowledge gained primarily from experience, not formal education.<sup>135</sup> This experiential knowledge gave mechanics some leverage over automobile manufacturers and customers. Even if cars were produced in a standardized manner, the real-world usage of the machines could create a vast array of mechanical faults. Only the mechanic and his trained ears, hands, nose, and eyes could diagnose an ailing car with any efficiency. But tacit knowledge is also difficult to "abstract and formalize, preventing the formation of a professional status around their expert

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<sup>134</sup> "Ramón Franco es el realizador, el héroe, porque en él hay mucho de la mente de Ruíz de Alda y de la artesanía de Rada. En él se juntan el geómetra y el "chauffeur". Sus manos son las de Radas, su cabeza es la de Ruíz de Alda. Lo abstracto y lo concreto, el conocimiento puro y la acción rotunda se juntan en el comandante del *Plus Ultra*..." "Franco, Amo del Espacio."

<sup>135</sup> Borg, *Auto Mechanics*, 9, 111.

service.”<sup>136</sup> It also made automobile repair primarily a relationship of trust—or perhaps more realistically mistrust—between the customer and the mechanic.

The world of aviation maintenance was much the same. Aircraft at this time lacked extensive instrumentation and sensors to detect mechanical faults. The more prestigious role of the “flight engineer” with his bank of dozens of dials and switches to monitor and control the aircraft was still years away. It was up to the skilled mechanic to detect and diagnose problems in flight using his senses. This too created a powerful relationship of trust between the pilot and the mechanic. Franco and Rada flew together for years after building a mutual trust during combat missions in which their airplane would occasionally land with bullet holes in the fuselage. Indeed, Rada’s sure hands and senses were just as essential to the Atlantic crossing as Ruiz de Alda’s navigation or Franco’s leadership. But much like the auto mechanic, the role of the aviation mechanic was denied scientific or professional status since it was “tactile manual work” and dependent on informal, tacit knowledge.<sup>137</sup> Rada was praiseworthy for his tremendous skill and dedication, but his accomplishments—according to many journalists and social commentators—were still subordinate to those of Franco and Alda.

Despite such effusive and yet condescending praise by Argentina’s intellectual class, Rada’s meteoric rise to international fame served as a powerful example of the opportunities in aviation for the common man. Later that year, the arrival of the Italian mechanic Ernest Campanelli with Olivero and Duggan reinforced this perception. Campanelli was already an international celebrity before the New York City to Buenos Aires raid, coming to prominence as the mechanic for the heroic Italian aviator Francesco de Pinedo. During their 1926 raid, the

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<sup>136</sup> Borg, *Auto Mechanics*, 4, 9.

<sup>137</sup> Borg also found that auto mechanics were purposely denied a scientific and professional veneer by vocational programs in the US, falling victim to the same hierarchy that placed “head work” above “tactile manual work.” *Ibid.*, 9, 87.

Italian ambassador to Argentina took the opportunity to praise “the best mechanic in Italian aviation,” who brought “courage, skills, and patriotism” to his work. Once again, his skills were couched in mystical language as Campanelli was “the magician who discerns the whims of the engine by sound.”<sup>138</sup> Men like Pablo Rada and Ernesto Campanelli signaled to their popular counterparts in Argentina that with “humble and inexpert”<sup>139</sup> skill, derived from experience not a university education, one could garner wealth, some degree of social status, and above all fame. The perceived heroism of great international raids improved the public perception of the mechanics that helped realize them.

In a sense, aviation mechanics were an anomalous case where a “maintainer” could be celebrated for innovation. As Andrew L. Russell and Lee Vinsel discussed in their 2018 essay in *Technology and Culture*, the popular and academic limelight has long been on inventors and innovators, today more than ever.<sup>140</sup> Popular culture in interwar Argentina featured many depictions of heroic invention or creation, and few laudatory representations of “maintainers” of any stripe. The aviation mechanic managed to transcend this obsession with invention. They were indeed responsible for maintenance, but their charges were at the forefront of technological progress at the time. Their sure hands were ensuring the success of the great technological conquest of modernity—that of the sky. In essence, maintenance was enabling innovation in the popular imagination. Few auto mechanics, if any, would become household names. But Pablo Rada, a humble cabinetmaker’s son, donned the mantle of heroic progress through maintenance work.

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<sup>138</sup> “Raimundo Bustamante. El Representante Diplomático de Italia,” *Caras y Caretas*, July 3, 1926, 55.

<sup>139</sup> “Crítica Inicia una Simpática Subscripción,” *Crítica*, February 11, 1926.

<sup>140</sup> Russell and Vinsel, “After Innovation, Turn to Maintenance.”

By the late 1920s and 1930s, this increased social valuation of mechanical skills blossomed into a phenomenon among the popular classes. It was the age of societal and personal improvement, and the wonders of material progress seemed to offer humble Argentines an avenue to status, comfort, and dignity. As José Moya makes clear, millions of Spaniards and other immigrants largely came to Argentina more because of the “promise of ascent” than to protect against “occupational slippage” in their ancestral villages and cities. Indeed in Argentina, like in the US, upward mobility was possible. In his case studies of immigrant communities, Moya found that “for one to four of every ten individuals...the promise materialized.” Although the popular credence given to the “rags-to-riches” myth has been exaggerated in retrospect, many immigrants nonetheless believed in—and experienced—modest upward mobility that brought them and/or their descendants from the lower to middle sector of society.<sup>141</sup>

To achieve this ascension, common people turned not to the universities, but public libraries, technical literature, enthusiast magazines, and correspondence courses. The first resources for an aspiring self-taught aviation mechanic were the industry magazines that arrived on-masse during the interwar period. *Aviation*, *Aero*, *Mundo Aeronáutico*, *Revista Auto-Aérea*, *Avia*, and *Alas* all began their runs in the 1920s and 1930s, although none proved particularly long-lasting. These magazines offered their readers the latest in aviation news, speculation about the industry’s future, and write ups on contemporary aircraft and motors. For more technical detail, aspirants could then turn to the many technical manuals published in Spanish during the same period. They could find these texts at the public libraries and smaller, community libraries created by neighborhood associations to promote industrious self-improvement.<sup>142</sup>

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<sup>141</sup> Moya, *Cousins and Strangers*, 265, 276.

<sup>142</sup> Karush, *Culture of Class*, 31.

The aviation community itself responded to the desire for publicly available technical literature with the creation of the Biblioteca Nacional de Aeronáutica [National Aeronautical Library] in 1927. Many of the dozens of technical manuals, conference reports, and engineering primers produced during the interwar period are still available on the library's shelves.<sup>143</sup> The Biblioteca Nacional de Aeronáutica also published its own series of books on the annual national aviation conferences from 1933 to 1940, lists of the types of aircraft and motors used in the country, local airfield layouts, chronologies of aviation events, and more.<sup>144</sup>

After reading through the available literature at the library, an aspiring mechanic could turn to the growing phenomenon of correspondence schools for adult education. By the late 1920s, correspondence courses for technical and traditional subjects were popular for men and women interested in self-improvement. The journalist Javier Casas observed the tremendous growth in the industry, from 10,000 participants in 1918 to more than 100,000 in 1929, declaring: "today the worker finds a way to take advantage of even his own rest to conquer the future." Popular subjects included "commerce, electro-technics, mechanics, languages, architecture, radiotelephony, drawing, [and] agronomy."<sup>145</sup>

Many of these "postal academies" [*academias postales*] advertised in aviation industry publications and technology enthusiast magazines like *Ciencia Popular*. They frequently juxtaposed the image of the aviator or aviation mechanic with promises of upward mobility and

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<sup>143</sup> See, for example, Angel María Zuloaga, *Manual práctico de volación destinado a los pilotos civiles* (Buenos Aires: Imp. Ferrari, 1923); Desiderio Biró, *Tratado elemental de metalurgia: libro de texto para escuelas industriales y de artes y oficios* (Buenos Aires: Ferrari hnos., 1925); José Serrat y Bonastre, *Tecnología mecánica: resumen de las conferencias dadas a los obreros pensionados al extranjero* (Barcelona: Labor, Manuales Técnicos, 1926); Dirección General de Aeronáutica, *Motores Wright Whirlwind y Wright Cyclone* (Buenos Aires: Taller Graf. Arg. L.J. Rosso, 1933).

<sup>144</sup> See the series "*Biblioteca Aeronáutica*" held at the BNA. The series was mostly published in the 1930s.

<sup>145</sup> Javier Casas, "Más de cien mil argentinos se instruyen por correo," *Mundo Argentino*, Oct. 2, 1929, n.p.

Su anhelo durante años, DE SER PILOTO, fracasó hasta hoy exclusivamente por la cuestión financiera y del tiempo. Estos dos obstáculos, al parecer inventados, HAN DESAPARECIDO POR COMPLETO. El "BOSTON STUDIO" le ofrece a Vd. a un precio ínfimo la ocasión increíble de ser

**PILOTO DE PLANEADOR,**  
brevetado con la  
**PATENTE NACIONAL.**

La parte teórica del curso, tratanco detalladamente los temas de la técnica en general del VUELO A VELA MODERNO, AERODINAMICA, AEROLOGIA, AERONAUTICA, ATMOSFERA, construcción de varios modelos, según planos de máquinas EUROPEAS Y NORTEAMERICANAS de 0.40 m. hasta 1.50 m. de envergadura, construcción de un planeador en tamaño original y LISTO PARA EL VUELO, etc., se realizará por correspondencia.

La enseñanza práctica se verificará en pocos días y bajo la dirección de CELEBRES AVIADORES - INSTRUCTORES EUROPEOS DE RECORD, contratados por el "BOSTON STUDIO".

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LOS CURSOS DARAN PRINCIPIO EL 20 DE OCTUBRE

Exija detalles por carta a la Dirección del  
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Figure 4.11. "Boston Studio" ad featuring a stoic pilot and a glider. Ad for "Boston Studio," *Ciencia Popular*, October 1935, 643.

status through their courses. The "Escuela Dornier" advertised for its aviation mechanic program with an homage to Pablo Rada:

Know well that the future is reserved for air transport. The man who dedicates himself to the technique of aviation, will have a brilliant future. Remember Rada, the mechanic of the "Plus Ultra" and think that what he did you can also do.<sup>146</sup>

Another Escuela Dornier ad featured the banner: "[We] will offer you the opportunity to conquer fame, money and glory!" Although such extreme promises seemed to fade with time,

<sup>146</sup> "Sepa bien que el futuro está reservado al transporte aéreo. El hombre que se dedique a la técnica de la aviación, tendrá asegurado un brillante porvenir. Acuérdese de Rada, el mecánico del "Plus Ultra" y piense que lo que él hizo usted también puede hacerlo." "Hagáse mecánico de aviación," *Aero*, September-October 1930, 7. It is not clear if the Escuela Dornier had a formal connection to the German aircraft manufacturer. Many correspondence schools used foreign or exotic names to entice customers.

correspondence courses in the 1930s maintained their optimism for the possibilities offered by aviation. Postal academies frequently expanded to offer in-person classes during the evening. They also increasingly added courses on basic aviation knowledge for aspiring pilots. A 1935 advertisement for the postal academy “Boston Studio” promoted its civil pilot’s license course by declaring “The domain [*dominio*] of the air is the domain of the future” (see fig. 4.11).<sup>147</sup> Three years later, the night-school Instituto Técnico “T.A. Edison” extolled the readers of *Ciencia Popular* to study “*aerotécnica*” [aerotechnics]: “Aviation offers you a future!”<sup>148</sup> Another school, the Universidad del Pueblo, provided correspondence and in-person courses for the aspiring “*piloto aviador*,” aviation mechanic, or—in a first—for aeromodeling.<sup>149</sup> The ad copy told readers to “secure your future learning a lucrative profession. Our courses offer a wide field to achieve your economic independence.” They should enroll now “if [they] want to make a lot of money.”<sup>150</sup>

The growth of adult education courses for pilots, not simply mechanics, reflected the changing status of flying in 1930s Argentina. As one journalist for *Mundo Argentino* reflected in 1928, “Aviation, definitively incorporated into modern life as one of the most wonderful conquests of civilization, loses every day not only its heroic character, but its sporting attraction.”<sup>151</sup> Foreign aviators from Europe arrived with increasing regularity and by 1929 the first international airlines had begun operations to Buenos Aires. Common people would soon take to the sky in ever greater numbers. Hundreds of pilots would be needed to staff the airlines

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<sup>147</sup> Ad for “Boston Studio,” *Ciencia Popular*, October 1935, 643.

<sup>148</sup> The use of the word “*aerotécnica*” is revealing of a change in rhetoric discussed in the next section. It will also be addressed at greater length in chapter six. Ad for Instituto Técnico “T.A. Edison,” *Ciencia Popular*, July 1938, 494.

<sup>149</sup> Aeromodeling [*aerodelismo*] will be discussed in chapter seven.

<sup>150</sup> Ad for Universidad del Pueblo, *Ciencia Popular*, November 1938, 746.

<sup>151</sup> “*La aviación, incorporada definitivamente a la vida moderna como una de las más maravillosas conquistas de la civilización, pierde cada día no sólo su carácter heroico, sino su atracción meramente deportiva.*” “Ha dejado de ser un deporte la aviación; su finalidad es más útil,” *Mundo Argentino*, January 11, 1928, 3.



and military squadrons of the future. The number of aviators was already on the rise by the start of the decade. In 1929, government statistics indicated 85 “active” pilots. By 1934, there were 346 active flyers and 126 student pilots, which remained the norm until the end of the decade.<sup>152</sup>

Accompanying the “popularization” [*vulgarización*] of flight came a new image of the pilot. According to a 1934 article in *Ciencia Popular*, the pilot was now merely a “chauffeur of airplanes.”<sup>153</sup> The loss of the elite status of male pilots—whether as biological or socioeconomic elites—was driven by the developments in popular and heroic aviation. Although the reality was far less rosy, the aviation industry loved to trumpet the safety of modern airplanes and the ease with which one could learn to fly.<sup>154</sup> Simultaneously, the demands of Heroic Aviation had produced airplanes of ever greater complexity. Many new technologies crowded the cockpit of advanced aircraft, such as autopilots, blind flying instruments, gauges for turbochargers and supplemental oxygen systems during high altitude operations, sophisticated radio navigation instruments, and more. While the shift was subtle, pilots in some popular depictions appeared more as machine operators than aerial knights (see fig. 4.12).<sup>155</sup>

The glamorous image of the World War I “knight of the air” was also fatally wounded by the realities of aerial warfare in the mid-twentieth century. The use of bombers by the Italians in Ethiopia, and especially by Fascist forces in the Spanish Civil War, convinced many intellectuals

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<sup>152</sup> I have used a combination of statistics to create the category of “active pilots” as government documents frequently changed the type of data collected. As such, active pilots should be thought of as pilots who have maintained their medical and licensing currency on an annual basis. There are no such statistics for aviation mechanics during the period. Data from *Aero*, October 1929, 13, and the *Boletín de Aeronáutica Civil* 1934 (p. 6), 1936 (p.48), 1937 (p. 40), 1939 (p. 30), published by the Dirección General de Aeronáutica Civil under the Ministry of the Interior.

<sup>153</sup> “Los Servicios Aéreos entre Europa y América,” *Ciencia Popular*, September 1934, 399.

<sup>154</sup> “La Aviación al Alcance de Cualquiera,” *Ciencia Popular*, December 1932, 265; “Dentro de poco ya nadie le tendrá miedo al aeroplano,” *Mundo Argentino*, January 11, 1933, 20, 55; “Las rutas del aire ya no tientan a los exploradores sino a los viajeros,” *Mundo Argentino*, September 25, 1935, 4-5, 34-5, 61, 64.

<sup>155</sup> This mechanization was driven by the demands of high altitude, high speed flight that was (correctly) thought to be the future of commercial and military aviation. Many of the heroic flights during the 1930s were focused on reaching the stratosphere.



Figure 4.12. Two pilots on a stratospheric flight. The caption said: "Every day the mission of man is more mechanical." "¿Es Posible Vivir a 5000 Kms. por Hora?" *Ciencia Popular*, July 1932, 717. Another, similar image published one year later had the caption, "Pilot of the future." Cover image, *Ciencia Popular*, October 1933.

and journalists that pilots were now just agents of cruel destruction against "defenseless peoples." Banishing any notions of chivalry, the pilots who strafed and bombed ground targets had a "criminal and monstrous mentality."<sup>156</sup> One prominent columnist for *El Hogar* wondered with an ominous tone in 1938: "Will aviation serve to complete the unification of the world, or to reduce civilization to ruins?"<sup>157</sup> Thus the aviator was largely reduced to the status of the

<sup>156</sup> "La Guerra Mecánica," *Ciencia Popular*, December 1935, 791. See also, "¿Se superarán este año las fantásticas velocidades aéreas?" *Mundo Argentino*, September 14, 1932, 43; "La Guerra Motorizada," *Ciencia Popular*, May 1936, 1148; "La Verdadera Importancia de los 'Records,'" *Ciencia Popular*, September 9, 1937; "La Destrucción de Guernica es una Atrocidad Incalificable. Pilotos Nazi Mataron a Mujeres y Niños," *Critica*, April 27, 1937.

<sup>157</sup> "¿Va a servir la aviación para completar la unificación del mundo o para reducir a ruinas la civilización?" "¿Adonde va?" *El Hogar*, April 8, 1938, 20-1.

mechanic or common, brutish soldier. While it would be an exaggeration to say that pilots had lost all of their post-World War I status, much of the romantic luster had worn off for good.

Such a shift in the popular imagination created new opportunities for the common man. Whereas for many humbler Argentines the prospect of becoming a pilot was a fantasy of the wealthy in the early 1920s,<sup>158</sup> it was now a plausible aspiration. Flight training remained too expensive for most, at least in the minds of aviation boosters and policymakers. As we will see in chapter five, decreasing the cost of flight hours for students was the perennial mission of government and military officials. These efforts did eventually make flight training possible for more Argentines—the case of Carola Lorenzini, who funded her initial training with her typists’ salary, is illustrative.

### ***Ciencia Popular, Gliding, and the Figure of the “Aficionado”***

Yet some aviation boosters dreamed of dramatically increasing the accessibility of pilot training to make the popularization of flight a reality in a country with far fewer resources than the North Atlantic nations. They turned to the newest international phenomenon in aviation: gliding [*vuelo a vela*, or *vuelo sin motor*]. Although gliders had of course predated powered aircraft, the marginally safer modern “sport” of motorless flight developed rapidly after World War I in Germany. The Versailles Treaty and London Ultimatum of May 1921 greatly restricted civil and military aviation in Germany. In response, German aviation enthusiasts turned to the still nascent sport of gliding. Soon the Rhön Valley had become the foremost location in the world for *vuelo a vela* as Germans flocked to participate in the newest modern and patriotic

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<sup>158</sup> Children and adults who wrote into *Mundo Argentino* frequently revealed their disillusioned realism when asked what their “greatest happiness” would be by saying they would love to be an aviator but know that they did not have the money. See “La página de los lectores,” from 1919 to 1921 in *Mundo Argentino*.

activity. The design of gliders rapidly improved alongside the knowledge of atmospheric currents. Gliding enthusiasts learned what might be called the “aerial geography” of their nations, or where were the best locations for thermals and upward currents.<sup>159</sup>

The gliding craze in Europe made the leap across the Atlantic as early as 1923. That year *La Prensa* and the ACA sponsored a glider-building contest. In 1924, the Hungarian émigré Desiderio Biró de Ditro, then an Army aviation engineer, built the nation’s first modern glider, which he named the *Regina*. After a lengthy study of the air currents above the Province of Buenos Aires, they selected the hills around Tandil as the best location to test the *Regina*. But in a twist of fate, the test pilot Otto Ballod was killed on the first flight attempt after his head struck the edge of the cockpit in a minor crash.<sup>160</sup> Ballod’s tragic death ended local efforts at gliding for the rest of the decade.

By 1930, the spectacular rise of gliding in Germany had again spurred efforts at *vuelo a vela* in Argentina. This time the sport enjoyed the vocal support of the newly published *Ciencia Popular* magazine under the direction of Jorge Duclout.<sup>161</sup> Duclout was one of the founding members of the Club Argentino de Planeadores “Albatros,” the first local club for gliding, in August 1930. The club imported gliders and had six “instructors” by early 1931.<sup>162</sup> Duclout used *Ciencia Popular* to drum up national enthusiasm for the newest “sport” and disseminate some of

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<sup>159</sup> In Germany, glider enthusiasts mapped out “air roads” of favorable wind currents for long-distance flights. For the history of gliding in Weimar and Nazi Germany, see Fritzsche, *A Nation of Fliers*, chapter three.

<sup>160</sup> Halbritter, *Historia de la industria aeronáutica*, 157-160.

<sup>161</sup> Beatriz Sarlo found in her study of *Crítica* and *Ciencia Popular* that Duclout’s monthly magazine was a “forum for technical realism,” at least in comparison to the wild technological sensationalism of the tabloids. Among the articles speculating about future technology were practical guides to building radios and other electro-mechanical devices. It strongly advocated for government policy to promote invention in Argentina, such as favorable patent laws and state subsidies for inventors’ organizations. Sarlo, *The Technical Imagination*, 61-2, 68, 73-75.

<sup>162</sup> Ad for “Club Argentino de Planeadores ‘Albatros’,” *Ciencia Popular*, February 1931, 610; “Cuenta con un Especialista el Club ‘Albatros,’” *Ciencia Popular*, October 1930, 282. Considering how few gliders there were in Argentina, I am not sure how these “instructors” got their experience. The only truly experienced glider pilot was the German immigrant Alfredo Franke, who worked for Junkers for six years and learned to glide in the Rhön Valley.

the knowledge needed to practice it.<sup>163</sup> In the pages of *Ciencia Popular*, Duclout presented gliding as the panacea to the woes of the aviation industry and society at large. Most obviously, it was a way to dramatically lower the cost of early flight training since the fundamentals could be taught without a powerplant. Gliders were far simpler machines that could be fashioned from local materials, making them comparatively cost efficient. One article claimed gliders could be built at home for as little as 200 pesos.<sup>164</sup>

But this was only the beginning of what can only be described as Duclout's fantasy around gliding. According to the editor and his fellow gliding boosters, *vuelo a vela* offered a way to stimulate mass flight training without government regulation or formal technical programs. It was a solution for the "problems of the air and [encouraged] aviation among the popular masses."<sup>165</sup> In the characteristic hyperbole of gliding enthusiasts, one booster proclaimed *vuelo a vela* "a sport within reach of the whole world and exempt from the dangers of powered aviation."<sup>166</sup> According to the first editorial on *vuelo sin motor*, the practice had a moral dimension as well: "Despite bad politics, the cinematograph and so many other evils that threaten the new generations, there are many young Argentines who honor the country. The formation of clubs...is a very praiseworthy example." The editorial rejected the need for government regulation and large organizations with wealthy patrons: "many statutes are not necessary, nor assemblies of partners..." Instead, "young enthusiasts...dedicate themselves

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<sup>163</sup> Gliding was frequently called a sport [*deporte*] and some predicted it would become as common as football or rowing. "La Muchachada Argentina debe Dedicarse al Vuelo con Planeadores," *Ciencia Popular*, August 1930, 134.

<sup>164</sup> "Construcción de un Planeador Barato," *Ciencia Popular*, December 1930, 469-71.

<sup>165</sup> "Es Facil Volar en Planeador," *Ciencia Popular*, July 1931, 1028.

<sup>166</sup> "Una intense campana 'Pro vuelo sin motor,' *Ciencia Popular*, April 1931, 759.

to...flying, building devices, studying the terrain and the winds” in simple “meetings of friends and practical events.” All that was needed was “activity and enthusiasm.”<sup>167</sup>

In *Ciencia Popular*, gliding was the aerial activity of the “*aficionado*,” the amateur, hobbyist or enthusiast. The feature of the “*aficionado*” was omnipresent in the magazine, dovetailing neatly onto the mythical image of the autodidactic inventor or mechanic. The *aficionado* devoted his leisure time to improving his skills and contributing to the material improvement of the nation. He created inventions in his spare time and kept abreast of the latest trends abroad. He acquired this knowledge not on sojourns to Europe or at a university, but in the popular technical literature like *Ciencia Popular*, in the newspapers, and on the job. *Ciencia Popular*’s mission from the beginning was to “[develop] among readers—especially among the young element—a love for mechanical works that serve to test inventiveness and ingenuity as well as learning for greater works.”<sup>168</sup> Building model airplanes, cars, and engines, for example, would cultivate an understanding of and enthusiasm for mechanics, opening the possibilities for work in the aviation or automotive fields.

The archetype of the *aficionado* seemed to have middle-income status. He was typically depicted with a bourgeois lifestyle and with leisure time. But as the historian Matthew Karush observed, “allegedly middle-class values were not incompatible with working-class identity, as

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<sup>167</sup> “Sí; a pesar de la mala política, del cinematógrafo y de tantos otros males que acechan las nuevas generaciones, hay muchos jóvenes argentinos que hacen honor al país. La formación de clubs, que publicamos en otras páginas, es un exponente muy elogioso, del grado de cultura y del interés por el vuelo sin motor se transforme en hechos concretos, que los jóvenes entusiastas dejen a un lado todos los obstáculos que puedan originar la formación de los clubs, para dedicarse a la parte práctica: volar, construir aparatos, estudiar los terrenos y los vientos, etc. Para eso no hacen falta muchos estatutos, ni asambleas de socios, sino reuniones de amigos y hechos PRACTICOS; actividad y entusiasmo.” “Vuelo sin Motor,” *Ciencia Popular*, September 1930, 197.

<sup>168</sup> “Desde un principio y de acuerdo a la orientación de esta revista nos hemos preocupado por desarrollar entre los lectores--especialmente entre el elemento joven--la afición por los trabajos mecánicos que sirvan para poner a prueba la inventiva y el ingenio así como también de aprendizaje para obras mayores.” “Trabajo de Aficionados,” *Ciencia Popular*, June 1936, 1244.



Figure 4.13. An ad for a power company features a bourgeois father working on an aircraft model with his sons, a classic image of the *aficionado* in *Ciencia Popular*. Ad for CADE, *Ciencia Popular*, June 1942, 377.

the notion of a ‘decent working-class suburb’ suggests.”<sup>169</sup> At a time when such boundaries were plastic in national politics and in everyday life, the figure of *aficionado* was equally amorphous, drawing in elements of working- and nascent middle-class identities.

The figure of *aficionado*—as well as the mechanic and inventor—was always masculine in the media, even if there were women workers in mechanical fields. In 1934, 155 of 3,816 salaried employees and 812 of 43,480 workers in the maintenance and vehicle industries were women.<sup>170</sup> Women were also participating in the self-education craze, representing almost a fifth of all students in correspondence courses in 1929.<sup>171</sup> But the reality of women in the workplace, a fact frequently emphasized by feminist writers during the period, did not shift the depiction of

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<sup>169</sup> Karush, *Culture of Class*, 37.

<sup>170</sup> There is no indication of what jobs these women held. But they were at the very least in proximity to the workshop. Comisión Nacional del Censo Industrial, *Censo Industrial de 1935* (Buenos Aires: Ministerio de Hacienda, 1938), 63.

<sup>171</sup> Javier Casas, “Más de cien mil argentinos se instruyen por correo,” *Mundo Argentino*, October 2, 1929, n.p.

the mechanically-savvy male individual. Men contributed to the project of upward mobility directly through their employment; women ensured the class ascension of the next generation by imbuing their children with “proper” values.

In the 1930s, the idea of women *aficionada* glider pilots was met with amused incredulity on the part of the sports’ male gatekeepers. When a group of young women arrived at the office of the Club Argentino Planeadores “Albatros” in January 1932 and asked for applications, the club personnel took some time to “come out of their surprise.” The writer for *Ciencia Popular* noted how when the men hesitated, one woman desirous of an argument quipped “Or is it that we women can’t fly like you too?” The club treasurer responded “Don’t be angry, *señoritas*... the matter will be submitted to the Directors Commission of the Club... It would not be strange for it to accept [you], forming a separate nucleus, but frankly it would attract attention.”<sup>172</sup> There is little evidence the Club “Albatros” subsequently admitted women trainees in any number or created an auxiliary women’s gliding club in the 1930s.<sup>173</sup>

According to the pages of *Ciencia Popular*, the *aficionado* was capable of building his own *planeador* [glider] and flying. The lack of proper gliders in the country was seen as the greatest impediment to the success of the sport.<sup>174</sup> The low cost of sail planes convinced Duclout and others that small, decentralized organizations spontaneously formed in the countryside could afford to buy gliders: “You do not need big charters to found a glider club, what you need is a handful of young enthusiasts, contributing 20 to 30 pesos each [to order] a glider and the club will quickly prosper.”<sup>175</sup> This was the route taken by the Club de Planeadores ‘Albatros,’ which

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<sup>172</sup> “Al Márgen de las Actividades del Club Argentino Planeadores Albatros,” *Ciencia Popular*, February 1932, 430.

<sup>173</sup> Though a group of women glider pilots gained prominence in the late 1940s and early 1950s. See box 20, folder 2, COR, BNA.

<sup>174</sup> “Vuelos sin motor,” *Ciencia Popular*, December 1930, 466.

<sup>175</sup> “Vuelo sin Motor,” *Ciencia Popular*, January 1931, 580.



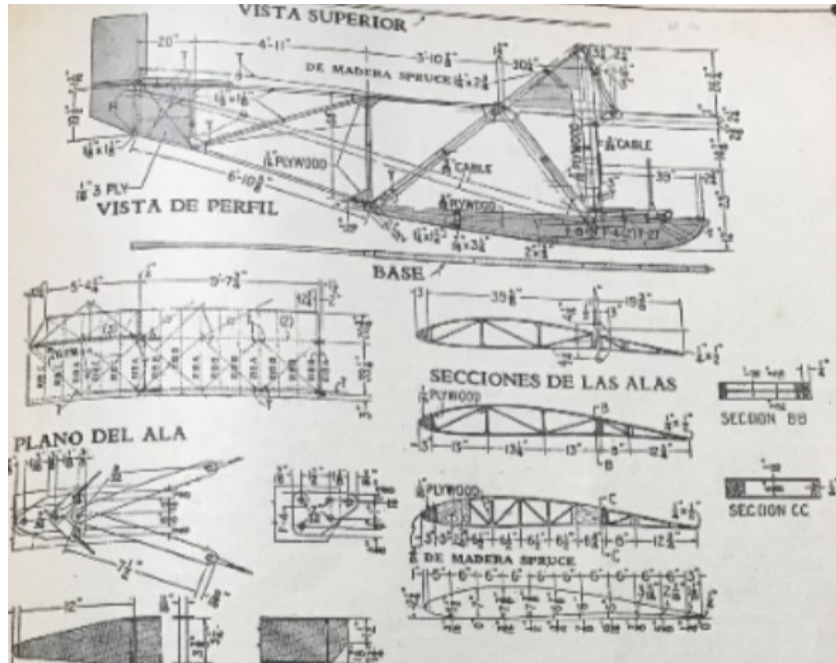


Figure 4.14. Some of the schematics for a basic glider published in *Ciencia Popular*, September 1930, 205.

ordered German gliders. But the extra cost of shipping and the long delays waiting for the aircraft to arrive drove the writers at *Ciencia Popular* to suggest aficionados build their own *planeadores*. The first major article on the subject in the magazine described the construction and flight of gliders as “so simple in practice and so complicated in appearance.”<sup>176</sup> In a move that now seems irresponsible, the magazine published detailed schematics for a homemade glider (see fig. 4.14). A few courageous (or foolhardy) *aficionados* eventually attempted to construct examples in their backyards.<sup>177</sup> Any successful homemade gliders were trumpeted on the magazine’s pages (see fig. 4.15).

Once a group of enthusiasts had a sail plane, they supposedly could learn to glide with relative ease and safety. Much of the prerequisite knowledge could be learned in the pages of

<sup>176</sup> “La Muchachada Argentina debe Dedicarse al Vuelo con Planeadores,” *Ciencia Popular*, August 1930, 134.

<sup>177</sup> “Algunos detalles para la construcción de un planeador,” *Ciencia Popular*, September 1930, 205.



Figure 4.15. Caption reads: “This glider is currently under construction in Santa Rosa, La Pampa, by various *aficionados* from that town, according to the plans published in this magazine.” It is unclear if it ever flew. *Ciencia Popular*, January 1931, 580.

*Ciencia Popular* and in technical manuals such as Rodolfo Speratti’s *Vuelo Sin Motor* which promised “everything that the *aficionado* of this sport should know.”<sup>178</sup> In his presentation at the First National Aviation Conference in Córdoba in 1933, Alberto Mascías, the prominent aviation booster and engineer, described learning to fly a glider as “very simple” even though there was no system for tandem controls for an instructor. Students learned by feel, gaining a sense of “serenity” and confidence over the controls. Unless the student did anything rash—which is a major caveat—the aircraft would gently glide back to the ground even if there was a failure of the steering system. Glider pilots then made excellent conventional aviators. In Mascías’ estimation, learning to glide was like practicing on a bicycle before mounting a motorcycle.<sup>179</sup>

<sup>178</sup> Ad for Rodolfo Speratti, *Vuelo Sin Motor* (Buenos Aires: Editorial “Alas,” n.d.), *Ciencia Popular*, March 1932, 518.

<sup>179</sup> “¿Se impondrá entre nosotros el vuelo a vela?” *Mundo Argentino*, August 30, 1933.

The sport was thus a way to cheaply produce quality pilots for the growing military and commercial industry, while also providing a patriotic, self-directed activity for *la juventud* [the youth].

These optimistic projections for the future of gliding were undoubtedly divorced from reality. Gliding was still a dangerous activity with little margin for error, especially in early sail planes with unforgiving glide-slope ratios. It required detailed knowledge of local air currents that was often lacking in Argentina. Lastly, the vast majority of clubs and enthusiasts made the reasonable decision to eschew building their own gliders, depending instead on imports.<sup>180</sup> This exacerbated the consistent shortage of airworthy *planeadores*.

These factors may have prevented the widespread practice of gliding as a sport, but the campaign “Pro-vuelo a vela” spearheaded by *Ciencia Popular* did help create a small yet dedicated gliding community. A German gliding mission in 1934 greatly improved the local science of “aerology” and stimulated some popular enthusiasm with their dramatic demonstration flights. By the end of that year, there were twenty-three gliding clubs recognized in government statistics. In 1938, there were still the same number of institutions.<sup>181</sup> The state also began modest subsidies for training at the Club de Planeadores “Albatros,” the country’s most successful gliding club. The Club de Planeadores counted some 150 members by 1932, and received the largest government subsidies of any motorized or unmotorized aero club by 1940. In this case the common Argentine claim that their country had the “best” geography for any given task proved prescient. The wide open and flat countryside, interspersed with hills and mountains, made the *Pampas* a world-class region for the sport. In the following decades, Argentine glider

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<sup>180</sup> There are few references to successful, home-built gliders in the media of the period and in the subsequent secondary literature.

<sup>181</sup> But government statistics did not report the number of gliding clubs from 1935 to 1937. It is also not clear how many of these clubs actually had gliders available, or a method of launching them, on a consistent basis.

pilots would secure distance records and even the occasional victory in international gliding competitions against their mainly European rivals.

But for these sail plane pilots, gliding did not become the popular gateway to professional piloting. Gliding was instead a specialized branch of aviation, rarely practiced by student pilots. In truth, flying a *planeador* required formal training, extensive knowledge, institutional support, and courage in much the same way as powered flight. Indeed, prophetic fantasies about the universal future of gliding for common people largely dropped away over the decade. In *Ciencia Popular*, this decline happened gradually after the departure of Jorge Duclout as editor in July 1931.<sup>182</sup> By the mid-1930s, gliding received the same amount of coverage, if not less, than other modern hobbies like building radios and tinkering on cars.

Although gliding did not become the panacea for Argentina's supposed shortage of pilots and aviation enthusiasts, the rhetoric about gliding reflected the growing expectations of the democratization of flight. Even if aviation boosters decried the lack of popular interest in aviation, the tacit assumption of such concerns was that aviation was the purview of the common man. The state—according to one journalist—had a moral responsibility for the sake of civilization and national defense to “familiarize the people” with aviation.<sup>183</sup> Yet this expansion of aviation culture and opportunity down the class ladder was replete with tensions. None would be more problematic than the friction between masculine notions of self-sufficiency, independence, and style, and the demands of an increasingly mundane and demystified aviation industry.

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<sup>182</sup> “Jorge A. Duclout se Retira,” *Ciencia Popular*, July 1931, 993.

<sup>183</sup> “Debemos fomentar y estimular en los jóvenes el interés por la aviación,” *Mundo Argentino*, August 11, 1937, 71.

## El Hombre Técnico: Pilots, Mechanics, and the Tensions of Modern “Criollo” Masculinity

During the interwar period there was a building sense that the ideal or normative Argentine male, especially for the middle and lower segments of society, was “restless, individualistic, less disciplined.” He depended on “personal effort, agility and skill” to succeed in the workplace and on the athletic field.<sup>184</sup> According to the historian of modern Argentine masculinity Eduardo Archetti, this male identity was incubated on the soccer pitch as local players sought to distinguish themselves from their great international rivals, the English.<sup>185</sup> Archetti’s “*criollo*” man was somewhat reconcilable with the heroic *aviador*, since restlessness represented an excess of energy, and solitary feats fit the need for rugged individualism and success based on personal aptitude. Their flights were great adventures that tested their mettle against the forces of nature.

But the pilots demanded by the commercial aviation industry and the world’s militaries in the 1930s were largely incompatible with this “*criollo*” male identity. The airline pilot and bomber pilots of the future needed to be disciplined, dependable, and definitively without the panache of a barnstorming aviator or striker on the soccer field. Already in the early 1920s this tension was evident in Argentine society. Federico More, a correspondent for *Caras y Caretas*, recalled three years later a commercial flight he took with a short-lived British airline in 1921. Upon seeing his English pilot More remembered thinking:

It is true that we would not get on an airplane driven by an Andalusian or a Neapolitan, by a South American or a Frenchman. It seems to us that to be a commercial aviation pilot you have to be English or German, Scandinavian or Dutch. Perhaps French, South

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<sup>184</sup> Archetti, *Masculinities*, 60.

<sup>185</sup> The famed international soccer star Diego Maradona (1960-2020) and his popular persona was perhaps the most archetypical recent incarnation of this “*criollo*” masculinity.

Americans, Spanish and Italians serve for heroic aviation; but passengers do not like heroics.<sup>186</sup>

Although Argentine pilots had ensured their nation's place in the pantheon of heroic aviation, public perception of the rebellious flair of "*criollo*" masculinity clashed with the needs of the maturing aviation industry.

As the 1920s progressed, the locus of such tensions was aerobatic flight. The performance of complex and dangerous maneuvers over crowds had grown controversial in and outside the industry after a series of accidents. In 1923 an irate member of the public wrote into *Aviación* magazine to excoriate the *jovencito* [little young] aviators who perform dangerous maneuvers over gathered crowds: "My ignorance on the matter does not reach the point of not being able to distinguish the good from the bad, the practical from fantasy, profitable aviation from unnecessary contortions [*firuletes*]..." Even if they were skilled, an inopportune engine failure might spell doom for many spectators in addition to the pilot.<sup>187</sup> Five years later, *Mundo Argentino* blamed another fatal accident on the "vanity of the pilot," concluding: "There is, as a false excuse, a superstition: that of believing that an airplane pirouette is heroic."<sup>188</sup>

By the late 1930s, the national press and industry were quick to condemn aerobatic pilots who plunged back to earth. The very qualities that made the aviator the representative of heroic masculinity in the 1920s—boldness, energy and willpower—were turned against the imprudent

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<sup>186</sup> "Bien es verdad que a un aeroplano dirigido por un andaluz o un napolitano, por un suramericano o un francés, no subiríamos. Parécenos que para ser piloto de aviación mercantil hay que ser inglés o alemán, escandinavo u holandés. Acaso franceses, suramericanos, españoles e italianos sirvan para la aviación heroica; pero a los pasajeros la heroicidad no les gusta." Federico More, "Lo que más o menos siente y piensa un hombre a bordo de una aeronave," *Caras y Caretas*, November 8, 1924, 112-3. Latin culture and heritage were fundamental aspects of the "*criollo*" identity, although it was more frequently restricted to a Hispanic identity.

<sup>187</sup> "Pero, mi ignorancia en la materia, no llega al punto de no ser capaz de distinguir lo bueno de lo malo, lo práctico de la fantasía, la aviación de provecho, de los firuletes innecesarios..." "Una carta oportuna, ¡Aviadores imprudentes! Al Señor Director de Aviación," *Aviación*, November 30, 1923, 4. Deadly accidents at airshows due to engine failures have continued to the present day.

<sup>188</sup> "Es que existe, como falsa disculpa, una superstición: la de creer que una pirueta de aeroplano es heroico." "Sacrificios inútiles a la acrobacia aérea," *Mundo Argentino*, January 25, 1928, 3.

aerobatic pilot. The editorials in *Ciencia Popular* were particularly condemnatory. Again prompted by an accident, one such article in 1939 demonstrated the continued tension between the “*criollo*” masculinity and mid-twentieth century aviation:

However, among those who have had the opportunity to be spectators of these misfortunes, an opinion is almost always unanimous that is never mentioned in [official] briefs: the imprudence that many times reaches temerity in the pilots. Without a doubt, this modality is very “*Criollo*” if you like, but it must be fought intensely if you want to train calm and efficient pilots in all circumstances. That desire to show off in almost all aviation festivals costs lives, it is necessary to intensely combat it... Being a good pilot requires first of all to be prudent, even at the expense of public applause.<sup>189</sup>

The restlessness of the heroic aviator had become recklessness in the “*criollo*” aviator of the 1930s.

In a follow up editorial, *Ciencia Popular* emphasized the consequences for the “temerity” of Argentine pilots. Whereas airlines staffed with foreign pilots were improving safety by leaps and bounds, the rolls of Argentine aviation statistics were riddled with accidents. The article argued “Our pilots are deficient; they are good pilots, maybe too good, but they are bad aviators.” To be a good aviator in this context meant contributing to the project of national and global aviation instead of seeking a “stupid death without anyone gaining by it.”<sup>190</sup> As commercial and large-scale military aviation matured, the qualities of the pilot were increasingly discipline, dedication, and technical competence. The ideal pilot for the industry was more like a

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<sup>189</sup> “Sin embargo, entre quienes tienen oportunidad de ser espectadores de esas desgracias, es casi siempre unánime una opinión que nunca mencionan los sumarios: la imprudencia que muchas veces llegada a la temeridad en los pilotos. Es sin duda esta modalidad muy “*criolla*” si se quiere, pero que debe ser intensamente combatida si se quiere formar pilotos serenos y eficientes en toda circunstancia. Ese afán de lucirse que en casi todos los festivales de aviación cuesta vidas, es necesario combatirlo intensamente...Ser buen piloto obliga antes que todo a ser prudente, aun a costa del aplauso del público.” “Heroísmo o Destreza e Imprudencia,” *Ciencia Popular*, October 1939, 599.

<sup>190</sup> “Nuestros pilotos son deficientes; son buenos pilotos, quizá demasiados buenos, pero son malos aviadores. La temeridad, el deseo de “*hacer proezas*” y de “*impresionar*”, les conducen tarde o temprano a una muerte estúpida sin que nadie gane con ello.” “Los Accidentes de Aviación en Nuestro País,” *Ciencia Popular*, November 1939, 663.

piece of the airplane's machinery. The masculinity of the aviator, in their eyes, served to reassure passengers of a safe and routine flight, not promise an adventure in search of national aggrandizement or personal glory.<sup>191</sup>

The tension between masculinity and piloting had an interesting parallel with how energy was characterized in women. As we saw in chapter three, initially "restless" women aviators were perceived to be in conflict with their feminine nature. As time went on, the arguments were perceived to be in conflict with their feminine nature. As time went on, the arguments shifted to saying restless women in the vein of *la mujer moderna* were a problem for the fabric of society, not solely their personal health. For men, restlessness was a sign of good health, virility, and energy. But if it was taken too far—if restlessness became recklessness—it was then a problem for society and the progress of aviation. It does not seem a coincidence that the charge of temerity became more common as pilots increasingly came from the middle and lower classes.

The popular characterization of the aviation mechanic followed a similar trajectory to that of the pilot. From the outset there were discrepancies between the representation of the heroic mechanic in the vein of Pablo Rada and "criollo" masculinity. Possessing tremendous technological skill, Rada earned respect and financial comfort despite humble origins. But in the national media, many of the qualities that he represented—loyalty, deference, and dependability—did not easily map onto the coalescing archetype of the "criollo" athlete. Such traits, often trumpeted in more elitist publications like *La Prensa*, likely represented the ideal working-class man in the eyes of the upper echelons of society. Many of the characteristics of the "criollo" man, in Archetti's analysis, expressly defied such expectations by the emphasis on individualistic panache, willfulness, and independence. In a society as diverse and dynamic as

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<sup>191</sup> At least in the context of peace. But unlike its North Atlantic counterparts, Argentina fought no wars during the period.



interwar Argentina, multiple “masculinities” could of course coexist. But these competing notions of normative male comportment and accomplishment left aviation and its practitioners in an unsettled state.

The popular expectation of upward mobility through autodidactic mechanical skill and creativity was also being eroded by the increasing perception of its difficulty. It was of course very challenging to create a profitable invention or maintain modern aircraft without formal training. Even if one had talent, modern technology demanded specialized skills and knowledge. The growing importance of electricity seems to have posed a particular challenge to mechanics, as they could not reliably harness their senses to diagnose problems.<sup>192</sup> Aircraft engine and airframe technologies were undergoing a “design revolution” with the incorporation of metal monocoque fuselages, turbochargers, complex radial cylinder arrangements, and more.<sup>193</sup> To compound the technical difficulties for aspirants, there were few opportunities for on-the-job training in the aviation industry due to its small size and competition from foreign personnel. In the 1935 Industrial Census, the first since 1914, there was still no separate category for aviation mechanics or maintenance despite reporting statistics for tram, bus, automobile, and engine workshops. This likely reflected the extremely small number of civilian aviation mechanics.<sup>194</sup> Most positions were with the largest producers and operators of aircraft in the country, the armed forces. Apprenticeships or jobs in the private sector likely numbered in the dozens, not hundreds.

There was significant growth in the broader mechanical maintenance sector, with a nearly 150 percent increase in such businesses and 211 percent increase in personnel from 1914 to

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<sup>192</sup> Borg, *Auto Mechanics*, 112.

<sup>193</sup> For this “design revolution,” see John D. Anderson, Jr., *The Grand Designers: The Evolution of the Airplane in the 20th Century* (New York: Cambridge University Press, 2018), chapter four.

<sup>194</sup> The census does not specify, but it is my presumption that military mechanics were not counted in the statistics.

1935. Mechanics workshops proliferated with the modernization of Argentina's public transportation, expansion of car ownership, and the mechanization of agriculture.<sup>195</sup> The total number of workers for such enterprises remained less than a quarter of their counterparts in the textile and food stuffs industries.<sup>196</sup> For industrial workers that could find a job at a mechanics' workshop, there were likely modest financial rewards—on the order of twenty to thirty percent more income.<sup>197</sup> Certainly there was opportunity in the maintenance sector. But the sense of wild possibility, that anyone with an aptitude for technical creativity and access to scientific and technical literature could achieve fame, wealth, and status, was diminishing by the mid-1930s.

The relatively long odds of success for the autodidact contributed to a “fragility” in popular masculinity. For the humbler men in Argentine society, meeting the demands of normative male comportment, skill, and labor were all too frequently beyond reach. This tension is evident in one of iconic novels of interwar Argentina, Roberto Arlt's *El juguete rabioso* [The Mad Toy](1926). Arlt (1900-1942) was the only major novelist of the period to interrogate the culture of industrialized, urban, and working-class life in Buenos Aires. He was the son of immigrants, dropped out of school at eight years old, and worked odd jobs until landing a position at a local newspaper. As Beatriz Sarlo described in her portrait of the writer, “He had an unsettling [for other literary elites] connection with the world of the poor, not based on

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<sup>195</sup> Car ownership exploded in interwar Argentina. In 1923, Argentina had the seventh largest number of automobiles in the world. By 1930, there were 435,822 automobiles in the country, or about one car for every 35 inhabitants. Feder, *Un siglo de autos*, 63-4. During the 1920s Argentina became the third largest importer of agricultural machinery after the USSR and Canada. Belini, *Historia de la industria*, 154.

<sup>196</sup> Comisión Nacional del Censo Industrial, *Censo Industrial de 1935*, 37.

<sup>197</sup> The data in the *Censo Industrial de 1935* reports the total money paid to salaried “employees” and “workers” from July 1, 1934 to June 30, 1935. In the food stuffs sector, 2,837 pesos were paid per salaried employee and 1,233 pesos were paid per worker. This was close to the aggregate figures for the entire industrial sector, which were 2,823 per employee and 1,236 per worker. In the category of “machinery and vehicles,” the figures were 3,196 pesos per salaried employee and 1,570 per worker. This was not the highest category though. Workers at electrical workshops earned 1,753 pesos per person, for example. Comisión Nacional del Censo Industrial, *Censo Industrial de 1935*, 44.

ideological sympathy or moral concern but” on common experience. In Arlt’s writing, “Creativity in applying practical kinds of knowledge is the aesthetic of the poor.”<sup>198</sup>

*El juguete rabioso* seems to have been largely autobiographical. The protagonist Silvio Astier, a disaffected young man of very humble origins, spends the book in search of respectability and economic advancement through various jobs and schemes. The first section features Silvio and his friends stealing library books and light bulbs to resell them on the street. Silvio’s friend Hipólito, dreaming of bigger things, builds a bamboo airplane model and puzzles over possible solutions to the “problem of natural stability” in flight. The two teenagers briefly debate the feasibility of controlling a motor by a wireless telegraph.<sup>199</sup> But the boys return to petty theft as the technical solutions escape them.

In the third section, Silvio hears of openings for mechanics’ apprentices at the Escuela Militar de Aviación at El Palomar. After reading an electrical engineering manual and some science articles in the newspapers, he makes his way to the flight school to make his case. Silvio succeeds through guile and dishonesty, convincing the officer in charge that he invented a “meteor signaling device, and a machine that prints what you dictate to it” and presenting a fake letter from “Ricaldoni the physicist.” As he reported to begin his apprenticeship, Silvio wondered to himself, “Would I ever escape from my terrible social condition, would I ever be able to become a gentleman, to stop being someone who went for any job opening?”<sup>200</sup>

But his luck turned for the worse when he unsuccessfully proposed a new mortar to an Army captain. After the captain described the problems with Silvio’s plan, he said, “You have undeniable potential, but you have to study, you think that just because you can dream something

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<sup>198</sup> Sarlo, *The Technical Imagination*, 38, 55.

<sup>199</sup> Roberto Arlt, *The Mad Toy* [*El juguete rabioso*], trans. James Womack (1926; repr., London: Hesperus Press Limited, 2013), 6-7.

<sup>200</sup> Arlt, *The Mad Toy*, 83-4, 88.

up then that's all the work done already, and thinking is only ever the start of something."<sup>201</sup> The next day Silvio was summarily dismissed from the program. As he walks away dejectedly, the Director of the School sees him and calls out "You should be in a technical institute. We don't need intelligent people here, just brutes for the work."<sup>202</sup> Silvio's mechanic dreams dashed, his life continues a downward spiral into destitution and moral corruption.

As literary analyses of Arlt's work have emphasized, the "self-reliant, plebeian form of masculinity" Silvio strived to embody was difficult to achieve for most poorer or uneducated men.<sup>203</sup> There was a very real possibility that any man might not achieve normative male standards, leading to a broader sense of "fragile" masculinity.<sup>204</sup> Such literary analyses, though, do not consider the particular role played by aviation technology in the articulation of this fragile masculinity. In Arlt's work, a career in the aviation industry represented the foremost opportunity for self-driven socioeconomic ascendancy and masculine confirmation. Successfully meeting the requirements of popular normative masculinity—self-reliance, self-improvement, and technical literacy—through a job like an aviation mechanic or pilot brought the promise of assimilation into Argentine society. Yet such work was hard to come by. In the end, "Silvio's search...for assimilation into the masculine national self...turns out to be impossible."<sup>205</sup>

Roberto Arlt's *El juguete rabioso* suggests that as early as 1926 there was some sense of the difficulty of socioeconomic upward mobility through self-reliance and a popular "technical imagination." Arlt seems to have been particularly prescient in this regard as the myth of heroic

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<sup>201</sup> Arlt, *The Mad Toy*, 91.

<sup>202</sup> *Ibid.*, 93.

<sup>203</sup> Gorica Majstorovic, "Masculinities, Modernity and the City in Roberto Arlt's *El juguete rabioso*," in *Modern Argentine Masculinities*, ed. Carolina Rocha, 57-72 (Chicago: Intellect, The University of Chicago Press, 2013), 63.

<sup>204</sup> Christina Civantos, "Language, Literacy, Legitimacy, and Masculinity in the Writings of Roberto Arlt," *Latin American Literary Review* 33, no. 65 (Jan-Jun 2005), 127.

<sup>205</sup> Civantos, "Language, Literacy, Legitimacy," 127.

mechanic or inventor persisted into the early 1930s. While there is little direct evidence of a changing mindset or growing disillusionment among working men themselves, there was a shift in the rhetoric of adult education advertisements and technology magazines like *Ciencia Popular*. As discussed above, the wilder promises of wealth and fame through technological skill in advertisements for correspondence and night schools diminished over the decade. Instead of a rocket up the socioeconomic ladder or fame, ads increasingly promised more realistic possibilities on the order of economic independence.

The very growth of the adult education industry over the course of the interwar period signaled that more people were interested in structured education to learn new skills. But by the second half of the 1930s, *Ciencia Popular*'s editors and journalists began clamoring for new, more substantial educational institutions. Argentina, in their estimation, now needed more "técnicos" [technicians], not necessarily *aficionados*. The magazine still argued that amateurs could build their own light aircraft with "patience, willpower, and time."<sup>206</sup> But the aviation and other technological industries demanded more than carpentry skills. The *técnico* possessed the specialized and advanced technical knowledge that could only come from formal theoretical and practical training. As the editorial in *Ciencia Popular* entitled "The Technical Man" declared, "The man who lives with the times, the modern man, who aspires to be useful to himself and to society must today be technical. The times have passed when the most elementary [knowledge] was enough to be useful. Today specialization is required and in particular being a technician."<sup>207</sup>

The rise of the *técnico* in *Ciencia Popular* was primarily a reaction to the changes in warfare more than the peacetime economy. Although articles usually concluded that technical

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<sup>206</sup> "¿Puede un Aficionado Construir un Propio Avión?" *Ciencia Popular*, February 1938, 79.

<sup>207</sup> "El hombre que vive con la época, el hombre moderno, que aspira a ser útil a si mismo y a la sociedad debe hoy ser técnico. Pasaron los tiempos en que bastaba con lo más elemental para ser útil. Hoy se requiere la especialización y en particular ser técnico." "El Hombre Técnico," *Ciencia Popular*, July 1938, 472.

education would provide aspirants with financial security, the most frequent evidence for the new importance of *técnicos* was the technification of war. They noted how even soldiers needed technical skills on the modern battlefield. The advent of the Second World War and reports of the unprecedented speed and violence of “mechanized” war made the need for military-age men with technical skills a national emergency. As an editorial in 1940 established,

We see in the current tragic moments how technology imposes its empire on all orders, in the improvement of machines of all kinds... Those who now direct fighter planes are the same men who drove them in times of peace. And their mechanics are also the same. This shows us that even in peace, the specialist’s mission is extremely important. This is why we hope that our youth will understand what it takes to acquire specialized technical knowledge.<sup>208</sup>

The war finally spurred the national authorities into significant action, including the creation of new aviation institutions and a significant increase in funding for flight training. It also empowered military authorities to take a more central role in the national economy and civil aviation community.

While there were a handful of technical institutes of repute, such as the Escuela Industrial de la Nación founded in 1897, there had been little growth in the sector since the turn of the century. The Radical Civic Union governments of Hipólito Yrigoyen and Marcelo Torcuato de Alvear had largely ignored technical education in their university reforms, and state subsidies for such institutions were trifling.<sup>209</sup> Educational opportunities for aviation in the university system or under the tutelage of the state existed in the interwar period, although they were small scale.

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<sup>208</sup> “Vemos en los trágicos momentos actuales cómo la técnica impone en todos los órdenes su imperio, en el perfeccionamiento de las máquinas de todo género.... Los que hoy dirigen los aviones de caza son los mismos hombres que los conducían en tiempos de paz. Y sus mecánicos son también los mismos. Esto nos demuestra que aún en la paz es importantísima la misión del especialista. Por esto es que esperamos que nuestra juventud comprenda lo necesario de adquirir conocimientos técnicos de especialización.” “Los Conocimientos Técnicos,” *Ciencia Popular*, June 1940, 329.

<sup>209</sup> Belini, *Historia de la industria*, 159.

The first academic program in aviation (for pilots, technicians, or engineers) was created at the Universidad Nacional de La Plata in 1925 under the direction of the aviation enthusiast and Congressional Deputy Julio A. Noble. One year later, according to the interwar pilot, journalist, and historian Antonio Biedma Recalde, aviation topics were introduced into the private industrial schools by a government decree. The Escuela Industrial de la Nación took ten more years to create its own program in 1936. 1937, notably the first year *Ciencia Popular* had editorials focused on *técnicos*, appears to have been a tipping point. Government policy officially integrated aviation topics in public primary schools. A flight school under the Centro de Aviación Civil was reorganized and expanded into the Escuela Nacional de Aeronáutica under state direction.<sup>210</sup>

While the opportunities for a technical education in aviation were on the rise, it is unclear how effective these institutions were, what kinds of technical skills they provided, or how easily their graduates secured stable employment. Most of these programs seemed to emphasize basic knowledge for pilots over training for aviation mechanics, electricians, or engineers. By 1940, government and military authorities felt that the aviation education pipeline was woefully deficient and instituted a series of reforms and initiatives to create thousands of new pilots and technicians.

But it was not only a lack of state support or poor organization that seemed to depress the national stock of technicians. *Ciencia Popular* argued that some of the stigma around technological labor remained in Argentine society. One editorial noted that “Technical careers, the most technical trades, impose a new method characterized above all by study according to the teaching plans of our official institutions.” But when deciding to send their sons to university,

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<sup>210</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 312.

parents had shown great preference for “the so-called liberal careers, teaching, etc.”<sup>211</sup> For those young men of sufficient means to go to college, they and their parents preferred more traditional careers of elite society. The magazine called on parents to “orient” their sons into technical careers, at the very least to relieve the “oversaturation” of university graduates in liberal fields.<sup>212</sup> Implicit in the article was that those who traditionally possessed manual, technical skills—the humbler classes—were not able to take advantage of such programs in sufficient numbers to meet the needs of industry and the military.

Thus the status of technical education remained uncertain at this time. Even as there was a growing demand for specialized technical knowledge that—in the estimation of people at the time—required advanced institutional schooling, higher education in Argentina was still largely oriented around the traditional fields prized by the wealthier segments of society. The common man in possession of technical skills or aspirations in turn was in a precarious position. Technology continued to increase in complexity and importance, yet the opportunities to improve his knowledge and skills to participate in the future economy were few and far between. But change was in the air. The state, long hesitant to devote substantial resources to technical education and industrial development, including in aviation, was about to radically reverse course.

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<sup>211</sup> “Las carreras técnicas, los oficios de mayor tecnicismo, imponen una nueva modalidad caracterizada por sobre todo por el estudio de acuerdo a los planes de enseñanza de nuestras instituciones oficiales.” “Hacen Falta Técnicos,” *Ciencia Popular*, June 1939, 341.

<sup>212</sup> “Hacen Falta Técnicos,” *Ciencia Popular*, June 1939, 341. See also, “Los Conocimientos Técnicos,” *Ciencia Popular*, October 1940, 283.



Aviation and its technological relatives were now firmly the purview of the common man. The cultural archetype of elite aviators like Ramón Franco or Jorge Newbery were but memories of a bygone era of naïve technological optimism before the return of unprecedented, mechanized savagery. The popular fascination with heroic aviators had driven the incorporation of aviation in the popular cultural lexicon and imagination. Children and young people grew up idolizing pilots and the opportunity for power, status, and liberation they represented. Immigrant communities and nationalists supported the cause of national aviation as they wrestled over their places in the national identity. Great aviators, male and female, inspired their countrymen with the possibilities offered by the modern age where technological skill, determination, and pluck might lift a humble person into fame, wealth, and prestige.

Although the aviation industry remained small at this time, the public laurels heaped onto celebrity aviators helped elevate the social status of technical skills. Mechanics, *aficionados*, and eventually *técnicos* were championed in enthusiast magazines like *Ciencia Popular* and working-class tabloids like *Crítica*. Common men increasingly saw technical hobbies and study as an avenue to masculine confirmation, material comfort, and dignity. The popular culture around technology and flight created *expectations* of socioeconomic uplift through aviation among common people before such prospects had largely materialized.

These expectations were having profound influences on the one set of institutions in Argentine society that had the political and financial resources to practice large-scale aviation during the interwar period: the armed forces. As we will see in the next two chapters, after World War I a subset of military officials became enamored with the possibilities of development they believed aviation offered their nation. These officers would be at the helm of national aviation policy as the state took its first tentative steps to regulate and support civil aviation, an authority

the military would never fully relinquish. The transformation of aviation from a status-symbol of the wealthy and entertainment for the masses, to a fundamental aspect of national politics and a career opportunity for working people was gathering momentum.

**Chapter Five**  
**The Army and the Aviation Community, 1923-1936**

*"¡Secundenos usted y realizaremos  
bien pronto... que hoy puede parecer  
una utopia!"*

“Support us and we will realize very  
soon... that today may seem like a  
utopia!”

Excerpt from the self-titled 1920 pamphlet  
by the Comisión Ejecutiva Nacional Pro-  
Aviación Militar y Civil, 24.

In October 1920, a group of prominent civilian and military aviation enthusiasts formed a committee to direct the growing popular campaign for national aeronautics. The Comisión Nacional Pro Aviación Civil y Militar [National Commission Pro Civil and Military Aviation] was directed by some of the well-known personalities that had participated in the founding of the Aero Club Argentino and Escuela Militar de Aviación, such as Horacio Anasagasti, Florencio Parravicini and Major Arturo P. Luisoni. There were also men whose role in aviation would develop significance in the coming years, including the civilians Jorge Duclout and Antonio Biedma Recalde, and the military officers Francisco Torres and Ángel M. Zuloaga.

To promote their cause, the Comisión Nacional Pro Aviación Civil y Militar published a pamphlet filled with much of the exuberant rhetoric characteristic of the early age of aviation before World War I. Aviation, in their eyes, would increase the fraternity between peoples, stimulate economic development, and be the crucible of modern man. The successive improvements to the human ability to transit space, from when “our good father Adam discovered the way to walk,” have been “marking stages along the way of progress.”<sup>1</sup>

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<sup>1</sup> Comisión Ejecutiva, *Comisión Ejecutiva Nacional Pro-Aviación Militar y Civil*, 19.

The pamphlet extolled all Argentines of “soul and heart” to take up the mantle of such heroic, technological progress.<sup>2</sup> The aviation boosters promised new jobs, unprecedented mobility, and national and personal empowerment. The commission even proclaimed that the perfection of national aviation and the advent of Argentine-built airliners crisscrossing the nation’s skies would deliver utopia.<sup>3</sup>

At the outset of the interwar period, the aviation community was confronted by a reality far different from the possibilities painted in the National Commission’s imagination. Aviation institutions, industry, and practice remained rudimentary and highly dependent on the North Atlantic economies. Despite the aerial carnage of the Great War, more Argentines than ever were looking to pilots as national and international heroes forging material progress for the betterment of all peoples. Yet Argentina still lacked aviation infrastructure in most of the country. According to the appraisal of local aeronautical engineer Edmundo Lucius, the nation also had no aircraft industry beyond the repair of their increasingly aged machines.<sup>4</sup> And despite the wave of popular excitement for flight, the number of active Argentine pilots remained miniscule.

Over the next two decades, the aviation community—represented by civilian flight clubs and the armed forces—sought to realize their aerial prophesies. Officials and enthusiasts were confronted with a staggering number of open questions about how to develop their industry: How will aviation be useful for our society? How should it be organized? How should it be financed? Should efforts at development focus on the provinces or the capital region? And most consequentially, who should direct this development? Argentine aviation enthusiasts naturally looked to the more industrialized North Atlantic nations for answers. National aviation

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<sup>2</sup> Comisión Ejecutiva, *Comisión Ejecutiva Nacional Pro-Aviación Militar y Civil*, 9-10.

<sup>3</sup> See the quotation at the start of the chapter.

<sup>4</sup> Lucius, “La implantación de las industrias,” 61.

magazines and military bulletins were replete with translated articles from abroad on the organization of aviation in France, Germany, Britain, Italy, Spain, and the US. But these nations were still in the throes of formulating their own national policies. The diversity of ideas about the proper organization of international and national governing bodies for flight matched the variations in national political cultures and structures in Europe and the Americas.

Furthermore, Argentines understood that methods for stimulating national aviation in European countries and the US were not entirely appropriate in their country. They lacked the military and civilian budgets, primary materials production, technical experience, and industrial capital to easily transplant North Atlantic development schemes. Thus, in an important sense, Argentine aviation boosters were self-consciously attempting something new; they would strive to create an aviation industry without most of the resources of their more advanced neighbors to the north. Thus the 1920s and 1930s were a time of aspiration and experimentation, of the formulation and reformulation of aviation policy as the political conditions and technological possibilities rapidly evolved in the Argentine Republic and the rest of the world.

At the outset of the interwar period, the aviation community was relatively cohesive as it confronted these uncertainties. The alliance of military officials and civilian enthusiasts first forged in 1912 remained largely intact through entities like the Comisión Nacional Pro Aviación Civil y Militar. But this was not to last. As the community expanded, new divisions arose between the old establishment represented by the Aero Club Argentino, and upstart flight schools like the Centro de Aviación Civil. This fracture soon folded into the most profound disagreement of the subsequent two decades: the role of the military in civilian aviation.

This chapter will investigate the early relationship between the state—in this case the Army—and the private aviation community. By the early 1920s Argentines knew how to train

pilots using the latest European methods. Now officials looked to expand flight training to fuel the development of the technology and the nation. To begin, I will detail the ideologies of the officers of the Army air services who steered much of the nation's aviation policy during the period. Men like Jorge Crespo and Francisco Torres believed that the velocity of transportation mediums was one of the primary drivers of progress in human history. They saw themselves as the agents of this "civilizing" process in Argentina. The discussion will then shift to the military's efforts to promote pilot training via the subsidization of civilian aero clubs, which resulted in the first of many clashes between civilian boosters and military officials.

My analysis will focus primarily on the ideologies, politics, and policies of the Army air services aviation boosters due to their outsized influence on the aviation community. I have included dissenting voices, whether from the civilian community or the other branch of military aviation, the Navy air service, when possible. Some important institutions, most notably the Aero Club Argentino, lack surviving publications during this period. In my discussion of the broader relationships between the Army and the national governments of Hipólito Yrigoyen (1916-1922, 1928-1930), Marcelo Torcuato de Alvear (1922-1928), General José Félix Uriburu (1930-1932), and General Agustín Justo (1932-1938), I have utilized the scholarship of Robert Potash, whose three volume series entitled *The Army & Politics in Argentina* remains the preeminent source on military-civilian relations in twentieth-century Argentina.<sup>5</sup> Lastly, I cannot hope to analyze all of the open debates in aviation at the time. Some areas of interest such as the development of national aviation law, the creation of a national weather system, and a detailed appraisal of commercial aviation will be broached only as they pertain to the central themes of producing evermore pilots.

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<sup>5</sup> Potash, *The Army & Politics in Argentina, 1928-1945*.

## **The Logic of Velocity: Aviation and the Possibilities of Equitable Development**

Aviation boosters had long espoused the lofty promises of aviation. Flight, according to many of its practitioners and enthusiasts, would bring about a new stage in civilization—one characterized by a rapidly shrinking globe. Yet there were few specifics offered by early prognostications. Some sectors of Argentine society, including within the aviation community, believed that the great industrial nations to the north would inevitably revolve this uncertainty. Time—in essence—was on Argentina’s side. They could simply wait and import the improved technologies and practices looming just over the horizon.

But among the most influential sector of the aviation community—the Army air services—patience was not a virtue. Argentina needed to invest in aviation immediately. By the early 1920s, there was little doubt as to the fundamental utility of aviation in war. The nominal recognition of the importance of military aviation on the part of Army officials came on March 20, 1920 with the creation of the Servicio Aeronáutico del Ejército (SAE)[Army Aeronautical Service].<sup>6</sup> Although the service remained subordinate to the Ministry of War and the Army’s leadership, the establishment of the SAE signaled that authorities were interested in moving beyond elementary flight training. Army officials took advantage of the influx of war surplus material to form their first active military aviation units.

There was certainly still much room for debate within military circles as to the best methods for the employment of military aircraft, especially as new war doctrines arrived from abroad over the interwar period. The focus of many key military aviation officials was often not on the minutia of tactics and strategy for aerial warfare, but instead on the possibilities of flight for civilian purposes. Treatises written by the more scholarly SAE officials laid out plans for the

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<sup>6</sup> Biedma Recalde, *Crónica histórica*, vol. 2, 200.

support of civilian aviation as a means to guarantee national defense *and* national development. The idea that civilian flight underpinned military capability was a truism in the aviation community. Civilian pilots, even with only elementary training, were a critical “aerial reserve” for the nation.<sup>7</sup> This axiom ensured that military officials were always at the table when there were national discussions on the methods, regulation, and funding of flight training.

But the more profound set of beliefs swirling around military aviation was the sense that aviation could foster socioeconomic development, especially in the provinces. This idea would prove enduring and deeply influential in Army policy. The belief that the Army had a responsibility to “civilize” the underdeveloped interior—in particular the far northwest and south—shaped much of their decision-making around flight training over the ensuing decades. Before chronicling those policy choices and their effects, it is worth first considering the Army air officials’ ideologies around aviation, mobility, and development over the interwar period. There were of course variations in the details of different officers’ plans for aviation, but on the whole the ideology of many Army aviators and administrators remained remarkably consistent in the face of political criticism and numerous setbacks. In the end, it was largely the visions of officials like Enrique Mosconi, Jorge Crespo, Francisco Torres, and their successors that shaped the official expectations and policies of the Peronist aviation boom.

The first major proponent of the role of aviation in national development was the well-known officer-engineer Enrique Mosconi (1877-1940). Mosconi is a prominent figure in the historiography of Argentina. He was the first director of Yacimientos Petrolíferos Fiscales

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<sup>7</sup> Francisco S. Torres, *Fomento de la aeronáutica argentina. Hacia la conquista del cielo patria* (Buenos Aires: [Aviación], 1923), 7; Eduardo Bullrich, *Régimen y organización de la aeronáutica civil* (N.p.: [Dirección General de Aeronáutica], 1938), 206-7.



(YPF), the state oil company.<sup>8</sup> But he first rose to national prominence in the Army air services. Mosconi was the son of an engineer from Milan who emigrated to Argentina to work on its rapidly expanding railroad network. Mosconi graduated from the Colegio Militar de la Nación [National Military Academy] in 1894, and promptly joined the Army's engineering section. In 1912, he was appointed to the technical commission for the EMA alongside Jorge Newbery.<sup>9</sup> On March 16, 1920, the now Colonel Enrique Mosconi was appointed director of the SAE.<sup>10</sup>

Mosconi quickly proposed an expansion of the state's activities in civil aviation. During his two-year tenure, the first civil aviation department, the División de Líneas Aéreas, was created, along with other key institutions like the Gabinete Psicofisiológico. Mosconi declared at the May 2, 1921 inauguration of the Aero Club de Mendoza that "Humanity will be transformed with the dominion of the air. The man of space lives and acquires skills, qualities, and energies that cannot be developed on the plains."<sup>11</sup> He brought together the two ideas underpinning the official support of aviation, its necessity for national defense and the possibilities for the improvement of society more broadly. At a social luncheon for the Casino de Oficiales [Officers' Club] on April 20, 1922, Mosconi said that aviation promised a "new rhythm of the new human era" characterized by enthusiasm and optimism. But he also warned, "the battle of the future requires complex technical authorities [*órganos*], whose improvisation is absolutely impossible."

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<sup>8</sup> YPF was the first wholly state-owned oil company outside of the Soviet Union in the world. Although run by Enrique Mosconi until 1930, it was not under the control of the Army. See Solberg, *Oil and Nationalism*; Nicolás Gadano, *Historia del petróleo en la Argentina, 1907-1955: Desde los inicios hasta la caída de Perón* (Buenos Aires: Edhasa, 2006); Gabriel Augusto Matharan, "La investigación industrial en la Argentina: El caso de la industria petrolera de Yacimientos Petrolíferos Fiscales (1925-1942)," *Redes* 19, no. 37 (December 2013): 13-42.

<sup>9</sup> Mosconi also happened to be the official in charge of Teodoro Fels' unit when the daring youth stunned the world with his flight over the Rio de la Plata. Mosconi attempted to discipline Fels for conducting such a risky flight without permission, only to find that the aviator's popularity made such censure impossible.

<sup>10</sup> *Enrique Mosconi. Propulsor de la Aeronáutica. 1877-1940*, 2nd ed. (Buenos Aires: Instituto Argentino de Historia Aeronáutica Jorge Newbery, 1979), 9-12.

<sup>11</sup> "La humanidad se transformará con el dominio del aire. El hombre del espacio vive y adquiere aptitudes, cualidades y empujes que no pueden desarrollarse en el llano." Speech reprinted at length in *Enrique Mosconi*, 13.

The military and the state needed to exercise “timely and profound foresight” to ensure Argentina’s security and prosperity.<sup>12</sup>

Mosconi’s main project in civil aviation was the creation of “air routes” across the country. In February 1921, Mosconi sent a proposal to the Ministry of War and the national press advocating for the establishment of six routes that radiated out from Buenos Aires to the provinces (see fig. 5.1). The principle challenge for authorities was the construction of the requisite infrastructure which was almost entirely absent from the interior. The wave of civilian airfield donations, discussed in chapter three, had created a smattering of rudimentary air “stations” (as Mosconi called them) in the main population centers of the interior, such as in Córdoba, Rosario, Mendoza, and Mar del Plata. These basic facilities, often little more than a marginally level grass field, were managed by aero clubs founded by local enthusiasts and informally directed by the Comisión Nacional Pro Aviación Civil y Militar, itself an amalgam of civil and military authorities. Mosconi sought to dramatically expand this system with the creation of dozens of well-equipped airfields, and over a hundred small auxiliary airstrips for emergencies.<sup>13</sup>

This network of runways would enable the military to effectively field its airplanes in any region of the country, which due to the short range of light aircraft at the time was extremely difficult. In 1922, the SAE conducted a series of raids with formations of military aircraft to study the possibility of such air routes. Four squadrons radiated out from Buenos Aires to the

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<sup>12</sup> “*La guerra futura exige de los pueblos que quieran ser victoriosos, oportunas y hondas previsiones, porque la batalla del porvenir requiere órganos de complejo tecnicismo, cuya improvisación es absolutamente imposible.*” Speech reprinted at length in Enrique Mosconi, *Creación de la 5ª Arma y las Rutas Aéreas Argentinas* (Buenos Aires, 1941), 92-3. This book is a collection of Mosconi’s writings and speeches published posthumously.

<sup>13</sup> Enrique Mosconi, “Las rutas aéreas,” in *Creación de la 5ª Arma*, 45-7.

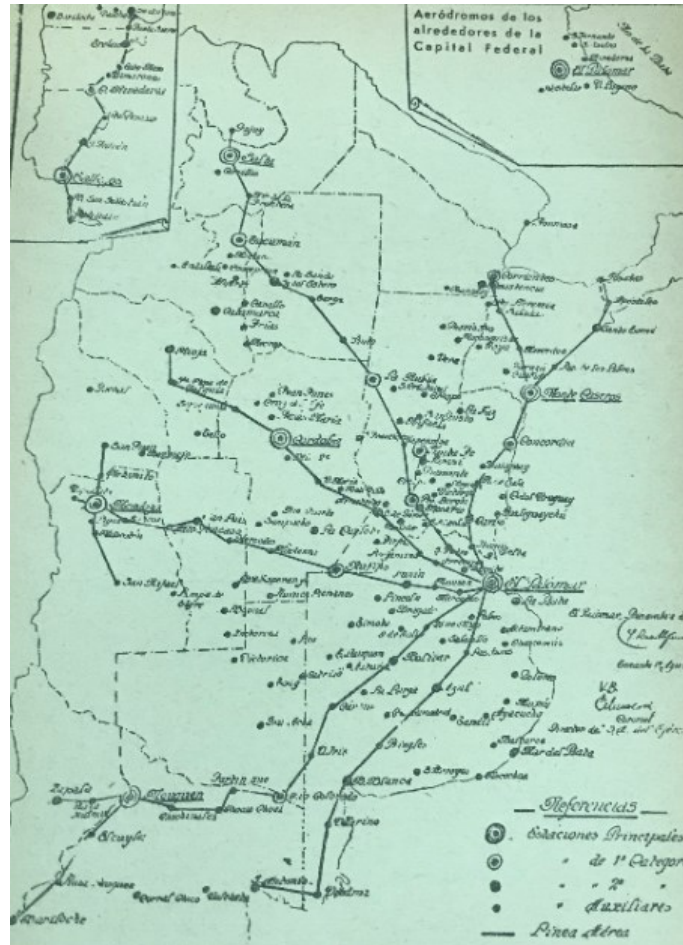


Figure 5.1. Mosconi's original proposed route map with six air lines radiating out from El Palomar airfield in the Federal Capital. These “rutas aéreas” were corridors of infrastructure that could be used by the military and any future civilian services. Enrique Mosconi, “Las Rutas Aéreas (May 7, 1921),” in *Creación de la 5ª Arma*, 63.

west, northwest, northeast, and south. All the groups struggled with the lack of proper infrastructure along their paths. The southern flight from Carmen de Patagones to Río Gallegos proved particularly challenging. A fleet of ten trucks had to drive over 3,600 kilometers to supply the southern group with fuel and replacement parts. The aviators were also unused to flying in the Patagonian environment, as was noted in the post-flight report: “No aviator or military pilot in the unit knew the region where they have conducted and experienced their aerial

journey.”<sup>14</sup> Mosconi was inspired to focus on the need for a national petroleum industry after a foreign *aeronafta* [avgas] supplier refused to dispense fuel on credit during one of these raids.<sup>15</sup>

But Mosconi was proposing more than just the creation of aviation infrastructure. He envisioned harnessing these airfields for a military-run airmail service. This commercial air service—he claimed—would bring economic, social, and political benefits to the provinces, as well as strengthen the position of the national government. Mosconi focused his proposal on a Patagonia route from Buenos Aires to Ushuaia on the extreme southern tip of the continent. He argued that the Patagonian route would bring the greatest benefit since the distant frontier zone lacked “regular communications with the Federal Capital” and its people were suffering from their “isolation.”<sup>16</sup> In a speech to the National Congress in 1921 to promote his project, Mosconi declared that faster communication between the capital and the southern regions would result in a more “synchronous and cordial” relationship.<sup>17</sup>

Tellingly, Mosconi emphasized in his Congressional speech that the Army should be “entrusted” with the project of facilitating communications with the far south due to its “traditional civilizing and progressive mission.”<sup>18</sup> This idea—that the Army was a key agent of progress—had been at the heart of the institution’s self-identity since the consolidation of the modern state in the 1870s and 1880s. Implicit in Mosconi’s framing of the Army’s mission was its supposed apolitical and patriotic intent. Beginning in the 1890s, the Army had begun a long modernization program directed by largely German advisors. This process led to a sense of

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<sup>14</sup> “Ningún aviador ni piloto militar de la unidad, conocía la región por donde ha realizado y experimentado su viaje aéreo.” “Informe,” in *Creación de la 5ª Arma*, 150.

<sup>15</sup> *Ibid.*, 155; Enrique Mosconi, *El petróleo argentino, 1922-1930, y la ruptura de los trusts petrolíferos inglés y norteamericano el 1º de agosto de 1929* (Buenos Aires: “El Ateneo,” 1936), 15; Enrique Mosconi, 17.

<sup>16</sup> Enrique Mosconi, “Nota al Sr. Director Gral de Ingenieros,” in *Creación de la 5ª Arma*, 115-6.

<sup>17</sup> Enrique Mosconi, “A la H. Cámara de Diputados d.l.N.,” in *Creación de la 5ª Arma*, 120.

<sup>18</sup> Mosconi, “A la H. Cámara de Diputados,” 120.

exceptionalism within the officer corps. They felt “above” the petty frays of domestic politics.<sup>19</sup> After World War I, an incipient economic nationalism and contempt for democratic politics arose among officers who were increasingly alienated by the Radical Civic Union President Hipólito Yrigoyen’s (1916-1922; 1928-1930) politically-motivated meddling in the Army.<sup>20</sup> Ironically, their reaction to such political interventions was to respond in kind, with the result being a flowering of political factions within the corps.<sup>21</sup>

Mosconi and most of his aviation colleagues were part of an economic nationalist faction of the Army that was gradually coming to the fore. These officials saw themselves as “nation-builders” who conquered Patagonia and molded Argentine citizens through the conscription process.<sup>22</sup> Many officers resented the foreign domination of key industries and infrastructure, such as the railroad and petrochemical industries. State-directed industrialization was increasingly seen as the key to securing the national defense of Argentina and ensuring its material progress. These beliefs eventually coalesced into import-substitution industrialization (ISI) policies, wherein the government nationalized and subsidized key industries while erecting tariff barriers to restrict imports. Army officials were encouraged by a growing civilian recognition of Argentina’s economic “tributary” status by scholars like the economist Alejandro Bunge. Although mainstream acceptance of Bunge’s ideas for state intervention in the economy was still a decade away, he was beginning to win early adherents among the armed forces.<sup>23</sup> The

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<sup>19</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 4-5; Mani, “Military Entrepreneurs,” 32.

<sup>20</sup> Laws were passed favoring those officers who had supported the governing party at the turn of the century. Potash, *The Army & Politics in Argentina, 1928-1945*, 10-1.

<sup>21</sup> The officer corps was not, nor would it ever be, unified in its political orientation. Ibid., 24-6.

<sup>22</sup> The 1905 universal conscription system still in effect required one-year service in the Army or two-year service in the Navy, with selection determined by a lottery. As Robert Potash described, “the enlisted ranks of the Argentine Army consisted of a permanent cadre fleshed out by annually renewed contingents of citizen-soldiers.” This meant that the primary duty of Army officials was the training of new echelons of soldiers from many different social, geographic, and economic circumstances. Ibid., 2.

<sup>23</sup> The 1924 treatise by Jorge Crespo discussed below quoted Alejandro Bunge’s *Las Industrias del Norte*.

Argentine officer corps would consistently be in the vanguard of ISI efforts across Latin America over the next half-century.<sup>24</sup> Thus Mosconi and his supporters believed the Army had a mandate to focus on the integration and development of the provinces.

Mosconi's proposal proved dead on arrival. Airmail services were just starting to form in the North Atlantic nations and Argentina's national legislature had no interest in joining the vanguard of such efforts for the time being. The Yrigoyen administration was also hesitant to spend on military armaments and infrastructure.<sup>25</sup> The amount requested for the construction of infrastructure was 6.7 million pesos, which could only be partially diffused by cooperation with local communities and aero clubs.<sup>26</sup> Just the annual operating costs for an airmail service to Ushuaia were placed at 689,860 pesos,<sup>27</sup> almost three times the entire civil aviation budget in 1923. But the basic framework of Mosconi's vision for national aviation continued to be a central aspect of his successors' plans.

In 1924, Lieutenant Colonel Jorge B. Crespo, the official who replaced Mosconi, reinforced his former boss's ideas with his own model for the development of domestic air transportation. Outside the role of aviation for national defense, Crespo saw flight as a tool in the "argentinización [Argentinization] of large areas of the country."<sup>28</sup> It would ensure national sovereignty over the frontier regions eyed by Chile, Brazil, and even the industrial powers of the North Atlantic. He spoke implicitly about the continuation of the project initiated by the "conquest of the desert" in the nineteenth century:

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<sup>24</sup> Mani, "Military Entrepreneurs," 35. The height of the Argentine military's ISI activity came after the period of this study in the 1960s and 1970s.

<sup>25</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 16.

<sup>26</sup> Mosconi, "Las rutas aéreas," 48.

<sup>27</sup> Mosconi, "Nota al Sr. Director General de Ingenieros," 118.

<sup>28</sup> Jorge B. Crespo, *El problema de la aeronáutica en el país: como factor económico y de defensa nacional* (Buenos Aires: Círculo Militar, 1924), 20.

...[the airplane] would fulfill the same civilizing and nationalizing function as that carried out by the historic terrestrial messengers that marched through vast regions of the territory for a century at the vanguard of the national formation.<sup>29</sup>

In a laughably imprecise statistic, Crespo alleged that “cosmopolitanism predominates in 60 to 90% of the population” in the Neuquén and Patagonia regions, “where the social and economic mediums are influenced by external forces that cancel out those of the country itself and those of the native citizen.”<sup>30</sup> Air services would guarantee those distant populations remained culturally and politically Argentine.

One year earlier, Crespo’s junior colleague Francisco Torres published the most complex and extensive tract on the role of aviation in national development. Torres was a military aviator himself; he received his *brevet* from the EMA in 1916.<sup>31</sup> Beginning in 1922 he was assigned to the newly-created División de Líneas Aéreas under the SAE. Torres also saw aviation as an opportunity to redistribute commercial and industrial power around the nation. For Torres, the “logic of velocity” dictated that the pace of progress was determined by the relative distance in time between the “great centers of activity.” In Argentina, rail, road, and water transportation was too slow for its frontier to develop at an acceptable rate. He believed that this relationship between speed of communication and development was natural and intuitive, even for the common people.<sup>32</sup> As we saw in chapter three, there was a powerful popular sense that velocity

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<sup>29</sup> “[el avión] llenaría la misma función civilizadora y de nacionalización que la realizada por las históricas mensajerías terrestres que marcharon a través de extensas regiones del territorio por espacio de un siglo a la vanguardia de la formación nacional.” Crespo, *El problema de la aeronáutica*, 20.

<sup>30</sup> “Permitiría implantar el nuevo medio de comunicación en las inmensas y ricas regiones que poseemos lejos de los centros principales de la industria y el comercio, y más lejos aún del espíritu nacional y patriotismo que tanto necesitan; especialmente en el Neuquén y regiones patagónicas, donde el cosmopolitismo predomina con un 60 a 90 % de la población y donde los medios sociales y económicos están influenciados por fuerzas exteriores que anulan las del propio país y las del ciudadano nativo.” *Ibid.*, 43-44.

<sup>31</sup> Unfortunately, I have yet to find the basic biographical information about Francisco Torres. He turned out to be a surprisingly important member of the Army aviation community considering how little has been written about him.

<sup>32</sup> Torres, *Fomento de la aeronáutica*, 23-24.

was one of, if not *the*, defining characteristic of modern progress. According to many social commentators, Argentines had to learn to cope with the stress of speed, whether it be the literal velocity of new cars and airplanes, or the metaphorical pace of material progress and social change. This acceleration of everyday life seemed to confirm the centrality of velocity as a driving force in the improvement of human civilization in the eyes of many Argentines within and outside the aviation community. As one writer for *El Hogar* expressed in 1925: “Velocity is the only thing that distinguishes us from beasts.”<sup>33</sup>

The process of development envisioned by Torres was political, commercial, and cultural. Yet by bringing all three of these aspects together, he revealed the tensions inherent in his nationalist conception of civilization and the frontier. The frontier regions were places of “banditry, raids, and other social evils.” “Airplanes of the State” would overcome this backwardness.<sup>34</sup> At the same time, the diversity of environments and peoples across the country, but especially in Buenos Aires, was leading to problematic divergences in the identity of the nation. Aviation might civilize the frontier, but it would carry back to the centers of the country a “purer *argentinismo* [Argentineness].”<sup>35</sup> Thus the very “backwardness” airplanes would remedy was the source of the true *Argentinidad*, an irony evident in the discussion of gauchos and nationalism in chapter four.

The officials of the SAE believed that air services would best flourish connecting centers to peripheries, serving as agents of civilization, even if they expected frontier culture to define their national identity. It seems logical that military officials would be primarily interested in furthering the integration of peripheral regions to prevent rival powers from chipping away at

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<sup>33</sup> “*La velocidad es lo único que nos distingue de las bestias.*” Carlos V. Bosco, “La locomoción en los tiempos futuros,” *El Hogar*, November 20, 1925, 6.

<sup>34</sup> Torres, *Fomento de la aeronáutica*, 80-81.

<sup>35</sup> *Ibid.*, 23-24.



Argentine territory. The airplane was simply the newest tool in the conquest and integration of the southern territories. But this belief was not just a result of local experience and needs. During the 1920s and 1930s, most of the large European airlines were based on colonial routes. Argentine popular media was aware of this reality of modern imperialism. While most domestic airlines on the continent were short-lived, France, the Netherlands, and Great Britain all developed long-distance routes to knit together their empires.<sup>36</sup> Spain and Portugal, seeking to reclaim their place in the concert of modern nations, sent their aviators south across the Atlantic to their former colonies.<sup>37</sup> Some Argentines saw this as a threat. If Argentina did not engage fully in the new Air Age, it might find itself subjugated once again under the yoke of a revitalized European imperialism made possible by the power of the airplane.<sup>38</sup>

This model of aviation operating between centers and peripheries was also grounded in an economic orthodoxy that sought to avoid competing with alternative modes of transportation. Argentines and Europeans alike posited that air services could not compete with cheaper and more reliable rail and road transportation. Most people, fearful of the risks of air travel, would likely continue to use ground transportation if available. Thus naturally the airplane should be used in remote regions as of yet unintegrated into the national infrastructure system.<sup>39</sup> Those areas were generally at the frontier, isolated by distance and difficult topography.

But this model for the future of air services posed a problem that General Mosconi, in his 1921 speech to Congress, foresaw. It is easy to imagine what the airplane would carry from the “centers of activity” to the frontier: cargo, mail, newspapers, passengers. But it was much harder

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<sup>36</sup> “Las grandes rutas aéreas. ¿Quiénes las surcan?” *Caras y Caretas*, Dec. 27, 1927, 224.

<sup>37</sup> Guillermo Giucci, “Internacionalismo y nacionalismo: el aeroplano,” *Mester* 35, no. 1 (2006): 111-127, 114-118.

<sup>38</sup> Sr. Samaniego, “La Conquista del Aire,” *Aviación*, May 1921, 51-54.

<sup>39</sup> Crespo, *El problema de la aeronáutica*, 22-6.

to fill the planes on their return journey. Airplanes might carry civilization to the south, but what would they physically bring back? Mosconi generously estimated, without much evidence, that the airplanes on their return journeys from Patagonia would have 15-25% less cargo. He optimistically replaced the weight of the newspapers shipped southwards—which were 68% of the southbound cargo—with “*varios*” for the return journey.<sup>40</sup> For the routes to the frontier in the far south, to places such as Comodoro Rivadavia, Rio Gallegos, and Ushuaia, the demand for tourist flights was minuscule, especially during the long winter season. Furthermore, it was unlikely that these small and largely impoverished towns would generate a large amount of correspondence.<sup>41</sup> Even using small and efficient “limousine” type aircraft, these routes would be very costly to operate for the state, and authorities were disinclined to spend lavishly on such technologically exotic projects.

According to many in the SAE, the answer to this problem lay in a deeply-embedded assumption about transportation technology: air travel, through its speed, *creates* commerce. The greater the velocity, the greater the economic development generated by a transportation medium. In Torres’ text, he imagined a network of civilian and military airbases knitting together a national military-industrial complex dispersed in the interior. Airplanes could quickly shuttle the needed personnel, correspondence, and primary materials around the country. Córdoba, as the “strategic-geographic point” [*punto geográfico-estratégico*] would be the hub of the network. Resistencia, with its timber industry, would be an “aero-industrial” base, processing the wood for aircraft production. Torres argued such industry could then supply the aircraft for these routes.<sup>42</sup>

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<sup>40</sup> Enrique Mosconi, “Mensaje del Poder Ejecutivo a la honorable Cámara de Diputados de la Nación,” quoted at length in Crespo, *El problema de la aeronáutica*, 29-32.

<sup>41</sup> At the time of this publication, Yacimientos Petrolíferos Fiscales did not yet exist.

<sup>42</sup> Torres, *Fomento de la aeronáutica*, 75-78.

Thus a national aviation industry, connected by Army-run air services, would ensure the economic development of the fringes of the nation.

Torres and his fellow aviation boosters may have borrowed this idea from Dr. Hugo Eckener, the famed German Zeppelin builder and pilot, who delivered a presentation in Buenos Aires in 1921 about a project to develop an airship line between Cádiz and Buenos Aires. Eckener acknowledged that at the present time, the volume of correspondence and cargo between Spain and Argentina that would likely be shifted from transatlantic steamers to airships was too small to make the line profitable. Common people continued to prefer the safer medium of steamships for the Atlantic crossing. But he then stated the “well-known” fact of transportation technology: “Good means of transportation create traffic.” If the travel time across the Atlantic was reduced from 25 days to 4 days, naturally, people would conduct more business, sending more letters and making the journeys themselves more often.<sup>43</sup>

But I would like to suggest that there was a deeper layer of metaphorical thinking that underlaid the presumption that transportation mediums can unilaterally create commerce and development. In the minds of many aviation boosters as well as in the popular media, airliners were seen as the modern incarnation of the early modern sailing vessel, which was the basis for the European colonization of the New World. Logically the equation of airplanes to caravels was most obvious with the great transatlantic flights after 1926, and especially that of the *Plus Ultra*. As we saw in chapter four, the Spanish aviator Ramón Franco, the “Master of Space, Master of Time,”<sup>44</sup> was frequently compared to Christopher Columbus. In the popular media, images of the *Plus Ultra* were often accompanied by drawings of conquistadors and early modern caravels (see

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<sup>43</sup> “...debe recordarse el hecho, bien conocido en la técnica del tráfico, que buenos medios de transporte crean tráfico...” Hugo Eckener, *El desenvolvimiento de los Zeppelines y su aplicación al proyecto de comunicación aérea con España* (Buenos Aires: Tip. "La Baskonia," 1921), 28.

<sup>44</sup> “Franco, Amo del Espacio, Domina el Tiempo,” *Crítica*, February 9, 1926.



Figure 5.2. One such example of the *Plus Ultra* juxtaposed with early-modern protagonists of Spanish colonization, including the caravel. Ad for J.L. Conde & Cía, *La Prensa*, February 11, 1926.

fig. 5.2).<sup>45</sup> In 1929, the writer Pablo Rojas Paz placed the struggle against time and space at the heart of progress. He declared the initial crossing of the Atlantic in the fifteenth century as “an offensive of humanity against time and space,” a conquest which the airplane was now making definitive.<sup>46</sup> The legacy of Spanish colonization loomed large in the minds of many Argentines when they looked back on their nation’s history, and this only increased with the surge in popularity of Hispanic culture in the 1920s and 1930s. They saw that first act of colonization by the Spanish in a distant, “barbaric” land as the birth of what later became Argentine civilization. Popular media like the magazines *Caras y Caretas* and *El Hogar* still spoke of the populating of

<sup>45</sup> It probably aided the metaphor between the caravel and airplane that the ocean-crossing aircraft of the day were usually flying boats.

<sup>46</sup> Pablo Rojas Paz, “El alba de ayer y el alba de mañana,” *El Hogar*, November 29, 1929, 7.

the interior of Argentina as an act of “colonization.”<sup>47</sup> It seems only natural that if airplanes were conceptualized as the new incarnation of caravels for an interior in need of civilization, aviation would be the agent of modern colonization.

Twenty years later, another important military aviation promoter made this connection more explicitly. Mayor Juan Rawson Bustamante, a professor at the Escuela Superior de Guerra, wrote *Las posibilidades aeronáuticas de postguerra* in 1944. Just like after World War I, Bustamante anticipated a post-war aviation boom generated by the advancement of aircraft technology and a large supply of war surplus airplanes. He echoed his forbearers in thinking of the airplane as a technology that connected centers to peripheries.<sup>48</sup> Bustamante referred to the colonial era and his understanding of the influence of sailing vessels:

Predicting how far the influence of this medium will go is risky; but if we think about what the appearance and development of maritime means have meant in the development of human civilization, we will not be exaggerated if we consider that air means will have, at least, a similar but surely much more accelerated influence in time.<sup>49</sup>

If sailing vessels transformed the early modern Atlantic world with thousands of slow and precarious journeys across the great watery expanses, imagine the power of the airplane, with its speed and disregard for geographical boundaries, to remake Argentina and its interior.

The presupposition that aviation was the newest force for progress underpinned the major initiatives by the Army air services for the remainder of this study. While many military officials

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<sup>47</sup> “El proyecto de colonización,” *La Prensa*, February 5, 1927; “La colonización del país en manos de empresas particulares,” *Mundo Argentino*, February 9, 1927; “Colonización y civilización,” *El Hogar*, October 7, 1927; “Tierra pública y colonización,” *Mundo Argentino*, January 29, 1930; “Necesitamos colonizar en los hechos,” *Mundo Argentino*, May 9, 1934.

<sup>48</sup> Juan Rawson Bustamante, *Las posibilidades aeronáuticas de postguerra* (Buenos Aires: Unión Industrial Argentina, Instituto de Estudios y Conferencias Industriales, 1944), 25.

<sup>49</sup> “Predecir hasta dónde llegará la influencia de este medio es aventurado; pero si pensamos lo que ha significado en el desarrollo de la civilización humana la aparición y el desenvolvimiento de los medios marítimos, no pecaremos de exagerados si estimamos que los medios aéreos tendrán, por lo menos, una influencia semejante pero seguramente mucho más acelerada en el tiempo.” Bustamante, *Las posibilidades aeronáuticas*, 26.

saw themselves as agents of development, this was, at its core, a cultural belief, not a technical assessment. Fully functioning air services were still over the horizon, even in the more industrialized nations. Aviation officials, for example, were unclear as to whether formal commercial airlines or personal light aircraft would dominate the nation's skies in the future. Numerous tracts were composed by aviation boosters tabulating all the ways aviation *might* be helpful for Argentine society, from crop dusting to air ambulance services to aerial surveying.<sup>50</sup> This uncertainty was the source of frequent jokes in popular magazines and newspapers around the Atlantic world; social commentators often lampooned the perceived outlandishness of flight becoming a facet of everyday life (see fig. 5.3). Thus the conceptualization of the “logic of velocity” in the minds of aviation boosters like Torres and Crespo was based on the construction of historical metaphors—the caravel and early modern colonization—as well as a close engagement with the sentiments around velocity in the popular culture. Undoubtedly men like Torres, Crespo, and Bustamante were influenced by the currents in the popular imagination about speed, technology, and progress, just as such aviation boosters were striving to steer that current with pamphlets, speeches, and magazine publications.

Not everyone in Argentine society or in policy-making circles agreed with the Army's aviation boosters either. For critics who might have been sympathetic to the economic nationalism espoused by men like Mosconi and Torres, the problem lay in the Army's strategy for fostering development via aviation—a line of criticism we will see in this chapter and the next. But for other, mainly elite elements of Argentine society, the very idea of development

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<sup>50</sup> See, for example, “La aviación civil progresa,” *Aviación*, December 1921, 6; Jorge B. Crespo, *La aviación y su probable desarrollo en la República Argentina* (Buenos Aires: Taller Gráfico de Luis Bernado, 1928); Miguel F. Vera, *Empleos del avión en ingeniería agronómica* (Córdoba: [n.d.], 1932); Gregorio A. Portillo, *Contribución al estudio de la aviación civil y de sus aplicaciones* (Buenos Aires: “Aviación,” 1938); Gonzalo A. García, *Función Social de la Aeronáutica* (Buenos Aires: Editorial Argentina “Aviación,” 1940).

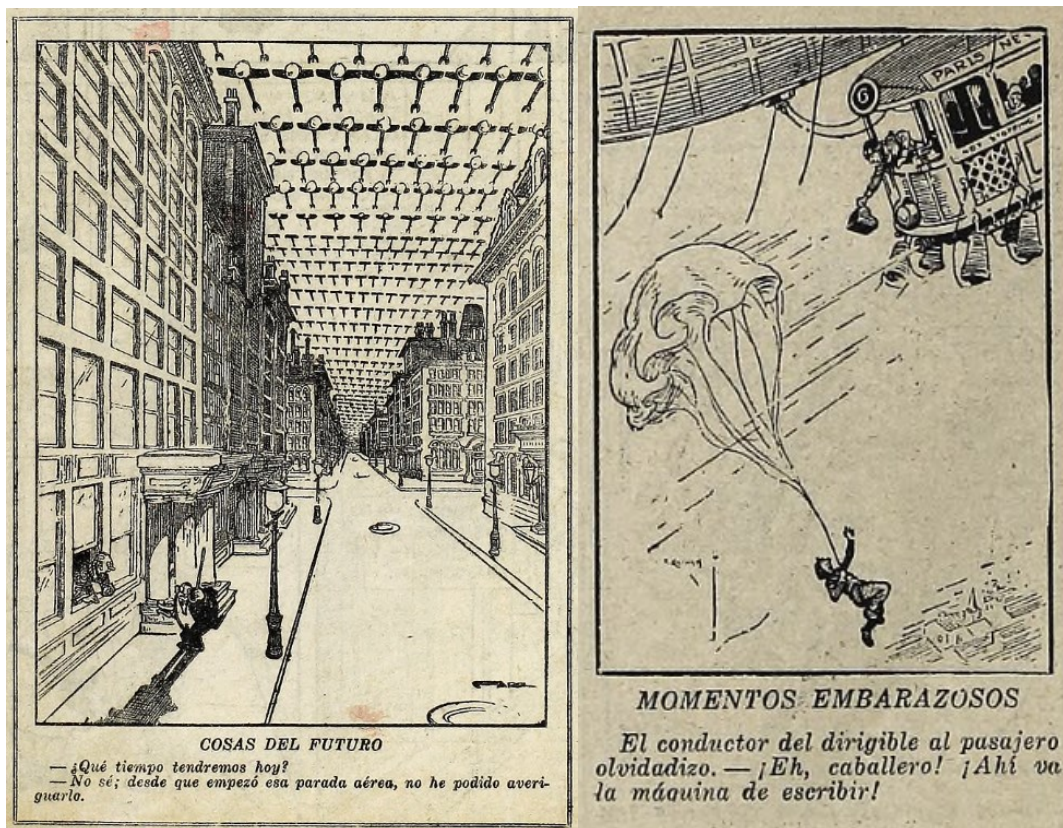


Figure 5.3. Examples of aviation-themed humor from the 1920s. The left cartoon, entitled “Things of the Future” reads: “What weather will we have today?” with the response “I don’t know; since that air [transit] stop began, I haven’t been able to find out.” *El Hogar*, December 19, 1924, 1. The right cartoon entitled “Embarrassing Moments” has the caption “The conductor of the airship to the forgetful passenger. –Hey sir! [Here] goes the typewriter!” *El Hogar*, October 23, 1925, 48.

through industrialization was unachievable or undesirable. Many within the nation’s powerful agricultural elite—who usually had the ear of the Argentine state and newspapers like *La Nación* and *La Prensa*—felt their nation should remain primarily an agricultural one. State programs to stimulate industrialization were deemed too expensive and/or too risky. For them, the identity and economy of the countryside, not the industrial city, was the future of Argentina.<sup>51</sup>

The Army air service proved to be the only entity in Argentine society that could actively pursue the lofty goals imagined by flight enthusiasts. They would be the enactors of the “logic of velocity” in their nation, whether or not their comrades in the Navy or civilian community agreed

<sup>51</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 24; Belini, *Historia de la industria*, 227-8.

with them. The primary site of this effort would be the provinces, the area where Army aviation boosters thought they could have the greatest effect. Army officials, as we shall see, were able to build alliances with senior administrators and politicians, ensuring a modicum of funding and regulatory authority denied other sectors of the industry. Ironically, even as they espoused the promises of rapid development and national integration, the factor that repeatedly swung the political winds in their direction was the threat of foreign conflicts. Nevertheless, Army officials consistently connected the needs of national defense to broader goals of development, always striving to prove their passion project was an instrument of peace, not war.

These lofty motivations and aspirations among Army air service leadership provides a small corrective to one of the more recent studies of “military entrepreneurship” by the political scientist Kristina Mani. Mani identifies the different types of military involvement in national economies and politics in Latin America to better understand their effects on the democratic experiments in the region. In her analysis, the Argentine Army followed the “industrializer path” as its main goal was “to ensure that Argentina would not be dependent on foreign industrial imports.”<sup>52</sup> She contrasts the Argentine priorities with the armed forces of Cuba and Ecuador, who were “nation builders” that focused on advancing “economic redistribution and social cohesion.” In essence, Argentine (and Brazilian) officials prioritized “guns over butter” while Cuban and Ecuadorian officials chose “butter over guns.”<sup>53</sup>

But Mani does not consider the ideas and policies of the Argentine Army air services. Military aviation boosters thought there was no need to choose between “guns” or “butter.” They believed that supporting a national aviation industry, even if it produced mostly weapons (i.e. military aircraft), would create opportunities to redistribute political and economic power in the

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<sup>52</sup> Mani, “Military Entrepreneurs,” 35.

<sup>53</sup> *Ibid.*, 32-34.



country, and integrate the nation into a more cohesive entity. Industrializing, in their view, *was* nation-building. This nuance does not undermine Mani's broader points about the diversity of military enterprises in Latin America and their fraught relationships with their civilian counterparts. But it does complicate her notion that unlike in the past, today's military enterprises in Argentina have "national economic growth, rather than [the] revival of defense production for the military's own use, [as] the primary goal."<sup>54</sup> From the beginning, at least within the Army aviation community, the two were inextricably interrelated.

### **The Army Aeronautical Service and the Promotion of Civil Aviation, 1923-1935**

In 1923, the Army Aeronautical Service received funds to promote civil aviation for the first time, with most of the new money directed to aero clubs to sponsor local flight training. This marked a transition in the relationship between the two spheres of the flight community. Whereas the military and civilian sectors had been equal, co-dependent partners in the years after the 1910 Centennial celebration, from now on the Army held the position of power. They were the only wellspring for resources for the perpetually undercapitalized civilian aero clubs and flight schools. Although the process was not straightforward, the military were also increasingly the regulators of national aviation, a power the leadership did not wield lightly. The period from 1923 to 1935 was one of experimentation, and civilian critics were quick to castigate Army officials for any perceived deficiencies with their policies. The growing reality that major decisions for the future of the national flight community were occurring behind closed doors, in the offices of the executive branch and the Ministry of War, undoubtedly fueled many civilians' discontent.

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<sup>54</sup> Mani, "Military Entrepreneurs," 46.

The civilian flight community at the outset of the 1920s was weathering a precipitous downturn on the far side of the post-war aviation boom. A handful of the French and Italian pilots and technicians had remained in Argentina, supplementing preexisting aviation institutions or creating new ones. They were joined by an informal influx of British and US pilots and industry representatives who saw opportunity in the upstart South American nation. But the post-war popular aviation boom was short-lived. Popular aero clubs, lacking consistent sources of funds, could not afford to maintain their recently acquired airplanes. National officials initially did not provide any support for civilian aviation and even the Army aviation budget remained pitifully small, representing only 1.5 percent of Army's expenditures in 1921.<sup>55</sup> These factors, combined with a general downturn in the national economy, caused a 97 percent drop in civilian flight hours from 1921 to 1923.<sup>56</sup> Although the severity of this contraction was likely more a sign of the unusual conditions during the post-war flight boom, it nevertheless caused a crisis in the industry.

The downturn was exacerbated by a developing fissure in the civilian community. In 1921 the beleaguered Aero Club Argentino (ACA), which had struggled since the death of Jorge Newbery in 1914, began to reassert its leadership role. But unlike the period before World War I, the well-known club was now joined by at least half a dozen other flight institutions just in the Buenos Aires area, not to mention the aero clubs in the provinces.<sup>57</sup> The ACA proposed the creation of a national body called the Federación Aeronáutica Nacional (FAN) under its direction. The club used its exclusive recognition by the *Fédération aéronautique*

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<sup>55</sup> Mosconi, "Almuerzo en el Casino de Oficiales, April 1921," in *Creación de la 5ª Arma*, 93.

<sup>56</sup> "Memoria del Departamento de Aviación Civil de Servicio Aeronáutico del Ejército: Año 1924," *Aviación*, April 1925, 20.

<sup>57</sup> These operations include the Curtiss school at San Fernando, the Compañía Río Platense de Aviación, the Sociedad Ítalo-Argentina de Aviación, and the Sociedad Anglo-Argentina de Aviación. Biedma Recalde, *Crónica histórica*, vol. 1, 180.

internationale (FAI) as leverage. As Antonio Biedma Recalde recalled, the “prevailing goodwill” in the community led to formalization of the FAN in October 1921.<sup>58</sup> The FAN theoretically acted as the gatekeeper for flight training institutions. They had to register with the organization, follow its guidelines, and keep appropriate records.<sup>59</sup> The FAN, without any official connection to the state, attempted to perform some of the regulatory roles later taken over by military officials, such as mandating medical exams prior to pilot training.<sup>60</sup>

But the FAN proved ineffective, mainly due to dissatisfaction with the ACA. Their main opponent was the Centro de Aviación Civil [Center for Civil Aviation](CAC). The CAC was founded in December 1919 by a group of immigrants that arrived after World War I, although their numbers were soon supplemented by Argentines. The Centro de Aviación Civil was the first institution to introduce the “Gosport” flight training method to the civilian community, likely a reflection of the recent experience of many of their pilots in Europe. The CAC captured much of the energy of the prewar Aero Club Argentino. By the time of its official inauguration and first round of classes in September 1921, the center had an aeronautical library open to the public and was publishing a flight magazine, *Aviación*—the first such publication since the ACA stopped producing its *Boletín* in 1916.<sup>61</sup> The CAC was the most active club by flight hours and

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<sup>58</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 212-3. The FAI, as a matter of policy, only recognized one institution per nation.

<sup>59</sup> “Federación Aeronáutica Nacional: Escuelas de Aviación,” *Aviación*, December 1921, 11.

<sup>60</sup> Article 6: “Ningún alumno podrá empezar su aprendizaje sin que un informe expedido por un médico de la Federación Aeronáutica Nacional, lo declare en condiciones físicas normales.” “Federación Aeronáutica Nacional,” 11.

<sup>61</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 182-3.

frequently produced the greatest number of new pilots in the country during the 1920s and 1930s.<sup>62</sup>

Its rivalry with the Aero Club Argentino had a class dimension. Within a month of the vote on the formation of the FAN, the CAC published a broadside against the organization in *Aviación*. It argued that the FAN's statutes lacked substance, that it was designed only for "sport" flying. This was in contrast to their operation,

which we can say with legitimate pride...is the only one in the Republic...formed so that working men can, according to their modest means, fulfill their aspirations and obtain their brevet to be able to dedicate their whole energies to this future means of locomotion...<sup>63</sup>

The ACA's membership was likely from a higher socioeconomic segment of Argentine society considering the larger number of recent immigrants involved in the CAC's founding and operation. While the ACA continued to be the main sponsor and arbitrator of air races, and one of its main activities was pilot training, the social club had many other priorities. The CAC branded itself, in contrast, as a utilitarian institution that would produce pilots for a future career in commercial or military aviation.<sup>64</sup>

The growing animosity between the two institutions became an open rift in August 1923 when the Aero Club Argentino prevented a CAC-trained pilot from taking part in a competitive raid. The controversy stemmed from the unusual situation around licensing under the FAN

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<sup>62</sup> Data from "Las instituciones aeronáuticas civiles durante 1923," *Aviación*, January 31, 1924, 9-20; "Dirección de Aeronáutica. La labor del año 1929," *Aero*, February 1930, 12-4; "Memoria del Centro Aviación Civil," *Aero*, June 30, 1930, 4, 32; "Dirección de Aeronáutica Civil. Hubo mayor actividad de los Aero Clubs en 1931," *Aero*, Dec.-February 1932, 12; and the *Boletín de Aeronáutica Civil* published by the Dirección de Aeronáutica Civil in 1934 (p. 7), 1935 (47), 1936 (3), 1937 (39), 1938 (26). All were accessed at the BNA.

<sup>63</sup> "Dado que nuestro Centro, del cual podemos decir con legítimo orgullo que es el único en la República, está formado para que los hombres de trabajo puedan, de acuerdo a sus modestos medios, llenar sus aspiraciones y obtener su brevet para poder dedicar sus energías por entero a ese medio de locomoción futuro..." "Federación Aeronáutica Nacional," *Aviación*, December 31, 1921, 6.

<sup>64</sup> "La aviación en la paz," *Aviación*, October 10, 1924, 10-12.

structure. The regulations allowed individual clubs, if certified, to grant a “National Aviator’s Diploma,” but only the ACA could then bestow an “International Pilot’s Brevet.”<sup>65</sup> Such a *brevet* was required to take part in FAI-sanctioned contests, giving the ACA the ability to dictate who could take part in the prestigious races. In 1922, the federal government began allowing Army aviators to test pilots trained at civilian institutions for the National Aviator’s Diploma.<sup>66</sup> This meant that the ACA could reject a pilot certified by the Army, which was indeed the case in August 1923. The CAC was sufficiently outraged by the affair that they publicly branded the ACA’s action “sabotage.”<sup>67</sup>

But the dissatisfaction with the ACA extended beyond the Centro de Aviación Civil. Even their theoretical allies were frustrated with the old club. One commentator in *Aviación* magazine decried a “mercantile” spirit supposedly invading Argentine aviation. Instead of “noble and heroic struggle,” pilots and aviation officials were seeking “despicable profit.” He believed the state and public should support “sports competitions” and bolster aero clubs, not institutions with a “mercantilist face.”<sup>68</sup> Yet, he also found little to praise in the Aero Club Argentino: “There is indeed a National Aero Club, but it is fair to admit that nothing positive has been done since the death of its founder, the never-forgotten Newbery.”<sup>69</sup>

The result of such infighting was the fatal weakening of the Federación Aeronáutica Nacional, which at some point in the ensuing years dissolved without fanfare.<sup>70</sup> In 1933 at the

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<sup>65</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 183.

<sup>66</sup> *Boletín Militar* 1603, 2ª Parte, February 22, 1922; *Boletín Militar* 1618, 2ª Parte, April 27, 1922.

<sup>67</sup> “El sabotage en la Aeronáutica: El Aero Club Argentino rechaza el Diploma de Aviador Nacional,” *Aviación*, August 25, 1923, 3-6.

<sup>68</sup> It is not clear which institutions he is referencing. The most likely candidates for this man’s ire are the Centro de Aviación Civil (although he was writing in *Aviación*, which was the CAC’s publication), or the US and British commercial aviation and flight training operations, the Curtiss school and the Compañía Río Platense de Aviación.

<sup>69</sup> “Aviación Nacional, Falta de Estimulo,” *Aviación*, June 1921, 32-3.

<sup>70</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 213.

first national aeronautical conference that drew all of the nation's major civilian and military aviation authorities and boosters, the prominent advocate for commercial aviation Víctor Ortiz Machado noted “a lack of a spirit of cooperation and camaraderie” among civilians. He lamented that the only form of Argentine camaraderie, “that we can call ‘*criollo*,’ [is] spasmodic and without any purpose and contributes to the loosening of all the springs of the moral mechanism necessary to carry out a [great] work...”<sup>71</sup> He advocated for the creation of a new civilian umbrella organization to better promote their interests in aviation.<sup>72</sup> A replacement for the FAN was indeed attempted that year, this time branded the Federación Aeronáutica Argentina, but it too failed to coalesce into a meaningful regulatory body.<sup>73</sup> The lack of a clear voice from the civilian aviation community, much less a national institution capable of self-regulation and lobbying the national government, gave the Army room to exert its authority.

The SAE was given a mandate to promote civil aviation in mid-1923, receiving the first official budgetary allocation of 250,000 pesos for the following year.<sup>74</sup> The move to intervene in the civil flight community was likely due to the crisis affecting the industry as well as a shift in the national political winds. The parsimonious Yrigoyen administration—at least on matters related to aviation—was replaced by fellow Radical Party member Marcelo Torcuato de Alvear in October 1922. President Alvear was a supporter of aviation. He assigned General Agustín Justo, another aviation enthusiast, as his Minister of War.<sup>75</sup> Both men proved more willing to

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<sup>71</sup> “*Existe en esta actividad como en tantas otras del país, falta de espíritu de cooperación y camaradería, de esa camaradería que no debe confundirse con la que es tan frecuente entre nosotros y que podemos llamar ‘criolla’, espasmódica y sin ninguna finalidad y que sólo contribuye al aflojamiento de todos los resortes del mecanismo moral necesario para llevar adelante una obra...*” Víctor Ortiz Machado, “Turismo Aéreo en la República Argentina,” in Conferencia Nacional de Aeronáutica, *Primera Conferencia Nacional de Aeronáutica: Córdoba, 1933* (Córdoba: Biblioteca Aeronáutica, 1934), 333.

<sup>72</sup> Ortiz Machado, “Turismo Aéreo en la República Argentina,” 333-4.

<sup>73</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 213.

<sup>74</sup> “El Presupuesto Nacional y la Aviación,” *Aviación*, September 30, 1923, 18.

<sup>75</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 13-6.

spend on industrial and military projects such as YPF and eventually the Fábrica Militar de Aviones in Córdoba.

The Alvear administration opened the federal tap for civilian aviation, even if only slightly. They also announced a project to create a body of national law for “air traffic” before the Chamber of Deputies in September 1923. The proposed law would establish the nation’s sovereignty over its skies, regulating domestic flight and any international air operations that might materialize. The framers acknowledged the laws needed to be flexible to consider the rapid progress of aviation. They were aware of the many unknowns that remained before the technology, but argued they needed to build a body of law to ensure Argentines a place in the industry.<sup>76</sup> The proposal spent another year in development but failed to pass Congress in 1925. In fact, the Argentine Congress did not pass a national body of public law for aviation until 1934, when it finally ratified the Paris Convention of 1919.<sup>77</sup> Civil aviation regulation was instead established by executive decree, with the Ministry of War tasked with enforcement. The Army retained this authority exclusively until 1931.<sup>78</sup>

The initial focus of the SAE leadership was the purchase of new training aircraft for Argentina’s flagging aero clubs and flight schools. The aircraft donated or purchased immediately after World War I were already outdated or worn out. More than half of the quarter

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<sup>76</sup> P.E., “Mensaje y proyecto de ley del P.E. sobre tráfico aéreo,” *Cámara de Diputados*, Diario de sesiones No. 58, September 26, 1923, 2792-2799.

<sup>77</sup> “Convención para la reglamentación aérea internacional,” *Cámara de Diputados*, Orden del día no. 88, September 29-30, 1934, 3304-3391. The Argentine delegates refused to sign the Paris Aerial Convention of 1919 because of the bias toward the victors of WWI. Argentine officials participated in, but refused to ratify the subsequent treaties of, the Spanish Conferencia Ibero Americana de Navegación Aérea of 1926 and the US Havana Convention of 1928. Argentine delegates were aware the documents represented efforts by Spain and the US to bolster their national interests in Latin America. Modifications to the Paris Convention in the 1920s removed the bias toward the Allied powers, facilitating its ratification by the Argentine legislature. Gonzalo A. García, “Reglamentos y proyectos de Ley y acuerdos Internacionales suscritos por nuestro país,” in Conferencia Nacional de Aeronáutica, *Primera Conferencia Nacional de Aeronáutica: Córdoba, 1933* (Córdoba: Biblioteca Aeronáutica, 1934), 75-85.

<sup>78</sup> “Convención para la reglamentación aérea internacional,” *Cámara de Diputados*, Orden del día no. 88, September 29-30, 1934, 3304-3391.

million pesos for the 1924 budget were dedicated to the purchase of eleven new Curtiss Orioles and Jennys. The rest of the funds were for new hangars and subsidies for the nation's aero clubs.<sup>79</sup> To manage these projects, the División de Líneas Aéreas within the SAE was expanded into the Departamento de Aviación Civil, and Francisco Torres—the most stalwart proponent of the “logic of velocity”—was placed in charge.

The subsidy scheme created by the Departamento de Aviación Civil (DAC) in 1924 revealed the Army's priorities. The first report on the DAC's activities in January 1925 emphasized that the new policies were for the “collective benefit” beyond just Buenos Aires; they placed special importance on flight training in the northern and southern regions of the country. The aero clubs of the interior, such as the Aeroclub Santiago del Estero, Chaco, and Tucumán received equal funds—if not more—than their equivalents in the capital region, despite the fact the latter were producing the vast majority of the nation's pilots. The DAC also provided provincial clubs with Army pilots and mechanics to oversee flight training. Two conscripts were assigned to provide runway services at the aero clubs in Mendoza, Junín, Las Flores, Tucumán, Santiago del Estero, Salta, Chaco, and the CAC in Buenos Aires.<sup>80</sup>

The report's likely author, Torres, defended the subsidization of flight training at the aero clubs, as opposed to sponsoring commercial flight centers, which was evidently the common practice in Europe. Torres noted the commercial system was illogical in Argentina, where “aviation is practiced solely for the love of flight, since at the moment there are no possibilities of practicing it as a *modus vivendi*’ by the many pilots that already exist...”<sup>81</sup> He argued that

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<sup>79</sup> “Fomento de la Aviación Civil por el Estado,” *Aviación*, January 31, 1924, 8.

<sup>80</sup> “Memoria del Departamento de Aviación Civil del Servicio Aeronáutico del Ejército, Año 1924,” reprinted at length in *Aviación*, January 1925, 7-14.

<sup>81</sup> “*Lo que sí es ilógico es que se pretenda implantar como sistema único en donde la aviación es practicada únicamente por amor al vuelo, ya que no existen por el momento posibilidades de practicarla como "modus vivendi" por los muchos pilotos que ya existen y cuando éstos son por lo general, modestos entusiastas.*” “Memoria del Departamento de Aviación Civil...1924,” 4.



aero clubs have a competitive advantage over commercial flight schools since they did not need to generate an economic return and often received charitable or state donations of land, equipment, and technical personnel.<sup>82</sup> Torres, already responding to criticism, then emphasized:

Before proceeding, it is appropriate to ratify once again the statements made so many times that: “*the autonomy enjoyed by civil institutions is absolute, and that the only direct intervention by the comptroller of this Department [i.e. Torres] has been from the point of view of teaching methods and [ensuring] efficient safety of flight equipment.*”<sup>83</sup>

The activities of the DAC immediately produced controversy, although the civilian community remained divided on the issue of Army influence. The majority of aero clubs, the national press, and the Centro de Aviación Civil were initially aligned with the Army. Articles in *La Prensa* and *La Razón* argued that civil aviation was in its embryonic stage and naturally needed the support of the Army and Navy to advance. They thought the long-established practice of joint civil-military initiatives like the creation of the EMA by the ACA was the best structure for developing national aviation. Many supporters emphasized the importance of both military and civil aviation for the nation’s security.<sup>84</sup>

But the DAC was clearly infringing on the authority of the Aero Club Argentino and the Federación Aeronáutica Nacional. No official legislation existed to regulate domestic aviation, but the Army had found a way to manage the industry without congressional backing. Officially subsidized clubs had to also accept SAE supervision of their activities.<sup>85</sup> This power was a direct

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<sup>82</sup> “Memoria del Departamento de Aviación Civil...1924,” 4-5.

<sup>83</sup> Italics original. “*Antes de proseguir, es oportuno ratificar una vez más, las declaraciones tantas veces formuladas de que: “la autonomía de que gozan las instituciones civiles, es absoluta, y que la única ingerencia directa de contralor de este Departamento, lo ha sido desde el punto de vista de métodos de enseñanza y estado eficiente de seguridad del material de vuelo.”* Ibid., 5.

<sup>84</sup> The following article contained a series of reprints from *La Razón* and *La Prensa*: “Interesantísima encuesta realizada por “La Razón” con motivo de la petición de la autonomía a la Aviación Civil de la Militar,” *Aviación*, January 1925, 13-4.

<sup>85</sup> This was formally codified in a decree in 1925, to be discussed below. In 1924 this system may have been more informal.

challenge to the FAN, which claimed the right to regulate sport flying and elementary training. The ACA protested and suggested the creation of a new “Comité de Aviación Civil” to manage the Army’s program.<sup>86</sup> In a twist, President Alvear signaled his support for the old aero club, suggesting the Army had gone too far in its policies.<sup>87</sup>

The CAC, via *Aviación* magazine, vehemently condemned the ACA’s proposal. The January 1925 issue was almost entirely dedicated to the purpose of supporting the Army’s activities. It cited conversations with some of the presidents of provincial aero clubs, who said the FAN lacked the resources to aid their precarious operations. They emphasized that “[Army] interference does not exist in the regional aerodromes.” But the CAC saved its most biting criticism for the ACA itself. In one article, a journalist for *Aviación* wrote “Argentine civil aviation is not the Aero Club Argentino.” The poor state of the ACA—he claimed—was due to the mismanagement of its leadership, not government policy. Their obstinacy in face of military initiatives would inevitably further erode the ACA’s preeminence:

If they continue on this train they will only reap the ridiculous and precipitate the irrevocable fall of an institution that, if innocuous in the present, bears in its name a world of glorious traditions of ‘heroic aviation,’ of that era that was filled only by Newbery and that since the day of his tragic disappearance, nothing was done to preserve the name of the ACA unscathed, since then, year after year, people eager for cheap fame have disputed their management positions...<sup>88</sup>

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<sup>86</sup> Unfortunately I do not have any sources from the ACA or its supporters during this period. I have inferred their concerns from other organization which were criticizing the ACA. There remains the possibility the objections of the ACA were more substantial or specific.

<sup>87</sup> “Acerca de las supuestas manifestaciones atribuidas al P.d.l.N. sobre la Aviación Civil,” *Aviación*, January 1925, 9-11.

<sup>88</sup> “*De seguir en este tren sólo cosecharán el ridículo y precipitarán la caída irremisible de una institución que si innocua en el presente lleva en su nombre un mundo de gloriosas tradiciones de la «aviación heroica», de aquella era que llenara únicamente Newbery y que desde el día de la trágica desaparición de éste, nada se hizo para conservar incólume el nombre del ACA, disputándose desde entonces, año tras año, sus puestos directivos personas ávidas de popularidad barata...*” “Acerca de las supuestas manifestaciones,” 10.

The ACA's proposal for a Comité de Aviación Civil was just another FAN in disguise.<sup>89</sup> The CAC undoubtedly saw the SAE's activities as a counterbalance to the power of its civilian rival. They benefited from the Army's program, receiving a 4,100 peso subsidy, new hangars, and a new Curtiss JN 90HP trainer in 1924. The ACA, in contrast, received 1000 pesos from the SAE, but they managed to acquire a 10,000 peso subsidy from the Ministerio de Relaciones Exteriores y Culto, a sign that they had friends elsewhere in the government.<sup>90</sup>

The controversy of 1925 did little more than dethrone Torres from his leadership of the DAC. According to criticism in *Aviación* two years later, Torres was a particularly meddlesome official who managed to draw the ire of many aero club members through his micromanagement.<sup>91</sup> He was replaced in late 1925 or early 1926 by Jorge B. Crespo, another believer in the power of aviation to develop Argentina's interior. In what would become a pattern in the DAC and its successors, the change of leadership had essentially no effect on the department's policies. In fact, evidence suggests that Army officials doubled down on their efforts to support provincial aero clubs and regulatory practices. In 1926, the Alvear administration, frustrated by Congress, decided to pass their air traffic proposal by decree.<sup>92</sup> The "Reglamentación de la Aeronavegación" formally codified the power of the DAC. In May 1927, the Servicio Aeronáutico del Ejército was expanded into the Dirección General de Aeronáutica [General Directorate of Aeronautics] under the Ministry of War, and the Departamento de

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<sup>89</sup> "Acerca de las supuestas manifestaciones," 11.

<sup>90</sup> "Memoria del Departamento de Aviación Civil...1924," 7-8.

<sup>91</sup> "El Departamento de Aviación Civil, Sus Antecedentes y Acción Desarrollada," *Aviación*, December 1926, 11-12.

<sup>92</sup> The exact sequence of events around this decree are unclear. It is not clear if the decree's first appearance is as a proposal, or if it had already been enacted without full acceptance from the Ministry of War in September 1925. In July 1926, the *Boletín Militar* published the decree saying it was as of then approved by higher officials. "Reglamentación Aérea," *Aviación*, December 15, 1925, 19; "Reglamentación de la Aeronavegación sobre el Territorio de la República," *Boletín Militar* 2020, 2ª parte, July 30, 1926.

Aviación Civil became the Dirección de Aeronáutica Civil (conveniently still “DAC”). The Army retained its authority over all official civilian aviation programs.<sup>93</sup>

Although the exact mechanisms for the state’s intervention in civil aviation are unclear in the law, aero clubs now had to meet more stringent standards for flight training. The reason for this increased regulatory scrutiny was a plan by the DAC director Jorge Crespo to decentralize military pilot training. Instead of creating new military institutions or expanding the Escuela Militar de Aviación, authorities delegated the preparation of potential military pilots to provincial aero clubs. Prospective military pilots received 1000 pesos to train at their local club. Crespo argued that aero clubs produced pilots more cheaply than the EMA, and he hoped to take advantage of this efficiency while also expanding the Army air services’ presence in the provinces.<sup>94</sup> In addition to a new wave of subsidies and aircraft allocations, the DAC expanded its regulation of licensing. For the first time, Army pilots and officials could conduct licensing exams for students they themselves trained at provincial aero clubs.<sup>95</sup> This now meant that a prospective pilot could spend his training from start to finish under the supervision of military officials, with military-donated equipment, despite belonging to a civilian aero club.

Although there would be minor alterations, for example to the type or amount of subsidy, the program Crespo instituted in 1926 remained largely intact for at least the next decade.<sup>96</sup> This was in spite of the coup d’état of September 1930, which resulted in Crespo’s dismissal from the DAC. From its inception, his program produced a flurry of criticism and this time it was not just the ACA and its affiliates. Most of the civilian community, including the Centro de Aviación

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<sup>93</sup> Decree reprinted in the D.G.d. Aeronáutica, *Memoria correspondiente al año 1927* (N.p., 1928), 2-3.

<sup>94</sup> Crespo’s pamphlet laying out his plan is reprinted at the beginning of Fernando Menendez, *Fomento de la aviación civil. Observaciones a un Proyecto absurdo* (N.p., 1926), 3-4.

<sup>95</sup> “Autorizando a la Dir. Del Servicio Aeronáutico del Ejército para otorgar a todos los pilotos civiles cuyos exámenes hayan sido tomados por ella,” *Boletín Militar* 7376, 1ª Parte, June 18, 1926.

<sup>96</sup> The main shift appears to have been from a flat subsidy for each prospective pilot to a fuel subsidy for trainers.

Civil, was alienated by the Army's policies. Unlike during the later period of media censorship under the Peronist government, these critics were able to loudly declare their misgivings about the DAC in the public sphere.

At a basic level, even former allies of the Departamento de Aviación Civil's initiative felt that the Army's experiment with supporting civil aviation was failing almost as soon as it had begun. Institutions were still closing, pilots were retiring for lack of work, and airplanes were sitting idle. Anonymous authors in *Aviación* argued that for all of the funds dispensed by the Army, the program had only helped 45 pilots receive their *brevets*. Meanwhile, a mere 31 civilian pilots were struggling to maintain their equipment and training.<sup>97</sup> The aircraft purchased by the SAE in 1924 were rapidly aging and poorly maintained. All that authorities had shown was an "ambition...to subordinate to the [DAC], at any price, all aeronautical manifestations that did not belong to the military or naval branch."<sup>98</sup>

Most of these critics argued that the system of subsidies and regulations was burdensome and premature. Some, like Fernando Menendez, thought that Crespo's claim that aero club pilots could be trained more cheaply was specious. He noted that such pilots flew for fun and paid for their training out of pocket—naturally they would seek to train in fewer hours. The key factor, according to Menendez, was the quality of the pilots, not the hours under their belt. Military pilots took more hours at the EMA because of the better quality of that educational experience and higher demands placed on Army aviators. Menendez concluded with another frequent criticism: the Army's policies did not encourage pilots to continue flying after receiving their *brevet*, or for them to remain "current" in today's language. What did it matter if there were a

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<sup>97</sup> "La Aeronáutica Argentina, Lo que nos sugiere el año 1926," *Aviación*, December 1926, 10.

<sup>98</sup> "El Departamento de Aviación Civil, Sus Antecedentes y Acción Desarrollada," *Aviación*, December 1926, 11-12.

bunch of *argentinos* with licenses if they never practiced? Flying was a perishable skill after all.<sup>99</sup>

The regulations were often seen as too onerous for sport aviation. They required student pilots to take medical exams that supposedly took multiple appointments and days, which club owners argued decreased popular interest since those who worked elsewhere to support their training were already short on time and money. The regulations also imposed new minimum standards of training for student pilots. In March 1928, the Aero Club Argentino announced that it was withdrawing from the subsidy system. Its directing committee sought to regain the “freedom of action” denied under the Army’s policies. The main offense, according to a letter sent to Crespo and the DAC, was the raising of the minimum flight hours requirement for licensing to match military standards:

Those who have been trained at the ACA aviation school; those who have received their degree when the institution was under their exclusive responsibility, have demonstrated at least as much knowledge after 10 hours of flight as those who have received their diploma after 60 hours, under the new system.<sup>100</sup>

While this was certainly an exaggeration, it is clear the military and civilian community disagreed about the standards for pilot training. The ACA withdrew from the Army’s program, but in a few years they would reappear on the list of funded clubs.<sup>101</sup>

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<sup>99</sup> Menendez, *Fomento de la aviación civil*, 6-10, 12.

<sup>100</sup> “*En la escuela de aviación del ACA se han formado numerosos pilotos; los que han recibido su título cuando la institución estaba a su cargo exclusive, han demostrado a las 10 horas de vuelo, tantos conocimientos, por lo menos, como los que poseen los que han recibido su diploma después de 60 horas, bajo el nuevo sistema.*” “El ACA resolvió ayer prescindir del apoyo de la Dirección de Aeronáutica Civil,” *La Prensa*, March 16, 1928. The minimum flight time requirements under the government’s 1926 regulations are unclear. The ACA’s claim of 60 hours under the new system does match the hours typically taken at the EMA for military pilots, but they were held to a higher standard. The ACA’s claim that they could train basic pilots in 10 hours flight time is absurd, likely a holdover from the early years of flight training.

<sup>101</sup> “Dirección de Aeronáutica Civil reglamentó la ayuda a las instituciones,” *Aero*, April-May 1933, 14.

The most extensive and cogent criticism of the DAC came from an ally of the Centro de Aviación Civil, the civil pilot, director of *Aviación* magazine, and eventual historian of Argentine aviation Antonio M. Biedma Recalde. In his 1926 book *La aeronáutica civil amenazada* [Civil Aeronautics Threatened], Biedma Recalde argued that the government's program had "an absolute lack of a defining orientation." The authorities had shown a consistent "miscomprehension" of the needs of aviation, falling prey to the "circumstances of the moment" instead of exercising political and economic foresight around the future of the technology.<sup>102</sup> By restricting the federal government's involvement in aviation to a poorly conceived flight training program, the authorities were neglecting the broader needs of an industry just on the verge of existence. Civil aviation was more than a reserve of piloting skill in the general population. It needed institutions and laws to create and sustain airplanes, operators, and pilots. Pouring funds into civic clubs to train a handful of pilots would in no way contribute to aviation becoming an economically sustainable activity for all parties involved.<sup>103</sup> The state—in essence—lacked a broader vision.

This criticism may at first seem to vindicate Army officials like Crespo and Torres. Both men advocated for the creation of air routes, an aircraft industry, and programs for mass pilot training. Indeed, one can easily fault Crespo, Torres, and their fellow Army aviation boosters for having too much vision. Biedma Recalde and later the fierce critic of the FMA Julio A. Noble pejoratively deemed the Army's plans "utopic."<sup>104</sup> Yet Biedma Recalde wrote in 1926 of the purpose of civil aviation in terms quite similar to the Army aviation boosters:

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<sup>102</sup> Antonio M. Biedma Recalde, *La aeronáutica civil amenazada. El departamento de aviación civil, creando para su fomento y control, carece de la capacidad necesaria* (N.p.: [Aviación?], 1926), 5-6.

<sup>103</sup> Biedma Recalde, *La aeronáutica civil amenazada*, 13-4.

<sup>104</sup> *Ibid.*, 14; Julio A. Noble, *La aeronáutica nacional y la Fábrica de Aviones de Córdoba* (Buenos Aires: Partido Demócrata Progresista, 1935), 12.

[Civil aviation] is in the capability of its members, from its leaders to the last runway attendant; it is in the capability and possibilities of the industries that it encompasses, from the large plants and factories to the most insignificant workshop, as well as all the related national raw materials; it is the sum of the resources inherent to aeronautics attracted to the country by the intensity of its activities and by the degree of its possibilities; it is in the work of *argentinización* that it would develop in the distant territories of the south, for example...<sup>105</sup>

Biedma Recalde also remarks that he supported the original civil aviation plans laid out by Enrique Mosconi in 1921-1922.<sup>106</sup>

Although they largely wanted the same ends, Biedma Recalde and likeminded individuals had a fundamentally different understanding of the relationship between aviation and development from many of their counterparts in the Army. As we saw above, men like Torres and Crespo believed that the speed of the airplane and its ability to overcome geographical constraints would create a better connection between centers and peripheries. The creation of new or faster communication would then stimulate progress or development in the periphery. More specifically, by establishing an aviation industry in the provinces, the industrial and political power of the nation could be decentralized away from Buenos Aires. For the Army, this translated into supporting provincial aviation as well as aspiring to create air services between the capital and the frontier regions. They decentralized elementary training for military pilots, accepting the administrative burden of regulating flight training across a wide variety of local contexts, in an effort to promote flight in the provinces. The consistently poor performance of

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<sup>105</sup> “*Es en la capacidad de sus miembros integrantes, desde sus dirigentes al último auxiliar de pista; es en la capacidad y posibilidades de las industrias que abarca, desde las grandes usinas y fábricas al más insignificante taller, a la vez que de todas las relativas a las materias primas nacionales; es en la suma de recursos inherentes a la aeronáutica atraídos al país por la intensidad de sus actividades y por el grado de sus posibilidades; es en la obra de argentinización que desarrollaría en los lejanos territorios del sud, por ejemplo*” Biedma Recalde, *La aeronáutica civil amenazada*, 11-12.

<sup>106</sup> *Ibid.*, 21.



these small aero clubs, often fatally underfunded, operating in harsh climatic conditions, and without basic infrastructure, makes Crespo's aero club "efficiency" argument appear disingenuous.

Biedma Recalde recognized this reality in his harsh critique of the state's aero club policies. According to his figures, over the preceding three years the Army sent far more resources to the provinces than to the clubs in the Buenos Aires, namely the Centro de Aviación Civil. The small provincial clubs in the west and northwest had received more and better aircraft, even though the CAC itself was woefully short on trainers. Although they had a similar number of airplanes to the clubs in Córdoba or Santiago del Estero, the CAC had four or five times as many students. This created a strange situation where there were four airplanes for Tucumán's one student, while in Buenos Aires the CAC was struggling with sixteen students for their one operating airplane.<sup>107</sup>

Such efforts, in Biedma Recalde's mind, reflected the Army's "regional interests" beyond military necessity. Even if the Army had enacted a program more in line with their strategic needs, Biedma Recalde also emphasized that experience abroad was increasingly revealing a divergence in the infrastructural, legal, and technical needs of commercial and military aviation. In his experience, the Army frequently retreated behind the excuse of regional interests or military secrecy when pressed about the deficiencies with their policies.<sup>108</sup>

Biedma Recalde argued that the Army was wasting resources by trying to create local aviation programs in areas that were for the present time incapable of sustaining them. Aviation is expensive and naturally efforts should be concentrated in regions with enough population and wealth to support it—essentially the capital region. The state should fund and protect businesses,

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<sup>107</sup> Biedma Recalde, *La aeronáutica civil amenazada*, 17-9.

<sup>108</sup> *Ibid.*, 14, 21.

not social clubs, which can make the technology useful for society, including by providing the defense and communications needed by frontier regions.<sup>109</sup> Aviation may aid the spread of development to peripheries, but first it needed to be successfully established in the center.

Antonio Biedma Recalde was not alone in this understanding of the relationship of aviation to development. One social commentator wrote in *El Hogar* in 1929:

One thing happens to Argentine aviation: she is the daughter of a poor family. There is, in effect, an Argentine poverty, no less visible or less great than our wealth... We are rich, and we are advanced, but much of the country lives in poverty and backwardness. In many cities running water is still a problem... The basic problems of civilization are still unsolved. Can you fly very high with that ballast?<sup>110</sup>

He argued, quite reasonably, that provincials in the poor regions of the nation needed running water, education, and economic opportunity before they might consider taking up aviation *en masse*. Development allowed for aviation, not the other way around.

Support for this point of view also came from another, surprising source: the Navy. In August 1930 the prominent naval aviator and official Marcos A. Zar published a series of articles in *La Prensa* that politely criticized the Army's plan for the flagging Latécoère airmail operation, Aeroposta Argentina. The nascent French air service had flown from Bahía Blanca down through Patagonia to Río Gallegos from 1929 to 1931 before financial trouble in France brought the operation to a halt. This prompted the Army to consider taking over the airmail line.<sup>111</sup> Zar echoed many others by first emphasizing the lack of a cohesive plan on the part of authorities,

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<sup>109</sup> Biedma Recalde, *La aeronáutica civil amenazada*, 13-4, 21.

<sup>110</sup> "Una cosa le pasa a la aviación argentina: es hija de familia pobre. Hay, en efecto, una pobreza argentina, no menos visible ni menos grande que nuestra riqueza.... Somos ricos, y estamos adelantados, pero gran parte del país vive en la pobreza y el atraso. En muchas ciudades es todavía un problema el servicio de aguas corrientes...Están sin resolver los problemas elementales de la civilización ¿Se puede volar muy alto con ese lastre?" "La Aviación Argentina," *El Hogar*, June 21, 1929, 3.

<sup>111</sup> Aeroposta Argentina did receive state subsidies, but they were given by the Ministry of the Interior after 1931, and the airline was still privately owned and operated. We will return to the subject of state airlines in chapter eight. For the history of Aeroposta Argentina, see Piglia, "La Aeroposta Argentina."

including inconsistent budgetary allocations by the executive branch. But he went on to make what might seem a subtle point: “the study of our airways should guide us towards the exploitation of the large lines” connecting Buenos Aires to other centers like Montevideo, Rosario, and Bahía Blanca. The creation of “local lines” between regional cities or towns, such as the planned line from Bahía Blanca to Río Gallegos, was too expensive and ineffective. Such lines involved an “*a priori*” assessment of “economic-political benefits” for the provinces. Although, Zar supposed, local lines would generate political goodwill and hence justify their own existence, all that would be accomplished is creating an expensive new charge for the state to maintain indefinitely. Zar did not believe such services would generate development and the resulting demand for commercial airlines in any reasonable amount of time.<sup>112</sup>

When change finally arrived in the civil aviation community, it was not due to the many protests of men like Menendez, Biedma Recalde, and Zar. In 1931 the Dirección de Aviación Civil was passed from military to civilian control, under the Ministry of the Interior. According to *Aero* magazine—an Argentine aviation enthusiast publication—civil aviation’s “independence was logical to some extent” since “civilian pilots have become more capable and the technicians have performed well.”<sup>113</sup> But the 1931 executive decree that mandated the reorganization instead cited the changing priorities of state regulators. The main charge of the DAC was now managing the airmail services provided by international and national carriers.<sup>114</sup> The new arrangement placed the DAC and the other sponsor of such services—the Dirección General de Correos y Telégrafos—together under the Ministry of the Interior.<sup>115</sup>

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<sup>112</sup> Marcos A. Zar, “Cómo debe organizarse la aviación civil,” *La Prensa*, August 10, 1930.

<sup>113</sup> “La Independencia de la Aviación Civil,” *Aero*, March-July 1931, 1.

<sup>114</sup> Beginning in 1929, first French, then US and German airlines reached Buenos Aires with growing regularity. Although passenger services were on the rise, these operators primarily transported mail.

<sup>115</sup> The decree is partially reproduced in Zuloaga, *La victoria de las alas*, 1st ed., 189.

Unsurprisingly, the civilian community quickly grew disillusioned with the change. They discovered that the aero club subsidy program would continue largely unchanged,<sup>116</sup> although now with lower budgets as the majority of the DAC's funds went to Aeroposta Argentina. Independence had only closed off the funding tap from the Army.<sup>117</sup> The Army air services did not take kindly to their new situation either. They openly challenged their civilian counterparts in the Interior Ministry. When the DAC refused to create a couple of new aero clubs to offload excess aircraft from the FMA, the Army unilaterally established the new Aero Club Pigüé under its control.<sup>118</sup>

The aero club system established by Torres, Crespo and their comrades at the SAE limped into the mid-1930s, harried by their many critics. The true reckoning was on the horizon. The DAC kept the aero clubs alive, but the constant infighting, lack of comprehensive regulation, and low budgets left local flight training in a precarious position. The cost of learning to fly does appear to have declined over the interwar period, and surely state subsidies further reduced the barriers to entry for the industry. The number of "active" pilots in the country—whether they be in training or licensed—had risen from 85 in 1929 to an average of 334 from 1934 to 1938.<sup>119</sup> Civilian flight hours (excluding commercial airlines) rose in consistent

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<sup>116</sup> "La Dirección de Aeronáutica Civil reglamentó la ayuda a las instituciones," *Aero*, April-May 1933, 14.

<sup>117</sup> Once the funds for Aeroposta Argentina were subtracted, the budget for supporting civil aviation was lower than it had been in 1924. "Los Aero Clubs ante el Gobierno," *Aero*, March-April, 1932, 11; "La Dirección de Aeronáutica Civil ha solicitado el aumento de su presupuesto de gastos para el año próximo," *Aero*, July-August, 1934, 22.

<sup>118</sup> This was an accusation brought by the Congressional Deputy Julio A. Noble in 1935. Noble, *La aeronáutica nacional*, 176.

<sup>119</sup> The available statistical information is spotty and sometimes suspect, especially until 1933. Argentines at the time complained about the poor statistical data published by aviation authorities. *Aero*, October 29, 13; and the D.G.d. Aeronáutica Civil, *Boletín de Aeronáutica Civil*, in 1935 (p. 6), 1936 (p. 48), 1937 (p. 40), and 1939 (p.30).

increments from a low of 214 in 1923 to 14,657 in 1935. With only minor dips, that number would continue to rise for next ten years.<sup>120</sup>

But the DAC did little to make flying safer. The costs of a decentralized flight training system that was underregulated, underfunded, and understaffed became increasingly clear in the form of persistent and deadly accidents. A 1938 government-commission study by lawyer Eduardo Bullrich found “serious flaws” in the basic training system: “In reality there is no guiding and regulating invention by authorities and the maintenance of professional capacity and its improvement is left to the initiative of the clubs or the individual interested party.”<sup>121</sup> Civil aviation appeared in a state of anarchy to contemporaries.<sup>122</sup>

The report cited the recent creation of the Escuela Nacional de Aeronáutica in 1937 as a source for optimism. An advanced training institution for professional pilots, the school was also supposed to standardize aviation pedagogy across Argentina. Authorities created the first certification for “flight instructor” to improve the quality of training nationwide. The creation of a centralized institution in Buenos Aires under the control of the Ministry of the Interior was a small but notable step away from the program Jorge Crespo instituted in 1926.<sup>123</sup> Despite this reprieve, military officials would soon find their mandate not just restored, but greatly expanded.

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<sup>120</sup> There were likely many factors that prompted this improvement in addition to government policy. There may have been a perception—trumpeted by the industry itself—that airplanes were much safer by the 1930s. As we saw in chapter four, the growing belief that aviation was a worthy and reasonable career aspiration for humbler people likely drove more to hop in the cockpit. “Memoria del Departamento de Aviación Civil de Servicio Aeronáutico del Ejército: Año 1924,” *Aviación*, April 1925, 20; and the D.G.d. Aeronáutica Civil, *Boletín de Aeronáutica Civil* in 1936 (p. 1), 1937 (p. 10), 1940 (p. 85), and 1942 (p. 36).

<sup>121</sup> “*En realidad no existe una intervención orientadora y reguladora de la autoridad y el mantenimiento de la capacidad profesional y su perfeccionamiento está librado a la iniciativa de los clubes o a la particular de los interesados.*” Bullrich, *Régimen y organización*, 205.

<sup>122</sup> *Ibid.*, 13-4, 159, 205.

<sup>123</sup> “Vasto proyecto de organización para formar pilotos aviadores civiles,” *La Prensa*, July 27, 1940. This article featured the original decree creating the Escuela Nacional de Aeronáutica.

The Peronist aviation project brought new life to national flight training while also ushering in another period of military dominance.

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Throughout the interwar period, the core uncertainty about the nature and promise of aviation technology persisted: does aviation produce development, or is it only a byproduct of development? This question naturally latched onto a preexisting debate that had long been an intrinsic aspect of the Argentine nation: should we look to the provinces or Buenos Aires for our future? This question and its many hypothetical answers were harnessed by aviation boosters in the civilian and military camps. The dividing line was never strictly across civilian-military lines. The Army air services largely stuck by their belief that aviation will produce development and they found support among segments of the civilian community. Simultaneously, Army air officials were criticized by their counterparts in the Navy and other divisions of the Army. Others questioned the very notion that industrialization was the desirable path for their nation in the first place. This would be especially evident with the Army air service's largest project of the interwar period, the *Fábrica Militar de Aviones* in Córdoba. The Argentine Army's efforts to build airplanes proved even more controversial than their regulation of flight training. The bickering over aero club policy in the 1920s would look quaint in comparison to the FMA scandal of 1935, which threatened the Army's very right to manage the aviation community.

**Chapter Six**  
**The Military Aircraft Factory and its Discontents, 1919-1936**

*“Es una utopía pensar que podemos conquistar con la Fábrica Militar de Aviones, la independencia de nuestra aeronáutica, de la industria extranjera.*

“It is a utopia to think that we can conquer with the Military Aircraft Factory, the independence of our aeronautics, from foreign industry.”

Speech by the Deputy Julio A. Noble in a 1935 Congressional session. Noble, *La aeronáutica nacional*, 12.

On a spring day in October 1927, a few hundred military officials, civilians, and politicians gathered seven kilometers outside of the city of Córdoba. The Minister of War, the Governor of Córdoba Province, the director of civil aviation Jorge B. Crespo, and dozens more officials were there to inaugurate the latest military installation. They stood looking at a collection of workshops which sat picturesquely in front of a “massif of the nearby mountains.” The buildings “present[ed] a beautiful appearance with [their] numerous white pavilions” and “red tile roofs.”<sup>1</sup> Over the past six months, construction crews had erected the first workshops of the Fábrica Militar de Aviones [Military Aircraft Factory], an institution officials hoped would soon be the hub of a thriving military-industrial complex in the heart of the Argentine interior.

In front of a crowd of civilians, the national press, and eighty factory technicians, Minister of War General Agustín P. Justo declared that the factory “will become transcendental for the Nation, for the province and for the future of the mechanical industries of the country in their development.”<sup>2</sup> With the band of the 13<sup>th</sup> Infantry playing behind them, Justo and the

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<sup>1</sup> “Interesante Resulto el Acto Inaugural de la Fábrica de Aeroplanos,” *La Prensa*, October 11, 1927.

<sup>2</sup> “...obras que se harán trascendentales para la Nación, para la provincia y para el porvenir de las industrias mecánicas del país en su desenvolvimiento” “Interesante Resulto el Acto Inaugural.”

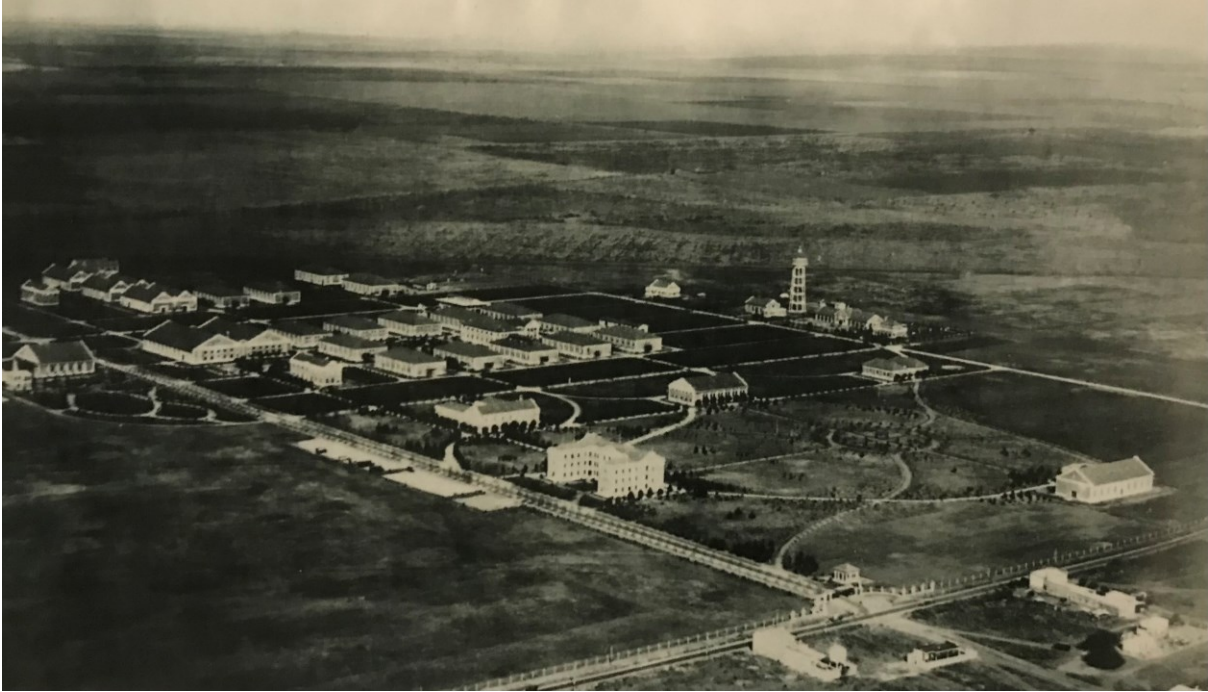


Figure 6.1. An aerial photograph of the Fábrica Militar de Aviones in May 1933. Arreguez, *Fábrica militar de aviones*, 284.

factory's new director Francisco de Arteaga then walked over to one of the main workshops. Together they opened an electrical panel with "a key that had a ribbon in the national colors." With the flick of a switch, the power was turned on, setting "all the mechanisms in motion in that part of the factory." The factory personnel evidently went to work immediately. The journalist for *La Prensa* artfully described the resulting scene:

The workers and mechanics, at their posts, dedicated themselves to their work, while outside, under the splendid blue sky and over the red roof of the factory, the engines of the military and civilian planes that had come to participate in the ceremony also hummed, tracing circles around the buildings.<sup>3</sup>

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<sup>3</sup> "Los operarios y mecánicos, en sus puestos, se entregaron a la tarea, mientras afuera, bajo el espléndido cielo azul y sobre el tejado rojo de la fábrica, zumbaban también los motores de los aviones militares y civiles que habían concurrido a participar en la ceremonia, describiendo círculos en torno de los edificios." "Interesante Resulto el Acto Inaugural."



In a small provincial city in the center of the Argentina *Pampa*, the state's first major experiment in aircraft production began with a sense of pride, optimism, and expectation.

The *Fábrica Militar de Aviones* (FMA) represented the latest initiative in the Army's broader shift to supporting basic state industry for the sake of national defense and development. As we saw in the previous chapter, Army officials increasingly believed that the nation needed to develop its interior through new transportation infrastructure and the sponsorship of industry. The first military-run industrial project was the national oil company *Yacimientos Petrolíferos Fiscales* (YPF), created in 1922, which undoubtedly represented the most advanced industrial operation in Argentina's far south. The second major industrial project was the new aircraft factory in Córdoba.

Opened in 1927, the FMA and its later iterations have remained at the heart of the Argentine aircraft and motor industry to this day. As we shall see, the factory came to have an important role as an articulator and disseminator of technical standards in industrial design and production beyond aviation, especially for new metals and chemicals. It became a critical educational institution, fostering the skills of engineers, technicians, and apprentices from around the country. The FMA, in essence, was the state's first significant research, regulation, and education institution in aviation. Yet the factory was also, of course, meant to produce airplanes; not just experimental aircraft but usable production models that could support the growth of the national aviation industry. To pull off this feat, officials aspired to expand the local production of aircraft from the artisanal to the industrial scale.

But this mandate presented military aviation officials with another slew of difficult questions: Should production be based on licenses or original designs? What kinds of aircraft does the country need? Should they be built from metal or wood? As we shall see, cultural and

political motives often lay at the heart of the official answers to these questions. Despite the practicality of building aircraft from licensed designs or from wood, officials chose the riskier path of original metallic designs—one which held many unknowns for Argentine engineers and technicians. Men like Bartolomé de la Colina, the military engineer in charge of the FMA during the early 1930s, believed their knowledge of the “science” of “*aerotécnica*” [aerotechnics] would mitigate this risk.

As it turned out, they overestimated the power of *aerotécnica* to resolve the many challenges of aircraft design. The factory did produce a variety of different civilian and military models, including a series of original prototypes. But this achievement was quickly marred by doubts over the airworthiness of these creations, which blossomed into a national political controversy in 1935. The concentration of power in the hands of the military—as a producer, inspector, and regulator of aviation technology—generated new concerns over the trustworthiness of the increasingly politicized Argentine Army and the risks being imposed on Argentines by its development projects. The problems around aircraft production threatened to undermine the military’s broader credibility as an impartial political and technical arbiter in Argentine society.

### **The Origins of the Fábrica Militar de Aviones and the First Period of Licensed Production, 1919-1930**

The Argentine aircraft and aeroengine industries were faring even worse than their flight training counterparts in the mid-1920s. As we saw in chapter two, before and during World War I there were a handful of civilian builders of aircraft in addition to the more substantial workshops at the Escuela Militar de Aviación. These operations built airplanes in an artisanal

manner, constructing copies of European Blériot and Farman aircraft with minor alterations to improve performance or durability. Airplane engine construction remained even more rudimentary due to the difficulty of acquiring the needed raw materials and the lack of local experience in advanced metallurgy. Although a small batch of reproductions of Rhône and Gnome engines were produced, these efforts were short-lived. None of the original civilian aircraft workshops survived the war, leaving the Army's EMA as the sole bastion of artisanal aircraft production in the country. No local producer could possibly hope to compete with the severely discounted—if not free—airplanes coming from abroad post war. At the beginning of 1925, an article in *Aviación* magazine painted a dire picture of the national aircraft and aeroengine industry. In their estimation, the nation had no civilian motor, airplane, or propeller industry. They also lacked the technical personnel, infrastructure, and laboratories that underpin aircraft production (see fig. 6.2).<sup>4</sup>

The civilian aircraft construction industry did have one success story. Two EMA aircraft builders, the Italian Jorge Sfreddo and the Argentine Luis Paolini, decided in 1920 to create their own workshop. Their business, Sfreddo & Paolini, was the only civilian operation that proved commercially sustainable through the entirety of the interwar period. The enterprise depended on contracts for aircraft repair and overhauls, especially for the large number of British and US aircraft in the country. Although they built a handful of original designs in the late 1920s and early 1930s, none was produced in quantity. Their efforts at original construction were stymied by the evolving technical requirements of state regulators, the miniscule local demand for private aircraft, and intense competition from far larger foreign manufacturers.<sup>5</sup>

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<sup>4</sup> “Aviación Civil y Aviación Militar,” *Aviación*, January 1925, 11.

<sup>5</sup> Unfortunately, repeated efforts to find the Sfreddo & Paolini corporate records have been unsuccessful. It is not clear if any of their documentation survives in archives. I remain dependent on the excellent chronicle provided by Francisco Halbritter, *Historia de la industria aeronáutica*, 176, 193-196.

EXISTEN		FRANCIA	ARGENTINA
Industria	—Motores	si	no
	Aviones	si	no
	Hélices	si	no
	Barnices	si	no
	otros elementos	si	no
Técnicos	—Ingenieros aéreos	si	2
	Constructores	si	no
	Inventores	si	no
Profesionales	—Pilotos	si	escasos
	Mecánicos	si	escasos
	Enteladores	si	escasos
	Montadores	si	escasos
Comercio	—Líneas	si	no
	Propaganda	si	no
Aeródromos	—Civiles	si	escasos
	Oficiales	si	2
	Comerciales	si	no
Escuelas	—Industriales	si	no
	Pilotajes	si	escasos
	Motoristas	si	no
Laboratorios	—Privados	si	no
	Oficiales	si	no
Legislaciones	—Internacionales	si	no
	Nacionales	si	no
	Privadas	si	no

Figure 6.2. How the Argentine aviation industry compared to its French counterpart in 1925. “Aviación Civil y Aviación Militar,” *Aviación*, January 1925, 11.

The virtual non-existence of a local aircraft and aeroengine industry was seen as a grave deficiency in the minds of many military and civilian aviation boosters. For the Army aviation theorists, local industry would reduce the dependence on foreign suppliers—which might be critical if war were to break out—and provide jobs across the country.<sup>6</sup> Antonio Biedma Recalde criticized the Departamento de Aviación Civil for buying aircraft abroad for its aero club program that could have been commissioned locally.<sup>7</sup> Most commentators in the 1920s and 1930s, even those who later criticized the state’s efforts, accepted that some sort of domestic

<sup>6</sup> Comisión Ejecutiva, *Comisión Ejecutiva Nacional Pro-Aviación Militar y Civil*, 11-13; Torres, *Fomento de la aeronáutica*, 78; Crespo, *El problema de la aeronáutica*, 43-5.

<sup>7</sup> Biedma Recalde, *La aeronáutica civil amenazada*, 10-11.

aircraft production capability was important for national security and progress. But to no one's surprise, they strongly disagreed over how this should be accomplished.

State authorities began to consider the creation of a national aircraft factory as early as 1918. The origins of the *Fábrica Militar de Aviones*—as it would become known—can be traced to an alliance of powerful political actors in interwar Argentina: the soon-to-be president Marcelo Torcuato de Alvear (1868-1942), his Minister of War and later president General Agustín P. Justo (1876-1943), and the aeronautical engineer and retired officer Francisco de Arteaga (1882-1962). Marcelo Torcuato de Alvear, a lawyer and prominent politician of the *Unión Cívica Radical*, was long a supporter of national aviation. He was a member of the ACA in its early years and sponsored legislation to improve the *Escuela Militar de Aviación*. During his stint as the ambassador to France, Alvear arranged for the EMA technician, Ambrosio Taravella, to enter the prestigious *École Supérieure d'Aéronautique et de Construction Mécanique de Paris* in 1918.<sup>8</sup> In his autobiography, Taravella recalled that Alvear was already interested in developing a national aircraft factory under the guidance of the most experienced aircraft builders and maintainers in the country: the Army.<sup>9</sup>

During the closing months of the First World War, Alvear entered into conversation with the retired major Francisco de Arteaga. According to the historian Francisco Halbritter, de Arteaga was “the ideological father” of the eventual military aircraft factory. He was educated in French Catholic institutions in Buenos Aires and Paris, before entering the *Colegio Militar* in 1896. De Arteaga later returned to Paris, entering an engineering course at the prestigious *L'École Polytechnique*. After serving as an officer in the Argentine artillery corps, he retired from active service in 1916 to enter the *École Supérieure d'Aéronautique*. Upon his graduation,

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<sup>8</sup> Halbritter, *Historia de la industria aeronáutica*, 235-6.

<sup>9</sup> Taravella, *Setenta años*, 68-9.

de Arteaga conducted an internship at Gustave Eiffel's famed aerodynamics laboratory. In 1918 he befriended Alvear, in the process becoming the main technical official who researched and organized the effort to create a national aircraft factory.<sup>10</sup>

The last man of the equation, General Agustín P. Justo, was also a friend of de Arteaga, the two having met as instructors at the Escuela de Tiro before World War I.<sup>11</sup> Justo, a university-educated civil engineer, was an ardent "military enthusiast of aviation."<sup>12</sup> Much like Alvear, Justo circulated in the most exclusive stratum of Argentine society. He was "highly respected in aristocratic circles"<sup>13</sup> and would play a leading role in national politics for the duration of the interwar period. As Alvear's Minister of War, Justo was omnipresent at public events for military and civilian aviation, and he presided over the Army's aero club program. As president from 1932 to 1938, he expanded the funds available for the national aircraft factory and protected it from harsh public criticism.<sup>14</sup>

General Justo was serving as the director of the Colegio Militar when Alvear won the presidency in June 1922. He was promoted to War Minister and immediately began to study the possibility of an aircraft factory. The project, from its earliest stages, was conducted with an air of secrecy. There was little political will for the national government to sponsor such an expensive and unprecedented plan. Preparations for the factory were instead quietly attached to much larger initiatives. In 1923, the Ministry of War submitted an enormous military armaments bill to Congress for 227 million pesos.<sup>15</sup> According to Robert Potash:

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<sup>10</sup> Halbritter, *Historia de la industria aeronáutica*, 235-6.

<sup>11</sup> Taravella, *Setenta años*, 68-9. [Marksmanship School.]

<sup>12</sup> Halbritter, *Historia de la industria aeronáutica*, 236.

<sup>13</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 13.

<sup>14</sup> Perhaps the most interesting obscure fact about General Justo is that on April 12, 1927 he was the first person in Argentina to "involuntarily" bail out of a stricken aircraft and survive thanks to a parachute. His near-death experience did not dampen his enthusiasm for the technology. The second person has also been mentioned here, then-Lt. Juan Rawson Bustamante on June 1, 1928. Biedma Recalde, *Crónica histórica*, vol. 1, 294.

<sup>15</sup> The sum was listed as 100 million pesos oro, which were each worth 2.27 pesos.

Justo used the tactic of surprise to have the bill taken up in the Senate in a secret session, and... his performance was so persuasive the bill was approved by every member except the lone Socialist senator.<sup>16</sup>

Within the bill was a 34 million peso allocation for the “support of industry” and the “acquisition of material” for the modernization of the armed forces.<sup>17</sup>

In October 1923, the organization tasked with carrying out this procurement, the Comisión de Adquisiciones en el Exterior [Commission for Exterior Acquisitions], was staffed by colleagues of de Arteaga. The following year, two new military officials, Alfredo Paladino and Bartolomé de La Colina, were sent to Paris to study at the École Supérieure d’Aéronautique. By late 1924, Justo directed the War Ministry to select a site for a group of new military arsenals. Córdoba was eventually chosen due to its “Mediterranean” climate and central strategic location in the country—a reasoning evident in Francisco Torres’ 1923 treatise.<sup>18</sup> Land was acquired for the project using the president’s power to expropriate grounds for military installations—all without any formal input from Congress. The Fábrica Militar de Aviones of Córdoba (FMA) was inaugurated on October 10, 1927 with Francisco de Arteaga as its first director and Ambrosio Taravella managing the fledgling operation’s workshops.

The goal of the FMA from the outset was the production of airplanes “in series,” or in sufficient quantity so as to bring a cost reduction per unit. Officials wanted to produce dozens of airplanes, not the trickle coming out of the Army workshops, and use the resultant savings from

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<sup>16</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 17.

<sup>17</sup> Halbritter, *Historia de la industria aeronáutica*, 237.

<sup>18</sup> Torres, *Fomento de la aeronáutica*, 78.

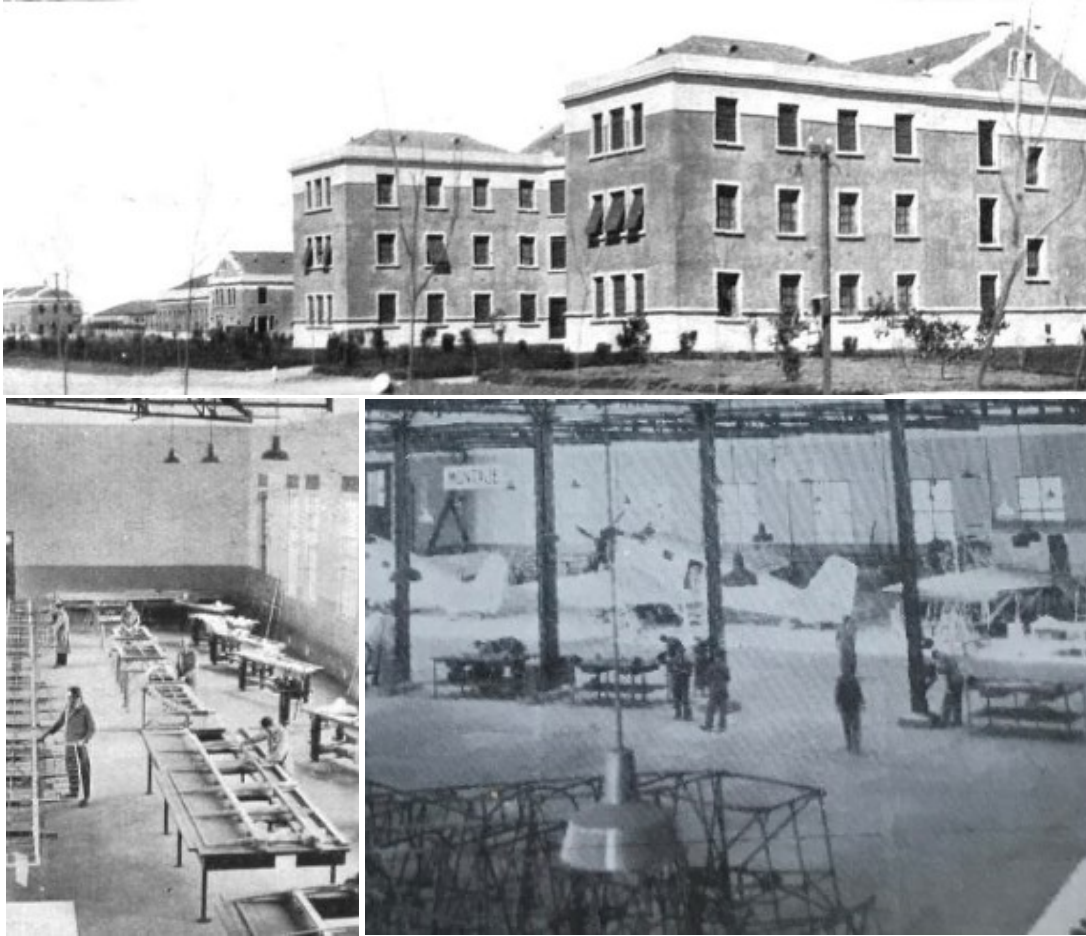


Figure 6.3. Top and bottom left images are the exterior and fabrication workshop in 1931. The bottom right is the fabrication workshop in 1936. “Fábrica Militar de Aviones en Córdoba,” *Caras y Caretas*, July 11, 1931, 99-100; “Pasado, presente y porvenir de la aeronáutica argentina,” *Boletín de Obras Publicas de la República Argentina*, no. 28, 1936, 1241.

an economy of scale to lower the costs of flight training and military procurements.<sup>19</sup> But de Arteaga was confronted by many outstanding questions on how to proceed with this mission. Should they prioritize licensed production using established foreign designs, or should the factory strive for independence by developing original designs? What types of airplanes should

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<sup>19</sup> Dirección de Aerotécnica, *Memoria 1930* (Córdoba, 1931), 57-8. This is clear in the first annual report produced by the factory, the *Memoria 1930* of the Dirección de Aerotécnica. The report showed the unit cost of the Lorraine-Dietrich motors and Dewoitine aircraft “outside of series production” at the FMA. They compared these figures to their future cost in series production, which they seemed to have pegged to the unit costs for the original manufacturers. The “*memorias*” referenced for the remainder of the chapter are for the Dirección de Aerotécnica, the directing entity of the FMA which will be discussed below. These reports were created each year, and sent to their overseeing institutions, such as the Ministry of War or the P.E.. I accessed all of the *memorias* of the Dirección de Aerotécnica at the DEHFAA.



they build? Should they include the latest technology in metal construction, or favor conventional wooden designs due to prevalence of local carpentry skill and stocks of wood?

Francisco de Arteaga chose to chart a middle path. The FMA began with the production of licensed models from France and Britain, but one of the selected types, the Dewoitine D-21C, was an all-metal monoplane. The acquired licenses for the Avro 504R “Gosport” trainer, Bristol F2B Mk.III biplane fighter, the Dewoitine D-21C, and the Lorraine-Dietrich 450 hp. engine reflected a narrow focus on badly-needed replacement military aircraft for the Army.

The FMA was at its heart an industrial experiment for the Army leadership and its technical personnel. The first two years of the FMA’s operations were focused on assembling the basic components of a modern aircraft factory. Officials had to build an industrial enterprise which—beyond the exigencies of manufacturing—demanded the logistical capability to reliably secure primary materials, tools, and technical expertise. They had to learn how to organize the many laboratories, workshops, reference libraries, inspection teams, and administrative offices involved in a production of cutting-edge technology. Millions of pesos were spent importing machine tools and “assemblies” [*montajes*] which facilitated series production.<sup>20</sup>

The factory became the first formal institution tasked with the assessment and dissemination of technical standards in aircraft construction and the creation, use, and maintenance of new materials for Argentine industry. It both imported foreign knowledge and derived its own standards through experimentation. Specialized laboratory devices were purchased so that FMA technicians could test the wooden, metallic, and chemical inputs for construction and calibrate sensitive flight instruments. FMA librarians began translating

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<sup>20</sup> Alvear’s administration invested 5.1 million pesos in the FMA installations in 1928 alone according to Julio Noble’s testimony in 1935. Noble noted that the full costs of all the tools and facilities was unclear for civilian authorities. The purchase of machine tools and assemblies were sometimes within the licensing contracts, making it difficult to tell how much was actually spent. Noble, *La aeronáutica nacional*, 131.

hundreds of foreign manuals, magazine articles, and government documents to ensure their technicians and engineers had access to the up-to-date information. Thousands of translated works eventually found their way into the FMA's technical library.<sup>21</sup>

The Córdoba region lacked the needed technical personnel, from basic carpenters to aeronautical engineers. Technicians had to be hired in Buenos Aires and brought to the provincial capital. Specialists in technical drafting and aerodynamics were contracted abroad since there was little local experience in either. More Army officials were sent abroad to study foreign factories or enter the *École Supérieure d'Aéronautique* in Paris. Apprentice programs were established at Córdoba for mechanics and carpenters, which had 121 entrants by 1930. That year, the FMA had a total of 470 employees, the majority of which were involved in the fabrication of airframes.<sup>22</sup> Despite their efforts, the factory was constantly short of qualified personnel as the operation grew in the early 1930s. The FMA's annual report in 1934 lamented that even with recruitment drives in Buenos Aires, they could only get four welders for aircraft fabrication, necessitating new training programs.<sup>23</sup>

The FMA quickly began production on the wooden Avros. The initial Avro 504R became the first FMA airplane to fly on August 2, 1928.<sup>24</sup> The ease with which the factory produced the airplanes comes as no surprise. The EMA workshops had already rebuilt dozens of Avros over their near-decade of service. Furthermore, as Taravella recalled, there was an abundance of carpentry skill among Argentine technicians.<sup>25</sup> The FMA even built the wooden aircraft more cheaply than their selling price abroad.<sup>26</sup>

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<sup>21</sup> D.d. Aerotécnica, *Memoria 1930*, 4; Dirección de Aerotécnica, *Memoria 1932* (Córdoba, 1933), 18-9; Dirección de Aerotécnica, *Memoria 1933* (Córdoba, 1934), 64.

<sup>22</sup> D.d. Aerotécnica, *Memoria 1930*, 31.

<sup>23</sup> Dirección de Aerotécnica, *Memoria 1934* (Córdoba, 1935), 92-3.

<sup>24</sup> Halbritter, *Historia de la industria aeronáutica*, 270.

<sup>25</sup> Taravella, *Setenta años*, 82.

<sup>26</sup> D.d. Aerotécnica, *Memoria 1930*, 57.

It was quite a different story with metallic construction. Although the licenses were acquired around the same time, the first FMA Dewoitine D-21C, all-metal monoplane did not take to the sky for another two and a half years.<sup>27</sup> The struggle to produce metal airframes tested the FMA's technical and administrative personnel to their limits, requiring an immense amount of careful research, trial-and-error, and improvisation. Their efforts were unprecedented in Argentina, involving new materials such as duralumin, and production techniques that were cutting edge even in the North Atlantic nations. This period of experimentation also revealed the challenges that lay hidden in a quintessential incarnation of technology transfer: licensed production.

Metallic airframe construction—not simply the use of metal components but having the load-bearing structures of the airplane made of aluminum and steel—was pioneered in France before World War I. But during that conflict the German aircraft industry took a definitive lead with the steel-tube fuselage design of Anthony Fokker and the corrugated duralumin clad aircraft by Hugo Junkers. The Allied powers soon began to study the German designs and develop their own capabilities. This process proved extremely challenging, requiring extensive research and financial support from governments. In the United States, authorities gave the task to the National Advisory Committee for Aeronautics (NACA), although the effort would involve the Bureau of Standards, the armed forces, and numerous private manufacturers.<sup>28</sup>

The use of metal in the airframe demanded new materials and designs. Metal had a superior compressive strength to wood, but it was prone to buckling when structural components were long and thin, a common requirement in airframes. Stronger, lighter, and more corrosion-

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<sup>27</sup> Halbritter, *Historia de la industria aeronáutica*, 272.

<sup>28</sup> For the early development of metal airframe technology, see Eric Schatzberg, *Winds of Wood, Wings of Metal: Culture and Technical Choice in American Airplane Materials, 1914-1945* (Princeton: Princeton University Press, 1999), chapter two.

resistant metal alloys were developed to better withstand the forces of flight. The most important of these was duralumin, an aluminum alloy with copper, magnesium, and manganese first invented by the German metallurgist Alfred Wilm in 1906. The key to Wilm's process was a heat treatment of the alloy wherein it was gradually cooled via quenching over the course of a few days. This resulted in an alloy that had "the tensile strength and ductility of mild steel, with just one-third the weight."<sup>29</sup> Junkers had used the new material to cover his famous corrugated-metal J4 biplane in 1916.

When the US entered World War I, they seized the German patents for duralumin and tasked the Alcoa company to produce the new material. But "Alcoa found it difficult to move from experimental to quantity production" and the metal continued to be "available only in limited quantities." The US Bureau of Standards was mandated with carrying out experiments on different heat treatment methods for such alloys. Even once the production of duralumin became more widespread in the mid-1920s, aeronautical engineers had to understand how to arrange the internal structures to compensate for the inherent weaknesses of metal. Complex honeycomb and strutted wing spar designs were tested by NACA to determine which had the greatest durability. New standards for the production of steel and aluminum also had to be established so airframe constructors would have access to a consistent stock of raw materials.<sup>30</sup>

In his study of the transition from wooden to metal airframes, Eric Schatzberg argues that a cultural belief in the superiority of metal over wood drove the development of metal construction at a time when such claims had little technical basis. Proponents of metal airframes frequently "claimed a multitude of advantages for metal in fire safety, weight efficiency,

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<sup>29</sup> Schatzberg, *Winds of Wood*, 25-6.

<sup>30</sup> *Ibid.*, 31-3.

manufacturing costs and durability.”<sup>31</sup> For at least the duration of the interwar period, most of these claims were exaggerated or false. Metal airframes did eventually produce lighter and stronger aircraft, but they continued to be more expensive to produce than composite or wooden ones.<sup>32</sup> In the popular and technical imaginations, metal represented “the industrial age, technical progress and the primacy of science.”<sup>33</sup> The “progress ideology of metal” made the eventual dominance of the material appear inevitable, especially to military officials. This ensured that a greater proportion of time and money at the many aeronautical laboratories in the US and Europe was dedicated to developing metal construction.<sup>34</sup> The cultural fervor around metal proved a self-fulfilling prophesy. The immense weight of research and development by the world’s aircraft industry transformed metal into the default construction material by the late 1930s, especially in military and commercial aircraft.

Argentine officials were not fanatics for metal construction, but they did seem to believe it was an inevitability. The most prolific local writer on the question of wooden versus metal construction was none other than Francisco Torres. His first article on the subject in the April 1921 issue of *Aviación* strongly supported a recent effort at the EMA workshops to substitute national woods for the European and North American varieties. He noted that Argentina had the “large-scale sawmills, capable of meeting the general demand and creating the stock that will ensure a sufficient supply of healthy and carefully selected wood...” The former use of foreign

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<sup>31</sup> Schatzberg, *Winds of Wood*, 45. As Schatzberg demonstrates, metal airplanes were shown to burn just as brightly as their wooden counterparts. Metal airframes were generally heavier, as steel and aluminum beams had to be reinforced to prevent elastic buckling. The appeal to lower costs was also modeled on the development of the automobile industry, where the use of metal facilitated Fordist mass production techniques due to its lower natural variability. Schatzberg points out that that appeals to a future of the mass production of aircraft were very optimistic, and even during the peak of world production during World War II, levels never came remotely close to the output of the car industry. See *Ibid.*, chapter 3.

<sup>32</sup> Composite airplanes, to use Schatzberg’s convention, were made of wood with metal components. In the Argentine sources the most consistent word for such construction were “mixed” airplanes.

<sup>33</sup> *Ibid.*, 58.

<sup>34</sup> *Ibid.*, 4-5.

woods, in Torres' opinion, was due to "the most absurd and anti-nationalist prejudices."<sup>35</sup>

Effective local substitutes were previously ignored, which "was what always happens, when [an Argentine product] is not disguised with a foreign name, as is the case with the label of the 'Pommery Greno,' 'Cliquot Extra-Dry' or any other sparkling wine, more *criollo* than the bitter *mate!*"<sup>36</sup> The possibilities of developing the national forest reserves into the raw materials of a modern and effective aircraft industry continued to interest military officials. Technical personnel at the FMA studied the qualities of different local woods, creating a catalogue of substitutes for well-known North Atlantic types.<sup>37</sup>

But the bulk of the Army's efforts were directed to metallic construction, and Torres himself was an advocate of shifting to predominately metal airframes. In December 1921, he published another article which painted the substitution of wood with metal as an inevitable final stage of "aeronautical evolution." The current, wood-and-wire methods were suitable for "primitive types" of aircraft, for "most sport and primary education" purposes. The second category were composite aircraft with metal airframes and fabric skin, which could support "higher power engines." Finally, there were the "large machines, which will possibly be the [next] immediate evolution[,] that have to characterize the second phase of aeronautics[,] or the all-metal airplanes."<sup>38</sup> The greatest benefit of metal construction, in Torres' estimation, was the

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<sup>35</sup> "...los prejuicios más absurdos y antinacionalistas." Francisco S. Torres, "Maderas nacionales en la Industria Aeronáutica," *Aviación*, April 1924, 17.

<sup>36</sup> "¡La madera nacional quedaba de hecho eliminada... así sucede siempre, cuando no se la disfraza con un nombre extranjero, como sucede con la etiqueta de los 'Pommery Greno', 'Cliquot Extra-Dry' u otro vino espumante cualquiera, más criollo que el mate amargo!" Torres, "Maderas nacionales," 17.

<sup>37</sup> D.d. Aerotécnica, *Memoria 1930*, 14; Instituto Aerotécnico, *Maderas argentinas. Informe sobre características físicas y mecánicas* (Córdoba: S.d. Aeronáutica, 1946). During World War II, the same shortages of metal that spurred the British armaments industry to greenlight the composite Mosquito bomber were acutely felt in Argentina. A handful of composite aircraft were designed and produced by the military aircraft factory—a subject which will be discussed briefly in chapter eight.

<sup>38</sup> "...finalmente, las grandes máquinas, que serán posiblemente, las de evolución inmediata que han de caracterizar la segunda faz de la aeronáutica o sean los aviones totalmente metálicos." Francisco S. Torres, "Evoluciones Aeronáuticas," *Aviación*, December 31, 1921, 20.

“elimination of cables and uprights” and “economy of material” which would enable a large monoplane “to carry hidden all its organs, thus facilitating penetration into space.”<sup>39</sup>

Four years later Francisco Torres expanded on this article in the form of a pamphlet entitled *Aviones Metálicos. Aviones Junkers* [*Metal Aircraft. Junkers Aircraft*]. Clearly impressed with the Junkers aeronautical mission which arrived in 1924, Torres believed that at least for military aircraft, “the airplane of the future will be metallic.”<sup>40</sup> He acknowledged that the national aircraft industry should produce wood, composite, and all-metal aircraft, as all three types had their niches. But beyond basic airplanes for sport flying and training, Torres thought metal construction was the more appropriate choice for local conditions—despite the near complete absence of a national metallurgical industry.

His two main arguments were the supposed ease of maintenance in varying climatic conditions and the simplicity of production in series. He acknowledged that metal airplanes may be more expensive at first, but they were more durable in the hot and humid climates common in Argentina’s north. Military and commercial aircraft, by the nature of Argentina’s geography, had to traverse many climatic zones, and Torres believed metal was more tolerant of such changes.<sup>41</sup> The ease of production and of maintenance was contingent on the construction being “simpler” due to the absence of the forest of wires, struts, and braces necessary in wooden construction.<sup>42</sup> In addition to the benefits in weight and aerodynamics, metal airplanes could supposedly be assembled with little skill or experience—Torres noted how women and “nonprofessional” men

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<sup>39</sup> “*la fineza de construcción, la supresión de cables y montantes, la solidez y la economía del material, no puede alcanzarse con mayor seguridad y eficacia más que con el monoplano de gran porte, que permita llevar ocultos todos sus órganos, facilitando así la penetración en el espacio.*” Torres, “Evoluciones Aeronáuticas,” 20.

<sup>40</sup> “*...que será metálico el avión del porvenir*” Francisco S. Torres, *Aviones Metálicos. Aviones Junkers* (Buenos Aires: Imp. Ferrari Hnos, 1925), 4.

<sup>41</sup> Torres, *Aviones Metálicos*, 5, 8, 24.

<sup>42</sup> *Ibid.*, 8.

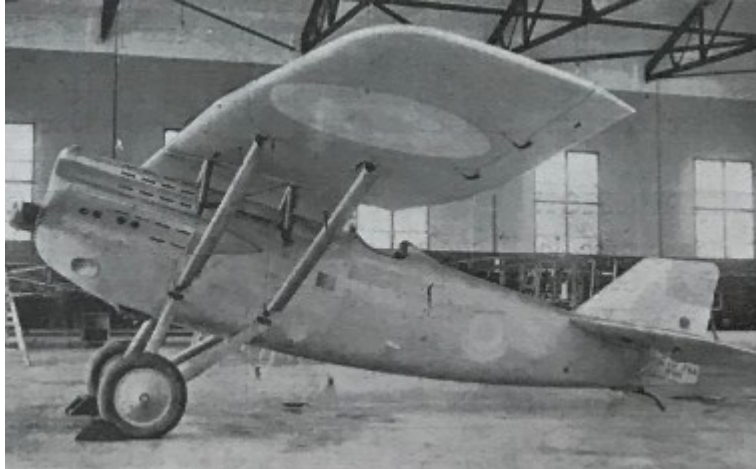


Figure 6.4. A Dewoitine D-21C produced by the FMA. “El primer avión de guerra,” *Aero*, January-February 1931, 11.

fabricated Junkers aircraft. In a gross underestimation of the challenges soon to confront the FMA, Torres argued:

While the construction of wood and composite [airframes] requires directors and principal workers, experts, in metal construction, as most of the work is purely mechanical, only directing technicians and workers are required to handle or monitor the operation of the machinery that produces the pieces of the airplane.<sup>43</sup>

The reduction of the total number of parts and the material uniformity in construction would thus make airplanes lighter, simpler, and cheaper.<sup>44</sup>

The exact reasons de Arteaga chose to purchase a license for an all-metal airplane are unknown, but the arguments made by aviation boosters like Torres—at home and abroad—probably convinced him the future was indeed metallic. Aeroengines required experience in advanced metallurgy regardless of the materials used in the airframes, and officials recognized

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<sup>43</sup> “mientras la construcción de madera y mixta requiere dirigentes y obreros principales, expertos, en la construcción metálica, como la mayor parte del trabajo es puramente mecánico, sólo se requiere técnicos dirigentes y obreros que manejen o vigilen el funcionamiento de la maquinaria que produce las piezas del avión.” Torres, *Aviones Metálicos*, 31.

<sup>44</sup> Another, more technical analysis of the challenges posed by metal in airframes, possibility written by Edmundo Lucius, reveals that Argentine technical personnel understood the problems with the technology. “La construcción metálica de los aviones,” *Boletín del Servicio Aeronáutico del Ejército*, January 1, 1922, 37-41.



that powerplants were the direst case of dependency on foreign industry.<sup>45</sup> De Arteaga likely believed that the purchase of a license from Dewoitine would mitigate the risks of attempting such cutting-edge production techniques. The contract included the technical drawings, many of the machine tools and assemblies, and arrangements for the raw materials. The Army imported hundreds of thousands of pesos more of specialized machine tools from France, Germany, and the US.<sup>46</sup> These resources would help the FMA's personnel gain critical experience while also supplying badly-needed fighter aircraft for the Army air services.

But as is so often the case in aircraft construction and metallurgy, the devil was in the details. Francisco Taravella, the technicians of the airframe section, and their counterparts in the motor workshop were soon faced with a bewildering quantity of technical and logistical problems. The transfer of the knowledge, tools, and materials employed in the Dewoitine and Lorraine-Dietrich factories in France proved arduous, both due to the deficiencies in the licensing process and the nature of metallurgy.

According to the official report of the FMA in 1930, the documents received from Dewoitine were prepared with "little care."<sup>47</sup> The specifications for the throttle assembly and fuel tasks were entirely forgotten. Technical drawings lacked detailed measurements and, more problematically for FMA technicians, labels for metal parts occasionally lacked specificity. Local personnel had to deduce which method of soldering to use on different steel and aluminum alloys.<sup>48</sup> Communication with the Dewoitine factory naturally took time and the FMA's team of engineers and drafters had to spend many hours creating new plans for the fabrication section.<sup>49</sup>

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<sup>45</sup> Torres, *Aviones Metalicos*, 4; Lucius, "La implantación de las industrias," 61.

<sup>46</sup> Taravella, *Setenta años*, 73.

<sup>47</sup> D.d. Aerotécnica, *Memoria 1930*, 2.

<sup>48</sup> *Ibid.*, 34-35.

<sup>49</sup> *Ibid.*, 13.

The problems did not stop once the fabricators and machinists had the plans in hand. The technicians struggled to properly integrate the menagerie of machine tools from Dewoitine, Lorraine-Dietrich, the US, and other nations. Machines that produced to specification in their “mother workshops” mysteriously no longer worked properly in Córdoba.<sup>50</sup> The jigs and fixtures which were supposed to guide the hands of less skilled machinists and assembly workers proved particularly finicky. According to the *Memoria 1930*, it took 250 work orders to “correct and put into place the...assemblies.”<sup>51</sup> For the Dewoitines, FMA personnel had to create, assemble or adjust “1,136 assemblies, molds and patterns” which required “188,828 hours” of work.<sup>52</sup>

FMA technicians lacked experience not just in metal construction, but also the organization and execution of series production. Naturally this inexperience exacerbated the problems inherent in the transfer of a production line from one context to another. Although in 1930 the FMA’s annual report did not specify the exact reason for their trouble with the machine tools and assemblies, later *memorias* pleaded with authorities to invest in climate control for the factory’s workshops. Officials consistently complained that shipments of raw materials and tools were arriving late, damaged, or defective regardless of their national origin or the type of material, suggesting that aircraft production was straining the logistical and administrative capabilities of the Army and its contractors.<sup>53</sup> The influx of new machines, on which the handful of local skilled technicians likely had little to no experience, also must have caused delays and inflated costs. Taravella recalled that the technicians for the Dewoitine project were the carpenters who had previously built the Avro 504Rs. He quipped that most of them “quickly

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<sup>50</sup> D.d. Aerotécnica, *Memoria 1930*, 38.

<sup>51</sup> *Ibid.*, 2.

<sup>52</sup> “...1136 montajes, moldes y matrices, habiendose invertido en ellos 188828 horas.” *Ibid.*, 34.

<sup>53</sup> D.d. Aerotécnica, *Memoria 1934*, 93-4. Engineers in 1934 found that the local wood being supplied to the factory was of insufficient quality. For other cases of such logistical problems, see D.d. Aerotécnica, *Memoria 1930*, 33, 35-6; D.d. Aerotécnica, *Memoria 1932*, 3; Dirección de Aerotécnica, *Memoria 1935* (Córdoba, 1936), 4.

adapted” to the new material, “except for the case of one of these workers, who was returned to the carpentry workshop for having the habit of carrying duralumin rivets in his mouth, thus giving rise to the formation of intense corrosion...”<sup>54</sup>

Taravella’s story belied the difficulty of producing and using the new metals in aircraft construction. In 1929, machining with duralumin “was done in the country for the first time.” Only three FMA technicians had ever worked with the material while they were stationed abroad.<sup>55</sup> Factory personnel also had to figure out how to properly transport and store duralumin, which proved more susceptible to corrosion than the boosters of metal construction usually admitted. This caused substantial delays after a shipment of duralumin cylinders was found to be deformed. The Material Testing Laboratory [Laboratorio de Ensayo de Materiales] conducted almost 500 tests on the alloy and devised a heat treatment to reshape the cylinders.<sup>56</sup> In the mid-1930s, a foundry workshop was built, and the personnel began experimenting with creating their own alloys from iron and aluminum. As Taravella remembered, the process was laborious, requiring a lot of “fine tuning” [*puesta a punto*]: “It took us a long time to eliminate the cracks, porosities, stagnant base bubbles and other physical defects that were produced.”<sup>57</sup> Eventually they were able to make their own aluminum cylinder heads for a series of licensed Wright Cyclone engines that followed the Lorraine-Dietrich project.

Fifty years later, Ambrosio Taravella looked back on the efforts of these years with pride. He emphasized that he and his fellow engineers and technicians were learning how to do

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<sup>54</sup> “*El personal de operarios carpinteros que había intervenido en la construcción de los Avro, fue pasado en gran parte, a los talleres de construcciones metálicas, los que se adaptaron rápidamente al nuevo trabajo, salvo el caso de uno de éstos, que fue devuelto al taller de carpintería por tener la costumbre de llevar los remaches de duraluminio en la boca, dando así origen a la formación de una fuerte corrosión en los remaches.*” Taravella, *Setenta años*, 82.

<sup>55</sup> D.d. Aerotécnica, *Memoria 1930*, 34.

<sup>56</sup> *Ibid.*, 23.

<sup>57</sup> “*...pues nos llevó mucho tiempo eliminar las grietas, porosidades, burbujas de bases estancados y otros defectos físicos que se producían los que, al final, fueron eliminados.*” Taravella, *Setenta años*, 74.

something new in Argentina, and they energetically disseminated their knowledge into the wider community. Taravella recalled numerous consulting jobs undertaken by FMA personnel for private businesses in Córdoba, Buenos Aires, and other regions. Their growing knowledge of material science and metallurgy, learned from painstaking studies and experiments, was invaluable for other industries. Taravella mentioned one “well-known brand of automobile” that was having problems with its gearbox. An analysis by FMA technicians revealed a defect in the gears’ metal.<sup>58</sup>

Indeed, of all the efforts made by the FMA’s leadership, their contributions to the nation’s industrial and technical standards and education were arguably its greatest legacy during this period. The reference libraries and laboratories were a reservoir of knowledge about national and foreign technical standards, science, and production techniques. Local workshops and business could now consult with a state institution that employed experienced engineers like Taravella on technical matters such as the tensile strength of different aluminum alloys or the best lacquers for protecting weather-exposed steel. The factory created a sudden and large demand—relatively speaking—for technical skills from advanced carpentry and machining, to welding and metallic fabrication, to chemical and material analysis. Prior to its founding, the total number of technical personnel in the aviation industry could not have numbered more than a few dozen. After 1927, hundreds of workers had jobs in an advanced industry, and hundreds more would be enlisted in the factory’s apprenticeship programs over the 1930s.

The paucity of local technical knowledge for the FMA increasingly alarmed military and federal officials, spawning new educational institutions. In 1930 the director of the University Nacional de Córdoba, Dr. Luis J. Posse announced a project to create an aeronautical

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<sup>58</sup> Taravella, *Setenta años*, 74.

engineering program at their school. Inspired by the activity of the FMA, Dr. Posse wrote “The shortage in the country of aeronautical technical engineers is notorious and it is no less known the importance that aviation acquires every day throughout the world.”<sup>59</sup> Five years later, the factory received its first locally-trained aeronautical engineers from the UNC program.<sup>60</sup>

1930 also saw the creation of the Army’s Escuela Superior Técnica [Superior Technical School], which was the “technological counterpart of the War Academy.” The school became “the center for studying technical problems related to heavy industry development and the promoter of economic nationalist doctrines within the Army.”<sup>61</sup> The FMA was one of a handful of military factories established after 1927, mostly related to gunpowder and explosives production. But the aircraft factory was the Army’s first and most high profile armaments project of the interwar period. The national press trumpeted its successes and criticized its failures. Both Robert Potash and the historian of Argentine industry Claudio Belini highlight the role of the FMA in the expansion of military industry and the creation of new institutions like the Escuela Superior Técnica.<sup>62</sup>

The problem for the FMA was that learning took time, and it was expensive. The factory was a political creation and thus its funding could cease at any moment. They needed tangible results to justify their existence—the very real material needs of the military and civil aviation communities had to be satisfied. Their congressional and media critics were also quick to blast

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<sup>59</sup> “Es notoria la escasez en el país de ingenieros técnicos aeronáuticos y no menos sabida la importancia que día a día adquiere la aviación en el mundo entero.” “Proyecto de creación en la universidad de una escuela de aeronáutica,” *La Prensa*, May 1, 1930.

<sup>60</sup> D.d. Aerotécnica, *Memoria 1935*, 1. There was an earlier program established at the Universidad Nacional de La Plata in 1925, but its history remains obscure at the present time. I have yet to find a reference to any of its graduates.

<sup>61</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 77.

<sup>62</sup> *Ibid.*, 77; Claudio Belini, “La Dirección General de Fabricaciones Militares y su papel en la industrialización de posguerra (1941-1958),” in *Estudios sobre la industria argentina I*, ed. Marcelo Rougier, 47-90 (Carapachay: Lenguaje claro Editora, 2014), 49.

the factory's management for any perceived inefficiencies or cost overruns in production. Later FMA annual reports cited worker "performance," noting how many pesos of "value" each employee produced per peso of input. The 1932 report pushed back on what seems to have been an imposed practice. It argued that firing workers with low performance was counterproductive to the factory's operation since the work of many technicians was more "intellectual" than "industrial."<sup>63</sup>

The FMA did succeed in its original missions laid out by de Arteaga. Between 1928 and 1931, they built 31 Avros, 10 Bristols, 32 Dewoitines, and 42 Lorraine-Dietrich motors. This production—as we will see—was achieved despite wildly fluctuating funding levels caused by the Great Depression and political upheaval. According to Francisco Halbritter, the FMA engineers improved upon the Dewoitine D-21C's design with a reinforcing modification to the wing mounts, which was later implemented in France and Switzerland too.<sup>64</sup> But the critics of the FMA and de Arteaga's strategy were already pressuring the factory and its leadership. Perhaps surprisingly, the impetus of change came from within the FMA itself. In May 1930, a new interim director of the factory was announced, Captain Bartolomé de la Colina. De Arteaga had gone to Europe for advanced study. Just under a year later, de la Colina was confirmed as the FMA director, a post he would hold for the next five years.<sup>65</sup> The change in leadership resulted in an ambitious new program of original aircraft design that ended in enduring controversy.

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<sup>63</sup> D.d. Aerotécnica, *Memoria 1932*, 22-3.

<sup>64</sup> Halbritter, *Historia de la aeronáutica*, 316.

<sup>65</sup> *Ibid.*, 267.

## **Bartolomé de la Colina, *Aerotécnica*, and the First Period of Original Designs at the FMA, 1931-1936**

Just as the factory was changing its orientation, significant events were unfolding on the national level that would have far reaching consequences for the Argentine aviation community. Amidst an economic slump caused by the Great Depression, the Army forcibly entered national politics for the first time in the country's democratic history. On September 6, 1930, a group of Army officials led by General José Félix Uriburu carried out a bloodless coup d'état against the democratically-elected administration of Hipólito Yrigoyen. Although General Uriburu only remained in power until February 1932, the "September Revolution"—as its supporters deemed the coup—ushered in the so-called "Infamous Decade" of electoral fraud and military interference in politics. General Agustín Justo, who retired from active duty in 1931, "won" that year's arranged election, leading the country until 1938. The involvement of the Army in national politics was now overt. For the aviation community, this meant that the policies of Army air officials were increasingly seen as part of the broader interference of the armed forces in national political and economic life. The intervention, in effect, polarized the politics around the military's role in the aviation industry.

As the historian Luis Fernando Furlan found in his study of participation by members of the military aviation branch in the September 6 coup d'état, many members of the Army air service were directly involved in the rebellion.<sup>66</sup> Officers in the Dirección General de Aeronáutica joined many of their comrades in the other branches of the Army who were frustrated with the perceived political meddling of the Yrigoyen administration in the Army's affairs. Hipólito Yrigoyen, the most prominent UCR politician, was reelected to the presidency

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<sup>66</sup> Luis Fernando Furlan, "La Aviación Militar en el golpe de Estado del 6 de septiembre de 1930," *Boletín de la Dirección de Estudios Históricos* 4 (2014): 18-54.

by a large margin in April 1928, succeeding Alvear. Yrigoyen had a record of political interference in the military during his first administration and did not shy away from it in his second.<sup>67</sup> For the aviation community, the most significant affront was a severe drop in armaments spending, which dramatically reduced the budget of the FMA in 1929 and 1930, while also preventing the purchase of new aircraft from abroad.<sup>68</sup>

There were, of course, political reasons beyond the needs of the military that spurred many of these officers to act. The men in Uriburu's camp generally disdained Yrigoyen's populist rhetoric and policies. Uriburu, finding support from nationalist and conservative intellectuals, officers, and politicians, sought to "eliminate 'the reign of demagoguery' and ensure control of society by the 'most qualified elements.'" This would involve "fundamental institutional reforms" under the complete control of the Army. His main opponent within the Army interventionists, General Justo, struck a more measured tone. He wanted to work with civilians on political reform and guarantee a return to constitutional rule as soon as possible.<sup>69</sup> In the end, Uriburu's position was untenable, and a coalition of military and civilian factions under General Justo took the control of the state. This conservative alliance became known as the Concordancia [Concordance], which remained in power through three presidents until 1943.<sup>70</sup>

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<sup>67</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 30-1.

<sup>68</sup> Furlan, "La Aviación Militar," 22. Overall military spending only dropped to 1928 levels. According to Potash, the Yrigoyen administration preferred to spend on salaries, pensions, and other benefits, not military hardware. Potash, *The Army & Politics in Argentina, 1928-1945*, 31-3.

<sup>69</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 43-44.

<sup>70</sup> The Concordancia brought together elements of the Anti-Personalist (i.e. Anti-Yrigoyen) wing of the UCR, the conservative Partido Demócrata Nacional, and the Partido Socialista Independente. Opposing them were the Partido Demócrata Progresista [Democratic Progressive Party], and the Socialist Party. Only the latter two contested elections under the Alianza Demócrata Socialista until 1935. The Yrigoyenist wing of the UCR, which later coalesced under Alvear, boycotted elections after 1931 after it became clear that the military and its allies would not allow them to win national or major provincial offices. For my narrative of the politics of the Infamous Decade, I rely on Romero and Brennan, *A History of Argentina*, chapter 3.



During the coup d'état, Army airplanes were important for disseminating the rebellion's message, especially "outside the metropolitan area." Aircraft were deployed over key civilian and military buildings as a psychological demonstration of force. But the participation of Army aviation officials was inconsistent.<sup>71</sup> As Robert Potash found in his general survey of the officer coup in 1930, economic nationalists—the faction most relevant to the FMA—were found on both sides of the revolution.<sup>72</sup> General Enrique Mosconi was an ardent supporter of Yrigoyen until the bitter end, while Francisco Torres was in General Uriburu's camp.<sup>73</sup> Colonel Jorge Crespo, who was leading the Dirección General de Aeronáutica in September 1930, was transferred to an insignificant posting. He was replaced by Lt. Col. Ángel M. Zuloaga. The resurgent Torres, now retired, was again put in charge of the Dirección de Aeronáutica Civil.<sup>74</sup>

For the Fábrica Militar de Aviones in Córdoba, the coup d'état may have brought salvation, at least from a slow death by tightening budgets. The national situation began to improve in 1931-1932. Export revenues were rising again after the initial shock of the Great Depression, and the FMA's old patron, General Agustín Justo, took the reins of government. The Justo administration's relationship to Army aviation and the FMA proved complicated. Justo was allied to many conservative and traditional segments of Argentine society, including the agricultural sector. His administration negotiated the Roca-Runciman Treaty of 1933, which

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<sup>71</sup> Furlan, "La Aviación Militar," 47.

<sup>72</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 52-3. Potash emphasizes that immigrant background and/or class status did not determine the political alignment of officers, although Uriburu and Justo "can be identified with traditionalist interests, and the revolution can be viewed as opposing the populist and middle-class character of Yrigoyenism..." But the middle-class junior officers were "found in prominent positions on all side on September 6, an indication perhaps of the divisions in the emerging middle class." Potash's findings reinforce the research of the history of class in Argentina, discussed in chapter four, which found the boundaries between the working- and middle-classes fluid, culturally and politically.

<sup>73</sup> Furlan, "La Aviación Militar," 24. Torres, unsurprisingly, was a politically active officer early in the 1920s. He was a member of the Logia "General San Martín," a secret society of officers who were critical of the first Yrigoyen administration. For the Logia, see Potash, *The Army & Politics in Argentina, 1928-1945*, 11.

<sup>74</sup> Furlan, "La Aviación Militar," 46.

ensured Argentine access to the UK market while giving the British local commercial concessions. The treaty was derided by nationalists. Yet the administration also sustained and expanded the military's industrial projects, including the FMA, and engaged in a national highway construction campaign. By the middle of the decade, Justo's treasury minister Federico Pinedo established a policy of increasing state intervention in the economy paired with "the gradual closing of the economy."<sup>75</sup> Stimulated by the global depression, the rise of Keynesian economics, and a frustration with the dominance of foreign capital, the atmosphere of economic nationalism continued to gestate among Argentine political circles. For the Córdoba factory, the national political situation gave Bartolomé de la Colina the freedom for an ambitious change of direction—albeit on a short leash.

De la Colina, a pilot and aeronautical engineer, decided to eschew license production and build aircraft originally designed by FMA personnel. He was a rising star in the Army aviation community, having been appointed to lead the Córdoba factory only one year after he arrived to manage its airfield. De la Colina was a fervent believer in the capacity of aviation to transform his country for the better. From his posting in Córdoba, and later as the first Secretary of Aeronautics under Juan Perón, he came closer to executing his aerial dreams than any other military aviation official.

The rise of Bartolomé de la Colina marked a generational shift in the military aviation community. The generation of Argentines that first participated in aviation, in the era of Newbery, were largely born in the 1870s and 1880s. The Army officers that had steered national aviation in the 1920s—Torres, Crespo, de Arteaga—had been in their forties. De la Colina, born in a small village in La Rioja in 1894, was a mere thirty-six years old when he took the reins of

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<sup>75</sup> Romero and Brennan, *A History of Argentina*, 65-69.

the Córdoba factory. He graduated from the Colegio Militar in 1913 as a Sub-Lieutenant in the artillery, and eventually entered the EMA, obtaining his *brevet* in 1922. De la Colina was assigned to the first active Army air unit and conducted important raids around the country. In 1925 he was sent to the *École Supérieure d’Aéronautique* in París for two years of study. After graduation, de Arteaga and the Army leadership had the newly-minted aeronautical engineer tour aircraft and aeroengine factories in France, Belgium, Germany, and Italy. As his biographer Isabel González noted, “according to his colleagues, friends and relatives, he was a kind man, with a calm character, cultured... great moments of nervousness did not disturb his natural good humor and his provincial grace”<sup>76</sup>—an imperturbability that would be desperately needed in the coming years.

De la Colina, upon his return to Argentina, was an energetic proponent of the branch of knowledge known as “*aerotécnica*” or aerotechnics. *Aerotécnica*, in a basic sense, was the scientific investigation of matters of technical importance, perhaps best represented in the US by the work of National Advisory Committee for Aeronautics (NACA). De la Colina was not the originator of the term, as the Dirección de Aerotécnica was created in the same May 1927 decree that resulted in the Dirección General de Aeronáutica (DGA). In its founding document, the Dirección de Aerotécnica was to be a “technical advisor” for the DGA and its dependencies on matters related to the “research, study, construction, and repair of flight material.” The Dirección de Aerotécnica was originally given autonomy from the factory since it was vaguely intended to provide oversight.<sup>77</sup> By the time the FMA began operations, the Dirección de Aerotécnica

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<sup>76</sup> Isabel González, *Bartolomé De La Colina—Alas Para Mi Patria* (La Rioja: Nexo Comunicación, 2004), 35-6.

<sup>77</sup> Original decree quoted in Halbritter, *La historia de la industria aeronáutica*, 239.

essentially *was* the factory, as all of the laboratories, workshops, libraries and administrative offices were its direct subordinates.<sup>78</sup>

De la Colina, at least by 1931, had a much more expansive understanding of the role of “aerotechnical” expertise than as mere technical advisors. In conference presentations and pamphlets, he promoted *aerotécnica* as a scientific means to organize, develop, and realize national aviation and improve Argentine society in the process. De la Colina harnessed the rhetoric of science, and its promise to deliver progress, to bolster the power of *aerotécnica* and its practitioners. As he said during a 1933 conference speech:

Aviation is the Science that deals with the problems inherent in the conquest of space by man. The Science of Mathematics, through *Aerotécnica*, guarantees and gives value to Aviation... *Aerotécnica*... can be defined as the scientific-technical framework of Aviation.<sup>79</sup>

De la Colina echoed many aviation boosters when he concluded his presentation:

For having realized the most sublime, remote, and useful dream of humanity, aviation is a great force that will receive preferential support from the world’s economic, material and moral means, to become what it should be: [the] guarantee, sustainer, and main factor of progress and [the] well-being of Civilization.<sup>80</sup>

*Aerotécnica*, according to its proponents, was thus a knowledge base which would underpin the country’s development. Beyond the analysis of technical questions, the “science” of *aerotécnica* promised a cohesive plan—a uniting of the different forms of administrative and industrial knowledge needed to sustain the many relevant institutions and interests in national aviation. For

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<sup>78</sup> This why all of the annual reports on the FMA were by the Dirección de Aerotécnica.

<sup>79</sup> “*La Aeronáutica es la Ciencia que es ocupa de los problemas inherentes a la conquista del espacio por el hombre. La Ciencia de las Matemáticas, por intermedio de la Aerotécnica, garantiza y da valor a la Aeronáutica...La Aerotécnica, que puede definirse como el esqueleto científico-técnico de la Aeronáutica...*” Bartolomé de la Colina, *La aerotécnica como factor principal de la ciencia aeronáutica* (Córdoba, 1933), 9.

<sup>80</sup> “*La Aeronáutica, por haber realizado el sueño más sublime, remoto y útil a la humanidad, es fuerza magna que recibirá el apoyo preferente de los medios económicos, materiales y morales de la capacidad mundial, para convertirse en lo que debe ser: garantía, sostén y factor principal de progreso y bienestar de la Civilización.*” de la Colina, *La aerotécnica*, 26.

Argentina, with its limited resources, the foresight provided by the mathematical-scientific study of aviation would be essential for avoiding “capricious evolutions, to the detriment of the security and progress of the country.”<sup>81</sup> In effect, de la Colina used scientific expertise to justify his Dirección’s authority over all aspects of aircraft production, maintenance, research, and use.

In his speeches, the factory’s activities described in the previous section were the embodiment of the mission of *aerotécnica*. His directorate oversaw the laboratories studying familiar and new construction materials. FMA technicians were learning how to weld, rivet, and shape materials like duralumin. They gathered the latest knowledge from institutions and publications at home and abroad. The FMA’s fabrication sections struggled but persevered in the implementation of industrial-scale metal production.<sup>82</sup>

De la Colina’s emphasis on the study of metal, and its “scientific” dimensions, raises the possibility that the choice of metal and assertion of scientific authority by these aeronautical engineers went hand-in-hand. Schatzberg certainly found that the proponents of metal depicted the material as more “scientific” than wood. In the minds of many technologists and lay people, “technological progress [involved] a trend from art to science” which was physically represented by the transition from wood—that classically artisanal medium—to metal. As Schatzberg makes clear:

“Science” in this context did not refer to a logically coherent system of ideas or an epistemological method. Rather, science was an attribute of a technological style, one that valued the use of theoretical models, complex calculational procedures, and extensive, systematic empirical research.<sup>83</sup>

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<sup>81</sup> de la Colina, *La aerotécnica*, 14.

<sup>82</sup> Bartolomé de la Colina, *Problemas resueltos por la Dirección de Aerotécnica hasta el presente y problemas a resolver. Conferencia dada, en el Círculo Militar, el día 16 de Octubre de 1931* (Buenos Aires: Tall. Graf. Cersosimo y Cía, 1931), 5-9.

<sup>83</sup> Schatzberg, *Wings of Wood*, 60.

Such a style was, of course, applicable to wood just as easily as metal. The emphasis on the scientific nature of the latter was hence “cultural prejudice.” Schatzberg contends that a similar process happened with the assumption that metal was more amenable to mass production in aviation.<sup>84</sup> This suggests that de Arteaga and de la Colina may have chosen to focus on metal because they were trying to establish a scientific aura over the FMA and the Dirección de Aerotécnica. The extensive study of wood might not have had the same *cultural* connotations of science and industry.

De la Colina stressed that the greatest benefits of the Army’s involvement in industry were the educational and occupational opportunities it afforded common people. As we saw in an earlier chapter, he echoed the widespread sentiment that the aviation industry and its offshoots provided, “suitable work [for] the wise, the profane, professionals of all branches, men, women and children.” His reference to the final category was not an appeal for child labor, but instead a hope for a “scientific-technical movement” among the youth to bolster aviation’s future possibilities.<sup>85</sup> *Aerotécnica*—the rational basis of such industry—thus:

...provides an effective means of social improvement to a great mass of the country, cultivating it intellectually and physically, assuring it through work, which is the main benefit of social welfare, for its useful and necessary participation in the activities of science, arts and trades comprised by *Aerotécnica*.<sup>86</sup>

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<sup>84</sup> Schatzberg, *Wings of Wood*, 53-4. Defenders like Torres and de la Colina believed that metal was better for production in series. Schatzberg argues that the benefits from employing metal in mass production, namely its material uniformity, was largely inapplicable to airplane production. The popular notion that metal was better for mass production evidently stemmed from the Fordist automobile industry. But Schatzberg notes that the aircraft industry never reached the economies of scale that would have favored the employment of metal. In Argentina, with its very limited market for airplanes, the local mass production of aircraft was a fantasy if not delusional.

<sup>85</sup> de la Colina, *La aerotécnica*, 25.

<sup>86</sup> “...es indudable que la extensión y aptitud industrial que debe mantener el país, repercutirá ondamente en la faz social del mismo, porque en las industrias aeronáuticas y sus afines encuentran tareas adecuadas los sabios, los profanos, profesionales en todas las ramas, hombres y niños, de donde la Aerotécnica brinda un medio eficaz de mejoramiento social a una gran masa del país, cultivándola intelectual y físicamente, asegurándosele mediante el trabajo, que es el principal favor del bienestar social, por su útil y necesario participación en las actividades de la ciencia, artes y oficios que comprenda la Aerotécnica.” *Ibid.*, 23.

As we saw above, the FMA factory was indeed a fountain of technical education and employment from the beginning. Under Bartolomé de la Colina's leadership, the total number of employees reached 764 in 1935, and the annual report proudly stated that there was only one foreign contractor on staff.<sup>87</sup> The factory was likely the only major employer for aeronautical engineers in the country and was a center for metallurgical education via its apprenticeships and consultations. Their personnel set the standard for all Army aviation technicians and inspectors who did periodic instructional rotations at the factory.<sup>88</sup> Officials were especially pleased that all these developments were happening not in Buenos Aires but the provincial city of Córdoba. Their long-held aspiration to de-centralize Argentine industry away from the capital was coming to fruition.

These initiatives had their roots in de Arteaga's original conception of the factory, but de la Colina aspired to add one more educational experience into the mix: original design. De Arteaga had chosen to mitigate the risks of aircraft construction by importing the technical data and materials from abroad via a production license. For him, learning to manufacture and maintain new aircraft and materials was enough of a challenge for the time being. De la Colina and his supporters were eager to exercise the knowledge they acquired in Europe; he was an aeronautical engineer trained at the world's oldest and most prestigious program in Paris. In his implicit calculation, the science of *aerotécnica* would guide the process of original design. This would reduce the risk in much the same way as the license. Using the rationalism and exactitude supposedly embodied by aerotechnics, de la Colina reasoned that the FMA could design an airplane that would better meet the technical needs and limitations of the aviation community.<sup>89</sup>

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<sup>87</sup> D.d. Aerotécnica, *Memoria 1935*, 2.

<sup>88</sup> D.d. Aerotécnica, *Memoria 1933*, 20.

<sup>89</sup> The factory's engineers did not attempt original design of motors for the time being. From 1934-1937 the FMA licensed and built 50 Wright-Cyclone 620 engines. Taravella, *Setenta años*, 166.



Figure 6.5. The "first airplane of Argentine conception and construction."  
Reproduction found in box 2, folder 8, COR, BNA.

Work on the first nationally designed airplane at the FMA began in March 1931, right after de la Colina's official confirmation as the factory's director. Together with the engineers Lorenzo Pedro Fontana and Natalio Trebino—both hired for the project—they designed and built the Ae.C.1, a closed-cockpit, three-seat monoplane with a metal airframe and wooden wings.<sup>90</sup> De la Colina, already wary of public criticism, had the airplane's first flight test conducted in secret. On October 28, 1931, an original design by FMA engineers successfully took off for the first time. The design reflected the Dirección de Aerotécnica's strategy of building an airplane for primarily civilian purposes.<sup>91</sup> This first airplane was quickly redesigned as a tandem two-seat, open-cockpit airplane that was at the time considered more practical for military training. The result was the better known version of the Ae.C.1, frequently just called the "Prototipo."

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<sup>90</sup> The decision to build wooden wings did lessen the difficulty of manufacturing the Ae.C since the long wing spars were among the more challenging components to fashion from metal. But other major structural components were metal.

<sup>91</sup> This purpose was evident in the Ae.C series aircraft promotional pamphlet produced in 1931. Dirección de Aerotécnica, *Construcciones aeronáuticas* (Córdoba: Dirección General de Aeronáutica, 1932).



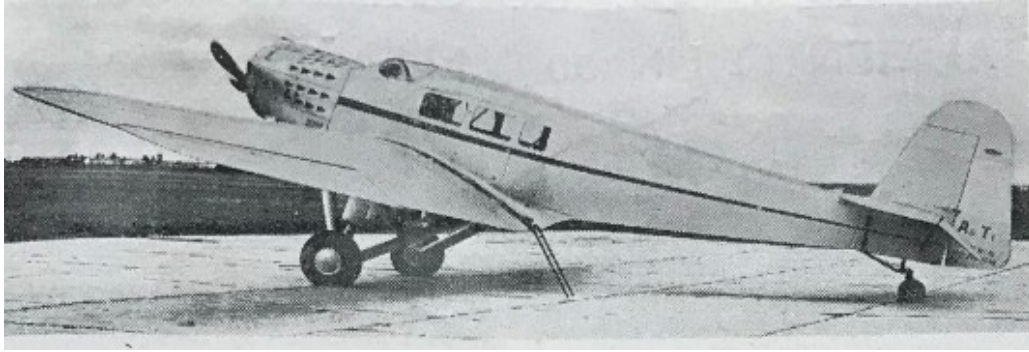


Figure 6.6. The Ae.T.1 transport variant.” “La Fábrica Militar de Aviones ha producido el primer avión de Transporte,” *Aero*, April-May 1933, 5.

The Prototipo served as the basis for the factory’s subsequent designs until 1936.<sup>92</sup> Its designers sought to make a basic platform that could be adapted to as many civilian and military uses as possible, including trainers. The airplane was supposed to replace the venerable Avro Gosports, which were by this point seriously outdated. FMA improved the Prototipo twice more into the Ae.C.2 and the Ae.C.3. The latter model was the first and only civilian type to be built in series, with the majority being distributed to aero clubs for free. The Ae.C.3 was a low-wing monoplane with a tandem open-cockpit arrangement. With two different imported engines of 145 hp., the aircraft had an official landing speed of 43 knots and a top speed of 92 knots, making it ideal for training and sport flying. Sixteen Ae.C.3s were produced from March 1934 until September 1936.

The civilian models had corresponding military versions. The military observation version of the Ae.C.2—the Ae.M.O.1—was the most produced aircraft by the FMA during this period, with 41 entering service. In 1933, borrowing heavily from the Prototipo, engineers created a transport version, the Ae.T.1, to replace the old Late-25s used by Aeroposta Argentina

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<sup>92</sup> Somewhat confusingly, all the subsequent iterations of the Ae.C. series were colloquially called the Prototipo.

(see fig. 6.6). The transport version was then itself modified into a bomber variant in 1935.

Neither the bomber nor the Ae.T.1 model was built in any number.<sup>93</sup>

The decision to produce civilian airplanes meant the FMA had to sell its airplanes to the public in enough volume to make it economically viable. But marketing the Ae.C.1 Prototipo and its derivatives proved an uphill battle from the outset. As Francisco Halbritter describes, “At this time, public opinion was quite skeptical about the capacity of the technicians who were in charge of the project...”<sup>94</sup> The public media was largely ambivalent toward the Prototipo at first. *La Prensa* reported major events like first flights or significant raids, but the coverage was brief in comparison to other occurrences like the arrival of the Graf Zeppelin in 1934.<sup>95</sup> Later, conservative newspapers like *La Prensa* and *La Nación* became overtly hostile to the new aircraft. Despite their general enthusiasm for flight, their commentators increasingly wrote that the government, and especially the Army, should not involve themselves in an economic enterprise like an aircraft factory—such activities were better left to the private sector.<sup>96</sup>

The technical press was more enthusiastic. The magazine *Aero* lauded both the Ae.C.1 and Ae.T.1.<sup>97</sup> One of its journalists declared the latter transport a “national industrial triumph.” For the commentators in *Aero*, each new technological feat represented a nationalistic milestone:

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<sup>93</sup> For the general description of the FMA’s original design program during this time I use the work of Francisco Halbritter. His meticulous history of the various versions of aircraft prototypes and production models has been immensely helpful. In my experience with the *Memorias* of the Dirección de Aerotécnica, his information is accurate, and for this period specifically, Taravella is unhelpful. The head technician was sent to Europe in 1931 for a stint, and his autobiography has little to say about the Prototipo and its offspring. For the narrative of the program, see Halbritter, *Historia de la industria aeronáutica*, 289-300; for the technical specifications of the Ae series, see *Ibid.*, 316-321.

<sup>94</sup> *Ibid.*, 290.

<sup>95</sup> See, for example, “Regresaron ayer de Córdoba los aeroplanos militares de la base de El Palomar, El avión ‘Prototipo’ hizo el vuelo de Córdoba a El Palomar...” *La Prensa*, December 16, 1931; “A las 18.30 de ayer llegaron a El Palomar los pilotos Cairo y Osorio Arana conduciendo el avión prototipo ‘A.E.C.2’ con el cual han volado sobre las catorce provincias,” *La Prensa*, July 19, 1932.

<sup>96</sup> Halbritter, *Historia de la industria aeronáutica*, 290.

<sup>97</sup> “La Fábrica Militar de Aviones ha producido el primer avión civil,” *Aero*, August-September 1931, 2.

This new Argentine airplane that will take to the air, beyond a demonstration of competence, willpower, sacrifice, patriotism and loyalty, has raised, in the same act of [its] first ascent, the national flag, allowing us to experience such satisfaction that, in a certain way, it is the same as the secret rejoicing felt at the fulfillment of a sacred and urgent duty of nationalism.<sup>98</sup>

*Ciencia Popular* was more measured in its support of the project to transform the Ae.C.2 into a civilian sport airplane in 1932. They looked forward to the “popularization” of the “sport of the air” thanks to the availability and economy of a locally-produced airplane.<sup>99</sup> But these articles were largely written prior to the real world use of the new aircraft.

Acutely aware of this—at best—ambivalence, de la Colina presided over a nationalistic publicity campaign to build confidence in the Prototipo and its descendants. The improved Ae.C.1 was formally dubbed “*Tenga Paciencia*” [Have Patience] and was used in numerous publicity flights. In June 1932, an Ae.C.2 named “*Tenga Confianza*” [Have Confidence] successfully completed the “Circuit of the Fourteen Provinces” in a record two days (see fig. 6.7).<sup>100</sup> The most spectacular raid was in October 1933. A formation of FMA-produced aircraft, dubbed the “Escuadrilla del Sol de Mayo” [Sun of May Squadron], flew in stages from El Palomar to Rio de Janeiro to honor a series of talks between President Justo and Brazilian President Getulio Vargas.<sup>101</sup> The successful raid, conducted with only one minor incident, was

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<sup>98</sup> “Ese nuevo avión argentino que surcará los aires, aparte de ofrecer una muestra acabada de competencia, voluntad, sacrificio, patriotismo y abogada lealtad, ha elevado, en el mismo acto de primera ascensión, el pabellón nacional, permitiéndonos experimentar una satisfacción tal, que, en cierto modo equivale al secreto regocijo sentido frente al cumplimiento de un sagrado e impostergable deber de nacionalismo.” “La Fábrica Militar de Aviones ha producido el primer Avión de Transporte,” *Aero*, April-May 1933, 5.

<sup>99</sup> “La aviación en el Salon,” *Ciencia Popular*, January 1932, 331; “Ha Resultado Excelente el Avión Prototipo,” *Ciencia Popular*, January 1932, 336.

<sup>100</sup> “A las 18.30 de ayer llegaron a El Palomar los pilotos Cairo y Osorio Arana conduciendo el avión prototipo “A.E.C.2” con el cual han volado sobre las catorce provincias,” *La Prensa*, July 19, 1932.

<sup>101</sup> The flight involved ten aircraft. The director of the Dirección General de Aeronáutica, Col. Zuloaga, flew in the lead airplane, a brand new Ae.T.1. Divided into groups behind the transport airplane were six Ae.M.E.1 military trainers, *Tenga Confianza*, *Tenga Paciencia*, and one Junkers K.43. Biedma Recalde, *Crónica histórica*, vol. 2, 221-3.

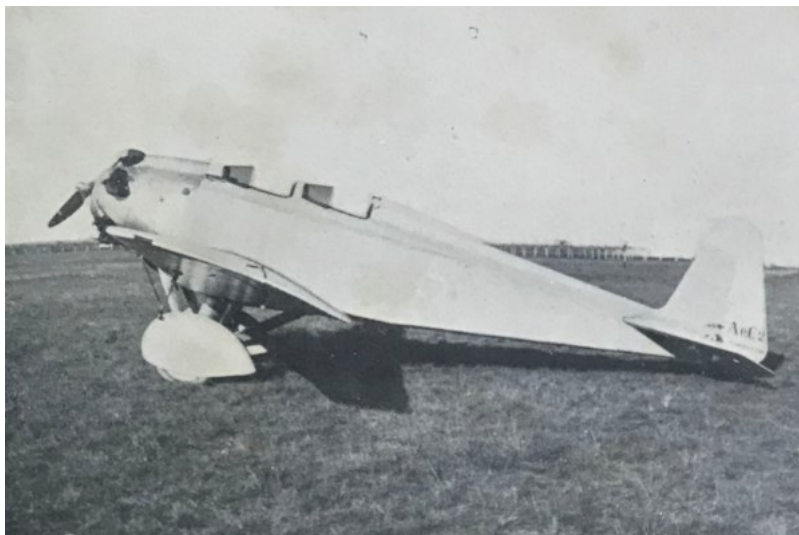


Figure 6.7. The Ae.C.2 “Tenga Confianza.” D.d. Aerotécnica, *Construcciones aeronáuticas*, n.p.

the high point of the FMA’s program under de la Colina. Carolina Lorenzini became a celebrity after her capture of the South American women’s altitude record in an Ae.C.3 in 1935.<sup>102</sup> In addition to publicity flights, the airplanes were featured in trade fair displays and many Ae.C.3s were gifted to aero clubs to drum up interest in the model.<sup>103</sup> The factory had its own representative, the pilot Pedro Mortola, who was tasked with selling the civilian models. Despite all these efforts, doubts about the new airplanes persisted.

Resistance to the factory’s change of direction from licensed production to original design evidently began within the Army itself. According to Halbritter, elements of the Army officer corps turned the press against the project from the beginning.<sup>104</sup> Although it is unclear who was behind the whisper campaign, there were plenty of potential sources. De Arteaga and Taravella were both clearly ousted, at least temporarily in the latter’s case, by de la Colina’s rise. Taravella, in his autobiography, had remarkably little to say about this momentous period in the

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<sup>102</sup> “Una aviadora argentina bate el récord sudamericano femenino de altura,” *Caras y Caretas*, April 13, 1935, 48.

<sup>103</sup> “La aviación en el Salon,” *Ciencia Popular*, January 1932, 331.

<sup>104</sup> Halbritter, *Historia de la industria aeronáutica*, 290.

FMA's history. Beyond those officials personally alienated by the shift, Robert Potash also makes clear that many Army officers disagreed with the recent expansion of military-run industry. For them, the entire ideology of development through industrialization was misguided: "For many other officers...the idea of an Argentine economy that differed sharply from the existing one, with its agricultural base and dependence on foreign trade, was regarded as illusory."<sup>105</sup> It was in this context that de la Colina chose to conduct the Ae.C.1's first flight in secret.<sup>106</sup>

The Justo administration supported de la Colina enough to sustain the original design project, but it was competing with many other priorities. Justo instituted a massive highway building program funded by a gas tax—the same pool of funds which was used for the support of civil aviation. The administration also continued the modernization of military equipment more broadly and created new military industrial installations. The Navy fared particularly well under the Justo government.<sup>107</sup>

The result of this environment of marginal political support and public ambivalence was inadequate budgets, especially as the ambitions of the factory's managers outgrew those of their patrons. De la Colina's plan—building one basic prototype to serve as the base for a series of specialized models—was logical considering the FMA's limited resources. But the project that unfolded proved too expensive, and de la Colina made—what was in hindsight—a serious mistake to press ahead with insufficient resources.

The shift to prototyping and manufacturing original designs required more technical expertise and manpower. Factory personnel swelled to 750 in 1931, 557 of which were

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<sup>105</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 24.

<sup>106</sup> Halbritter, *Historia de la industria aeronáutica*, 290.

<sup>107</sup> Noble, *La aeronáutica nacional*, 56-7; Potash, *The Army & Politics in Argentina, 1928-1945*, 90.

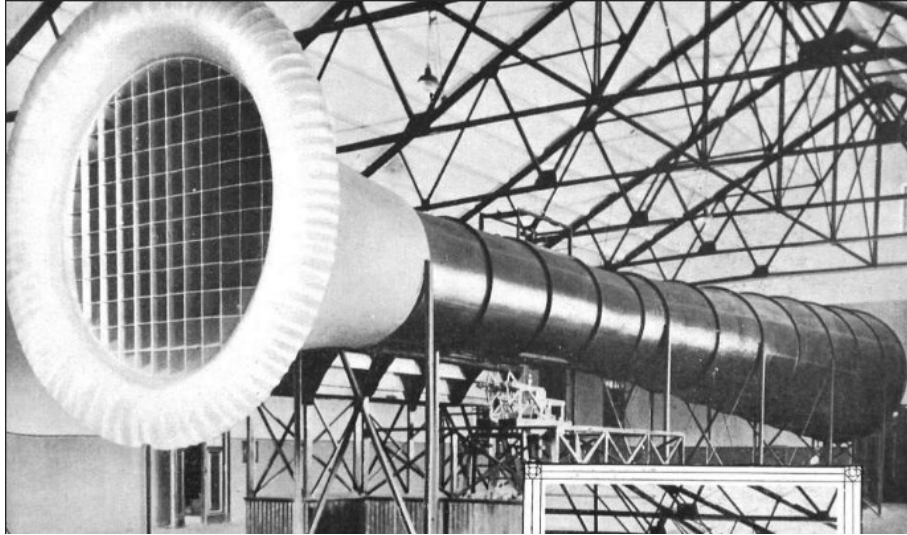


Figure 6.8. A commonly reproduced photograph of the FMA's wind tunnel. “Fábrica Militar de Aviones en Córdoba,” *Caras y Caretas*, July 11, 1931, 100.

concentrated in the fabrication section.<sup>108</sup> Technicians and engineers still had the material and fabrication challenges experienced under the Dewoitine program, but now they had to evaluate and refine the aerodynamic and structural qualities of the basic design too. De la Colina had to hire eight new engineers and four high-level technicians to implement the Ae.C.1 project.<sup>109</sup> When the factory was established, the two areas where foreign expertise was in the greatest demand were technical drafting and aerodynamic analysis—both foundational to original design. The only foreigner to remain under contract throughout this period was the Italian professor of aerodynamics, Dr. Clodoveo Pasqualini.<sup>110</sup> The largest wind tunnel in the region was completed by 1931, which became a common feature of press coverage of the factory (see fig. 6.8).<sup>111</sup>

But in a story emblematic of this expansion of capabilities, the wind tunnel did not receive the needed fans through at least 1935. Factory personnel were thus unable to conduct

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<sup>108</sup> D.d. Aerotécnica, *Memoria 1932*, 83, see also unpaginated graphical insert.

<sup>109</sup> Halbritter, *Historia de la industria aeronáutica*, 289.

<sup>110</sup> D.d. Aerotécnica, *Memoria 1930*, 32; D.d. Aerotécnica, *Memoria 1934*, 1.

<sup>111</sup> See, for example, “Fábrica Militar de Aviones en Córdoba,” *Caras y Caretas*, July 11, 1931, 99-100.

large-scale aerodynamics testing with their prototypes.<sup>112</sup> In 1932, the budget contracted from around 2 million pesos to 1.65 million pesos. Over a hundred employees were fired. In order to maintain its “professional and specialized personnel,” factory managers switched to a five-hour workday. Tight budgets also prevented the purchase of badly-needed laboratory equipment, machine tools, and improvements to the facilities.<sup>113</sup> Over the next three years, management would switch back and forth between five-hour and eight-hour workdays as funding ebbed and flowed.

De la Colina continued—despite these pressures—to develop new prototypes, including significant redesigns like the Ae.T.1. He may have been pressured by the real needs of the aviation community, but it is clear that the factory—though technically proficient—was woefully under resourced. The result was a series of airplanes based on one prototype that had, in Halbritter’s evaluation, “marginal” flight characteristics.<sup>114</sup> The Prototipo and its derivatives were airworthy and in the right hands they were capable of laudable feats like the aforementioned raids. But they were unrefined aircraft whose official performance statistics belied their temperamental natures. Nowhere would this be more apparent than with the Ae.C.3 civilian trainer and its military counterpart which, as we will see below, could be dangerous in novice hands.

The factory’s engineering team was unable—or unwilling—to substantially modify their designs in response to their apparent weaknesses. They pressed ahead, producing more new aircraft as quickly as possible to demonstrate the factory’s utility for the Army and nation. Even after a series of accidents involving FMA-built aircraft in the mid-1930s, factory officials refused

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<sup>112</sup> D.d. Aerotécnica, *Memoria 1935*, 4.

<sup>113</sup> D.d. Aerotécnica, *Memoria 1932*, 1-2, 33-6.

<sup>114</sup> Halbritter, *Historia de la industria aeronáutica*, 257.

to entertain the possibility of a deficiency in their airplanes. They and their supporters argued that problems with flight training were to blame. The truth—as is so often the case—was somewhere in the middle. But by 1935 the problems around the FMA’s original design program had erupted into a political scandal. The Córdoba factory found itself squarely in the crosshairs of a larger battle between President Justo’s Concordancia alliance and its fiercest critics. De la Colina’s project did not survive the encounter.

### **Crisis and (Temporary) Reformation: Julio A. Noble and the 1935 Congressional Hearings**

In 1935, a resurgent Unión Cívica Radical political party under former president Alvear announced its intentions to contest that year’s Buenos Aires gubernatorial race and the congressional elections of 1936. Although the Justo administration eventually allowed fraud to prevent the return of UCR candidates, 1935 was nevertheless a year of political upheaval as the opponents of the Concordancia saw an opportunity to win back power. The anti-government Alianza Demócrata Socialista, formed from the Partido Demócrata Progresista (PDP) and the Partido Socialista, began a political offensive in the national press, which ended with a series of Congressional hearings in the summer of 1935. These hearings proved raucous and even violent as the speakers did little to hide their contempt for one another. The more well-known proceedings occurred in the Senate at the direction of the PDP founder Lisandro de la Torre. Focused on corruption in the meat packing industry and the politics of the Roca-Runciman Treaty, those hearings culminated in the assassination of the PDP senator Enzo Bordabehere on the Senate floor.<sup>115</sup>

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<sup>115</sup> Bordabehere was killed by a “shot intended for de la Torre, fired by a thug linked” to the minister of agriculture, Luis Duhau. De la Torre had accused the minister of corruption. Romero and Brennan, *A History of Argentina*, 72.



Although they never led to murder, another set of contentious hearings took place in the lower Chamber of Deputies at the initiative of the PDP Deputy Julio Argentino Noble (1896-1960). Noble, self-described during the proceedings as “in love with aviation,”<sup>116</sup> had a long history in the local flight community. As a student at the Colegio Nacional Nicolás Avellaneda he organized a funding drive to purchase an airplane for the Escuela Militar de Aviación in 1912.<sup>117</sup> Eventually trained as a civil engineer and pilot, Noble was a frequent participant in the civilian-military initiatives of the 1920s. He organized engineering conferences and published papers on the future possibilities of aviation. Noble was also an important member of the Aero Club Argentino by the 1930s.<sup>118</sup> In 1932, he was elected to the Chamber of Deputies as a PDP representative for Santa Fe, a position he held for one term of six years.

Noble used his experience in aviation as a platform to launch a powerful critique of Army policy. The impact of his arguments was magnified by his long history in aviation. Noble’s campaign was bolstered by a growing discontentment in the national press, especially *La Prensa* and *La Nación*, around the Fábrica Militar de Aviones in Córdoba.<sup>119</sup> In June 1935, Noble opened a formal inquiry into the FMA, which resulted in a set of hearings in late July with the presence of the Ministry of War, General Manuel A. Rodríguez. Rodríguez himself seems to have had little familiarity with aviation and the details of the FMA. But he was the official tasked with defending the national government’s policies, which he did with zeal if not marked cunning.<sup>120</sup> Although Noble’s arguments concentrated on the problems with the factory and their externalities, it is clear from the proceedings that there were far greater political issues at play. At

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<sup>116</sup> Noble, *La aeronáutica nacional*, 26.

<sup>117</sup> Halbritter, *Historia de la industria aeronáutica*, 131.

<sup>118</sup> And probably earlier but I lack membership information for the ACA in the 1920s. “El Aero Club Argentino...” *Aero*, October-November 1933, 11-2.

<sup>119</sup> There are multiple references to this press campaign by both sides during the hearings.

<sup>120</sup> General Rodríguez was one of Justo’s close allies, having been important in his 1931 rise to the presidency. Romero and Brennan, *A History of Argentina*, 62-3.

stake was the reputation and credibility of the armed forces. The self-proclaimed qualities that underpinned the Army's authority to govern aviation—disinterestedness, patriotism, trustworthiness—were being called into question.<sup>121</sup>

Noble, both at the opening of the inquiry on June 26 and at the formal hearings in July, argued that the military's focus on the *Fábrica Militar de Aviones*—more specifically the promotion of original designs—was endangering the military and civilian flight communities. Argentine pilots were flying outdated or deficient airplanes. Even if the airplanes were adequate, the government failed to provide enough of them, whether imported or built locally. The shortage of airplanes then reduced the opportunities for pilots to practice and maintain their skills. This created a deadly situation where less experienced pilots were sporadically flying more demanding aircraft. Noble dramatically opened his inquiry by declaring: “We are paying in lives for a badly-conceived and [even] worse executed policy.”<sup>122</sup>

For his evidence, Noble focused on the safety statistics of the military aviation community, likely because this was a more pointed political attack against the Minister of War. Army authorities were directly responsible for the instruction and operation of military pilots, unlike their civilian counterparts who were under the control of the Ministry of the Interior at this

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<sup>121</sup> The main source for these hearings is a political booklet produced by the PDP to promote Noble's activity in the summer of 1935, *La aeronáutica nacional y la Fábrica de Aviones de Córdoba*. The book is a transcription of Noble's testimony, with most—but not all—of the opposition's and his allies' comments edited out. I have supplemented this admittedly easier to read publication with the official records of the Congressional sessions. In my experience, this set of testimony is unique during the 1930s for its extensive and specific criticisms of the Army's aviation policy. Most publications or speeches were vaguer, with greater deference shown to the military and national leadership. They also tended to be proscriptive and speculative, without detailed consideration of past policies.

<sup>122</sup> “*Estamos pagando con vidas una política mal concebida y peor ejecutada.*” Noble, *La aeronáutica nacional*, 4.

point. Furthermore, military aviation represented a significant proportion of all flight activity in the country outside of foreign airlines.<sup>123</sup>

The statistics gathered by Noble revealed an appalling situation. In a service that counted only dozens of airplanes, thirty-nine Army officers and enlisted personnel had died in accidents since 1925. It was only six months into 1935 and already five *militares* had lost their lives. The rate of flight hours per fatality in military aviation had averaged 2,755 hours per death from 1931 to 1934. Civilian aviation was faring even worse, with the horrendous rate of 1,770 hours per death in 1934. As a point of comparison, Noble cited the accident rates in the US. Argentina's hours per death ratio was the equivalent of the US military in the early 1920s—its rate from 1930-1933 had improved to an average 13,327 hours per death. Even US civil aviation—excluding the safer commercial airlines—was doing markedly better in 1933, achieving a rate of 4,093 hours per death.<sup>124</sup>

The training levels per pilot were also inferior to their US counterparts. In 1934, the Argentine Army had 112 active pilots who accrued 9,098 hours of flight time, which worked out to about 81 hours per pilot a year. The Navy air service evidently had a better ratio at 125 hours annually per pilot. But as Noble emphasized, the US military was at that point striving to give each pilot 300 hours of flight time a year.<sup>125</sup>

Although Minister of War Rodríguez countered that the political opposition had reduced the funds available to the Army for training, Noble's argument was more expansive than lamenting the under resourcing of the military aviation community. He noted the deficiencies in the training at the EMA, especially the lack of “blind flying” instruction, and emphasized the

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<sup>123</sup> In 1934, Army flight time totaled 10,495 hours, while the civilian community—excluding the airlines—totaled 13,795 hours. *Aero*, July 1939, 12; D.G.d. Aeronáutica Civil, *Boletín de Aeronáutica Civil*, no. 2 (1934), 6.

<sup>124</sup> Noble, *La aeronáutica nacional*, 47-53.

<sup>125</sup> *Ibid.*, 55

need for greater independence for the air services.<sup>126</sup> But the core of his argument was centered on problems with the nation's flight material. Aviation remained dangerous and expensive in Argentina because civilian and military pilots did not have access to safe and economical airplanes. The fundamental reason for the paucity of adequate flight material—in Noble's estimation—was the state's exclusive focus on the *Fábrica Militar de Aviones*, and the poor results of that project.

Noble and his allies argued that the very idea of the FMA was misguided. Noble emphasized that no other nation had embarked on the same type of military industry in aviation.<sup>127</sup> The possibility of shedding national aviation's dependence on foreign industry was illusory in Noble's estimation: "It is a utopia to think that we can conquer with the Military Aircraft Factory, the independence of our aeronautics, from foreign industry." He stressed the lack of a supporting local metallurgical industry, especially the production of steel and "light alloys." These shortcomings in the Argentine economy meant the factory still "lives subject to foreign industry."<sup>128</sup> In his mind, the FMA existed because of an ascendant "nationalist spirit" in the government—essentially the ideology espoused by Army officials like Torres and de la Colina.<sup>129</sup>

Noble reinforced the flawed logic of the factory by noting the small size of Argentine military aviation and thus the miniscule market for the FMA's creations. The total number of active military aircraft was only about forty in 1935. The factory's managers were hoping to manufacture aircraft in series, eventually building hundreds of airplanes. If they actually met

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<sup>126</sup> Noble, *La aeronáutica nacional*, 5, 31-6.

<sup>127</sup> *Ibid.*, 10. This was an exaggeration since at least the Soviet Union possessed state-owned and -operated military aircraft factories.

<sup>128</sup> "*Es una utopía pensar que podemos conquistar con la Fábrica Militar de Aviones, la independencia de nuestra aeronáutica, de la industria extranjera.*" *Ibid.*, 12.

<sup>129</sup> *Ibid.*, 185.

their production targets, their best customer would have too much material after just one year. Furthermore, Noble warned that if Army aviation spending actually rose to absorb these new airplanes, it might kick off an “aeronautical arms race in South America.”<sup>130</sup> De la Colina had focused on creating airplanes that could also be used in the private sector. But in 1936, there were only 291 airplanes in active use by the civilian sector, including commercial operators and aircraft owned by the state. Many of these airplanes dated back to the mid-1920s, suggesting the annual consumption of new airplanes was very small.<sup>131</sup>

The switch to original design—which Noble called the “prototype policy”—was a particularly grievous mistake. The production of prototypes was simply beyond the technical and financial means of the factory:

A prototype, that is to say, the machine on which the aircraft series must be copied, requires a scientific preparation, followed by empirical refinement and finally, experimentation that the airplane factory of Córdoba, for lack of instruments, for lack of experienced technical staff, and lack of resources, is not in a position to meet.<sup>132</sup>

As a point of comparison, Noble claimed that the development of a single prototype in the US generally cost the equivalent of the FMA’s entire budget (US\$200,000-500,000).<sup>133</sup> The creation of successful prototypes was difficult as the recent struggles of the French fighter aircraft program had shown. It took many design modifications, especially after the initial prototype was built, to refine its flight characteristics. Wind tunnel testing—a capability the FMA did not have—was essential. Noble cited the development history of Pan American’s Brazil Clipper

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<sup>130</sup> Noble, *La aeronáutica nacional*, 62.

<sup>131</sup> D.G.d. Aeronáutica Civil, *Boletín de Aeronáutica Civil*, no. 3 (1936), 48-51. Noble does not cite this evidence as it was released in 1937, but it bolsters his point.

<sup>132</sup> “Un prototipo, es decir, la máquina sobre la cual han de calcarse los aviones de series, exige una labor científica de preparación, una de afinamiento empírico posterior y finalmente, una experimental que la fábrica de aviones de Córdoba, por falta de instrumental, por falta de personal técnico experimentado y por falta de recursos, no está en condiciones de cumplir.” Noble, *La aeronáutica nacional*, 11.

<sup>133</sup> *Ibid.*, 12.

aircraft, which evidently required 582 modifications after its first long-distance flight test. The FMA's leadership chose to create new variants of the prototype instead of refining its original design.<sup>134</sup> In Noble's opinion, the results were airplanes that "are bad, are expensive, and are old the day they leave the factory."<sup>135</sup>

The government's opponents focused on the poor performance history of the Ae.C series of light aircraft, which the FMA promoted as training and touring aircraft. The military variant was also used alongside the Avro 504R Gosports for basic training. Based on anonymous pilot testimony, Noble asserted that the Ae.C.1 Prototipo (and hence its derivatives) was 300 kg. heavier than officially recognized, which in turn drove up the landing speed. FMA's calculation put the minimum speed around 43 knots, more than adequate for basic training. But Noble claimed that his colleagues put the real landing velocity at 57 knots. He also described the airplane's worrying lack of stability in steep turns and propensity to spin.<sup>136</sup>

According to evidence in the military's own documentation, there was a hesitancy to use the FMA's aircraft. Noble noted how decrees were released by the Dirección de Aerotécnica limiting the practice of aerobatic maneuvers even in the Avro Gosport license productions due to the risks of structural deformation.<sup>137</sup> The same limitations were imposed on Ae.C.3s used by the aero clubs.<sup>138</sup> Under the Gosport training regime, aerobatic flight, in the form of spins for civilians and of combat maneuvers for military pilots, was a necessary part of flight training. Noble dramatically claimed, "Civilian aviators run away from these machines; they have well-

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<sup>134</sup> Noble, *La aeronáutica nacional*, 84-87.

<sup>135</sup> "Son malos, son caros y son viejos el día que salen de fábrica." *Ibid.*, 13.

<sup>136</sup> *Ibid.*, 90-6.

<sup>137</sup> *Ibid.*, 34.

<sup>138</sup> *Ibid.*, 175.

founded fears to pilot them.”<sup>139</sup> In the Army’s own annual report, quoted by Noble, fully trained military pilots were reluctant to use the observation variant of the Prototipo:

The [Ae.M.O.1] airplanes were provided to the squadron of application. Due to their trepidations, [the airplanes] could not be initially used with intensity in daily work, requiring continuous revisions, [until] finally adapting them to specialized jobs.<sup>140</sup>

The Navy also refused offers from the Army to use its airplanes. According to Halbritter, the Army gave the Naval air service the military trainer variant of the Ae.C.3 for evaluation in 1935. A few months after tests at the Punta Indio Naval Air Base, the airplane “was returned...without any comment.”<sup>141</sup> FMA documentation shows that the Navy purchased replacement parts from the factory in 1932 and 1934.<sup>142</sup> But Noble claimed in his testimony that the service had been compelled by the Justo administration to adopt the Lorraine-Dietrich motors produced in Córdoba.<sup>143</sup>

In Noble’s estimation, instead of purchasing new airplanes from abroad, the government was overpaying to provide subpar aircraft to the flight community. The officials promoting these policies were “driven by that ‘nationalism’ that already invades everything in the world...” They insist on the need for the “construction of ‘one hundred percent Argentine’ machines, because

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<sup>139</sup> Noble, *La aeronáutica nacional*, 82.

<sup>140</sup> “Los aviones A.C.M.O., fueron provistos a la escuadrilla de aplicación. Debido a sus trepidaciones no se les pudo emplear inicialmente con intensidad en el trabajo diario, requiriendo continuas revisiones, adaptándolos finalmente a los trabajos de especialidades.” *Ibid.*, 9-10.

<sup>141</sup> Halbritter, *Historia de la industria aeronáutica*, 292.

<sup>142</sup> D.d. Aerotécnica, *Memoria 1932*, 3; D.d. Aerotécnica, *Memoria 1934*, 96.

<sup>143</sup> Noble, *La aeronáutica nacional*, 133-4. Although the Minister of the Navy was present at the hearings, the government’s opponents largely abstained from compelling the minister to testify against his Army colleague. During the hearings the Navy’s representative was generally cordial to Noble and his allies, but neither him nor General Rodríguez showed any interest in driving a public wedge between the services.

the machine must be conceived in the country, it must be built in the country, and it must be flown in the country...”<sup>144</sup>

In essence, Noble was arguing that the Army’s efforts to use aircraft production as a crucible of Argentine industry had a political motive—i.e. nationalism—that was steering what should have been purely technical decisions. As we saw in the beginning of chapter five, Noble was correct to question whether the Army was as disinterested as it claimed. Officials like Torres, Crespo, and de la Colina were ardent promoters of industry in the nation’s interior; their cultural distaste for “cosmopolitan” Buenos Aires was just as influential as the real need for military security on the frontiers. Although Noble did not make this point, the FMA could have been located on the outskirts of the capital metropolis, which would have reduced the logistical challenges of transporting industrial materials and workers to a small city some 700 kilometers from the nation’s major ports.

Noble and his allies generally stopped short of calling for the FMA’s closure. While the harshest critic, evidently *La Nación*, editorialized for the total privatization of the factory,<sup>145</sup> the deputies saw the experience and technical capability of the factory, although expensive in blood and treasure, as an asset to be preserved under some form of state control. As Nicolás Repetto stated after lamenting the 10 million pesos spent on the FMA, “The factory is installed and exists. Therefore, it is absolutely necessary that we make it efficient.”<sup>146</sup> Repetto advocated for diversifying the FMA’s mandate to include farm machinery—badly needed in Córdoba

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<sup>144</sup> “...de los culpables de la producción de malas máquinas, de los que llevados por ese «nacionalismo» que ya lo invade todo en el mundo, quieren también la construcción de máquinas «cien por ciento argentinas», porque hay que concebir la máquina en el país, hay que construirla en el país, y hay que volarla en el país?” Noble, *La aeronáutica nacional*, 192.

<sup>145</sup> “Moción...sobre la organización, seguridad y eficiencia de la aviación militar y naval,” *Cámara de Diputados*, Diario de sesiones, 13 Reunión, 12 Sesión ordinaria, July 18, 1935, 658.

<sup>146</sup> “Moción...sobre la organización, seguridad y eficiencia de la aviación militar y naval,” 657.



province—and other basic metal products.<sup>147</sup> Noble thought that the wiser course of action of authorities would have been to entice a foreign manufacturer to open a plant in Argentina, which could serve as a fountain of new technical knowledge. But at this point, he wanted the factory to reduce its scale back to only the provision of replacement parts and shift to a mixed public-private ownership scheme.<sup>148</sup>

The *Fábrica Militar de Aviones*' defenders admitted that many of Noble's points had elements of truth. The Minister of War vaguely noted that changes to the FMA's program were being made, to which Noble retorted that such efforts were far too slow.<sup>149</sup> The accident rate was indeed unacceptable and the military was studying how to ameliorate the situation. The political allies of the Justo administration argued that the factory had potential and its shortcomings were simply the result of underfunding by Congress. They also emphasized that Noble's charge that the FMA's products were already obsolete upon completion was an exaggeration. General Rodríguez stated, "Our material is not modern, but it is in a perfect condition; the Nation still cannot provide ultramodern material."<sup>150</sup> Deputy Taboada Mora of the conservative *Partido Demócrata Nacional* argued that it was essentially impossible to produce the "most modern machines" because of how quickly aviation technology was improving at the time. He quipped that by the time airplanes purchased abroad arrive, even they were not the most "effective" anymore.<sup>151</sup> The government's allies saw Nobles pretensions to recreate the latest developments in the United States or Europe in Argentina as unrealistic.

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<sup>147</sup> "Moción...sobre la organización, seguridad y eficiencia de la aviación militar y naval," 658.

<sup>148</sup> Noble, *La aeronáutica nacional*, 61, 195.

<sup>149</sup> *Ibid.*, 112.

<sup>150</sup> "*Nuestro material no es moderno, pero está en perfecto estado; la Nación no puede dar todavía el material ultramoderno.*" *Ibid.*, 50-51.

<sup>151</sup> "Moción...sobre la organización, seguridad y eficiencia de la aviación militar y naval," 650.

Mora finished his remarks by emphasizing that the greatest resource at the factory was its technical personnel, which he proudly noted “are, at present, almost totally Argentine and shortly, they will be totally Argentine.” The work provided by the factory “dignified” the worker:

Already Córdoba has begun to appreciate it, watching how yesterday’s tender young ones from a humble home have become strong adolescents, whom in addition to providing the daily bread are also bringing habits of order, work and hygiene, that elevates the moral level of the ranch until turning it into a healthy and sunny abode for the worker.<sup>152</sup>

Whereas Noble focused on the material deficiencies and risks in the flight community, Mora spoke of a broader vision and purpose for the factory. It was a national project that offered to mold the humble Argentine worker, improving his condition while building the foundations of the military-industrial capacity to wage modern war. Mora was, in effect, echoing the building popular conception that we saw in chapter four that industrial labor, especially in the aviation industry, could be a source of socioeconomic opportunity and uplift for working people.

The old aeronautical dreams of military and civilian aviation boosters from the early 1920s were persisting in the rhetoric of the Army’s defenders. The 1920 civil-military promotional pamphlet forecasted thousands of jobs for “both sexes and all ages” in aviation and all its supporting scientific industries.<sup>153</sup> The FMA was the first industrial institution to deliver on this promise, except for the conspicuous exclusion of women. At a time when technical education was lacking in the country, the FMA was training and hiring Argentines. For the higher personnel like the aeronautical engineers, the factory was likely the only domestic

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<sup>152</sup> “Y habla muy elocuentemente, además, el favor de la dignificación de la vida del obrero. Ya en Córdoba empieza a apreciarlo viendo cómo los hasta ayer tiernos retoños del hogar humilde, se han convertido en robustos adolescentes que además de proveer el pan de cada día traen a la casa hábitos de orden, de trabajo, de higiene, que elevan el nivel moral del rancho hasta convertirlo en la vivienda sana y soleada del obrero.” “Moción...sobre la organización, seguridad y eficiencia de la aviación militar y naval,” 654.

<sup>153</sup> Comisión Ejecutiva, *Comisión Ejecutiva Nacional Pro-Aviación Militar y Civil*, 12-3.

employment opportunity. The real economic benefits of the FMA, in the minds of many of its supporters, was thus to its workers more than the aviation community itself.

Noble, who considered himself an expert after his many years of involvement in the flight community, accused the authorities of misunderstanding the needs of aviation. He declared General Rodríguez a “relatively young man by age, but old by his technical and tactical knowledge.”<sup>154</sup> Military and civilian aviation needed, above all else, effective, safe, and economical airplanes. But perhaps it was Noble who misunderstood that the true purpose of the FMA. Earlier we saw how, according to its leadership, its purpose went far beyond the production of aircraft. It was an experiment in the long-term industrial development of the nation, which—increasingly—also promised the “*dignificación*” [dignification] of the working class. This vision for the uplift of workers through the Army’s institutions extended from the capital city into the provincial countryside.

Noble’s criticisms against the FMA’s operations were powerful and contained many arguments that with hindsight were cogent. The strategy of original design and production employed by de la Colina produced poor results. The Army eventually acknowledged the deficiency of the Ae.C.3’s construction when in 1938 its airworthiness certificate was revoked due to fears of structural degradation. In Halbritter’s understanding, the Prototipo and its successors had a disconcerting lack of lateral stability and possessed other “unorthodox” characteristics.<sup>155</sup> Instead of refining their design with minor modifications, the engineers occupied their time with major alterations for the sake of new variants. Each model involved a redesign of the cockpit and seating arrangements or, in the case of the Ae.T.1, an increase in

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<sup>154</sup> “*Es ésa la mejor explicación de la actitud del ministro de Guerra. Es un hombre relativamente joven por la edad, pero viejo por los conocimientos técnicos y tácticos.*” Noble, *La aeronáutica nacional*, 164.

<sup>155</sup> Halbritter, *Historia de la industria aeronáutica*, 297.

scale. As Noble noted with some exaggeration, most foreign aircraft manufacturers only produced three to four models at time, while the FMA had produced 32 different airplane configurations in five years.<sup>156</sup> Furthermore, the attempt to make one aircraft that could meet the needs of both civilian and military training was questionable, since the latter trained using more advanced aircraft in a more rigorous institutional setting.<sup>157</sup>

The decision to give airplanes with “marginal” performance to aero clubs and the EMA for flight training likely did aggravate the already dangerous activity of learning to fly. But Noble did not acknowledge the history of disagreement within the civilian aviation community, as well as their resistance to the military’s efforts at regulation. Some journalists, in their investigations of the accident rate, thought the problem was in the poor state of flight training, which varied greatly in quality around the country.<sup>158</sup> The lack of a cohesive regulatory environment for civil aviation was the failure of the national government, the Army, and the civilian flight institutions. Accidents were likely exacerbated by the rudimentary state of the nation’s aviation infrastructure, which had only seen minor and piecemeal efforts at improvement since the early 1920s. The national meteorological service was also in the midst of reformation after its deficiencies became clear in the early 1930s.<sup>159</sup> Bullrich found that in such services “there is a great anarchy and [they] provide little use...from the point of view of aeronautical protection and safety.”<sup>160</sup> Noble blamed the exclusive focus of authorities on the

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<sup>156</sup> Noble, *La aeronáutica nacional*, 68.

<sup>157</sup> A political writer for *La Prensa* pointed out this issue in 1940, when the FMA began another design program for a civilian-military trainer. “La fabricación nacional de aviones,” *La Prensa*, July 17, 1940.

<sup>158</sup> *Aero* magazine later backed up the government’s claims that it was more bad training than faulty equipment that was costing so many lives. “Falta de Disciplina en Nuestra Aeronáutica,” *Aero*, August-September 1936, 1. *Ciencia Popular* wasn’t so sure, and they did suggest subpar aircraft allotments were more to blame. “Los accidentes de Aviación,” *Ciencia Popular*, November 1937, 729.

<sup>159</sup> Biedma Recalde, *Crónica histórica*, vol. 1, 264-83.

<sup>160</sup> “...hay una anarquía grande y que es escasa la utilidad que los actuales servicios prestan, desde el punto de vista de la protección y de la seguridad aeronáutica.” Bullrich, *Régimen y organización*, 159.

FMA for the nation's aviation crisis, but it was his congressional colleagues that had also failed to pass meaningful legislation in those other areas.

Over the course of the hearings, the details over the FMA's production strategies or "prototype politics" seemed to recede behind a debate of far greater consequence for the nation: the place of the armed forces in Argentine society and politics. The fiercest exchanges during the testimony—beyond moments where Noble accused the Minister of War of having been complicit in the deaths of military aviators—were around military secrecy. General Rodríguez repeatedly expressed misgivings at the detailed knowledge Noble possessed that was not public knowledge, arguing that secrecy was important for national security. Noble, in the first such exchange, shot back that "in aviation there are no permanent secrets; at least, we cannot have them ourselves. If aviation had secrets, we would be condemned to not have aviation."<sup>161</sup> Later, when the PDP deputy discussed recent tests on the bomber variant, the Minister of War lamented:

The education of our workers is not high enough so that these things do not go public. These things must be kept in reserve, not by a spirit of concealment, but by a spirit of custom, especially so that the day when the Nation needs it, it can count on the secrecy of its personnel.<sup>162</sup>

In an ominous reference that revealed the gestating admiration for European fascism among members of the armed forces, General Rodríguez continued: "In Germany, for example, it was forbidden and punished by the Penal Code to give data referring to the manufacture of [such]

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<sup>161</sup> "...en aviación no hay secretos permanentes; por lo menos, no podemos tenerlos nosotros. Si en aviación hubiera secretos, estaríamos condenados a no tener aviación." Noble, *La aeronáutica nacional*, 28.

<sup>162</sup> "La educación de nuestros obreros no es lo suficientemente elevada como para que estas cosas no salgan a la publicidad. Estas cosas deben ser mantenidas en reserva, no por un espíritu de ocultamiento, sino por un espíritu de costumbre, sobre todo para que el día en que la Nación lo necesite cuente con el secreto de su personal." *Ibid.*, 135-6. It should be noted that a significant proportion of the FMA's personnel were civilian workers.

things...” He remarked that there “were things in which my condition as a soldier I cannot listen to in silence.”<sup>163</sup> Noble eventually retorted:

We do not resign ourselves to this economic nationalism at the cost of the lives of airmen. It is more patriotic that it has more value to say these things here and in the newspapers, than to insist on closing our eyes. These things are not secret, they cannot be; if there was something secret, I would be the first to respect it.<sup>164</sup>

Noble repeatedly expressed outrage at the lack of transparency for the FMA, citing the dearth of trustworthy statistics and congressional officials’ difficulty in gaining access to the factory grounds.<sup>165</sup>

General Rodríguez’s appeal to military secrecy—undoubtedly a screen for the poor performance of the factory—is reminiscent of the appeals to “regional interests” made by Army officials in the 1920s when civilians like Antonio Biedma Recalde criticized the aero club policies. In both cases, the Army was depending on its institutional credibility as patriotic, apolitical, and—above all—trustworthy. Many members of the officer corps perceived the Army as a fundamental institution in the creation of Argentine civilization and progress. They saw this process as distinct from, and often superior to, the increasingly raucous democratic politics of the early twentieth century. The self-perceived autonomy from democratic politics was by the 1930s profoundly detached from reality, yet it underpinned the authority of the Army to meddle in national politics.

The distinction was evident in the hearing. According to Noble, Rodríguez had been quoted saying “the democratic forces are the enemies of the Army and the Navy”—which the

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<sup>163</sup> Noble, *La aeronáutica nacional*, 137.

<sup>164</sup> “*No nos resignamos a este nacionalismo económico a costa de vidas de aviadores. Es más patriótico y tiene más valor decir estas cosas aquí y en los diarios, que empeñarse en cerrar los ojos. Estas cosas no son secretas, no pueden serlo; si hubiera algo secreto sería yo el primero en respetarlo.*” *Ibid.*, 142.

<sup>165</sup> *Ibid.*, 29-30, 169, 198.

Minister of War did not deny. In his concluding remarks, Noble told the chamber: “We do not want to mix the Army in politics nor politics in the Army.”<sup>166</sup> This belief in the Army’s apolitical nature was thus alive, if weakened. Even the UCR’s voters—according to *La Prensa*—applauded the presence of military officers at polling places in 1938 in the belief they “would guarantee impartiality.”<sup>167</sup>

In the relative anarchy of the national aviation community of the interwar period, the Army was given a greater and greater role in aviation policy precisely because they were deemed disinterested, knowledgeable, and experienced. As we have seen, the new technology of aviation was seen by military officials as a powerful new tool in its “traditional civilizing mission.” The accumulated technical and scientific expertise from its engineering and cartographic projects had already lent military officials an authority resembling their civil engineering counterparts across the Americas. Engineers used their supposedly disinterested scientific and technical knowledge to garner social and political authority to transform urban spaces, sponsor industrialization projects, and even steer national politics.<sup>168</sup> De la Colina, in his presentations on the role of *aerotécnica*, repeatedly invoked the need to prevent the infiltration of politics into what should be a scientifically-determined program to develop the technology. The fourth and final “mission” of *aerotécnica* was to “Constantly defend [the] country’s Aeronautics from biased internal and external politics.”<sup>169</sup>

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<sup>166</sup> “No queremos mezclar al ejército en la política ni la política en el ejército.” Noble, *La aeronáutica nacional*, 165.

<sup>167</sup> *La Prensa*’s coverage of the February 1938 gubernatorial election under the Castillo presidency is covered in Potash, *The Army & Politics in Argentina, 1928-1945*, 112-4.

<sup>168</sup> For another case of the social and political authority conferred to engineers in the late nineteenth century, see Anna Rose Alexander, *City on Fire: Technology, Social Change, and the Hazards of Progress in Mexico City, 1860-1910* (Pittsburgh: University of Pittsburgh Press, 2016), chapter four.

<sup>169</sup> “Defender constantemente a la Aeronáutica de su país de políticas tendenciosas internas y externas.” de la Colina, *La aerotécnica*, 15.

Yet, this appeal to ensure the apolitical development of aviation was of course deeply ironic. Argentines recognized at the time what later became a truism in the historiography of flight: aviation was and is a fundamentally political industry. It was always dependent on state support in the forms of subsidizes, military procurements, infrastructure projects, legislation, and more. But for military officials this obvious political dimension of their industry was seen as distinct from the influences of “democratic politics.” In the minds of men like Crespo, Torres, and de la Colina, the project of national development via aviation could be carried out above the democratic fray as it was in the common interest of the nation’s security and progress.

Critics like Noble and the PDP threatened to weaken the Army’s technical, political, and social authority to conduct such projects as the FMA. Beyond aviation, such attacks risked the Army’s right to be a powerful influence in the Argentine economy and participate in its national politics. Although aviation was only one area of criticism, the Córdoba aircraft factory was the highest-profile industrial project managed by the Army. Doubts cast there could undermine the perception of its technical and managerial competence. Indeed, the weight of anti-government hearings in the summer of 1935 humiliated the Justo administration and forced a series of reforms.<sup>170</sup> In September of that year, the administration agreed to reform Army aviation and its procurement strategy. Millions of pesos were set aside to purchase aircraft abroad.<sup>171</sup> De la Colina was reassigned to a new post in 1936. The FMA switched back to licensed production, this time building the series of Focke-Wulf Fw-44J biplanes and Curtiss H750 Hawks.<sup>172</sup> The factory still existed, but its prestige, funding, and mandate had suffered major blows.

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<sup>170</sup> Romero and Brennan, *A History of Argentina*, 72-3

<sup>171</sup> “Adquisición de aviones para el ejército, orden del día número 195,” *Cámara de Diputados*, 37<sup>o</sup> meeting, ordinary session 36, September 26, 1935, 2365-2368.

<sup>172</sup> Halbritter, *Historia de la industria aeronáutica*, 267, 301-3.



## **Evaluating the State's Aviation Projects and their Effects on the Flight Community**

As the interwar period drew to a close, the Argentine aviation community underwent a period of self-reflection and reform. Dozens of editorials, articles, pamphlets, and books were published on the state of the industry in their country and the world. There was a prevailing sense that the Army's aviation experiments had failed to organize, regulate, and stimulate the technology, at least with the safety and scale demanded by the industry's enthusiasts. In the final chapter, we will return to their assessments and prescriptions for the future. But first it is worth stopping to evaluate the interwar period's hard-won lessons in both learning to fly and learning to build airplanes, with the benefit of hindsight.

When it came to promotion of flight training, the Army's decision to delegate basic instruction to the aero clubs has created a confusing perception in the historiography of Argentine aviation that the interwar period was characterized by civilian autonomy. At face value that was true, but in reality the Army was the principal regulator and financier of civil aviation. The two roles went hand-in-hand since state subsidies were contingent on the acceptance of military oversight. Despite its meager resources, the Army was also the most experienced flight institution in the country. More fundamentally, the national government and especially the legislature were only willing to fund aviation projects when they pertained to national defense. Even funds earmarked for "the fostering of civil aviation" were justified by the military exigency to create an "aerial reserve" for the nation.

Initially aero clubs welcomed the help, including military personnel to train their students and maintain their operations. But the largest civilian institutions, the Aero Club Argentino and the Centro de Aviación Civil, resisted the Army's efforts to regulate their activities. These civilian institutions were themselves divided, which meant that no extra-governmental

organization successfully took the role of regulator or, at the very least, lobbying arm of the flight community.

The Army used their authority—based both in their technical expertise and in their reputation as selfless, apolitical servants to the nation—to establish themselves as the center of power in the flight community. With that power men like Torres, Crespo, and de la Colina pursued their self-perceived mandate to develop the military-industrial capability of the nation, and in turn foster independence, security, and prosperity for the common Argentine. This—as we saw in the previous chapter—was the manifestation of a cultural belief in the power of aviation to transform their society in much the same manner as the early-modern Spanish caravel spread “civilization” to the New World. The Army had long seen itself as a source of civilization and progress in the interior, and the airplane became the newest tool in that mission.

By stepping into this role, Army officials were openly wading into the politics of the aviation community. Whereas before civilian institutions had been partners of the Army, now they were its charges. The criticism came within months of its donning the mantle of the primary manager and benefactor for aviation. But this public condemnation of their regulatory and financial power paled in comparison to the national scandal that resulted from the Army adding one more task to their mandate: production.

As we have already seen, the choices made by de la Colina after 1930 were problematic, not least because they failed to account for the factory’s limited resources in time, expertise, and, above all, money. Maintaining de Arteaga’s policy of licensed production would have lowered this burden on the factory, while also reducing the political and technical risks of original design. Once the choice to pursue original design was made, authorities made the mistake of making one, unrefined aircraft into a series of specialized models intended for immediate production.

But beyond the issues with original design, the experience of the FMA in the mid-1930s showed the problems with the Army's concentration of power. By that point, the Army was tasked with building airplanes, certifying them as airworthy, disseminating them to the civilian and military flight communities, *and* overseeing the resultant flight training. Onto this concentration of regulatory and productive responsibilities was the blanket of secrecy and political deference the Army had come to expect for its operations. Thus civilians had to simply *trust* that the Army was acting in their best interest.

As the accident rate in the early to mid-1930s drew national attention, that trust eroded. It created a climate of fear and frustration around the FMA's airplanes. As Noble's testimony shows, pilots were afraid to fly the airplanes. It is difficult to know with complete certainty whether the Prototipo and its derivatives were as dangerous as its detractors alleged. But that is largely irrelevant. It was the seeds of doubt planted in the aviation community that mattered most. For example, Noble argued that the Ae.C.3 was overweight, and thus had a landing speed 12 kts. above its official minimum velocity. But this higher speed—57 kts.—was still reasonable for a monoplane training aircraft, especially one without flaps.<sup>173</sup> Instead it was the uncertainty about the factory's data—and in this case what was the correct minimum speed—that undermined public confidence in their aircraft. If the FMA's personnel were responsible for inspecting the new airplanes, and they had a vested interest in the success of the model, how could pilots know the aircraft was fully safe? The fears over Ae.C.3's squirrely handling in turns and propensity to spin were also tough to shake. It does not bode well for an aircraft's sales if its

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<sup>173</sup> Modern Cessna 150s and 172s trainers, which feature flaps, generally have a landing speed in the 40-knot range. Flaps were a relatively new aerodynamic technology in the 1930s, and the FMA's engineers were studying how to implement flaps in their aircraft in 1935. D.d. Aerotécnica, *Memoria 1935*, 74.

promotional article feels to the need to say “[IT] DOES NOT INVOLUNTARILY ENTER SPINS.”<sup>174</sup>

This narrative suggests that the Army—characterized by a lack of transparency and ostensible service to higher causes like national defense, development, and prestige—was not the best institutional environment for the regulation and production of aircraft. Aviation technology, due to the immense risks involved, always required trust to function, whether it was the confidence of a heroic pilot in his or her mechanic, or the sense of safety airline passengers felt knowing airplanes were being inspected and their operators regulated. When the Army entered the politics of the national aviation community in 1923, and then the national political arena in 1930, the Army taxed that public trust to its limits, undermining faith that its actions reflected the best interest of the nation and its aviators.

Although Noble did not explicitly express it in these terms, his argument showed how the political and ideological motivations of the Army had the power to increase or decrease the risks borne by pilots and their charges. The factory needed a domestic market for aircraft, so the Army—via the executive branch—created one by dedicating procurement funds to FMA aircraft, making it more difficult to import civilian aircraft, and purchasing its own products for the aero clubs. The subsidies granted for flight training increased demand for trainers, further enlarging the civilian flight community. The FMA’s marketing materials and boosters also framed the purchase of FMA airplanes as a patriotic act, compelling their allies in the aviation community to use them. In a classic incarnation of import-substitution industrialization, the state tried to use its financial, political, and propaganda powers to create a market for its products, giving the

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<sup>174</sup> Emphasis original. “*NO ENTRA INVOLUNTARIAMENTE EN TIRABUZÓN.*” Pedro V. Mortola, “Los aviones nacionales de nuestra Fábrica Militar de Córdoba bajo el punto de vista: Aerodinámico, Constructivo y de Empleo,” *Boletín Informativo de las Armas*, 1935, 281-293, 291.

producers room to develop their capabilities and refine their methods.<sup>175</sup> Eventually, as its defenders promised, the factory would have the ability to make effective and competitive aircraft, lessening the need for state intervention.

The problem was that learning how to build airplanes—more so than most industrial and consumer products—inherently involved physical risk. Any new aircraft was necessarily experimental, and even more in the era when the fundamental concepts of aerodynamics, aircraft design, and metal fabrication were still being formulated. De la Colina likely overestimated the power of *aerotécnica* to provide *a priori* technical assessments about designs and modifications—especially with the lack of resources at his engineers’ disposal. When the material dimension of metal construction was added in, the uncertainties were compounded. Even if the aeronautical engineers could be assured of their design, the use of metal in airframes was relatively new in the global industry and completely unprecedented in Argentina. The operational limits placed on FMA aircraft were in large part due to fears of structural deformation under stress, which pointed to deficiencies in the design *and* materials.

Learning requires failure. Although the technical knowledge and tools the FMA imported may have reduced the risk of total failure, it was to be expected that the first iterations of new aircraft would be expensive and mediocre at best. The engineers and technicians in Córdoba were at the forefront of their nation’s industrial capabilities, and they needed room to experiment, succeed, and fail. The *memorias* certainly pleaded for more time, manpower, and resources due to the difficulties of learning how to design and produce metal airplanes. In an ideal world, the FMA would have been given more time and resources to develop its capabilities,

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<sup>175</sup> This is not to say that all the other branches of the government were willing to play along. The Navy and the Ministry of the Interior were at times skeptical of the Army’s efforts. But the Army was bolstered by its close connections to the presidency and larger budgets.

without any expectations of it supplying the local flight community in the short-term. But the Fábrica Militar de Aviones—created in a precarious political context—had to produce concrete results and quickly. The FMA’s leadership, under pressure to deliver new and economical aircraft, pushed ahead with the production of unrefined models. The military and civilian flight communities, incentivized to use the resultant aircraft, became the guinea pigs for the Army’s industrialization effort.

Once there was a sense that the FMA’s airplanes were compromised, the political blowback was immense. For Noble, the risks imposed on civilian pilots were troubling, but the more grievous offense of the Army’s program was the danger to the nation’s defense, their fundamental responsibility. Pilots were undertrained and equipped with subpar aircraft, in Noble’s estimation, in the interest of the factory. Noble’s testimony presented the FMA as a risk not simply to the pilots who flew their products, but to the security of the nation and its citizens.

Of course, the defenders of the factory retorted that the FMA would someday provide the industrial independence necessary to survive modern war. The creation of a state factory for airplanes was likely the only way the nation could develop local experience in all facets of modern aircraft construction. There seems to have been no interest on the part of private capital, domestic or foreign, to develop that capability in Argentina. Noble proposed that authorities shift to encouraging foreign manufacturers to open plants in Argentina. But this strategy was problematic too. The Chilean government negotiated the opening of a Curtiss plant outside Santiago in 1930. But the plant closed after two years due to Curtiss’ bad financial situation during the Depression.<sup>176</sup> It was simply too risky without substantial government investment of some sort—which was the story of the aviation industry in other countries. Furthermore, as many

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<sup>176</sup> Secretaría General de la Comandancia en Jefe, *Historia de la Fuerza Aérea de Chile. “El Amanecer de los Condores.” Desde los Albores hasta 1930*, vol. 1 ([Santiago]: Fuerza Aérea de Chile, 1999), 456-8.

economic nationalists increasingly trumpeted, the factory established technical standards, opportunities for technical education, and a path to the dignity and comfort supposedly provided by industrial work.

As with so many of the debates of the interwar period, there was truth to both perspectives. Each side was driven by deeper convictions about the possible benefits aviation might have for Argentine society, and what was the best way to realize them. The various representatives of the Army and the civilian community were compelled by cultural and technical visions for the future of their nation even as their politics arranged them into different camps and frequently resulted in conflict. In a broader sense, Army aviation officials were learning about the politics of the aircraft industry and national governance.

For de la Colina, the missteps and political controversies of 1935 ended his program of original design and resulted in his marginalization in 1936. His colleagues in the Army aviation services would see their mandate quickly returned and expanded with outbreak of the Second World War. In de la Colina's case, the return to power took longer. But in nine years' time he and his closest allies would be back and this time they would have the unequivocal support of the national government in the context of prosperity, not depression.

Part III

Peronist Aviation

1943-1955



## Chapter Seven

### **Class, Gender, and State Aviation in Juan Perón's "New Argentina," 1943-1955**

*"La Conciencia Aeronáutica es la  
Conciencia del Hombre del Futuro."*

"Aeronautical Consciousness is the  
Consciousness of the Man of the Future."

Ministerio de Aeronáutica, "Exposición  
de la Colección de Maquetas," box 18,  
folder 1, COR, BNA.

For a week each year from 1946 to 1955, heads across Argentina craned skyward. Formations of glittering aircraft swept overhead while leaflets rained down on the city streets. Some outside observers might have drawn dark parallels to the recent past of aviation, to the contrails of bombers on their way to distant targets. Yet here in Argentina, aviation had not suffered the taint of apocalyptic war. As crowds gathered to admire the new planes roaring above them, painted in brilliant blue with yellow suns, there was a sense of optimism, energy, and vitality. The newly-elected president General Juan D. Perón (1895-1974) promised to remake the nation, and aviation would be front and center for this transformation. Argentina was joining the "Air Age."

General Perón unleashed a massive national political and industrial program from 1946 to 1955 that sought to elevate the socioeconomic conditions of the urban and rural working classes at the heart of his political power. Peronist propaganda promised working people a position of privilege in a "New Argentina" that claimed to be politically sovereign, economically independent, and socially just. Perón's accomplishments were marred by financial irregularities, poor execution, and a drift toward ever-increasing authoritarian politics. In the process, he permanently reshaped the nation's economy and political landscape.

For the national aviation community, the rise of Juan Perón marked a sea-change in the organization and scale of their industry. Army officials marginalized after 1936 found a new patron to sponsor their long-held plans for a cohesive and extensive national aviation system. Officers like Bartolomé de la Colina recognized a popular enthusiasm for flight among common *argentinos* who saw the aviation industry as an opportunity for gainful employment and personal empowerment. They fostered this association and promised to finally deliver on these possibilities, in the process garnering significant political power. National authorities quickly harnessed aviation as a “technopolitical” tool—a technology employed “to constitute, embody, or enact political goals”<sup>1</sup>—to both represent and realize the Peronist vision for an Argentina centered on the lower classes. Although aviation was but one part of a broad program of industrialization, labor reform, and social welfare, the state’s aviation projects were highly visible, with government propaganda frequently utilizing the technological spectacle of flight to promote Perón’s “New Argentina.”

Unprecedented levels of public money soon poured into aircraft production, airport construction, flight training, and public aviation activities. But the Peronist aviation project was not limited to new factories, airports, and airlines. It had extensive popular and cultural dimensions as well. Beginning in 1945, the third week of September was designated the *Semana Aeronáutica* [Aviation Week]. It was to be a celebration of the nation’s aerial achievements, which promised “to create within the population a clear and patriotic *conciencia aeronáutica* [aeronautical consciousness].”<sup>2</sup> That is, Aviation Week was to awaken in Argentina a deep enthusiasm for the “sublime” and “transcendent” aerial technology which promised to transform

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<sup>1</sup> Hecht, *The Radiance of France*, 15.

<sup>2</sup> Secretaría de Aeronáutica, *La memoria de la Semana Aeronáutica, 22-29 de septiembre 1946* (Mercedes, AR, 1947), 1. Found at the Dirección de Estudios Históricos de la Fuerza Aérea Argentina (DEHFAA).



Figure 7.1. Photographs from the 1953 Semana Aeronáutica in Buenos Aires. *Revista Nacional de Aeronáutica*, October 1953, 24, 27.

their nation and the world. Aeronautical consciousness was meant to elevate the Argentine “citizen masses” physically and spiritually. Aviation Weeks were thus the opportunity for authorities to demonstrate their progress, and to inspire the Argentine people with possibilities for the future.

Historians of aviation and its culture around the world have been largely restricted to the interwar period when aviation remained in its “golden” or “heroic” age—generally the interwar period. Scholars such as Joseph Corn, Peter Fritzsche, Robert Wohl, Scott Palmer, and Willie Hiatt focused on the period where flight technology was at the peak of its popularity, when it

remained the foremost technological spectacle of its day. Even if aviators and passengers in these early days were of substantial means, historians have emphasized the participation of common people classes as audiences and donors to the many subscription campaigns for new aviation material and institutions.<sup>3</sup> The scholarship on the postwar era for aviation largely shifts to a focus on the maturing airline and general aviation industries, with an attendant interest in their middle- and upper-class customers.<sup>4</sup>

Yet in Argentina, the importance of the popular classes, the lower socioeconomic half of Argentine society, did not diminish with the waning of aviation's heroic age. The local culture and politics of class and technology placed the working classes at the center of the national dialogue around aviation. This phenomenon was reinforced by the vagaries of class divisions in interwar Argentina.

The small body of literature dedicated to Argentine aviation has largely overlooked the cultural and rhetorical aspects of the Peronist program. Older chronicles by contemporary aviators or officials have little to say about the Peronist period, likely due to their personal political persuasions or fears of retribution by anti-Peronist authorities after 1955.<sup>5</sup> Studies since the end of the military dictatorship in 1983 have focused on the national aircraft factory in Córdoba, the Instituto Aerotécnico (IA) and the national flag airlines.<sup>6</sup> The recent work by the historian Melina Piglia has shown how national airlines were mobilized to develop the Argentine interior and, later under Peronist authorities, were powerful tools to emphasize Argentina's

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<sup>3</sup> Corn, *The Winged Gospel*; Fritzsche, *A Nation of Fliers*; Wohl, *The Spectacle of Flight*; Palmer, *Dictatorship of the Air*; Hiatt, *The Rarified Air*.

<sup>4</sup> Meyer, *Weekend Pilots*; Tiemeyer, *Plane Queer*; Van Vleck, *Empire of the Air*; Kolm, "Stewardesses' Psychological Punch'"; Bhimull, *Empire in the Air*.

<sup>5</sup> Zuloaga, *La Victoria de las alas*, 2nd ed.; Biedma Recalde, *Crónica histórica*, 2 vols.

<sup>6</sup> See dissertation, chapter eight. See also Frenkel, *Juan Ignacio San Martín*; Bonetto, *La industria perdida*; Burzaco et al., *Las alas de Perón II*; Artopoulos, *Tecnología e innovación*.

political and economic independence.<sup>7</sup> Lastly, historian Anahí Ballent was the first to suggest the political dimensions of Peronist aviation in her study of the architectural design of Perón's public works projects in the Buenos Aires suburb of Ezeiza.<sup>8</sup> This chapter will expand on Ballent's observation by revealing the broader utility of aviation to Juan Perón and his supporters, not only as propaganda for the government's project, but as a physical representation of the future Peronism promised common people.

This chapter will focus on the culture and politics of Peronist aviation as the culmination of the many discourses circulating around flight during the interwar period. The ideas and cultural associations inscribed into Peronist aviation represented an escalation of the preceding decade of aviation's local development, not a radical break. But this culmination intensively privileged the rhetoric and policy prescriptions of one particular segment of the national aviation community—Army aviation's nationalist developmentalists—while marginalizing any other vision for the future of flight technology in Argentina.

We will begin with the political upheavals and military reforms during the Second World War, which served as the foundations of the Peronist aviation boom. Using government publications, internal records, and newspapers, I then reveal how Peronist authorities after 1946 melded the rhetoric of interwar aviation culture and Perón's political philosophy, forming an iteration of "aeronautical consciousness" unique to Argentina. This Peronist "*conciencia aeronáutica*" anchored the political messaging of the Aviation Weeks and the government's broader project. Lastly, I will elucidate the many ways in which aviation authorities articulated

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<sup>7</sup> Piglia, "La Aeroposta Argentina,"; Piglia, "'Carry our colours'." For the history of state airlines and their associated infrastructure from 1945 to 1955, see Ghiretti et al., *Los orígenes de Aerolíneas Argentinas*. For a general chronicle of post-WWII Argentine commercial aviation until the 1980s, see Pablo Potenze, *La Aviación Comercial Argentina (1945-1980)* (Buenos Aires: El Cronista, 1987).

<sup>8</sup> Ballent, "El peronismo y sus escenarios."

notions of gender, race, and class in line with Peronist ideology and politics. Officials vigorously supported national aviation because of the power of the airplane to represent and ensure the “balanced” uplift of the popular classes. As I will argue, the official deployment of aviation imagery and rhetoric as part of a project of national rejuvenation injected a powerful sense of meaning and purpose into the labors of working men. The airplane and its culture were thus central to the class-based technopolitics of Peronism and bolstered its power and enduring legacy in Argentina.

The scale and intensity of the Peronist aviation program, especially from 1946 to 1948, was unrivaled in Argentine history. The nation’s modern aviation infrastructure, its air force, and flag carrier were all established in only a few years. After Perón’s ousting in 1955, the government would never again dedicate such vast funds and publicity to an aviation project. What then drove this government-led boom in aviation? What motivated Perón to hitch his broader economic, social, and political program to the symbolism and rhetoric of Argentina’s small but vibrant aviation community? As the “Air Age” finally dawned, what meaning did the Argentine state and its constituencies impart on the technology of flight?

### **The Revolution of '43 and Argentina during the Second World War**

As the world plunged back into global conflict in 1939, Argentina remained removed from the carnage due to its geographical isolation and its policy of neutrality. The nationalist factions of Argentine Army at the helm of national politics had close ties to their German and Italian counterparts, as well as a general affinity for the fascist regimes. The war caused new shortages of industrial and consumer goods, further stimulating domestic production. Britain still needed agricultural products and Argentina quickly built a substantial foreign currency reserve.

When the US entered the war in 1941, pressure from the *norteamericanos* placed immense stress on the Argentine government, as it oscillated between the Allies and continuing the policy of neutrality.<sup>9</sup>

Even from the relative isolation of South America, Argentines saw the utility of strategic air power in the Allied bombing campaigns in Europe and, later, the Pacific.<sup>10</sup> In June 1940, the fall of France caused a panic among politicians, defense officials, and the press unsympathetic to Nazi Germany.<sup>11</sup> General Justo's successor, President Roberto Ortiz (1886-1942; in office 1938-1942) was an Allied sympathizer, and quickly succeeded in passing the largest ever defense spending bill only four days after the Germans entered Paris. The funds—in addition to an expansion of the armed forces—sponsored new industrial projects to produce armaments.<sup>12</sup> Although pressure from nationalists, especially the pro-German and pro-Italian officers in the military, kept Ortiz from altering the neutrality policy, the national government deemed the Axis powers more as threats than potential partners.

The aviation community responded to the flurry of defense spending with a major national initiative to train 5,000 pilots as an aerial reserve under the direction of the newly-formed Junta Argentina de Aviación (JAA).<sup>13</sup> The alliance of civilian and military institutions succeeded in jump-starting the local flight community, seeing a significant expansion in the number of professional and basic pilots. But the JAA's achievements remained far below their

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<sup>9</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 287.

<sup>10</sup> The *Revista de Informaciones Aeronáuticas* (1942-46) frequently featured original and reprinted articles discussing the use of aircraft in the Second World War.

<sup>11</sup> As Potash and later historians have shown, a significant—if not equivalent—proportion of Argentine policymakers and political powerbrokers held strong pro-Allied sentiments. The nationalist factions tenaciously maneuvered to maintain Argentina's policy of neutrality, but it was by no means a given. Potash, *The Army & Politics in Argentina, 1928-1945*, 122-3; Romero and Brennan, *A History of Argentina*, 82-90.

<sup>12</sup> For the history of the DGFm, see Belini, "La Dirección General de Fabricaciones Militares."

<sup>13</sup> This would represent a ten-fold increase in the number of active pilots in the country. Dirección General de Aeronáutica Civil, *Boletín de Aeronáutica Civil*, no. 7 (1939), 33.

target of 5,000 pilots, which left them open to harsh criticism from detractors such military officers with Axis sympathies.<sup>14</sup>

The JAA program limped forward until 1943 when a coup d'état altered the national political scene. On June 4, 1943, a secret military society of mostly junior officers called the GOU ousted a civilian government that had been buttressed by military support (from a different Army faction) and electoral fraud. The so-called “Revolution of ‘43” or “June Revolution” resulted in a series of military governments. The leaders of the coup—many of whom openly admired European Fascism—sought to create a corporatist dictatorship under military control. The military junta appointed General Pedro Pablo Ramírez as president until February 1944 when he was replaced by his vice president Edelmiro Farrell, who held the position until constitutional elections were held in 1946. Ramírez and his supporters stubbornly maintained the policy of neutrality even as the tide of the war turned against the Fascist powers.<sup>15</sup>

Shortly after taking power, the Ramírez regime dismantled the JAA, arguing it was poorly conceived and executed. Just as in the late 1930s, military aviation officials were left arguing that the national aviation policy was rudimentary and incomprehensive.<sup>16</sup> In the following two years, a dramatic series of changes set the stage for a massive national investment in flight technology.

These reorganizations were contingent on the rise to power of Colonel Juan Perón, who himself stepped onto the national scene in June 1943. The cadre of dedicated aviation boosters in the Army became intimately associated with Perón and would direct the major aviation

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<sup>14</sup> See chapter eight for more on the politics and performance of the JAA.

<sup>15</sup> Romero and Brennan, *A History of Argentina*, 90-93.

<sup>16</sup> Jorge J. Manni, “Síntesis de algunos puntos tratados en la conferencia dada en el Centro de Altos Estudios respondiendo a un cuestionario fijado por su Dirección,” *Boletín de Informaciones Aeronáuticas*, August 1943, 853-880.



institutions created by the Peronist government. For better or for worse, their fates became intertwined with Perón's, ensuring that his fall in 1955 resulted in the loss of their personal power as well.

Juan Domingo Perón's life, personality and ideology remain subjects of great interest to historians as the Colonel proved to be the most influential figure in twentieth century Argentina. Perón's rise altered the political balance in his nation, creating a bifurcation in Argentine society—between “peronistas” and “antiperonistas”—that endures to this day. As we will see, the political alliances he formed as well as his personality and ideology were multifaceted and at times in tension. Perón was both a man of “balcony bombast” and of eloquent rhetoric.<sup>17</sup> He condemned violence and yet condoned it when carried out by his supporters. He was famously intelligent and charismatic, charming both individuals and the crowds that gathered to listen to his speeches.<sup>18</sup> Fundamentally a pragmatic political operator, Perón's politics were personalist; he fostered paternalistic and mutually beneficial relationships. Perón allied himself with powerful individuals, such as the heads of the major labor unions, by fusing their aspirations to his interests.

Perón first climbed the rungs of political power in the Army officer corps. His message was very much in tune with the right-wing, nationalist and corporatist sentiments of many officers in the 1920s and 1930s. Through his career postings, Perón built a network of loyal junior officers who proved essential as he emerged onto the national political scene.<sup>19</sup> His penchant for conspiratorial networking bore fruit in June 1943, when he won power as a key

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<sup>17</sup> Crassweller, *Perón and the Enigmas of Argentina*, 10-2.

<sup>18</sup> Page, *Perón: A Biography*, 14-5, 24, 32.

<sup>19</sup> *Ibid.*, 35-6. From February 1939 until June 1940 he served as a military attaché in Italy. The exact influences of that trip remain unclear, but it seems highly likely that Perón was impressed by Mussolini's harnessing of mass spectacle to mobilize the Italian people, considering the later resemblances of Perón's governing rhetoric to that of Fascist Italy.

member of the GOU and its “Revolution of ’43.” Over the following two years, Perón shifted the rhetoric and policies of the GOU regime, in effect creating a “revolution within a revolution.”<sup>20</sup>

Perón occupied two key posts during the Ramírez and Farrell administrations from which he built his political power. First, he was the Undersecretary (and later Secretary) of the War Ministry, where he exercised his politicking abilities to expand his base of junior officer support.<sup>21</sup> Second, he was named the head of the newly-formed Secretariat of Labor and Social Welfare. From this position, Perón famously built an urban, working-class base of support through the major industrial unions. He utilized populist rhetoric of economic and political inclusivity, and actually fulfilled many of his promises. Perón’s alliance with nationalist Army officers and the working class, his *descamisados* [“shirtless ones”], were at the core of his political power until 1955.

Perón—himself an admirer of Mussolini’s Italy and Franco’s Spain—adapted prewar European Fascist concepts to fit the changing international situation. His politics also sought an alternative way from liberal capitalism and communism through the guidance of a supreme leader, but he recognized that in the postwar world he needed to add a democratic veneer to his corporatist ambitions. The political movement that eventually became Peronism lacked the racism and veneration of war that were central to the ideology of German and Italian Fascism. Heavily populist in his rhetoric and policy, Perón aimed to create an “organized community” that would improve the “*bienestar*” [well-being] of the popular classes without military expansionism

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<sup>20</sup> Federico Finchelstein, “Corporatism, Dictatorship and Populism in Argentina,” in *Authoritarianism and Corporatism in Europe and Latin America*, eds. António Costa Pinto and Federico Finchelstein, 237-53 (London: Routledge, 2018), 246.

<sup>21</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 211-2.

or racial exclusion.<sup>22</sup> Like many mid-century governments across the political spectrum, Peronist officials sought to use regulation, state planning, and support for technology and industry to improve the economic and social conditions of their non-elite populations.

At the Ministry of War Perón first began to build a political alliance with the aviation boosters, most notably Bartolomé de la Colina. Perón had no direct history in the aviation community, but he had developed a friendship with de la Colina in the early 1930s. Perón was an assistant to the Minister of War, General Rodríguez, when the factory in Córdoba was of particular interest to national authorities. The then-Major was assigned to arrange official visits to the factory to drum up badly-needed political support for the project.<sup>23</sup> But this remained the extent of Perón's connections to aviation until the 1940s. He was not a committed aviation enthusiast or aviator in the manner of one of his political inspirations, Benito Mussolini.<sup>24</sup> In fact, he would develop a fear of flying after a near accident in a DC-3 in 1945, ironically while on his way to visit the Córdoba factory.<sup>25</sup> Instead, Perón, always adept at harnessing his fellow officers' aspirations, saw in the small Army aviation community an opportunity to form a new base of support within the Argentine military. That support would be sorely needed during Perón's early political career. He was constantly maneuvering to preserve his image and political positions, depending on his charisma and allies to see him through the many challenges to his power.

Shortly after the Revolution of '43, on June 10, 1943, Perón (as undersecretary of the Ministry of War) agreed to meet privately with a group of military aviation officials, including

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<sup>22</sup> For the similarities and differences between European fascism and Argentine Peronism, see Finchelstein, "Corporatism, Dictatorship and Populism," and Federico Finchelstein, *The Ideological Origins of the Dirty War: Fascism, Populism, and Dictatorship in Twentieth Century Argentina* (New York: Oxford University Press, 2014), 86-92.

<sup>23</sup> Bonetto, *La industria perdida*, 69-70.

<sup>24</sup> Mussolini was a pilot and used that in his political rhetoric to build alliances with the aviation community. For an excellent discussion of Mussolini, Fascist Italy, and aviation, see Wohl, *The Spectacle of Flight*, 49-106.

<sup>25</sup> Page, *Perón: A Biography*, 106.

Cesár Raúl Ojeda and Bernardo Menéndez. According to Ojeda's recollections in 1987, the gathered officers informed Perón of the need for an independent air force and government ministry, to which Perón responded:

In this war that is now being fought, no operation is conceived without the participation of aviation. And before the war started, in Europe, people were already traveling from one side to the other by air. In Rio de Janeiro, when I was returning to Argentina, I saw an airplane land in Santos Dumont [airport] every five minutes. Here, meanwhile, every time an airplane passes, we look up. I'm going to help, but I need an aviator to work with me.<sup>26</sup>

That aviator turned out to be Ojeda, who remained close to Perón for the next eight years. Soon after the June meeting, the Ministry of War began the reorganization process that created an independent air force, the Fuerza Aérea de Argentina [Argentine Air Force], and a centralized bureau to handle all national aviation activities, the Secretaría de Aeronáutica [Secretariat of Aeronautics] in 1945.<sup>27</sup>

In February 1944, Perón was appointed Minister of War by his former boss General (now President) Farrell. That same month, the Instituto Aerotécnico (formerly the FMA), the Dirección General de Material Aeronáutico, and the Dirección General de Aeronáutica Civil (previously under the Ministry of Interior) were placed under the newly-created Comando en Jefe de Aeronáutica [Command in Charge of Aeronautics], still under the control of the Army.

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<sup>26</sup> “En esta guerra que se está librando ahora, no se concibe ninguna operación sin el concurso de la aviación. Y antes que comenzara la guerra, en Europa, ya la gente viajaba de un lado a otro por vía aérea. En Río de Janeiro, cuando regresaba a la Argentina, he visto aterrizar en Santos Dumont un avión cada cinco minutos. Aquí, mientras tanto, cada vez que pasa un avión, miramos para arriba. Yo les voy a ayudar, pero necesito un aviador para trabajar conmigo.” Frenkel, *Juan Ignacio San Martín*, 52. Frenkel interviewed Ojeda shortly before his death.

<sup>27</sup> Aranda Durañona, *El vuelo del cóndor*, 45.

Colonel Bartolomé de la Colina—whose fortunes were rapidly improving—was named head of the command.<sup>28</sup>

As early as 1944, Perón began to harness the rhetoric of aviation to further his political aspirations. That year, the Instituto Aerotécnico under the direction of Juan Ignacio San Martín began the production of the nation's first military trainer aircraft built in large numbers, the DL-22. In June 1944, Perón flew to Córdoba for the presentation of the first DL-22, meeting with de la Colina, San Martín and others. In front of a gathering of civilian and military officials, Perón declared:

Our great potential in the field of Aeronautics has been propelled toward its own destiny at an accelerated and firm pace. Fortunately, the time of vacillations and predictions is behind us. The June Revolution has imposed an organic and vital concept in this matter, that aviation is not an element to be divided into sectors that do not bear a relationship between them.<sup>29</sup>

In a press statement afterward, Perón emphasized the emotional power of the experience as everyone from de la Colina to the “most modest of workers... was profoundly moved” by the sight of a DL-22 taking to the skies. Later that summer, Perón organized an exposition featuring the DL-22 to promote the accomplishments of the revolutionary government.<sup>30</sup> The project to build an international airport in Ezeiza just outside Buenos Aires was revived under the Ministry of Public Works and directed by General Juan Pistarini, another close ally of Perón.

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<sup>28</sup> The Comando's founding decree stipulated that if an independent institution should prove necessary to the “rational evolution” of the aviation community, it would serve as the foundation for a “Secretaría de Aeronáutica” [Secretariat of Aeronautics]. Biedma Recalde, *Crónica histórica*, vol. 1, 236-8; Aranda Durañona, *El vuelo del cóndor*, 45-7.

<sup>29</sup> “*Ha sido necesario impulsar hacia sus propios destinos, con ritmo acelerado y paso firme, a nuestro inmenso valor potencial aeronáutico. Afortunadamente, ha pasado ya la época de las vacilaciones y los tanteos. La revolución de junio ha impuesto un concepto orgánico y vital en la materia, considerando que la aeronáutica es un elemento que no puede desperdigarse en sectores sin relación entre sí.*” *Mundo Aeronáutico*, June 1944, 16.

<sup>30</sup> *Ibid*, 17, 40.

In October 1944, the government approved a new “Organic Law of Aeronautics” which began the administrative separation of aviation activities from Army control. This process culminated in Decree 288/45 on January 4, 1945, which moved all institutions under the Comando en Jefe de Aeronáutica to the new Secretaría de Aeronáutica. De la Colina was named the first Secretary of Aeronautics, with Ojeda serving as the Undersecretary.<sup>31</sup>

Interestingly, the Secretaría de Aeronáutica was theoretically a civilian institution that managed both military and civil aviation. The emblem of the Secretaría featured an angelic woman representing *la Patria*—the Nation—with wings outstretched and flanked by two sets of aircraft. The aircraft represented the unity of civilian and military aviation for the sake of the nation, an important concept that remains at the heart of Argentine aviation today (see fig. 7.2). But in practice, the Secretaría was led by military officials and heavily favored their political priorities and material needs.

For Perón, loyal institutions such as the Secretaría de Aeronáutica, and their managers, proved invaluable during the watershed event of the period. On October 8, 1945, a military faction moved to oust Perón over his appointment of a family member of his soon-to-be-famous wife, Eva Duarte Perón, to an important government post. The “Nicolini Affair,” as it is remembered, spurred to action some of nation’s most powerful military leaders who controlled the largest Army garrison in the capital. According to Potash, Perón’s aides encouraged him to counter-mobilize the FAA and some loyal Army units. But the Colonel refused to sign the

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<sup>31</sup> “Creando la Secretaría de Aeronáutica,” *Boletín Aeronáutico Público*, no. 1 (1945), 4-6; “Nombrando Secretario de Aeronáutica,” *Boletín Aeronáutico Público*, no. 1 (1945), 6. The mission and organization of the Secretaría de Aeronáutica were further expounded in “Decree 3088 Reglamento Orgánico” of February 9, 1945, reprinted in Biedma Recalde, *Crónica histórica*, vol. 1, 242-248. The Constitution of 1853 limited the number of ministries allowable under the government, so the revolutionary government was forced to call the new institution a “secretariat,” despite its powers being equivalent. After the constitutional reform of 1949, the Secretariat would be changed into a Ministry.

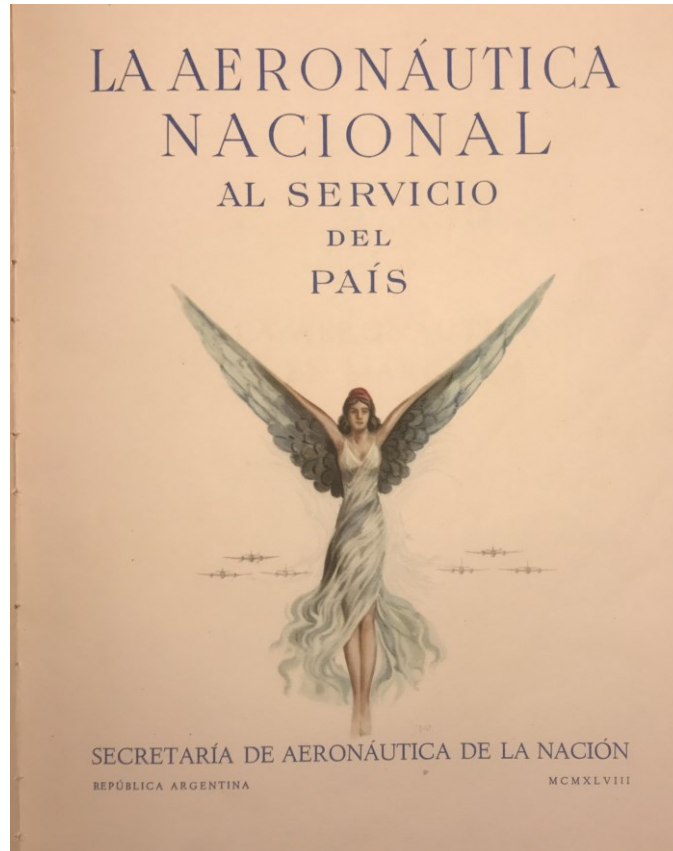


Figure 7.2. “La Patria” flanked by civilian and military aircraft, the emblem of the Secretaría de Aeronáutica. S.d. Aeronáutica, *La Aeronáutica nacional*, title page.

orders. On October 9, General Pistarini was sent to negotiate with Perón and convinced him to resign.<sup>32</sup> Three days later, deemed a threat to any power transition, Perón was arrested by the Navy and interned on an island.

The turning point came on October 17 when a massive demonstration of industrial workers, fearful of a reversal of the benefits bestowed by Perón, marched on the capital demanding his release. The local Army commander and garrisons were unwilling to use force to turn back the workers, and so a crowd of over 300,000 people reached the Casa Rosada (the

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<sup>32</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 270-1.

Argentine executive mansion in the center of Buenos Aires). A small team of the Colonel's most trusted advisors, which included his "unconditional supporter" Bartolomé de la Colina, was instrumental to the hurried negotiations on that tense and long day.<sup>33</sup> Perón's opponents yielded to the pressure from the demonstrators, and on that same night of October 17, Perón famously gave a rousing speech from the balcony of the Casa Rosada to throngs of gathered supporters.

Perón retired from the military, freeing him to run in the elections the following year. With his allies still in power (such as General Farrell, Pistarini, and de la Colina), Perón was now in position to win the presidency. His political opponents alleged that the Colonel intended to take the presidency by force if necessary. Progressive Democratic leader Julio Noble claimed there was a plan for Perón to use the FAA, loyal Army units, and armed civilians to block the election and seize power. It remains unknown if Noble's allegations were based on reality or merely a political ploy. Regardless, the charges proved moot as Perón was swept into the presidency on February 24, 1946 with 52.8 percent of the popular vote in what is generally believed to have been a clean election.<sup>34</sup> The time of Juan Perón had come, and with it, a redoubled effort to elevate the nation through aviation.

### **The Rhetoric of Peronist Aviation**

Before delving into the activities of Aviation Week and the broader aviation program, it is essential to understand the basic rhetoric of post-war Argentine aviation officials. The language of Peronist speeches and publications pertaining to aviation and their broader political philosophy was often complex, filled with allusions to Argentina's past and symbolic representations of the future. The rhetoric of aviation and Peronist political philosophy

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<sup>33</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 18.

<sup>34</sup> *Ibid.*, 37-8.



eventually melded into a form of “aeronautical consciousness” unique to Argentina, which was actively promoted by the Peronist government.<sup>35</sup>

On the morning of September 22, 1946, Vice-Commodore Carlos Pimeniel inaugurated the first Aviation Week in the central plaza of Mercedes outside Buenos Aires. Deploying a rhetoric that invoked the Argentine countryside, he implored onlookers to consider the history of aviation in their nation:

...since man entered to compete with the bird for the dominion of the space...the *criollo* showed that he not only has tempered his heart to dominate his bronco but also to grasp the lever of the winged machine and play with it in the heights...<sup>36</sup>

As the week-long aviation festivals spread across the country all Argentines had an occasion to feel proud about the progress already realized by the nation, while imagining what lay in the future. The displays were for “the people of the whole Republic,” for “all...who yearn to see the wings of the country advance...to make possible the conquests of new triumphs.” Thanks to the support of the “first Argentine aviator,” General Perón, no one would be left out of the “Air Age” and the many benefits it promised.<sup>37</sup> There followed a week of festivities around the country, from airshows to prize competitions to aviation-themed radio lectures. The spectacle

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<sup>35</sup> The primary sources for the remainder of this chapter fall into three broad categories. First, there are the published materials produced by the government, either the Secretaría de Aeronáutica or the Presidencia de la Nación, which include the *Boletín Aeronáutico Público*, the *Boletín de Informaciones Aeronáuticas*, the *Revista Nacional de Aeronáutica*, and the *Plan de Gobierno, 1946-1951*. Second, there are internal review documents produced by aviation institutions for other agencies. These include “*memorias anuales*” found at the DEHFAA. Third, I consulted two pro-Peronist papers, *El Líder* and *Democracia*, and the Justicialista Party magazine *Mundo Peronista*.

<sup>36</sup> “*Nuestra aviación desde que el hombre entro a competir con el ave por el dominio del espacio, jalono los primeros triunfos del vuelo mecánico y admire el mundo con sus conquistas. —Demostró el criollo así que no solo tiene templado su corazón para dominar su potro sino también para empuñar la palanca de la maquina alude y jugar con ella en las alturas.*” S.d. Aeronáutica, *La memoria de la Semana Aeronáutica...1946*, 12.

<sup>37</sup> *Ibid.*, 12. Perón had been awarded the title of “*primer aviador argentino*” earlier that year by aviation officials.

was repeated in 1947 and 1948, with hundreds of thousands of Argentines flooding to the main exhibition in the capital alone.<sup>38</sup>

The spirit and scale of the first Aviation Weeks reflected the post-war optimism and sense of prosperity in the country. The European demand for agricultural goods recovered and the nation continued to amass a substantial foreign currency reserve during the war. Domestic industry continued to grow thanks to the shortage of industrial imports and state subsidization.<sup>39</sup>

Perón harnessed the nation's considerable resources and his strong political position to begin his project of building a "New Argentina" —a reformulation of the national future similar to pronouncements made by prewar Fascist leaders in Europe. Peronist rhetoric and propaganda equated the "Nation" and the "people" with the popular classes, marginalizing many in the more affluent sectors.<sup>40</sup> For those Argentines that fell outside the constituency of the national authorities, the period was one of censorship and growing authoritarianism as Perón strived to gain personal power over all aspects of national politics and society. This tension between the expansion of "social citizenship" for poorer Argentines and the curtailment of civil liberties for others created what the historian Ernesto Semán calls an "authoritarian democratization."<sup>41</sup> The deep ironies of such authoritarian democratization greatly exacerbated the political polarization of Argentine society.

The Peronist aviation program was one more piece of Perón's "plan of national rejuvenation" centered on the working classes.<sup>42</sup> The *Semana Aeronáutica* had a single purpose

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<sup>38</sup> S.d. Aeronáutica, *Memoria anual 1947* (N.p., 1948), 240; S.d. Aeronáutica, *Memoria anual 1948* (N.p., 1949), 349. Aviation Weeks became less consistent after 1948, with sporadic aviation exhibitions in 1951 and 1952, until the Aviation Week was reinstated from 1953 onward.

<sup>39</sup> This brief period of prosperity would largely come to an end after 1948. Gambini, *La primera presidencia de Perón*, 141-2.

<sup>40</sup> Karush, *The Culture of Class*, 205.

<sup>41</sup> Semán, *Ambassadors of the Working Class*, 13.

<sup>42</sup> "Informó el P.E.A. la C. de Diputados Sobre la Aviación," *La Nación*, September 23, 1946.

according to the officials at the Secretaría de Aeronáutica: “to create in the population a clear and patriotic aeronautical consciousness.”<sup>43</sup> It would do so by “[bringing] together all of the expressions of modern technology applied to the development of flight from the scientific, cultural, social, economic, industrial, and commercial perspectives.”<sup>44</sup> It was to increase the awareness of the Argentine people of the national aviation program’s creation of new airplanes, airlines, training institutions, and airports. Implicit in its mission was a duty to promote Perón’s wider program. Although the state investment in aviation was unprecedentedly large, greater sums of the national reserve were spent on nationalizing the railroads, public health infrastructure, and social programs. But flight technology was frequently enlisted to represent this broader effort to forge a “New Argentina,” earning an outsized place in the Peronist rhetorical and visual canon.

In one such case, officials utilized the imagery of national aviation to promote a major constitutional reform critical to the broader Peronist project. In late 1948, the government launched an energetic political campaign to promote a modernization of the 1853 Constitution, including updated political representation laws and new legal protections for workers. More consequentially, Perón also included a clause that removed the restriction of a president to one term, in effect allowing himself to remain president indefinitely should the popular vote continue to fall in his favor. A referendum on the new constitution was slated for the end of the year. The government advertising campaign promoted the constitution by associating it with the first nationally-built jet aircraft, the “Pulqui I” (see fig. 7.3). Surrounded by text reading “In harmony

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<sup>43</sup> “Crear dentro de la población una clara y patriótica conciencia aeronáutica.” S.d. Aeronáutica, *La memoria de la Semana Aeronáutica...1946*, 1. The *Semana Aeronáutica* was established by Decree 448/45, “Estableciendo la Semana Aeronáutica,” *Boletín Aeronáutico Público*, no. 61, August 14, 1945, 608-9.

<sup>44</sup> “Exhibiránse Muestras de Aeromodelismo Durante la Muestra Aeronáutica,” *Boletín de Informaciones Aeronáuticas*, May 1946, 300.



Figure 7.3. “A Tono con la Hora,” *El Líder*, November 14, 1948.

with the times! Reform of the National Constitution,” the ad juxtaposed the 1853 Constitution, characterized by oxen towing a cart, with the 1949 Constitution depicted by a sleek and swift airplane. Perón sought to link his reforms to “one of the most expressive symbols of the progress of mankind.”<sup>45</sup>

In 1947, the Secretary of Aeronautics Bartolomé de la Colina inaugurated that year’s Aviation Week with a national radio broadcast. He announced that the people “have a duty to fulfill this national and global movement to obtain the final conquest of the air...”<sup>46</sup> Popular aeronautical consciousness was the key to meeting the challenge and possibilities of this “conquest.” *Conciencia aeronáutica* was a “fundamental pillar of Air Power” in the “age of the

<sup>45</sup> “Aviación Civil y Apoyo Estatal,” editorial, *Revista Nacional de Aeronáutica*, February 1951.

<sup>46</sup> “Fué Inaugurada Ayer la Semana de Aeronáutica,” *La Nación*, September 22, 1947.

Air,” and was thus necessary for national progress and security.<sup>47</sup> It could mean something as simple as an “interest in the problems of aerial transportation;”<sup>48</sup> but more often, it implied a blend of educational, spiritual and nationalistic concepts, from the ability to pilot and repair aircraft, to the effective use of aviation as a tool for progress, to the discipline and daring to take to the skies in the first place. Not to have the knowledge of and appreciation for the most recent “evolution” of aviation was to doom a person to the “margin of reality.”<sup>49</sup>

The concept of aeronautical consciousness was not unique to Argentina. Each major aviation power had a different conception of what was usually called “airmindedness.” The historian Joseph Corn first recognized the interwar American concept of “airmindedness,” which meant “having enthusiasm for airplanes, believing in their potential to better human life, and supporting aviation development.”<sup>50</sup> Historians have since shown the many national variations of the phenomenon, which was inextricably tied to the perceived opportunities and dangers of material progress and international politics. Lofty notions of “airmindedness” as a mentality of soon-to-be messianic liberation and improvement were always tempered—if not overwhelmed—by very real fears of renewed global war and the destruction airplanes promised to wreak.<sup>51</sup>

The Argentine usage of *conciencia aeronáutica* dates back to at least the late 1920s, although aviation officials and boosters commonly used a variety of phrases such as “*espíritu del aire*” [spirit of the air] and “*sentimiento aéreo*” [aerial sentiment] until the Peronist period. Jorge Crespo wrote in 1928 that “It is constantly said and maintained that it is necessary to develop the

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<sup>47</sup> “Semana Aeronáutica,” editorial, *Revista Nacional de Aeronáutica*, September 1952, 9.

<sup>48</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 45.

<sup>49</sup> “La Semana de Aeronáutica,” editorial, *La Nación*, September 26, 1947.

<sup>50</sup> Corn, *The Winged Gospel*, 12. For the variety of national cultures of “airmindedness,” see Palmer, *Dictatorship of the Air*, 3.

<sup>51</sup> Scott Palmer, for example, shows how in the interwar Soviet Union, communist officials were primarily concerned with inculcating airmindedness among workers and peasants for the sake of defending the nation from what they perceived to be the inevitable attack by the capitalist powers. Palmer, *Dictatorship of the Air*, 119-20.

aeronautical consciousness of the people, so that they can and know how to use it widely...” According to Crespo, aeronautical consciousness required a scientific literacy that was often lacking in the Argentine people.<sup>52</sup> As early as 1929, aviation officials proposed to explicitly cultivate “*conciencia aeronáutica*” through popular programs, but little seems to have materialized other than sporadic air shows, propaganda flights, and modest exhibitions.<sup>53</sup>

The 1930s saw a growing chorus of journalists, aviation enthusiasts, and officials lament the poor state of airmindedness in Argentina. Commentators tended to characterize aeronautical consciousness in two distinct ways in line with their political and socioeconomic ties. Journalists and writers publishing in the mainstream press often spoke of *conciencia aeronáutica* as an act of consumption, a willingness to use airplanes as travelers, businessmen, and commuters. The writer Tomas Chakey and the businessman Víctor Ortiz Machado wrote of popular airmindedness as essential for keeping Argentine society and its commercial institutions in lock step with the industrial powers to the north. Such commentators frequently ascribed the paucity of *conciencia aeronáutica* to a fear of flying that enthusiasts portrayed as antiquated by the 1930s. They believed education and propaganda could help Argentines overcome their “ancestral fear of space” and enable them to enjoy the (supposed) safety and convenience of modern air travel.<sup>54</sup>

Unsurprisingly, military aviation officials and civilian specialists presented the formation of popular airmindedness as the dissemination of the technical knowledge and skills demanded by modern warfare and industry. For them, *conciencia aeronáutica* went far beyond an

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<sup>52</sup> Crespo, *La aviación y su probable desarrollo*, 22-3.

<sup>53</sup> “Dirección de Aeronáutica. La Labor del Año 1929,” *Aero*, February 1930, 12-4.

<sup>54</sup> Tomas Chakey, “Las rutas del aire ya no tientan a los exploradores sino a los viajeros,” *Mundo Argentino*, September 25, 1935, 4. See also “Son grandes las posibilidades del turismo aéreo,” *Mundo Argentino*, August 11, 1937, 29; Víctor Ortiz Machado, *Diez meses de actividad aeronautica (artículos, comentarios y trabajos diversos)*(n.p., 1933); Víctor Ortiz Machado, *El turismo aéreo en la República Argentina* (Buenos Aires: n.p., 1935). Machado was a prominent member of the Buenos Aires Rotary Club.

appreciation for the benefits and safety of flight technology. Popular airmindedness was the knowledge, enthusiasm, and dedication to participate in national aviation as a pilot, technician, or engineer. In military publications and enthusiast magazines like *Aero* and *Ciencia Popular*, *conciencia aeronáutica* was primarily about vocation, not consumption. Yet much like their commercial counterparts, the concept of airmindedness carried connotations of international competition in peace and war.<sup>55</sup>

The military exigencies created by the Second World War and military officials' increasing dominance of the Argentine state brought their brand of *conciencia aeronáutica* into the national spotlight—one which emphasized nationalist dedication, achievement, and sacrifice. The Junta Argentina de Aviación and the 5,000 pilots initiative called for the “granting of subsidies...destined specifically for the formation and diffusion of the spirit of the air [*espíritu del aire*] of the youth.”<sup>56</sup> Editorials in major newspapers and magazines extolled the need for popular *conciencia aeronáutica* even if there remained disagreements about how to stimulate it. Although the execution of the JAA's initiative was heavily criticized by officials after June 1943, they expanded the state's responsibility to foment popular airmindedness. Peronist aviation officials then formally codified the promotion of popular “*conciencia aeronáutica*” and translated it into meaningful action, which also had the effect of cementing the usage of the phrase over competing expressions like “*sentimiento aéreo*.” This official *conciencia aeronáutica* naturally emphasized military values—hard work, discipline, and sacrifice for the nation—and had little to do with the consumerist aeronautical enthusiasm promoted by civilian figures like Víctor Ortiz Machado.

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<sup>55</sup> See, for example, “La Educación Aérea en las Escuelas,” *Aero*, May-July 1937, 1; Bullrich, *Régimen y organización*, 191-2; Portillo, *Contribución al Estudio*, 8-12; “El Futuro Desarrollo de la Aviación Civil Argentina,” *Ciencia Popular*, August 1940, 455; “La Conciencia Aeronáutica,” *Ciencia Popular*, February 1941, 71.

<sup>56</sup> “Vasto proyecto de organización para formar pilotos aviadores civiles,” *La Prensa*, July 27, 1940.

Over the course of Perón's first presidency, *conciencia aeronáutica* was increasingly associated with the ideals of his amorphous political philosophy "*justicialismo*," which became the "soul" of the Peronist program.<sup>57</sup> *Justicialismo* was a collection of concepts centered on economic independence, political sovereignty, and social justice. The mission of social justice was its most distinctive aspect. Perón sought to build a harmonious society with the explicit purpose of improving the happiness of all of the Argentine people, not only "the children of privilege."<sup>58</sup> Inspired by Perón's veneration for Spanish Falangism and pre-war Italian Fascism, the role of the state under *justicialismo* was to create a corporatist "organized community" in order to achieve social harmony. Harmony entailed balancing two sets of opposing concepts: spiritualism and materialism, and individualism and collectivism. Extremes in either direction, as was the case in capitalist and communist societies, were to be avoided. This harmony was directed by the *Conductor* [driver], Perón himself, a classic paternalistic and personalist conception of the leader in Latin American politics, often called *caudillismo*.<sup>59</sup> Through *justicialismo* and his leadership, Perón promised the Argentine people that their nation would be "reborn" as the "New Argentina."<sup>60</sup>

Perón often spoke of the need to improve the "moral framework for the social consciousness of the country" by "elevating the social culture of the working masses, dignifying their work, and humanizing capital."<sup>61</sup> In practice, this was achieved through a state-directed balancing of the interests of different sectors of society. The socioeconomic uplift of the working

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<sup>57</sup> Perón's speech to the Chamber of Deputies initiating the First Five Year Plan, October 21, 1946, published in P.d.l. Nación, *Plan de Gobierno, 1946-1951*, vol. 1 (Buenos Aires: P.d.l. Nación, 1946), 11.

<sup>58</sup> Perón's speech to the Chamber of Deputies, in P.d.l. Nación, *Plan de Gobierno, 1946-1951*, vol. 1, 17.

<sup>59</sup> In party propaganda, Perón distinguished himself from a mere *caudillo* by emphasizing the centrality of a doctrine, *justicialismo*, in his decision-making. "La organización en el pensamiento vivió de Perón," *Mundo Peronista*, November 1, 1952, 12; Crassweller, *Perón and the Enigmas of Argentina*, 227-8.

<sup>60</sup> Juan Perón, *Perón expone su doctrina* (Buenos Aires: Subsecretaría de Informaciones de la P.d.l. Nación, 1948), xxxvii.

<sup>61</sup> Perón's speech to the Chamber of Deputies, in P.d.l. Nación, *Plan de Gobierno, 1946-1951*, vol. 1, 17.



class was not achieved through the redistribution of wealth, such as through badly-needed but politically-toxic agrarian land reform. Instead Perón sought to improve the technical skills of Argentine workers and subsidize local industry, expanding national economic output and directing much of the resultant wealth to the working classes through social programs. Peronist propaganda presented popular consumption as a key facet of a “dignified” standard of living for working people. Government policies succeeded in improving the “*bienestar*” [well-being] of the lower classes through labor reforms, price controls, and other economic measures, providing many poorer Argentines with unprecedented levels of material comfort and leisure.<sup>62</sup>

But in the Peronist political project, consumption and leisure were only one side of the coin. On the other was the provision of “dignified” work for the masses. The aviation industry was portrayed in the popular and official imaginations as a particularly salient opportunity to deliver on the state’s plans.<sup>63</sup> It was prestigious, representing both the peak of the technical knowledge and skills associated with the working classes and a patriotic endeavor dedicated to national defense and development. Furthermore, wages were generally higher in the mechanical

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<sup>62</sup> Elena, *Dignifying Argentina*, 7-9; Milanesio, *Workers Go Shopping*, 2-5. For the history of leisure and vacation in Peronist Argentina, see Elisa Pastoriza, *La conquista de las vacaciones: Breve historia del turismo en la Argentina* (Buenos Aires: Edhasa, 2011), especially Part III.

<sup>63</sup> There was a politics of consumption around aviation—namely the state airlines—but this was of secondary importance for Peronist authorities. There were few instances of workers being transported to their vacation “colonies” on the state airlines. As the historian Melina Piglia has shown, the state mainly used its international airlines as a tool for Argentina to demand legal and commercial parity with foreign powers and their flag airlines. The state did advertise flights on their carriers for those Argentines that could afford it. Lastly, state propaganda had little to say about the private ownership of light aircraft. Their emphasis was on the provision of state-owned aircraft for training purposes. Pastoriza, *La conquista de las vacaciones*, chapter 6; Piglia, ““Carry our colours,”” 44-61.

and electrical workshops that supported aviation than in the nation's other industrial and agricultural sectors.<sup>64</sup>

Perón gradually developed his philosophy over the course of his first presidency. As *justicialismo* evolved, so did *conciencia aeronáutica*. The August 1945 law that created the Semana Aeronáutica simply considered the role of the festival to form aeronautical consciousness, which meant a sense of the “importance of the aeronautical factor in the life of the Nation.”<sup>65</sup> But by the inauguration of the 1948 Aviation Week, the then Secretary of Aeronautics César Raúl Ojeda spoke of “true aeronautical consciousness” as “the consciousness of progress, the consciousness of peace, the consciousness of justice.”<sup>66</sup> This “progress” was implicitly for and by the common *argentino* who worked in the nation's workshops and fields. *Conciencia aeronáutica* was, in effect, a manifestation of *justicialismo* in the people.

It was thus the goal of the Secretaría de Aeronáutica to foment aeronautical consciousness in as much of the population as possible. To accomplish this, the secretariat organized the nation's civil aeronautical institutions into a cohesive system, while greatly expanding its size and prominence on the national stage. In 1948 the Secretaría de Aeronáutica published an extensive promotional book called *National Aeronautics in the Service of the Country*. Among the many colorful charts and hand-drawn emblems, the text delineated the philosophy and intent of the Peronist aviation program. Aeronautical consciousness, it stressed, “wakes in everyone, without distinguishing between age, sex or social class.” In Perón's New

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<sup>64</sup> There is only fragmentary statistical evidence for the wages in the aviation and associated industries during the interwar and Peronist periods. For a sample of wages for the military's technical personnel at the national aircraft factory, see “Aprobando el proyecto de escalafón para el personal de mastranza de la Fábrica Nacional de Aviones,” *Boletín Militar*, M. 7684, 1ª Parte, July 7, 1927; for the wages paid to workers in different industrial sectors, see Comisión Nacional del Censo Industrial, *Censo Industrial de 1935*, 44; Ministerio de Asuntos Técnicos, *Censo Industrial de 1946* (Buenos Aires: D.G. del Servicio Estadístico Nacional, [1952?]), 153-156.

<sup>65</sup> “Estableciendo la Semana Aeronáutica,” *Boletín Aeronáutico Público*, no. 61, August 14, 1945, 608-9.

<sup>66</sup> “Comenzó la Celebración de la Semana Aeronáutica de 1948,” *Revista Nacional de Aeronáutica*, September 1948, 73.

Argentina, “everyone flies...”<sup>67</sup> The development of *conciencia aeronáutica* was to be an inclusive and all-encompassing project. It would provide moral and “spiritual” purpose while the Secretaría de Aeronáutica built the new factories, airports, and institutions that formed the material reality of Peronist aviation.

### **Aviation Weeks 1946-1948 and the Contours of the Peronist Aviation Project**

At no other national aviation institution or event could the spiritual and material qualities of the Peronist aviation program be better gleaned than the Aviation Weeks and exhibitions. It was the goal of the organizers that every Argentine who studied the displays of aircraft and engines would see the nation’s aviation “as the absolute expression of progress, both human and technical.”<sup>68</sup> Even allowing for some exaggeration in government publications and favorable media outlets, the Aviation Weeks were impressive affairs. In 1946, authorities built excitement for the first Aviation Week by holding prize competitions for posters and aviation slogans that would be used throughout the exhibitions.<sup>69</sup> National newspapers covered the frenzy of activity as officials transformed the widest avenue in the center of Buenos Aires into a mock airport during September (see fig. 7.4). Planes were flown into the satellite airports surrounding the capital and transported downtown.

Once events began, visitors to the national exhibition in the capital could see each aspect of the Peronist aviation program. This would begin with a line of nationally-produced aircraft, recently purchased foreign aircraft, and cross-sections of reciprocating engines. The Peronist government had greatly expanded activity at the national aviation factory in Córdoba, the

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<sup>67</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 133-4.

<sup>68</sup> *Ibid.*, 133-4.

<sup>69</sup> S.d. Aeronáutica, *La memoria de la Semana Aeronáutica...1946*, 4-12.



Figure 7.4. "La Exposición Aeronáutica 1947," one of the few photographs of the main Buenos Aires downtown installation with a mock airport and aircraft displays. S.d. Aeronáutica, *La Aeronáutica nacional*, 168.

*Instituto Aerotécnico* (IA, formerly FMA). The IA produced high-performance propeller aircraft, as well as the first jet aircraft made in Latin America, the "Pulqui I."<sup>70</sup> Pulquis and the other less-prestigious aircraft were ubiquitous in Aviation Week events and Peronist media. While the newly produced national aircraft were often the centerpiece of the Aviation Week exhibitions, Peronist aviation authorities also imported war surplus aircraft from Great Britain to augment the FAA's capabilities. These included Gloster Meteors (the first operational jet fighters in Latin

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<sup>70</sup> See chapter eight. The "Pulqui I" and the subsequent "Pulqui II" did not performed well, and they never progressed beyond the prototype stage. Burzaco, *Las alas de Perón II*, 20-44; Artopoulos, *Tecnología e innovación*, 45-83.

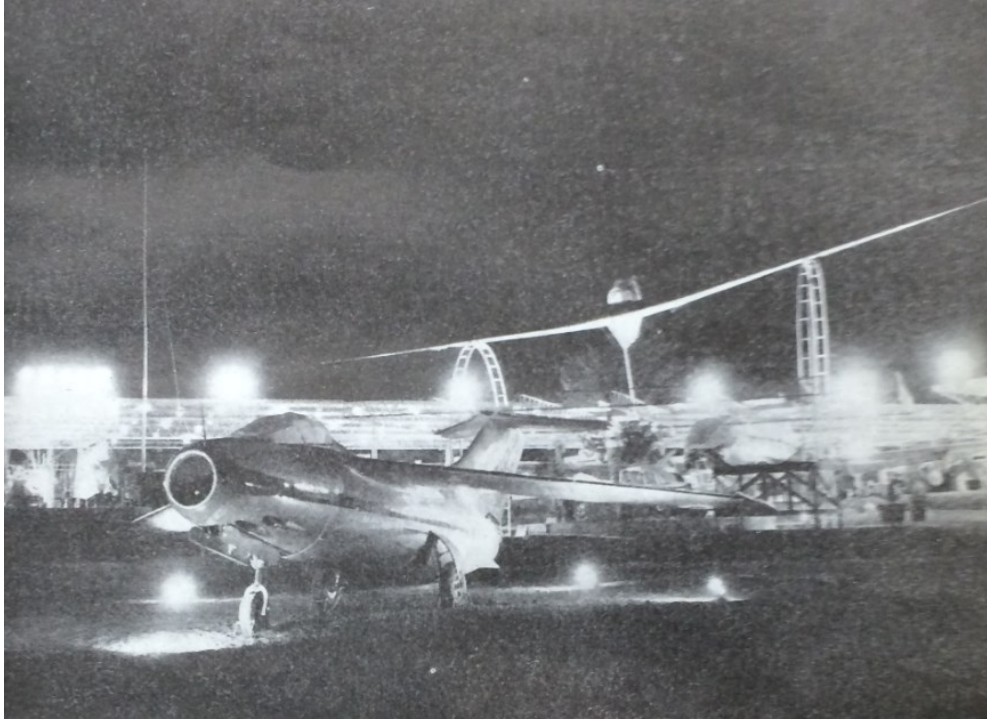


Figure 7.5. A Pulqui II prototype and a flying-wing glider designed by the German engineer Reimar Horten feature prominently at a 1954 national fair in Mendoza. *Revista Nacional de Aeronáutica*, February 1954, 15.

America) and Avro Lincoln four-engine strategic bombers (the first heavy bombers in the region).<sup>71</sup>

After having walked around the stands and aircraft displays, a visitor could then continue onto the exhibit presented by the Ministry of Public Works, which in 1946 featured a large-scale model of the future international airport of Buenos Aires (see fig. 7.6).<sup>72</sup> Since 1944, the ministry had been constructing a huge new airport to finally rectify the lack of an official national port of entry for aircraft. Simultaneously, the Secretaría de Aeronáutica was tasked with building a smaller domestic airport alongside the Río de la Plata in downtown Buenos Aires. These two

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<sup>71</sup> “Inauguróse Ayer la Segunda Exposición de Aeronáutica,” *Democracia*, September 30, 1947.

<sup>72</sup> “Continúa la organizacion de la muestra de aeronáutica,” *La Nación*, September 8, 1946.

airports, known as “Ezeiza”<sup>73</sup> and “Aeroparque” respectively, were the crown jewels of a massive aviation infrastructure program initiated by Perón’s First Five Year Plan [*Primer Plan Quinquenal*].

The Five Year Plan, officially commencing in 1947, poured billions of pesos into a public works program in transportation, telecommunications, education, public housing, and public health.<sup>74</sup> The government built or nationalized airports and airfields, weather stations, navigational beacons, and administrative buildings across the country.<sup>75</sup> In the official booklet outlining the plan, aviation was recognized as essential to “economic and social progress.”<sup>76</sup> Airports would improve the local economy through new, more skilled jobs. They would streamline the movement of natural resources from their disparate locations in the country’s far north, west, and south.<sup>77</sup> Furthermore, airports would facilitate the integration of provincials into the nation. Argentines in far-flung towns in Patagonia were brought closer to the material and spiritual heart of the nation, Buenos Aires. With the advent of air travel, “[Patagonians] began to feel more Argentine after the vision of the blue and white colors that shone on the [airplanes’] wings...” landing at their local airport.<sup>78</sup>

The airport at Ezeiza was the centerpiece of Perón’s aviation infrastructure program. The project had begun with the expropriation of an enormous tract of land—almost six times the size

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<sup>73</sup> “Ezeiza” is the town where the airport was built. Just prior to opening, the airport was renamed the Aeropuerto Internacional Ministro Pistarini, which remains its official name today. Yet it is still colloquially called “Ezeiza.” “Se Denominará “Ministro Pistarini” el Aeropuerto de Ezeiza,” *Revista Nacional de Aeronáutica*, April 1949, 18.

<sup>74</sup> Along with expensive nationalizations, this effort would spend the bulk of Argentina’s 5.6 billion peso post-war reserve. Potenze, *La Aviación Comercial*, 79.

<sup>75</sup> “Que Nos Muestra la Exposición ‘La Nueva Argentina?’” *Revista Nacional de Aeronáutica*, January 1952, 14-16.

<sup>76</sup> P.d.l. Nación, *Plan de Gobierno 1946-1951*, vol. 1, 262-3.

<sup>77</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 45.

<sup>78</sup> “Contribución de la Aeronáutica al Progreso de la Patagonia,” editorial, *Revista Nacional de Aeronáutica*, April 1950, 5.



Figure 7.6. "The president of the Republic observing the model of the airport of Ezeiza." Perón is just to the right of center, with de la Colina standing at his right. "La Exposición de Aeronáutica," *La Nación*, September 23, 1946.

of Heathrow or Idlewild airports at the time—to the southwest of the capital. The public works engineers had an extremely optimistic prediction of the volume of future air travel and thus over-designed the airport's capacity.<sup>79</sup> Allocated 120 million pesos in the First Five Year Plan,<sup>80</sup> the project quickly expanded into a broad urban development program with a new hotel, leisure clubs, and resort towns for Argentines, including the well-known Ciudad Evita. Argentines could relax by the poolside adjacent to a taxiway while Aerolíneas Argentinas' DC-4s and Pan American's Stratocruisers passed by.<sup>81</sup> A new highway was built from downtown Buenos Aires

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<sup>79</sup> Ballet, "El peronismo y sus escenarios," 20-2.

<sup>80</sup> P.d.l. Nación, *Plan de Gobierno, 1946-1951*, vol. 1, 354. For comparison, in 1927 military aviation officials proposed to spend 10 million pesos for a new Buenos Aires airport over five to ten years (which they were denied). "El Director de Aeronáutica Civil ha planeado la construcción del futuro aeropuerto de esta capital," *La Prensa*, September 21, 1927.

<sup>81</sup> "Plane and Fancy Swimming," *Aviation Week*, June 23, 1952, 18.



Figure 7.7. The airport at Ezeiza in 1950. Many of the buildings are still existent, serving as administrative offices instead of terminals. Pablo Szelagowski, Carlos Alejandro Di Bernardi, and Nicolás Vitale, “Planificación y desarrollo de las terminales de pasajeros en el Aeropuerto Internacional de Ezeiza,” *VII Simposio de Transporte Aéreo* (São Paulo, 2009), 3.

to the airport, reorienting the capital’s growth away from the shore of the Río de la Plata.<sup>82</sup> Such luxurious facilities and projects offered humbler people material comfort and leisure opportunities usually afforded only the wealthy, while also giving the more affluent a place to engage with the “New Argentina”—or so the Peronist press claimed.

Ezeiza was inaugurated on April 30, 1949 with Perón, Eva, and major aviation officials present. Undoubtedly, the airport was among the world’s finest at the time of its completion. Originally based on Berlin’s Tempelhof Airport, by the late 1940s the design had changed to reflect that of Washington National, which at the time was considered an archetypical “modern” airport. The British aviation magazine *Flight*, in an article named “Peron’s Pride,” deemed

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<sup>82</sup> Ballet, “El peronismo y sus escenarios,” 7-8.





Figure 7.8. An advertisement for the airport at Ezeiza promises upscale entertainment and dining. *Revista Nacional de Aeronáutica*, December 1951, 7.

Ezeiza “probably the largest and most modern airport in the world...”<sup>83</sup> Peronist officials took full advantage of their new international airport. Perón and his allies took congressmen, provincial politicians, and union leaders on tours of the impressive construction.<sup>84</sup> New airports such as Ezeiza became the settings for aircraft inaugurations, parades, and other public

<sup>83</sup> “New Airports for South America,” *Aviation Week*, March 28, 1949, 40; “Peron’s Pride,” *Flight*, December 8, 1949, 731.

<sup>84</sup> Ezeiza was also featured in two propaganda newsreels in 1949 that highlighted the progress of the *Nueva Argentina*. “Argentina de Hoy,” P.d.l. Nación, la Secretaría de Prensa y Difusión, 1949. “Encantos de Buenos Aires,” *Sucesos Argentinos*, 1949. Both films can be found at the Archivo Histórico de los Servicios de Radiodifusión Sonora y Televisiva del Estado Nacional (RTA).

ceremonies put on by Peronist officials. For the majority of Argentines that never flew on airplanes themselves, the Aviation Weeks in particular were an opportunity to visit these concrete monuments to modern progress.

With a new appreciation of the national efforts to build native aircraft and impressive airports, an Aviation Week attendee could move on from mere passive admiration to active engagement with aviation. Children and adults alike could take free 15-minute “flight baptisms”. Coupons for these flights were often showered on cities by military aircraft in advance. Nearly 30,000 people took their “baptismal flights” on single-engine, two-seater aircraft in 1947 and 1948.<sup>85</sup> Newspapers featured photographs of smartly-dressed children smiling after their first forays into the air. The word choice of “baptism” emphasized the significance—even transcendence—of the bestowal of aeronautical consciousness. It also further cast aviation in a traditional and familiar Catholic mold for many Argentines.

Perhaps after an aerial baptism, visitors then could participate in one of the many aeromodelling competitions held on the main exhibition avenue, at Aeroparque, or at a military air base. As will be discussed further below, aeromodelling—the construction of miniature airplane models—was a core aspect of the government’s broader aviation education initiative for primary and secondary school students. The national exhibition remained closed to the public each weekday morning so school children could tour the displays. Authorities provided free model kits, gave introductory classes, and held competitions at airports, schools, and FAA bases across the country.

If aeromodelling or a flight baptism inspired an Argentine to take to the sky, he or she would then join a local aero club. As will be discussed in the next chapter, the government

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<sup>85</sup> S.d. Aeronáutica, *Memoria anual 1947*, 240; S.d. Aeronáutica, *Memoria anual 1948*, 349.



Figure 7.9. On the left, the distribution of existent (blue dots) aero clubs in 1947, and planned aero clubs (white) by 1951. The remaining dots represent current and planned parachuting clubs. On the right, the distribution of existent aeromodelling clubs (white dots) and planned aeromodelling clubs (red), and similarly orange and pink dots representing current and future gliding clubs. S.d. Aeronáutica, *La Aeronáutica nacional*, 139, 148.

decided to expand the aero club system, while also bringing the far-flung institutions under the regulation of the Secretaría de Aeronáutica. To meet the demand for new pilots and encourage the use of airplanes in economic activity, officials decided to radically expand the network of aero clubs, from 50 in 1947 to 138 in 1951. The aero clubs were financially incentivized to create subsections for aeromodelling, transforming them into community hubs for aviation education and outreach.<sup>86</sup>

<sup>86</sup> D.G.d. Aeronáutica Civil, *Memoria anual 1946* (N.p., 1947), 34, 48.

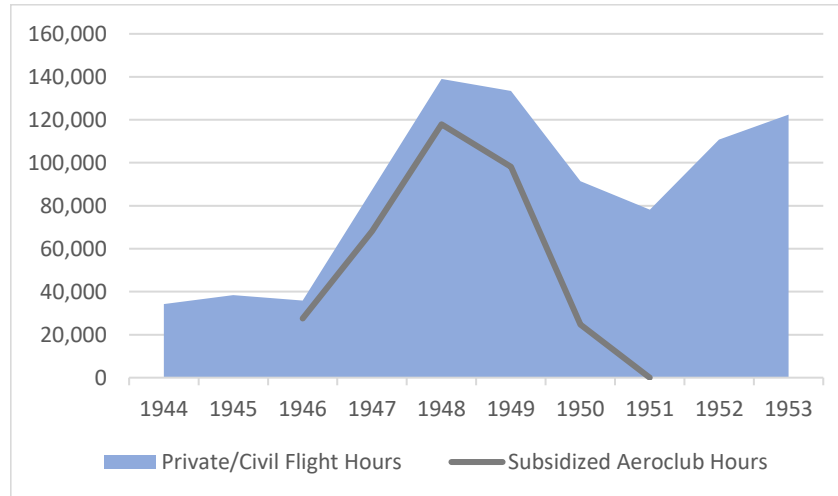


Figure 7.10. Private/Civilian Flight Hours Registered with the S.d. Aeronáutica. Subsidized aero club hours not reported after 1950.

Peronist aviation officials hoped that after their engagement with Aviation Week festivities, aspiring pilots would be inspired to join their community aero clubs. There they could work their way up from aeromodelling to gliding and then motorized flight, before, if they desired, enrolling in the Escuela de Aviación Militar or the Escuela Nacional de Aeronáutica to become professional pilots. In addition to investments in infrastructure, facilities, and personnel, the government heavily subsidized aero club flight hours from 1946 to 1951, resulting in a near quadrupling of registered civilian flight hours in the country (see fig. 7.10). It also prioritized the local construction and importation of the light aircraft necessary for such a popular aviation boom, tripling the number of matriculated civilian aircraft between 1944 and 1952.<sup>87</sup>

<sup>87</sup> The number of matriculated aircraft went from 530 in 1944 to 1,120 in 1947, and peaked at 1,690 in 1952. Data compiled from the *memorias anuales* of the S.d. Aeronáutica in 1947 and 1948, and the following *memorias anuales* of the Ministerio de Aeronáutica: M.d. Aeronáutica, *Memoria anual 1951* (N.p., 1952); and M.d. Aeronáutica, *Memoria anual 1953* (N.p., 1954).

## Flight Culture and Ideological “Balance” in the New Argentina

The Aviation Week was thus the entry-point for Argentines to grasp the extent of the Peronist aviation program and take part if they so desired. It was a propagandistic demonstration of newfound Argentine technical competence and grandeur. The creation of new airlines and Air Force formations were trumpeted as achievements that upheld the national and economic “sovereignty” promised by Peronist media. But the relationship between Peronist politics and its aviation program was more complex. Perón and his allies harnessed aviation technology in their broader political program due the values it supposedly embodied—a balance of material capabilities and spiritual purpose—and its rhetorical power to elevate the social status of the prime Peronist constituency, working men. Critically, the sentiments that swirled around aviation in mid-twentieth century Argentina predated the rise of Juan Perón in 1943. This ensured that the state’s propaganda and technopolitical program were already legible for common Argentines.<sup>88</sup>

As discussed above, *justicialismo* called for a harmonious balance between dichotomous political ideas, including materialism and spiritualism. Perón looked to chart a new, unique path to a future of sovereignty, prosperity and justice by directing how these concepts would be balanced. The idea of “progress,” which was almost universally upheld as the goal of the Peronist national project, was seen as having material and spiritual components.

The material aspect was relatively straightforward: the technological and industrial progress of the nation. New factories, housing, automobiles, and airplanes were all necessary as an economic base for the “dignification of work and the worker,” which was to be accomplished

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<sup>88</sup> Recent scholarship in history of Peronism has increasingly emphasized the adaption of preexisting cultural narratives into the rhetorical and political canon of Perón’s movement. See, for example, Karush, *The Culture of Class*, 177-9; Chamosa, *The Argentine Folklore Movement*, 157; Ezequiel Adamovsky, “Race and class through the visual culture of Peronism,” in *Rethinking Race in Modern Argentina*, eds. Paulina L. Alberto and Eduardo Elena, 155-183 (New York: Cambridge University Press, 2016), 159.

through industrialization, technical training, and state planning.<sup>89</sup> Such pronouncements assumed that industrial-technical work would elevate the standard of living for the Argentine working classes. Although aviation was only one part of an extensive industrialization program, aircraft and their supporting technologies were frequently used to represent this broader initiative. Especially after the First Five Year Plan, propaganda featured photographs of Argentines working on aircraft motors at airports or in machine shops. State propaganda emphasized official industrial education programs, which ostensibly ensured Argentine workers were “the best in the world” in their “capacity” and “*técnica*.”<sup>90</sup> Peronist propaganda promised that “thousands of operators of all young ages...will be thousands of officers, technicians, and engineers. The blocks of a future industrial power are being engraved..., while working for the exclusive benefit of the People.”<sup>91</sup>

Peronist authorities linked interwar narratives of working-class uplift through technological skill to the cult of personality that surrounded Eva Perón. In one such story repeated in propaganda in the later years of Perón’s government, a poor boy from the impoverished province of Misiones named Mario Abel Zandes arrived in Buenos Aires to ask the authorities for help with his ailing mother. Peronist officials decided to give Zandes a tour of the city. After a visit to the tomb of General San Martín, he went to Ezeiza where “he remained for a long while looking at the airplanes and repeating [to himself]: ‘I have to fly in these.’” Finally, Zandes is taken to see Eva Perón who is already ill from the cancer that would take her life. Zandes handed her two notebooks, one filled with his notes on Peronism, the other with “a

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<sup>89</sup> “Política Peronista. Objetivos del Justicialismo,” *Mundo Peronista*, November 15, 1951, 3; “Somos obreros dignificados,” *Mundo Peronista*, January 15, 1953, 6.

<sup>90</sup> “Ingenio y técnicos criollos,” *Mundo Peronista*, June 1, 1952, 6-7. Authorities argued that state scholarships for technical education were more “dignified” than private charity since they did not have the “feeling of servitude or personal dependency” on wealthy benefactors. “Becas para la Aviación Civil,” editorial, *Revista Nacional de Aeronáutica*, December 1951, 9.

<sup>91</sup> “Automóviles, Tractores y Motocicletas para el Pueblo,” *Mundo Peronista*, June 1953, 11.

hundred drawings of aircraft motors, made by [his] own hand.” Eva informed the boy that she had arranged for him to work as a mechanic’s assistant at Aerolíneas Argentinas, the state airline. Zandes said after the meeting: “Everyone loves her, but no one knows how good *señorita* Evita is... A poor worker from as far away as me... And I was with her! I swear that one day I will return on an airplane, to repay her.”<sup>92</sup> In Peronist propaganda, the state—through its educational programs, industrial subsidies, and labor laws—was repeating Zandes’ story for thousands of loyal and patriotic *descamisados* across the nation.

Like much propaganda, the stories had enough elements of truth to make them believable. The state’s extensive sponsorship of the aviation sector had created thousands of jobs for skilled and unskilled workers, as well as inspired the expansion of technical education institutions. The creation of a network of national airlines, the Fuerza Aérea Argentina, new infrastructure, and the expansion of the Instituto Aerotécnico transformed the rudimentary industry into a true “vocation” for workers. In 1948, the Secretaría de Aeronáutica had almost 30,000 employees alone. For those who joined the ranks of the air forces, the Secretaría offered public housing, healthcare, and discounted foodstuffs and consumer goods for them and their families.<sup>93</sup> According to government reporting, some 80,000 people were directly and indirectly “linked” to the aviation industry.<sup>94</sup> These opportunities were also distributed around the nation, including to some of the most underdeveloped regions. The state aviation press routinely touted provincial airports as “landmarks of progress and civilization.”<sup>95</sup> Such airports and their

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<sup>92</sup> Such propaganda did not see any issue with Zandes having to personally travel all the way to Buenos Aires to see Evita to get a job, which is revealing of the normative personalism of the Peronist state. “Para mi querida madrecita,” *Mundo Peronista*, May 15, 1952, 9; “Recuerdos de Evita,” *Mundo Peronista*, December 1, 1952, 26.

<sup>93</sup> S.d. Aeronáutica, *Memoria anual 1948*, 323. A significant amount of the funds allocated to the improvement of FAA bases involved the construction of new housing and barracks for personnel.

<sup>94</sup> S.d. Aeronáutica, *Memoria anual 1948*, 71; “Celebróse el Segundo Aniversario de la Dirección General de Ayuda Social de Aeronáutica,” *Revista Nacional de Aeronáutica*, May 1948, 65-6.

<sup>95</sup> “Ocho años después,” editorial, *Revista Nacional de Aeronáutica*, January 1953, 5.

supporting workshops employed “manpower that is trained and perfected;...creating new sources of work, [raising] the general economic level of an appreciable human sector.”<sup>96</sup>

But there was a perception that this type of materialistic development alone endangered the crucial spiritual dimension of societies. It was a “contamination...brought about by the accelerated march of the progress of peoples.”<sup>97</sup> Improving the quality of life for workers involved both “moral and material dignification.”<sup>98</sup> Perón declared in 1953 that “we are not a technical government, we are a human government...to technify [*tecnificar*] is dehumanizing...We use technology but we put it to the service of the happiness of man and the greatness of the Fatherland.”<sup>99</sup> The Argentine “rebirth” was predicated on an equilibrium between these forms of progress, and “not [forgetting] the people.”<sup>100</sup>

Thus to avoid poisoning society with materialism, the government made a concerted effort to infuse their programs with a “spiritual” side. The term “spiritualism” in mid-century Argentina generally encapsulated a host of moral and religious values. In some cases, “spiritual” was simply to be in line with traditional Catholicism. There was a general sense, especially among more conservative circles, that “so many peoples have lost their faith and, disoriented, let themselves be carried away by the materialistic current, setting aside the unshakable and ever-applicable principles...of Christ.”<sup>101</sup> An active effort to maintain traditional faith was thus

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<sup>96</sup> “Función retributiva de la Aeronáutica,” editorial, *Revista Nacional de Aeronáutica*, February 1952, 5.

<sup>97</sup> “El Plan Cultural del Circulo de Aeronáutica,” *Revista Nacional de Aeronáutica*, July 1948, 11.

<sup>98</sup> “Política Peronista. Objetivos del Justicialismo,” *Mundo Peronista*, November 15, 1951, 3.

<sup>99</sup> “*Nosotros no somos un gobierno técnico, somos un gobierno humano. Generalmente la tecnificación termina con el humanismo y tecnificar es deshumanizar. Empleamos la técnica pero la ponemos al servicio de la felicidad del hombre y de la grandeza de la Patria.*” “Ponemos la Técnica al Servicio del Hombre,” *El Líder*, December 26, 1953.

<sup>100</sup> Perón’s speech to the Chamber of Deputies, in P.d.l. Nación, *Plan de Gobierno, 1946-1951*, vol. 1, 9.

<sup>101</sup> “...tantos pueblos han perdido la fe y, desorientados, se dejan arrastrar por la corriente materialista relegando los principios incommovibles y siempre vigentes de la doctrina de Cristo.” Zuloaga, *La Victoria de las alas*, 2nd ed., 435. For an interwar critique of the materialism of modernity, see the many outraged editorials by Alberto Casal Castel in *El Hogar* magazine from 1936 to 1939.



necessary for the well-being of society. As discussed in earlier chapters, flying had long been seen as an inherently pious activity. The official dedication to the saint of Argentine aviation, the Virgin of Mercedes, called on its personnel to pray daily “so that the ascension of our machines may be a symbol of the elevation of our souls.”<sup>102</sup> A state aviation editorial declared that the Argentine pilot, despite his mastery over the air, “is reverent and humble because he knows that Nature without God is treacherous.”<sup>103</sup> These religious sentiments were ingrained in the common language of Argentine aviation, such as the words “martyr” and “baptism,” which appealed to the more conservative segments of Argentine society.

But in a broader and more widely used sense, spiritualism, or spiritual progress, meant a moral condition or state of the common man that was critical to the forging of an appropriately Argentine modernity. The 1948 Secretaría de Aeronáutica promotional book opens by distinguishing between material and spiritual progress, stating that for Argentines, progress was “more spiritual than material.” Progress contributed to the creation of “a type of Argentine [who is] healthy, strong, cheerful, optimistic, noble, proud to feel Argentine, with peace in the heart, without envy in the soul...”<sup>104</sup> Peronist aviation propaganda was filled with references to a “new youth” who with energy and optimism dedicated themselves to the “noble ideal” that was national aviation.<sup>105</sup> By flying, “the aviator ‘harmoniously coordinates his faith and moral order’, and therefore his example transcends the earthly life.”<sup>106</sup> Thus spiritualism in the people meant a collective sense of duty, discipline, sacrifice, and energy. By promoting “aeronautical

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<sup>102</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 338.

<sup>103</sup> “La Aeronáutica al Servicio de la Paz,” *Revista Nacional de Aeronáutica*, March 1954, 9. There was also a cultural association between flying and religion in the United States. Corn, *The Winged Gospel*, 47-50.

<sup>104</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 11-2.

<sup>105</sup> See, for example, speech by Pimeniel in S.d. Aeronáutica, *La memoria de la Semana Aeronáutica...1946*, 12; “Semana Aeronáutica,” *Revista Nacional de Aeronáutica*, September 1952, 9.

<sup>106</sup> “El aviador ‘coordina armoniosamente su fe y el orden moral,’ y por ello su ejemplo trasciende de la vida terrena.” Zuloaga, *La Victoria de las alas*, 2nd ed., 435.

consciousness,” the aviation community was aspiring to also ensure the spiritual uplift of the Argentine working classes.

Peronist officials emphasized that beyond the provision of aeronautical consciousness, material improvement *could* increase spirituality in the people. Aviation officials editorialized in early 1955 that for this to happen, the state and common people had to understand that “as a spiritual being, man can only consider well-being [*bienestar*] as a means to broaden his soul, freeing it from material servitude.” Mankind had reached a level of “*técnica*” to build complex machines. Society would likely benefit from the labor savings and boost to productivity, but only “If [man] does not allow himself to be dominated by [machines]; if he does not fall into the fetishism of the ‘robot’ . . .” The reward—they surmised with characteristic grandiosity for Peronist officials—was “economic freedom” and the conquest of “creative leisure, the classic leisure with dignity, engine of History, source of our culture, and supreme gift because it offers man the opportunity to see God reflected in the serenity of his soul.”<sup>107</sup>

The rhetoric and culture of aviation under the Peronist state was thus an amalgam of sentiments of material and spiritual uplift that appealed to many in Argentine society. New jobs and training programs in the capital region and the interior helped build a truly national movement. Provincials—just like *porteños*—could look hopefully to the future.<sup>108</sup> The

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<sup>107</sup> “*Como ser espiritual, el hombre no puede considerar el bienestar más que como medio para ensanchar su alma, liberándola de la servidumbre material. El hombre económico, el ente social, está logrando una técnica que le sirve para fabricar las máquinas más complicadas. Si no se deja dominar por ellas; si no cae en el fetichismo del 'robot', y gana—mediante mayor y mejor producción—su libertad económica, habrá llegado la hora de enfilar hacia una vida mejor siempre que sea capaz de conquistar el ocio creador, el clásico ocio con dignidad, motor de la Historia, fuente de nuestra cultura, y supremo regalo porque depara al hombre la oportunidad de ver reflejado a Dios en la serenidad de su alma.*” “Hacia una Vida Mejor,” *Revista Nacional de Aeronáutica*, May 1955, 13.

<sup>108</sup> As recent scholarship on rural and provincial Peronism has shown, the movement had a more diverse class base in such spaces due to the lack of unions or significant industrial activity. Instead, provincial Peronist officials often forged alliances with elements of the middle and upper classes. Their efforts were quite successful. See chapters in Gabriel Rafart and Enrique Mases, eds., *El Peronismo, desde los territorios a la Nación. Su historia en Neuquén y Río Negro* (Neuquén: Editorial de la Universidad Nacional del Comahue, 2003); and Alejandra Salomón, *El peronismo en clave rural y local: Buenos Aires, 1945-1955* (Bernal: Universidad Nacional de Quilmes, 2012).

spiritualist sentiments of religiosity, patriotism, and discipline also appealed to military officials, nationalist intellectuals, Catholic integralists, and other social conservatives.

### **Children, Aeromodelling and “Air Age” Education**

When Peronist officials invoked material and spiritual progress in their propaganda and policies, it was often directed at the next generation of inhabitants of *la Nueva Argentina*. Non-elite children, young adults, and their parents were a prime constituency of both aviation and Peronist officials. They saw *la juventud* [the youth] as a source of future skilled workers, responsible and prosperous citizens, defenders of their nation, and—most importantly for Perón—loyal voters. The state media constantly celebrated new educational and social welfare programs for children. Such messaging not only built a positive association of the state as a source of personal opportunity for young people, but it also reassured parents that Peronist reforms would secure their children’s futures. Furthermore, the invocation of the nation’s youth injected the Peronist project with a sense of newness and vitality. This common-sense political strategy was essential for the success of Perón’s broader industrial development program since both the state and the private sector needed thousands more skilled workers to meet their expansion targets.

Peronist politics around childhood sought to democratize changes to childrearing and education that had been building largely among the upper echelons of Argentine society. With the stabilization of the national political situation in the 1870s, Argentine liberal elites began to construct a public education system, emulating developments in the United States. Elite Argentines felt that popular education, mostly for basic literacy, was essential for the modernization of their nation. By the 1910s, the state had become “the most important actor in

the process of childhood schooling.”<sup>109</sup> Children could attend six grades of primary school, although most only completed one or two years before needing to enter the workforce to help support their families—a trend which continued well into the twentieth century.<sup>110</sup> A Peronist education official noted in 1947 that 86 percent of children who entered first grade in 1937 had dropped out by the sixth.<sup>111</sup> Those children who could continue school worked their way up the “narrowing...educational pyramid” to the secondary and university levels.<sup>112</sup>

The state’s interest in fostering public education reflected growing concerns with immigration, race, and public health in the early twentieth century. As discussed in chapters three and four, the vast influx of immigrants and popular conceptions of Social Darwinism triggered racial anxiety among government officials, medical practitioners, and the media. These elites absorbed North Atlantic discourses which normalized the bourgeois family, sentimental childhood, and the medicalization of childrearing. New forms of “social engineering” such as public schools and summer camps were supposed to inculcate young Argentines with a “common, unified, patriotic, democratic, and republican culture, a culture both scientific and spiritualist.”<sup>113</sup> An emphasis on physical exercise swept through Argentine society. The children of tomorrow would be imbued with virility, discipline, flexibility, and dexterity and thus be able to meet the “struggle for life.”<sup>114</sup> More and more class time was also dedicated to Argentine history with stories of national heroes like General José de San Martín.<sup>115</sup> By the 1930s, the nationalist folklore movement found a home in schools as the state sought to form patriotic

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<sup>109</sup> Armus, *The Ailing City*, 289.

<sup>110</sup> Scobie, *Buenos Aires*, 210.

<sup>111</sup> Puiggrós, *Qué pasó en la educación argentina*, 134.

<sup>112</sup> Scobie, *Buenos Aires*, 223.

<sup>113</sup> Armus, *The Ailing City*, 289.

<sup>114</sup> *Ibid.*, 277, 289, 301-2. Exercise culture was tied to veneration of the outdoors and the countryside as social commentators feared the adverse “spiritual and physical effects” urban modernity might have on children—much like with women.

<sup>115</sup> *Ibid.*, 240-44.

citizens.<sup>116</sup> This period would see a re-integration of Catholic schooling into public education, which had been restricted by the liberal, secularizing elite in the late nineteenth century.<sup>117</sup>

All these changes in education point to a new conception of childhood in Argentina and Latin America. Over the first half of the twentieth century, childhood evolved from a period of labor for the sake of the household to a special time of development in which children were to be isolated from the trials and tribulations of work and the wider world. This shift coincided with the increasing predominance of bourgeois, middle-class conceptions of the family. Although a study of this change in Argentina has not yet been written, the historian Ann S. Blum's work on family, gender, and work in Mexico City is revealing of social transformations across Latin America. Just as in Argentina, children and families were rhetorically equated with the Mexican nation, encouraging new forms of state control over reproduction and childrearing.<sup>118</sup>

Blum shows how Mexican children were, in effect, feminized in late nineteenth century social thought and popular culture. They became the embodiments of "vulnerability and purity, qualities also associated with elite ideals of femininity."<sup>119</sup> Instead of working, they should be allowed to play and to engage in other "innocent pastimes." The ability of a family to meet this expectation of a sentimentalized childhood developed into a key metric to gauge their social position, as working-class families discovered to their detriment. Initially such a standard of living and pattern of behavior was largely unattainable for the humbler segments of society. Only with intensive state intervention—much like in Peronist Argentina—was sentimentalized

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<sup>116</sup> Chamosa, *The Argentine Folklore Movement*, 125.

<sup>117</sup> Plotkin, *Mañana es San Perón*, 32, 148.

<sup>118</sup> Blum, *Domestic Economies*, xxvii.

<sup>119</sup> *Ibid.*, xix.

childhood democratized to partially include the lower classes.<sup>120</sup> As historian Valeria Manzano argues, the Peronist social welfare and education reform essentially created the category of “the youth” as a political, economic, and cultural block in Argentine society.<sup>121</sup>

Aviation enthusiasts and officials during the interwar period were steeped in this growing movement to protect, nurture, and improve the nation’s youth via new educational opportunities and activities. The calls to spur *conciencia aeronáutica* or *sentimiento aéreo* in the people discussed above were also directed at children. Aviation boosters, both civilian and military, argued that an appreciation for “the cause” could help children gain a sense of “orientation” toward aviation and the modern economy. They often looked abroad to aeronautical education programs in Europe and exhorted their countrymen to give their children the same opportunities.<sup>122</sup>

Aviation enthusiasts settled on aeromodelling as the prime tool for aeronautical education in the classroom and as a youth hobby. By the early 1930s miniaturized airplanes had evolved from mere toys or collectables for display into bona fide flying machines. Models—usually made of balsa wood and fabric or paper—replicated the internal frameworks and/or external shapes of actual wings and fuselages. As a result, the miniature airplanes effectively mimicked the flight characteristics of their real-world inspirations. In the late 1930s modelers added tiny motors to

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<sup>120</sup> Blum, *Domestic Economies*, xix, 133-4. Furthermore, working-class women’s labor was diverted to support the middle- and upper-classes in their efforts to meet this standard, with the result being weakened familial cohesion among society’s more vulnerable members. This was also the case in Argentina in the early twentieth century. Rodríguez, *Civilizing Argentina*, 99.

<sup>121</sup> Although the “age of youth,” as Manzano calls it, only began after 1955. The new category in Argentine society became a political football for Peronists and anti-Peronists, and young people engaged in the transnational cultural revolutions emanating from Europe and the US. The youth by that point essentially meant teenagers, which was a newly conceptualized phase of life. See Valeria Manzano, *The Age of Youth in Argentina: Culture, Politics & Sexuality from Perón to Videla* (Chapel Hill: University of North Carolina Press, 2014), chapter one.

<sup>122</sup> “La Educación Aérea en las Escuelas,” *Aero*, May-July 1937, 1; “Debemos fomentar y estimular en los jóvenes el interés por la aviación,” *Mundo Argentino*, August 1937, 71.

their aircraft, and by the Peronist era the more advanced practitioners were integrating wired or radio controls for mechanized flight surfaces.

According to its adherents, aeromodelling promised to not only develop an enthusiasm for aviation but encourage beneficial personal qualities and technical skills. Boosters argued that the construction and flying of model airplanes at a young age fostered an intuitive sense of the three-dimensional movement necessary for the proper design and operation of aircraft.<sup>123</sup>

Aeromodelling required diligence, attention to detail, and—as any modeler knows all too well—an abundance of patience. Such skills and qualities were seen as essential for the complex industrial work involved in aircraft construction, maintenance, or piloting. Thus, building models was not simply play—children were developing their mental faculties for the modern age.<sup>124</sup>

The interwar period saw the growth of a cottage industry of enthusiast publications, modeling supply companies and retail shops. The first aeromodelling clubs appeared in 1932, although unlike their powered flight counterparts they remained independent from state influence or financing.<sup>125</sup> This began to change after the 1936 military scandals and with the brewing threat of global war. Military and education officials saw the activity as a way to stimulate *conciencia aeronáutica* in school children and build an aerial reserve.<sup>126</sup> The first competition to explicitly

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<sup>123</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 135. This was a common theme in interwar aviation, with major efforts to promote aeromodelling in many European nations, especially Germany, and the US. Corn, *The Winged Gospel*, 113-20; Fritzsche, *A Nation of Fliers*, 200-3.

<sup>124</sup> Aeromodelling as a hobby fit the self-improvement spirit of the interwar period discussed in chapter four. Interwar social commentators and advertisers frequently extolled parents for children to learn while playing, with toys such as erector sets and model airplanes, which they of course sold for a profit. See, for example, “Varias Notas de Interés General. Los Juguete Científicos,” *Ciencia Popular*, December 1934, 682.

<sup>125</sup> Much like *Ciencia Popular* and gliding, a new aviation magazine, *Mundo Aeronáutico*, began to proselytize the benefits of aeromodelling in 1932. Sporadic competitions and conventions were held through the decade, sponsored by the Centro de Aviación Civil, *Mundo Aeronáutico*, Shell Mex Argentina, YPF, the Club Argentino de Planeadores “Albatros,” and the Universidad Popular de la Boca. “El Desarrollo del Aeromodelismo en los Principales Países del Mundo,” *Mundo Aeronáutico*, June 1939, 42-3; “Como se Fomenta el Aeromodelismo,” *Mundo Argentino*, June 1939, 27-8.

<sup>126</sup> Bullrich, *Régimen y organización*, 193; “Vasto proyecto de organización para formar pilotos aviadores civiles,” *La Prensa*, July 27, 1940.

meet the “performance” standards of the Fédération aéronautique internationale—which had expanded its mandate into modeling—took place in 1938. By the following year, *Mundo Aeronáutico* estimated that there were about 2,000 aeromodelling *aficionados* nationwide.<sup>127</sup> Yet the repeated cries to add aeromodelling to the education curriculum reflected the continued failure to implement any large-scale programs. As late as 1947, aeromodelling had not been integrated into the school curriculum in Buenos Aires province and the capital.<sup>128</sup>

The June 1943 coup d’état brought new momentum to the effort, and in 1944 the first government directorate to sponsor aeromodelling was formed under the Dirección General de Aeronáutica Civil.<sup>129</sup> Aviation boosters and military officials lobbied their government to follow the example of “Air Age Education” in the United States.<sup>130</sup> By Perón’s first presidency, aviation officials were finally able to vastly expand the state’s promotion of aerial education and aeromodelling. In official propaganda, these education initiatives had the dual purpose of creating the aerial reserves for the FAA while also shaping Perón’s “new youth.”

In the 1946 pamphlet *Mensaje a los escolares argentinos* [*Message for Argentine schoolchildren*] distributed to schools, the opening page featured stylized quotations from Perón and Bartolomé de la Colina urging children to take up modeling. Perón had evidently declared: “The sky of the homeland needs Argentine schoolchildren to...reach it through the practice of

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<sup>127</sup> “Como se Fomenta el Aeromodelismo,” *Mundo Argentino*, June 1939, 27-8.

<sup>128</sup> S.d. Aeronáutica, *Memoria anual 1948*, 103-4. This may have been due simply to a lack of knowledge and resources. But education authorities and their elite patrons tended to eschew artisanal or technical instruction, which may have suppressed efforts to include aviation topics and aeromodelling in the national curriculum. Scobie, *Buenos Aires*, 210; Sarlo, *The Technical Imagination*, 5.

<sup>129</sup> “El Desarrollo de la Aeronáutica Civil en la Arg.,” *Revista Nacional de Aeronáutica*, March 1950, 6.

<sup>130</sup> “Dictan Clases sobre Aviación,” *El Líder*, September 9, 1946; “La Educación para la Edad Aeronáutica,” *Revista de Informaciones Aeronáuticas*, April 1943, 435-8. For the US experience, see Corn, *The Winged Gospel*, 124-6; Van Vleck, *Empire of the Air*, 106-8.



aeromodelling.”<sup>131</sup> To help children who “dream of reaching ever greater heights” realize their aerial destinies, the state promised new logistical, technical, and financial support for modelling.<sup>132</sup> From 1946 onward, the Secretaría de Aeronáutica was tasked with crafting a national curriculum for aeromodelling and aviation-themed instruction, providing aeromodelling supplies to hundreds of schools and institutions, and hosting dozens of competitions.

Officials maintained much of the rhetoric of aeromodelling from the interwar period. In *Mensaje a los escolares argentinos*, Director of the Dirección General de Aeronáutica Civil Comodoro Luis Ernesto Beizuela argued that “the child who practices aeromodelling, while [also exercising] his abilities and spirit of inventiveness, will develop one of the sports that will best contribute to the future greatness of our Homeland.”<sup>133</sup> In the wake of a national aeromodelling competition in 1948, the aviation magazine *Alas de América* reported “...that aeromodelling has an extraordinary utility is undeniable...it forces him to sharpen his ingenuity, turning him into a potential creator and giving birth to a complete aeronautical consciousness, which can convert him tomorrow into an aviator, builder, designer, mechanic, etc.”<sup>134</sup>

Such dramatic pronouncements had elements of truth, which are especially evident if one considers the material practice of aeromodelling in the mid-twentieth century. The models of the 1930s and 1940s were a far cry from the relative simplicity of pre-formed plastic models

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<sup>131</sup> “El cielo de la patria necesita que los escolares argentinos lleguen también a él por la práctica del Aeromodelismo.” D.G.d. Aeronáutica Civil, *Mensaje a los escolares argentinos* (N.p., 1946). Located within the D.G.d. Aeronáutica, *Memoria anual 1946*, housed at the DEHFAA. Like a number of Perón’s aphorisms, this quotation was attributed to *el Conductor* without any reference to when and where he said it.

<sup>132</sup> In the words of de la Colina. D.G.d. Aeronáutica Civil, *Mensaje a los escolares argentinos*, n.p.

<sup>133</sup> “El niño que practique Aeromodelismo, a la vez que ejercitará su habilidad y espíritu de inventiva, desarrollará uno de los deportes que mejor contribuirá a la grandeza futura de nuestra Patria.” D.G.d. Aeronáutica Civil, *Mensaje a los escolares argentinos*, n.p.

<sup>134</sup> “...que el aeromodelismo tiene una utilidad extraordinaria es innegable...le obliga a agudizar el ingenio, convirtiéndole en un creador en potencia y haciendo nacer en él una cabal conciencia aeronáutica, que puede convertirlo en el día de mañana en aviator, constructor, diseñador, mecánico, etc.” “Fue Disputado el Trofeo ‘Presidente de la Nación’,” *Alas de América: Revista de Actualidades Aeronáuticas*, September 1948, 22.

commonly assembled today. As a 1947 Secretaría de Aeronáutica educational pamphlet *Construya su aeromodelo!* [*Build your airplane model!*] illustrates, early models were carved by hand out of a plank of wood. The modeler's hand was guided by tracings from a sheet of paper. For models beyond the most basic level, the carved pieces mimicked real spars and ribs, which were then wrapped in paper (see fig. 7.11).<sup>135</sup> Gluing the parts together required manual dexterity and the ability to visualize two-dimensional schematics in three dimensions—undoubtedly a stimulating challenge for many young children.

The year 1946 saw the beginning of a boom in officially-sponsored aeromodelling nationwide. Officials distributed 10,000 plans for the construction of models to students across the nation.<sup>136</sup> During the 1946 Aviation Week, military aircraft showered the city of Buenos Aires with miniature airplane models to simulate interest.<sup>137</sup> A new aeromodelling tournament, named the “Trophy of the President of the Nation,” featured thousands of pesos in prizes for its contestants.<sup>138</sup> In addition to founding new clubs across the interior, the Secretaría sent teams of civilian *aficionados* to demonstrate the latest techniques.<sup>139</sup> By the end of 1947, nearly 5,000 people had registered with aeromodelling clubs.<sup>140</sup> Six years later there were 87 clubs across the country with 215 tournaments that year alone.<sup>141</sup>

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<sup>135</sup> D.G.d. Aeronáutica Civil, *¡Construya su aeromodelo! Planeador* (N.p., 1947). Located within the D.G.d. Aeronáutica Civil, *Memoria anual 1947* (N.p., 1948), housed at the DEHFAA.

<sup>136</sup> “10.000 Planos para la Construcción de Aeromodelos Fueron Distribuidos Entre los Escolares,” *Boletín de Informaciones Aeronáuticas*, November 1946, 292-3.

<sup>137</sup> It is not clear if this became common practice. “Hoy “llovieron” Aviones Miniatura Sobre la Ciudad y sus Alrededores,” *El Líder*, September 27, 1946.

<sup>138</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 324; S.d. Aeronáutica, *Memoria anual 1948*, 83.

<sup>139</sup> D.G.d. Aeronáutica Civil, *Memoria anual 1947*, 113.

<sup>140</sup> S.d. Aeronáutica, *Memoria anual 1948*, 83.

<sup>141</sup> “Intensa Actividad Cumplió en 1953 Aviación Civil,” *El Líder*, December 31, 1953.



Figure 7.11. The “Aviator of tomorrow”. The wooden internal structure of the model, wrapped in paper, are evident here. From a promotional book published by the Secretaría de Aeronáutica. S.d. Aeronáutica, *La Aeronáutica nacional*, 137.

Peronist officials disseminated the knowledge to teach aeromodelling through special classes and propaganda for elementary school teachers and students. A classroom and demonstration field with a 200-student capacity was built at Aeroparque in downtown Buenos Aires.<sup>142</sup> Officials opened an Escuela Oficial de Aerodelismo in Córdoba, which in 1948 instructed 115 local teachers. By the end of 1947, most of the provincial governments had agreed to incorporate aviation into elementary schooling. Plans to finally expand into the Buenos Aires region brought the total estimated participants in aeromodelling classes for 1948 to over 60,000 children.<sup>143</sup>

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<sup>142</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 324.

<sup>143</sup> Authorities arranged initiatives with partners like the Sociedad de Maestros de Enseñanza Manual de Rosario and the Jefe y Celadores de los Parques Municipales de Recreación Infantil in Buenos Aires. D.G.d. Aeronáutica Civil, *Memoria anual 1947*, 113-5.

These initiatives represented aviation officials' contribution to the broader Peronist program of education and social reform for children. Perón supported the reintroduction of Catholicism and further intensified the nationalist rhetoric within public education.<sup>144</sup> Eva expanded a rudimentary system of "*ciudades infantiles*" or "children's cities" that had also taken shape in the interwar period. These clusters of educational institutions, leisure facilities, and government housing aided "poor children" and "orphans" from infancy to adulthood. Images of children clad in impeccable white clothing playing, learning, and dancing in the *ciudades infantiles* filled Peronist propaganda.<sup>145</sup> As the next chapter will show, Peronist officials reformed and expanded the technical education system. Cultural changes and state policy dramatically increased the number of secondary school students, more than doubling the population between 1946 and 1955.<sup>146</sup>

Aeromodelling competitions and classes were highly visible efforts by the state to incorporate ostensibly forward-thinking pedagogical practices into official and informal education programs, casting the broader initiative in a pragmatic, modern light. The Peronist state's democratization of such opportunities for children, with all the attendant promises for socioeconomic improvement, certainly enhanced the political power of Perón's project. The emphasis on the *future* citizens of the nation also had the built-in benefit of giving the government time to deliver on the advanced educational programs and jobs promised by propaganda and state planning.

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<sup>144</sup> He increasingly equated himself to the great Argentine heroes of San Martín and (for Peronists) Juan Manuel de Rosas. Plotkin, *Mañana es San Perón*, 52, 111.

<sup>145</sup> Anahi Ballet, "Unforgettable Kitsch: Images around Eva Perón," in *The New Cultural History of Peronism: Power and Identity in Mid-Twentieth Century Argentina*, eds. Matthew B. Karush and Oscar Chamosa (Durham: Duke University Press, 2010), 152.

<sup>146</sup> Manzano, *The Age of Youth*, 22.

## Masculinity, Class, and the Peronist Technical Identity

The values, skills, and identities Peronist education sought to impart on *la juventud* were highly gendered. They reflected the transformations of masculinity and femininity in the modern age of “civilized” urban life evident since the mid-nineteenth century. Peronist propaganda, consciously or unconsciously, tried to remedy the long-standing tension around “*criollo*” masculinity—the gender identity generally associated with working men. It presented Peronist civilization as a source of universal masculine confirmation without branding “*criollo*” masculinity as incompatible with modern industry and society. State and military officials promoted a common Argentine manhood that incorporated yet tamed *criollo* masculinity, turning it into a “useful” identity that could thrive in modern workshops and offices, not only on the soccer pitch or ranch.

As we saw in chapters one and four, liberal elites in *belle époque* Buenos Aires rejected mid-nineteenth century characterizations of civilization as fundamentally feminine. Whereas writers from the “Generation of 1837” had presented European culture as an antidote to the hypermasculinity of the “barbaric” countryside, the intellectuals of Jorge Newbery’s era insisted that the “conquests” of progress were sources of manly confirmation and status. As the interwar period unfolded, the masculine status of famous pilots only partially diffused to the far larger number of mechanics, administrators, and other workers that underpinned the aviation industry. Common *argentinos* increasingly saw technical labor as a potential source of socioeconomic upward mobility and masculine confirmation. But it proved a difficult archetype of manly self-improvement to achieve in Argentine society. There were few opportunities for technical education and few jobs in the aviation industry itself. The masculine “technical” identity remained out of reach for most.

Instead, the most prevalent form of popular masculinity was the “*criollo*” variety represented in melodramas, music, and on the soccer pitch. The “*criollo*” man—as the name suggests—was deeply linked to the countryside and the mythologized figure of the gaucho. Exemplified by the soccer star, *criollo* masculinity emphasized individuality, virility, and panache. These values clashed with those increasingly promoted by the maturing aviation industry and other sectors of the modern economy, which prized discipline, dependability, and formal education.<sup>147</sup> The independence if not rebelliousness of *criollo* manhood was enmeshed in a populist interwar culture that both venerated and condemned elite lifestyles. Popular melodramas depicted affluent living standards as a desirable goal for common people, while simultaneously painting elites as morally bankrupt. Perón seized on this dynamic and oriented his policies around celebrating the popular *criollo* masculinity while also harnessing the power of the state to bestow middle-income living standards on the lower classes.<sup>148</sup>

To achieve this end, Peronists needed to break the long-held perception of formal education and modern work as emasculating. Officials tried to present the values of industrial modernity—above all discipline—as in line with the masculine self-actualization evident in sports and entertainment. The state now actively cultivated a heavily-militarized technical identity, promising boys and young men that engagement with the modern economy would provide the same manly confirmation as breaking in foals on the *Pampa* or fighting on campaign. Unsurprisingly, officials enlisted aviation technology to help bolster this technical identity. The Army had long cultivated technical skills among its conscript classes to meet its ever growing demand for pilots, mechanics, and industrial workers at its armaments factories. The Peronist era

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<sup>147</sup> Archetti, *Masculinities*, chapters two and six.

<sup>148</sup> Karush, *Culture of Class*, chapter five.

represented an intensification of this mission; now national officials, not merely its armed forces, would promote a popular, technical male identity.

Peronist officials used two main strategies to bolster this modern masculine identity among common people. First, government philosophy held the patriarchal family as the fundamental unit of society. Labor policies were geared toward ensuring families could achieve good living standards on solely male wages. Peronist officials thought that the inability of men to provide for their family was a “true social scandal.”<sup>149</sup> The expansion of national industry—with its higher wages than the traditional economy—was supposed to provide the jobs for these male heads of household. New technical educational programs would ensure Argentine workers were prepared for these jobs. The state, in effect, sought to make the interwar technical identity a viable path to personal fulfillment for working *argentinos*. The wage increases and new social welfare programs did much to make this a reality during Perón’s first presidency.<sup>150</sup>

Second, state propaganda presented the masculine technical identity as compatible with yet superior to the older, rural *criollo* variety.<sup>151</sup> Party newspapers, magazines, and pamphlets harnessed the imagery and rhetoric of the *criollo* man but added a critical ingredient: discipline. The discipline to both be a useful member of the modern workforce *and* direct those efforts at national aggrandizement under Perón’s leadership. Whereas the interwar rhetoric of technical self-improvement was focused on individual ascension in society, state media now emphasized

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<sup>149</sup> Elena, *Dignifying Argentina*, 40.

<sup>150</sup> *Ibid.*, 7-9.

<sup>151</sup> There was a condemnation of undesirable *criollo* masculinity in the Peronist press, represented by the *patoters* or “working-class adolescents, portrayed as hanging around cities and towns without anything else to do but organize petty scandals.” Manzano, *The Age of Youth*, 24.

that such individual efforts were in the service of collective progress.<sup>152</sup> Popular movies of the period, as scholars of Argentine film have noted, were infused with notions of soldierly self-sacrifice for the nation. Such sentiments were naturally the product of the military's dominance of the state and desire to inculcate its values of discipline, deference, and patriotism among its pool of potential recruits.<sup>153</sup>

But notions of discipline and self-sacrifice were applied to technical careers too. In essence, the sacrifice was the discipline itself—the discipline to be a reliable and skilled worker that furthered the Peronist project. It was a willingness to submit to state plans and dedicate years of effort to classroom and practical education to fill desperately needed positions in the government and its sponsored industries. And, as Peronist propaganda would make increasingly clear over the first presidencies, it was a discipline to obey *el Conductor* and his representatives. As Perón wrote in a promotional article for the Second Five Year Plan:

I am, perhaps, a technician of discipline. Forty years I have obeyed, and forty years I have made myself obey. So I must know something about discipline... military discipline is the toughest, most rigid and most unbearable discipline. However, the nature of man comes to bear it even with pleasure, so that there is no discipline rigid enough so that man cannot respect it and cannot fulfill it.<sup>154</sup>

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<sup>152</sup> Hernán Comastri has shown how the popular “technical imagination” of the interwar period was distinct from that of the Peronist era, due to the former’s emphasis on technical invention for the market, versus the latter’s focus on inventing for the benefit of the state and nation. Hernán Comastri, “La Inventiva Popular Frente a Las Nuevas Formas del Transporte: Prensa, Publicidad y Cartas a Perón (1946-1955),” *H-Industri@: Revista de Historia de la Industria, los Servicios y las Empresas en América Latina*, n. 22 (August, 2018), 8.

<sup>153</sup> For military masculinity in mid-century Argentine pop culture, see Currie K. Thompson, “The Military, Movies and Masculinity: *Su major alumno* and *Pampa bárbara*,” in *Modern Argentine Masculinities*, ed. Carolina Rocha, 109-22 (Chicago: Intellect, The University of Chicago Press, 2013); and Erin H. Redmond, “Masculinity, Performance and Peronist Nationalism in *La traición de Rita Hayworth*,” in *Modern Argentine Masculinities*, ed. Carolina Rocha, 123-138 (Chicago: Intellect, The University of Chicago Press, 2013).

<sup>154</sup> “Yo soy, quizá, un técnico en disciplina. Cuarenta años he obedecido, y cuarenta años me he hecho obedecer. De manera que algo debo saber de la disciplina. Por otra parte, la disciplina castrense es la disciplina más dura, más rígida y más insoportable. Sin embargo, la naturaleza del hombre llega a soportarla hasta con placer, de manera que no hay disciplina suficientemente rígida como para que el hombre no la pueda respetar y no la pueda cumplir.” “El arte y la teoría en la conducción,” *Mundo Peronista*, January 1, 1952, 47.



Peronist aviation officials presented their industrial and educational programs as a source of a dignified yet disciplined modern masculinity. Propaganda frequently featured the “disciplined youth” that were taking their place in the definitive “conquest of the new dimension of the Homeland” (see fig. 7.12). Aviation officials at the factory in Córdoba—the largest employer of workers in the industry by that time—took the imposition of military discipline extremely seriously even for its majority civilian workforce. A former Instituto Aerotécnico employee who had been at the factory during the first Peronist presidencies recalled years later:

Everyone had to carry out their work in a timely and proper manner, and in many sections you couldn’t even talk while you were working; talking improperly, leaving the workplace without just cause, doing a job wrong, answering the superior incorrectly... and so many other things were in all cases a reason for punishment...<sup>155</sup>

The technician remembered how when the Pulqui II was first flown in 1950, the main workshop’s *operarios* were denied permission to watch the flight from the tarmac. The workshop doors were even closed. Nevertheless, after hearing of the success of the test flight, the workers “got together...in the middle of the workshop and most of us hugged each other, others jumped for joy and many, including me, were shedding tears of emotion.”<sup>156</sup> When asked about whether this discipline was burdensome, the worker emphasized that it was indeed strict, but they were compensated by the sense of accomplishment and “strong spirit in the people” at the factory. He and his fellow technicians—in his memory—venerated the factory leadership which set an example of energy, dedication, and service.<sup>157</sup> Government messaging, in short, characterized

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<sup>155</sup> “Cada cual tenía que cumplir su labor en tiempo y en forma, y en muchas secciones no se podía ni conversar mientras se trabajaba; el conversar indebidamente, el salir de su lugar de trabajo sin causa justificada, el hacer mal un trabajo, el contestarle incorrectamente al superior... y tantas cosas más eran en todos los casos motivo de castigo...” Bonetto, *La industria perdida*, 201-2.

<sup>156</sup> “*Déspués de la rasante nos juntamos no sé por qué en el medio del taller y la mayoría nos abrazamos, otros saltaban de contento y a muchos, entre ellos yo, se nos caían las lágrimas de emoción.*” Ibid., 201.

<sup>157</sup> Ibid., 201-2.



Figure 7.12. The “disciplined youth” on the left and a recruitment ad for the FAA on the right. S.d. Aeronáutica, *La Aeronáutica nacional*, 271; Ad for Escuela de Especialidades de Aeronáutica, *Aerovivencias*, 1948, DEHFAA.

worker discipline as a patriotic and meaningful behavior that was improving their nation and communities.

Yet the rhetoric of Peronist aviation maintained elements of the *criollo* masculinity commonly associated with their prime constituency, the working classes. State media still promised familiar incarnations of masculine confirmation despite the discipline. The act of rebellion—a hallmark of the rugged independence of the gaucho archetype—was moved from the individual to the collective level. Perón and working *argentinos*—in rhetoric and frequently in reality—were thumbing their noses at traditional power structures, defying the oft-maligned “oligarchy” and foreign powers like the US. As historian Eduardo Elena put it, Perón’s



Figure 7.13. The promises of manly validation in a 1947 government pamphlet for young aspiring pilots. On the left, a woman is impressed by a pilot who just got his wings. On the right, an airline pilot masters by aerial “stead.” S.d. Aeronáutica, *Semana Aeronáutica* 1947, n.p.

socioeconomic elevation of the working classes was a “‘heretical’ challenge to cultural norms of deference.”<sup>158</sup>

On the personal level, Peronist media blended the imagery of rural and unfettered masculinity with the presentation of new government programs. One editorial in June 1955 promoted the masculine quality of “*inquietud*” [restlessness] frequently invoked during the interwar period both in reference to pilots and the *criollo* identity.<sup>159</sup> As discussed in chapter three, *inquietud* on the part of men was a positive virtue resulting from excess energy, that quintessential quality of modernity. When a woman possessed *inquietud*, it inevitably led to tragedy—firmly establishing the link between energy and masculine behavior. State media encouraged both restlessness and discipline, revealing the inherent tension of a Peronist masculinity that looked equally to a mythical *gauchesco* past and an industrial, highly-ordered future.

<sup>158</sup> Elena, *Dignifying Argentina*, 7.

<sup>159</sup> “Las Semanas Aeronáuticas,” *Revista Nacional de Aeronáutica*, June 1955, 11.

A poignant example of this strategy was a pamphlet for children distributed by the Dirección de Aeronáutica Deportiva [Sport Aviation] at the 1947 Semana Aeronáutica. The cartoon booklet was meant as a guide for aspiring pilots. It described state programs, subsidies for training, and potential jobs. For those who successfully earned their wings, authorities promised a life of manly validation using tropes long evident in *criollo* masculinity. One cartoon featured an attractive woman ogling a newly-credentialled aviator. Another depicted an airline pilot riding his airplane like a horse while a “tourist” pilot was shown cooking an *asado* for two women (see fig. 7.13). The final page presented a father and son watching an airplane fly by, extolling “Father! Do not obstruct the ambition of your son; make him one more guardian of our sky” (see fig. 7.14).<sup>160</sup> Although these cartoons were undoubtedly tongue-in-cheek, they nonetheless presented aviation as very much in line with a popular masculinity of the countryside and barracks that would have been familiar to many Argentine boys and men. In this way, officials presented the modern economy under state control as a source of a gender continuity in a rapidly changing world.

Aviation officials’ appropriation of such rural masculine archetypes was part of a broader trend of racial inclusivity in Peronist politics. In their effort to “to attract the attention of all social classes to aviation,” the authorities implicitly included Argentina’s mixed-race population.<sup>161</sup> As discussed in chapter four, darker skin color was perceived as a marker for lower socioeconomic status instead of a distinct racial group. Peronism, by elevating the status of the lower classes, in effect also lessened racial stigmatization. This was reinforced by an emphasis on provincial spaces and culture. National authorities frequently promoted “*criollo*”

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<sup>160</sup> Dirección de Aeronáutica Deportiva, *Semana Aeronáutica 1947* (N.p., 1947), n.p. Found within the D.G.d. Aeronáutica Civil, *Memoria anual 1947* housed at the DEHFAA.

<sup>161</sup> “Orientación Aeronáutica de la Juventud Argentina,” *Revista Nacional de Aeronáutica*, September 1952, 19.



Figure 7.14. State propaganda encouraged parents to allow their children to join the aviation industry. S.d. Aeronáutica, *Semana Aeronáutica* 1947, n.p.

culture, in the form of folkloric dances and music, in the national media. In a first, state propaganda images of groups of children or supporters often featured people of color.<sup>162</sup>

Peronist aviation officials also stressed the dissemination of “native” [*autóctono*] culture among their personnel and dressed their actions with the rhetoric and imagery of rural and *criollo* culture, such as naming airplanes with indigenous words.<sup>163</sup> In one case, the Instituto Aerotécnico marketed its “El Indio” engine with a stereotyped image of an indigenous man

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<sup>162</sup> Adamovsky, “Race and class through the visual culture of Peronism.” Despite Perón passing little meaningful legislation to specifically aid people of color in Argentina, his political opponents sometimes called Peronist supporters—white or otherwise—the pejorative term “*cabecitas negras*” [little black heads]. Eduard Elena argues that this use of race shows how skin color was fundamentally a political construction in Peronist Argentina that served to denote friend from foe. Upper-class Argentines reduced the “plebian sectors” to an “othered” racial category that reinforced an “us” versus “them” mentality. Elena, “Argentina in black and white,” 206.

<sup>163</sup> See for example, “Acción cultural del Círculo de Aeronáutica,” *Revista Nacional de Aeronáutica*, February 1950, 3; “Volovelismo: Porvenir del Vuelo a Vela,” *Revista Nacional de Aeronáutica*, June 1951, 49; “La Escuela de Suboficiales de Aeronáutica,” *Revista Nacional de Aeronáutica*, June 1955, 51.

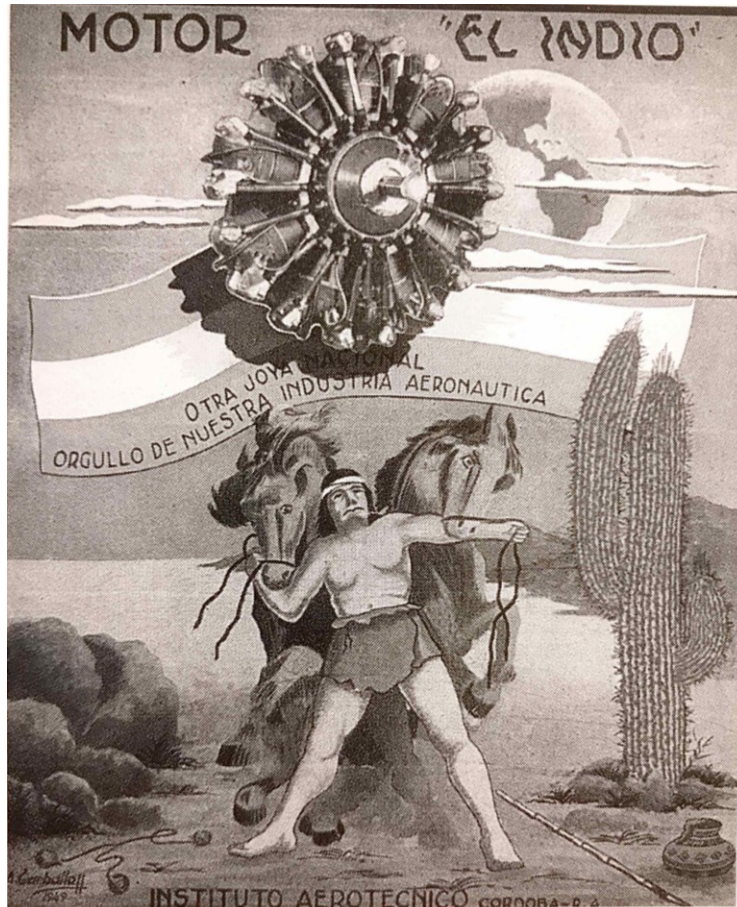


Figure 7.15. Advertisement for the IA “El Indio” engine, with the subtitle: “Another national jewel, pride of our aviation industry.” Burzaco, *Las alas de Perón II*, 25.

leading two horses in the desert (see fig. 7.15). At once insulting, patronizing, *and* subversive of the usual dichotomy between civilization and indigeneity, the image reveals the state’s conflicting presentation of race, class, and national identity.<sup>164</sup>

Such messaging appeased nationalist intellectuals who had long believed that the antidote to foreign cultural domination lay in the Argentine countryside. But for the common *argentino*,

<sup>164</sup> Chamosa, *The Argentine Folklore Movement*, chapter seven. For more on the relationship between race and class in interwar and Peronist Argentina, see Natalia Milanesio, “Peronists and *Cabecitas*: Stereotypes and Anxieties at the Peak of Social Change,” in *The New Cultural History of Peronism: Power and Identity in Mid-Twentieth-Century Argentina*, eds. Matthew B. Karush and Oscar Chamosa, 53-84 (Durham: Duke University Press, 2010); and Adamovsky, “Race and class through the visual culture of Peronism.”

the state promotion of *criollismo* in its many forms cast the state's new programs and industries in a positive and familiar light. It encouraged working Argentines to perceive these Peronist initiatives as for and by people like them—or perhaps more accurately—by their ostensibly faithful representative, General Perón.

Just as the rhetoric of Peronist media contained many echoes of the discourses around pilots and masculinity from the interwar period, it also reflected continuities in the notion of heroism in aviation evident since the early 1930s. Flight was rapidly losing its heroic sheen as more and more common people took to the skies and a miraculously mundane “Air Age” of safety and regularity neared reality. The pilot was increasingly part of a well-oiled technological system, not a rugged individual staking his claim to national and international celebrity.

This naturally fit the politics of the Peronist state which presented aviation as an opportunity for decidedly-less meteoric technical careers for everyday people. The Peronist aviation industry promised socioeconomic ascendance, personal dignity, and masculine validation, but it did not offer hero status, international fame, or great wealth. State media and national newspapers rarely discussed the individual feats of pilots.<sup>165</sup> Of greater importance were the development of government programs, construction of new machines and infrastructure, and national technological aggrandizement. In keeping with its populist bona fides, state propaganda generally presented collective effort—not individual achievement—as heroic.

But this did not mean the individual hero was gone. While most pilots had lost celebrity status in Argentine society and in much of the world, there remained a specialized segment of the industry that could still produce heroes: aircraft testing. The figure of the brave and highly-

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<sup>165</sup> This is evident in both the aviation-specific publications like the *Revista Nacional de Aeronáutica*, and party publications like *Mundo Peronista* and *Democracia*. In other contexts, such as sports and entertainment, celebrity and/or hero status remained intact.

skilled test pilot maintained much of the masculine aura of earlier celebrity aviators. The immense risk involved in testing experimental aircraft—which were attempting ever more extreme feats of speed, altitude, and maneuverability—and the connection to national technological progress naturally gave the pilots significant social cache.<sup>166</sup>

Argentina had its own well-known test pilot, the military aviator Edmundo Osvaldo Weiss. The Argentine pilot of German descent had graduated from the Escuela de Aviación Militar in August 1942. According to Francisco Halbritter, Weiss was a member of the GOU in June 1943, and seems to have had a personal connection to top officials in the Army air services and, eventually, in the Peronist government. Posted to the Instituto Aerotécnico, he became the head test pilot for its prototypes.<sup>167</sup> Through his political maneuvering and clear piloting skill, Weiss ensured that he was the first to fly the country's most anticipated aircraft like the Pulquis. He was also frequently tapped to perform exhibition flights for the press which boosted his national image.

In many ways Weiss perfectly encapsulated the new image of the pilot as a technical specialist and mission-oriented worker. A profile of Weiss by *Revista Nacional de Aeronáutica* presented him as wholly occupied with his work at the IA: “We talked about vocation. He is passionate about flight. His vocation for flying led him to enter a military career. He lives at the Institute.”<sup>168</sup> Weiss was also described as a “simple” and “cordial” man, who possessed an “analytical mentality.”<sup>169</sup> The presentation of the era's most famous individual pilot in Argentina

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<sup>166</sup> In the US context, pilots like Chuck Yeager and Albert Crossfield became national figures in the late 1940s and 1950s, only to eventually be surpassed by the first generation of astronauts, who were sometimes themselves test pilots, like Neil Armstrong. Tom Wolfe, *The Right Stuff* (New York: Farrar, Straus, and Giroux, 1979).

<sup>167</sup> Halbritter, *Historia de la industria aeronáutica*, 336.

<sup>168</sup> “Hablamos de vocación. El vuelo lo apasiona. Su vocación por el vuelo lo indujo a ingresar a la carrera militar. Vive en el Instituto.” “Con el piloto de pruebas del Instituto Aerotécnico,” *Revista Nacional de Aeronáutica*, June 1950, 15.

<sup>169</sup> “Con el piloto de pruebas,” 14-16.



as hard-working, skilled, disciplined, and dedicated to Peronist progress fit with the state's broader propaganda which hoped to instill these values among working *argentinos*.

But while Weiss was a national figure during the Peronist era, there is little evidence to suggest he received the same public acclaim as celebrity flyers during the interwar era. State media, in an inversion from the earlier period, was focused on the aircraft—not their pilots—as symbols of national aggrandizement. It was the Pulqui II, not Weiss, that drew the attention of journalists and publicists. Peronist media generally eschewed the racial anxiety of the interwar period that encouraged social commentators to focus on the biological capacities of pilots. The promotion of *criollo* culture and *criollos* themselves was evidence of a building sense of Argentine self-confidence about the people's fitness for modernity. No longer did they need to hide their history or those who supposedly represented authentic yet archaic *Argentinidad*. Peronist propaganda took it as a given that the popular classes were fit for modernity, and simply needed state support to ensure their prosperity. The creation of the Pulqui II was part of the effort to provide this support, and hence more important to the narrative espoused by the Peronist state.

Ironically, the focus of heroic narratives shifted up the social hierarchy to the managers of the Peronist project and especially to the Peróns themselves. Perón and Eva were depicted in official media as the physical incarnations of ideal masculine and feminine leadership and *Argentinidad*. This trend would only intensify after Eva's death in 1952 and as Perón felt the noose of opposition tightening around him in the lead up to the *Revolución Libertadora*.<sup>170</sup>

The “hero” of the day in the perception of the aviation community at the time, and ever since, was the figure of Juan Ignacio San Martín (1904-1966), who directed the IA from 1944 to 1948 and headed the Ministry of Aeronautics from 1951 to 1955. San Martín—a subject of

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<sup>170</sup> For the construction of Perón as a “charismatic leader” and the public “worship” of Eva, see Plotkin, *Mañana es San Perón*, part II.

chapter eight—was a close ally of Perón and seems to have matched his energy and ambition. Men like San Martín became the elite of Peronist society distinct from the disparaged “oligarchy.” The IA worker interviewed by Walter Bonetto spoke about his former boss with reverence. The technician remembered San Martín as “a humble, hard-working, ... honest...[and] wise man.” He commended San Martín’s ability to inspire his subordinates with a sense of mission and meaning: “He knew how to enthuse, he knew how to make [you] feel like an important part of one [team].”<sup>171</sup>

Long after the Peronist era and San Martín’s passing in 1966, he was enshrined as a great man of the period by sympathetic historians. Bonetto listed Juan Ignacio San Martín among a pantheon of men who supposedly encapsulated the spirit of the Liberator José de San Martín’s national ethos and wisdom—which also included Perón, Mosconi, de la Colina and others. These men were heroic by virtue of their ambition to transform their nation for the better.<sup>172</sup> The heroes of Peronist Argentina were great politicians and generals, and the nameless workers and technicians that executed their plans. They would build the *Nueva Argentina* together with manly energy, discipline, sacrifice, and skill.

### **Women and the Limits of Peronist Aviation**

In contrast to the clear and consistent propaganda on masculinity, the Peronist state—and in particular aviation officials—made an art of sending mixed messages on the lingering question of the place of women in modern society. Officials largely maintained their ambivalence toward women in aviation evident during the 1930s. Although Peronist aviation propaganda proclaimed that their activities would not discriminate based on sex, the truth was far from the political

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<sup>171</sup> Bonetto, *La industria perdida*, 202.

<sup>172</sup> *Ibid.*, 96, 115; Frenkel, *Juan Ignacio San Martín*, 140.

messaging. Opportunities for women in aviation existed in mid-century Argentina, but the Peronist state did little to promote the industry as a source of “dignified” work for women.

The discrepancy between rhetoric and action reflected the broader tensions around modern femininity. Women and family were at the center of Perón’s policies, both as potential supporters for his populist base and as symbols of his political, economic, and social agenda. As discussed above, the Peronist state took the paternalist family to be the basic sociopolitical entity of Argentina.<sup>173</sup> The Argentine woman—supposedly represented by the increasingly saint-like Eva Duarte—was still tasked with upholding the nation’s spiritual and political values in the household. Eva and the state harnessed pre-existing notions of femininity to advocate for a greater participation of women in the public sphere as voters, but not workers. Propaganda presented Eva as spiritually linked to the *pueblo*, forming through her gender a “Bridge of Love” between *el Conductor* and the masses. As Christine Ehrick describes in her analysis of Eva’s oratory on the radio, “...just as Eva is destined to obey and follow her husband, so the *descamisadas* are destined to obey and follow him. Female citizenship here comes via the pathway of devotion to Perón, in a relationship that deliberately slips between President and husband.”<sup>174</sup> Just as working men were supposed to exercise discipline—in their work and their politics—so too were women, although in this case by remaining dedicated to their ostensibly traditional roles as mothers and wives, and by voting for Perón.

Women were simultaneously empowered and disempowered under the Peronist governments. They finally gained the right to vote in 1947, which historian Gregory Hammond argues was simply an effort by Perón to gain more political support. Yet the Peróns did not ally

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<sup>173</sup> Elena, *Dignifying Argentina*, 7, 40, 110-1, 170-3; Guy, *Women Build the Welfare State*, especially chapter six.

<sup>174</sup> Ehrick, *Radio and the Gendered Soundscape*, 129.

themselves with the long-standing feminist and suffragist movements, which they denounced as part of the “oligarchy.” Instead, new organizations of working-class women supporters were created under Eva’s direction, most importantly the Partido Peronista Feminino. The Peronists thus extended the vote to women, but actively supported only those women who were seen as political allies. Government propaganda then painted the advent of women’s suffrage not as a victory made by women but a reflection of Perón’s benevolence.<sup>175</sup>

This push-and-pull during Perón’s tenure extended to the welfare state as well. The Peronist government dramatically expanded the social welfare system, pouring millions of pesos into new formal and informal institutions. Yet this new system was not created from nothing. Historian Donna Guy argues the Peronist state took over the charitable organizations that were previously run by elite women. Perón, in effect, paternalized welfare, transforming it from a maternal task to care for vulnerable children to the purview of a masculine state acting as a father over its citizens.<sup>176</sup>

In the aviation sector, this gendered politics ensured that there were women flyers and technicians featured in national propaganda, but authorities made no effort to integrate women into the industry’s workforce. As we saw in chapter three, famous *aviadoras* had dispelled any notions of an inherent female biological inferiority in the cockpit. But in an environment of increasing social conservatism on gender, commentators and officials generally shifted from arguing women *could* not fly, to that they *should* not fly. Since Carola Lorenzini’s death in 1941,

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<sup>175</sup> As Hammond emphasizes, Perón, as a pragmatic politician, needed the approval of his powerful institutional allies, such as the Catholic Church, the military, and organized labor. That these institutions “all accepted, or at least tolerated, female political participation demonstrated that the feminists had at last made themselves heard on this issue.” Hammond, *The Women’s Suffrage Movement*, 200.

<sup>176</sup> The government took all responsibility for social assistance through its institutions, such as the Fundación de Eva Perón and the Secretaría de Trabajo y Previsión. Guy, *Women Build the Welfare State*, 11, 137-8, 152-3. A similar process unfolded in Mexico during the tenure of the Partido Revolucionario Institucional in the 1930s and 1940s, see Blum, *Domestic Economies*, 130.

new pilots like Jorgelina Elena Barozzi and María del Carmen Romero broke sport-flying records, keeping *aviadoras* in the news even as coverage diminished. Male commentators, writing as if they needed reminding of the capabilities of women in the cockpit, continued to be surprised by their achievements. After a spate of new women's aviation records in Argentina, one commentator remarked as late as 1951: "The alleged fragility of women seems to be definitely a thing of the past."<sup>177</sup>

State media certainly took advantage of the achievements of pilots like Jorgelina Elena Barozzi, emphasizing how *pilotas* were evidence of the vibrancy of Peronist aviation. Propaganda also harnessed images of women, symbolically linking them to notions of popular aeronautical consciousness. The winning entry in an official aviation photography contest in December 1949 featured a portrait of a young woman smiling as an airplane passed by, with the caption "the youth flies..." The Secretaría de Aeronáutica's 1948 promotional booklet had a dramatic image of a woman pilot, proclaiming "Women also fly" (see fig. 7.16).<sup>178</sup>

Sometimes official propaganda bared the hollow nature of most of this rhetoric, as was the case with the aforementioned pamphlet for prospective pilots disseminated at the 1947 Aviation Week. The first page depicted a love-struck man on the ground, with a woman flying an airplane above. The text asks: "How can I be an aviator?" before answering "Girl! Young man! Here is the question that [after] reading this brochure will be perfectly clear to you."<sup>179</sup> Yet the

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<sup>177</sup> "Records Femeninos en Aeronáutica," *Revista Nacional de Aeronáutica*, August 1951, 10. For a collection of later magazine articles on women in Argentine aviation in the early to mid-twentieth century, see box 20, folder 2, COR, BNA.

<sup>178</sup> Cover, *Revista Nacional de Aeronáutica*, December 1949; S.d. Aeronáutica, *La Aeronáutica nacional*, 149.

<sup>179</sup> S.d. Aeronáutica, *Semana Aeronáutica 1947*, n.p.



Figure 7.16. On the left, the winner of the 1949 national photography contest, captioned “the youth flies...,” cover of *Revista Nacional de Aeronáutica*, December 1949; on the right, propaganda image by the Secretaría de Aeronáutica caption, “women also fly,” S.d. Aeronáutica, *La Aeronáutica nacional*, 149.

subsequent pages are entirely from the male perspective, to the point of promising female adoration as a prize of pilot training.

The 1947 pamphlet revealed a reality of Peronist aviation that ensured the marginalization of women—it was managed by military men, who despite their rhetoric to the contrary, designed their programs largely around supposed military interests. Propaganda and budgets favored FAA training programs and service opportunities—exclusively male spaces. This was especially true for any professional programs beyond rudimentary flight training or aeromodelling instruction.

Lest this appear an accidental effect of defense exigencies, there is strong evidence of gender conservatism, if not misogyny, among military leadership. Military men, as documented

by Potash, were often hostile to the growing power of Eva and her organizations.<sup>180</sup> Perón had to delicately maneuver around these officers as he refused to rein in his politically talented partner. This tension came to a head when Perón seemed to suggest Eva would be running as his candidate for vice president in 1951. As Potash describes: “This prospect, however gratifying to [Eva’s] supporters, was one to set the teeth on edge of many Argentine males, especially those in uniform, for whom the idea of this woman, or indeed any woman, as constitutional successor and consequently Commander-in-Chief of the armed forces was still inconceivable.”<sup>181</sup> Perón was evidently forced to change his plans due to the resulting backlash. Eva was rarely mentioned in *Secretaría de Aeronáutica* publications in contrast to the omnipresence of *el Conductor*. It seems logical that such ingrained hostility toward women in leadership positions would also result in a consistent apathy toward technical education programs and job opportunities for women on the part of military officers.<sup>182</sup>

The authorities did create a handful of education initiatives for women and girls in traditional roles, such as the training of teachers in aviation terminology, aeromodelling classes for school girls, and the employment of flight attendants.<sup>183</sup> A poignant if peculiar example was the creation of a core of women nurse parachutists that became a regular feature of aviation festivals in the later years of Perón’s presidency. At face value, the addition of skydiving to the nursing profession would seem merely another instance of the frivolous injection of everyday

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<sup>180</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 52, 94, 118-9.

<sup>181</sup> *Ibid.*, 119.

<sup>182</sup> Gender was not the only site of tension between Perón and military officers. Potash describes how Army leadership were sometimes apathetic to rule changes to enable more lower class men into military academies for officers. General Sosa Molina, who was also among the most hostile men to Eva, seems to have been behind the resulting foot-dragging around military reforms. Potash, *The Army & Politics in Argentina, 1945-1962*, 87.

<sup>183</sup> “Fue Disputado el Trofeo ‘Presidente de la Nación’,” *Alas de América: Revista de Actualidades Aeronáuticas*, September 1948, 23; “Aeromodellismo: Prevision Deportiva,” *Revista Nacional de Aeronáutica*, April 1952, 40; S.d. *Aeronáutica, La Aeronáutica nacional*, 158-9. But these initiatives were clearly of secondary importance to programs for boys and men, including for flight attendants.

practices with “Air Age” spectacle—in the vein of the speculative “uses” for airplanes lampooned in interwar cartoons. Certainly the frequent juxtaposition in state media of parachuting nurses with “Leo” the parachuting rescue dog lend credence to this interpretation.<sup>184</sup>

Yet the intensity of the experience of throwing oneself out of an airplane with a parachute—and its association with paratroopers—gave the practice a decidedly serious and masculine connotation in the official and popular imaginations. Promoted by state officials since the 1930s, parachuting in the postwar period was still characterized with the dramatic rhetoric of a gendered rite-of-passage for the youth. The 1947 *Semana Aeronáutica* pamphlet encouraged the youth to take up parachuting, as a complement to or instead of pilot training. It featured an excerpt from the military aviator Vicente Bonvissuto’s new book *De frente al abismo* [*Facing the abyss*]. In language that would have been at home in Newbery’s day, Bonvissuto wrote:

Argentine youth, melted in the crucible that treasures the gold of courage, has been practicing [parachuting]. The glory is already his, but the triumph achieved will expand his fame like the sound waves of the roaring overflowing sea... There is the parachutist, chest overflowing with healthy greatness!<sup>185</sup>

That state propaganda featured women participating in such a masculine activity—replete with the risk and courage—was revelatory of the limited but nevertheless real space for women to engage with practices usually restricted to men.

Equally revelatory, though, was that these women were nurses. Authorities promoted the training of female nurses as part of its program of social medicine. As Jonathan Hagood argues, the figure of the nurse came to represent the “ideal Peronist woman.” Microcosms of Eva’s role

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<sup>184</sup> See, for example, “Exposición 1953,” *Revista Nacional de Aeronáutica*, October 1953, 22-9; for “Air Age” education and women teachers, see “Aerodelismo: Previsión Deportiva,” *Revista Nacional de Aeronáutica*, April 1952, 40.

<sup>185</sup> “La juventud argentina, fundida en el crisol que atesora el oro del coraje, lo viene practicando. La gloria ya es suya, pero el triunfo alcanzado expandirá su fama cual las sonoras ondas de rugiente mar esbordado...Helo ahí al paracaidista, desbordante el pecho de grandeza sana!” S.d. *Aeronáutica*, *Semana Aeronáutica* 1947, n.p.



as a “Bridge of Love” between the people and Perón, nurses were to be “*agentes de enlace*” or liaisons between (male) doctors and patients. The official rhetoric around nurses emphasized traditionally feminine values, such as sacrifice, selflessness, and kindness.<sup>186</sup> Thus parachuting nurses had strong associations with feminine virtue, even as they demonstrated their masculine *bona fides* by leaping out of airplanes.

Although opportunities in the aviation industry were rare for women, there is evidence of at least a handful of women workers at a private manufacturer and in state workshops. According to the 1953 *Memoria* for the Ministry of Aeronautics, officials were undergoing a trial run of female *operarias* [operators] at a “Regional Workshop”—one of the principal nodes in the network for maintaining state aircraft—as part of the Second Five Year Plan.<sup>187</sup> The scale of this program and what became of it are unclear—to the degree that it is possible the program never existed. In another instance, the daughter of the aviator-engineer Desiderio Biró—herself a pilot—evidently worked at the Instituto Aerotécnico. According to Francisco Halbritter, she received official permission to use a civilian aircraft prototype, the I.Ae. 32 Chingolo, on a publicity flight to the US. Yet Halbritter does not even know her name, and IA documentation makes no mention of women employees.<sup>188</sup>

A more significant effort that left a greater mark in the historical record involved the private aircraft manufacturer Petrolini Hermanos, S.A. In 1940, the Junta Argentina de Aviación called for the design of a basic trainer for the aero clubs. FMA engineers Juan A. Peretti and Clodoveo Pascualini developed an aircraft similar to a Piper Cub, the “Boyero.” The prototype

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<sup>186</sup> Jonathan Hagood, “Agentes de Enlace: Nursing professionalization and public health in 1940s and 1950s Argentina,” in *Routledge Handbook on the Global History of Nursing*, eds. Patricia D’Antonio, Julie A. Fairman and Jean C. Whelan, 183-197 (New York: Routledge, 2013), 190-3.

<sup>187</sup> M.d. Aeronáutica, *Memoria anual 1953*, 132.

<sup>188</sup> Her flight never happened. Halbritter, *Historia de la industria aeronáutica*, 334.



Figure 7.17. Eva Duarte with Minister of Aeronautics Ojeda to her right during the presentation of the Boyero on January 14, 1949. Pablo Potenze, “Morón, Ezeiza y Aeroparque, Tres Símbolos de la Nueva Argentina,” in *Los orígenes de Aerolíneas Argentinas: La posguerra y un modelo de país (1945-1955)*, eds. Guido Ghiretti et al., 101-26 (Buenos Aires: Grupo Abierto Libros, 2020), 126.

proved satisfactory and officials decided to contract the design out to private workshops. The initial contract went to Sfreddo & Paolini, but it eventually lapsed without any deliveries due to wartime shortages of steel tubing and engine parts. In 1946, the Secretaría de Aeronáutica announced a new contract to produce Boyeros, which was won by Petrolini Hermanos, S.A. With technical assistance from Emilie Dewoitine, Petrolini Hermanos began production in late 1948.<sup>189</sup>

For reasons that remain obscure, the firm employed women for the assembly of the airframes, a practice that seems to have lasted for the entire production run of over a hundred aircraft completed by February 1952. There is little evidence that this decision was driven by state or military officials, but the official presentation of the Boyero on January 14, 1949 offers a

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<sup>189</sup> Untitled article, box 2, folder 3, COR, BNA.

clue to possible sources of Peronist patronage. In contrast to most official aircraft presentations, it was Eva not Juan that represented the state. A press photograph shows her flanked by Ojeda and other officials next to the new airplane (see fig. 7.17). It is possible that Eva and/or her organizations like the Fundación Eva Perón may have had a hand in the effort—or at least expressed their support for the *operarias* at Petrolini Hermanos. Internal documentation from the Secretaría de Aeronáutica as well as publications like the *Revista Nacional de Aeronáutica* were largely mute on the matter.<sup>190</sup> An article to promote the first eight Boyeros produced by Petrolini Hermanos had no textual reference to the use of women on the production line, but there were photographs showing it. The most significant recognition of such women workers came with the cover of the September 1950 *Revista Nacional de Aeronáutica*, which featured a beautiful female technician working a drill press (see fig. 7.18).

But beyond these few instances, officials chose not to promote the women working in aviation. Even if state policies allowed for or enabled some cases of women workers in aviation, these handful of cases received a tiny fraction of the coverage heaped on their male counterparts in state media. The *Revista Nacional de Aeronáutica*—for example—only featured a single article on current women *working* in aviation (as opposed to hobbyists) from its founding in 1948 until 1956.<sup>191</sup> State officials also paid little attention to the most famous example of a professional Argentine *pilota*, Carola Lorenzini. Lorenzini would seem a natural fit for Peronist

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<sup>190</sup> Presumably, if the military did not want Petrolini Hnos. to use women workers, they could have stopped them since it was a government contract and they held regulatory control over aircraft production.

<sup>191</sup> The hushed nature of women's involvement in national aviation is evident in the archive and historical record. Women workers, whether professional pilots or technicians, were and are rarely discussed in the historical literature and state documents. The few fragments of information are generally mere acknowledgements of women in the workforce without substantive discussion or interpretation. I also encountered frustrations with missing articles on the subject at the BNA. Most gallingly, the only aforementioned article in the *Revista Nacional de Aeronáutica* to discuss women workers was cut out from the only copy of this issue I have managed to track down. Nevertheless, the lack of evidence here is revelatory in and of itself, considering the immense abundance of coverage on male workers in state media.



Figure 7.18. On the left, images of the *operarias* on the Boyero production line in 1949, *Revista Nacional de Aeronáutica*, January 1949, 1. On the right, an image of a female technician operating a drill press, on the cover of the *Revista Nacional de Aeronáutica*, Sept.-Oct. 1950.

propaganda, considering her rural and working-class origins. But in contrast to the constant commemoration of male aviation “martyrs,” the tenth anniversary of her death in 1951 was marked by a short paragraph in the domestic aviation news in the *Revista Nacional de Aeronáutica*. Only the Aero Club Argentino seems to have held a significant memorial for Argentina’s greatest *aviadora*.<sup>192</sup> The real presence of women in the aviation industry in Argentina thus remained largely invisible in state media, even in publications outside military supervision like *Mundo Peronista*. When it came to the central provision of Peronist aviation—dignified work—women largely found themselves excluded and invisible.

<sup>192</sup> “Aeronoticias,” *Revista Nacional de Aeronáutica*, November 1951, 14; “Aeronoticias,” *Revista Nacional de Aeronáutica*, December 1951, 11.

## Peronist Technopolitics and the Power of Aviation

Peronist aviation harnessed the rhetoric of flight technology for what was arguably its most enduring aspect, the elevation of the social *status* of working people.<sup>193</sup> National authorities used the long-espoused narrative of the conquest of the sky to carve out a central place for the working classes in the broader narrative of the past, present, and future of Argentina. Eschewing the cultural, political, and economic elite, Peronist aviation officials loudly declared that the “*masa ciudadana*” [citizen mass] were the main drivers of the nation’s progress.

The invocation of the illustrious history of flight and the consistent role of patriotic, technically-minded working people projected this story into the past, creating a sense of continuity in what otherwise might have felt like a sharp break with Argentine tradition. Officials routinely commemorated fallen aviators like Jorge Newbery and Benjamin Matienzo. Many invocations to the “martyrs” of Argentine aviation praised the qualities of the fallen while casting a self-lauding spotlight on the present day. Perón—naturally—was particularly adept at this. In a speech to honor the fortieth anniversary of Jorge Newbery’s death, he described the aviator as “a humble and modest man, as an exemplary patriot and as a bold and manly conqueror of the Argentine sky” before concluding: “For this reason, to the breadth of the national tribute that is paid to his memory today, I add mine as President of the Nation, as an athlete and as a citizen, with the affection and respect that the virtues of humility, of patriotism, character and self-sacrifice awaken in me.”<sup>194</sup> Perón’s political acumen aside, the state’s rhetoric anchored their

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<sup>193</sup> Aviation was one of many areas where Peronist authorities elevated the status of the humble, such as the assignment of workers to the diplomatic corps. Those that had traditionally enjoyed the upper echelons of Argentine society suffered profound “status anxiety” caused by the state’s upending of the social hierarchy. Semán, *Ambassadors of the Working Class*, 3-21; Karush, *The Culture of Class*, 211.

<sup>194</sup> “Por eso, a la amplitud del homenaje nacional que se presta hoy a su memoria, sumo el mío de Presidente de la Nación, de deportista y de ciudadano, con el cariño y el respeto que despiertan en mí las virtudes de la humildad, del patriotismo, del carácter y de la abnegación.” “Las Palabras del General Juan Perón,” *Mundo Deportivo*, March 4, 1954, 19.

current project in the history of national efforts to fly. Peronists spoke of the aviation program as a redemption of a long-gestating spirit of technical work and progress in the nation.

When it came to the present, Peronist propaganda espoused a pride in the contribution of common people to the country's greatness, especially the recent strides under Perón. As one editorial in the *Revista Nacional de Aeronáutica* proudly proclaimed, the work of the state and the "Argentine man" had transformed Argentina from a "semi-colonial country" into "a power that has been integrated...into the group of leading States with voice and vote." The nation "[had] been incorporated into History."<sup>195</sup> Such political messaging undoubtedly had a powerful impact on working Argentines. Government propaganda routinely published the pictures of workers who had graduated from technical schools or labored in workshops, imbuing their personal efforts with national and historical meaning.<sup>196</sup> High officials and Perón himself would often tour aviation facilities and personally congratulate technicians for their roles in projects like the Pulqui II. State-sponsored technical education programs frequently featured trips to visit Juan and/or Eva, while some even involved extended tours of facilities and projects around the nation. Civilian and military pilots were also used for prominent national celebrations, such as the annual commemoration of José de San Martín's death on August 17 in the capital.<sup>197</sup>

If the technical skills of the working class were essential for the present, the many official and popular prognostications of the future suggested an even more salient role over the horizon. Upon the demonstration of a new tailless gliding prototype, the state aviation media declared the flying wing: "another revelation of the capacity of our compatriots, technicians and

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<sup>195</sup> "Por Ancho Cauce," editorial, *Revista Nacional de Aeronáutica*, July 1951, 7.

<sup>196</sup> See, for example, "Catorce Técnicos," *Revista Nacional de Aeronáutica*, February 1952, 23; M.d. Aeronáutica, *Alas Argentinas*, (N.p., 1951), n.p.

<sup>197</sup> See, for example, the 1951 schedule for military and civilian students at the Escuela Superior de Aerotécnica, *Memoria anual año 1951* (N.p., 1952), n.p.; "Participó la Aeronáutica: En los Homenajes al Libertador," *Revista Nacional de Aeronáutica*, August 1948, 76.



Figure 7.19. Perón and Secretariat of Aeronautics César Ojeda (far left) congratulate the technicians who built the Pulqui II prototype. Photographs that highlighted such workers and their patron Perón were omnipresent in state propaganda and favorable news outlets. M.d. *Aeronáutica, Alas Argentinas*, n.p.

craftsmen...of the Argentine pilots... Therein lies the greatness of [our] race that is forging a new Argentina, so that in a not too distant day the skies of the Homeland will be crossed by hundreds of airplanes and gliders...<sup>198</sup>

One of the many aphorisms attributed to Perón was “Aeronautical Consciousness is the Consciousness of the Man of the Future.”<sup>199</sup> The statement at first glance appears a confirmation of the importance of aviation technology to the future of Argentina. But with the sentiment coming from Perón himself, it was also a powerful vindication of the knowledge, skills, and enthusiasm long associated with the working classes. The future belonged not to the elite and their intellectual culture, but to the pilot, the mechanic, the radio operator, and those who enthusiastically forged the nation’s technological destiny. This construction of status and

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<sup>198</sup> “Yo volé el ‘Ala Volante’ criolla,” *Revista Nacional de Aeronáutica*, August 1950, 50.

<sup>199</sup> I do not know when or where Perón originally said this. But for an example of its reproduction, see the title pages of the pamphlet M.d. Aeronáutica, “Exposición de la Colección de Maquetas.”

meaning for the work of the popular classes did much to solidify Peronism's enduring political appeal for Argentines laboring everywhere from the workshops of Buenos Aires to the fields of the *Pampas*.

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In conclusion, flight technology offered Peronist authorities a particularly powerful package of sentiments that imbued the technical work of common people with greater meaning while offering concrete benefits in the form of more prestigious and remunerative work. The creation of such meaning was primarily accomplished through the rhetorical and real promotion of a masculine and ostensibly "*criollo*" technical identity for working men and boys. The resulting technopolitical program enhanced Perón's power and appeal with a diverse swath of society. While aviation was undoubtedly a boost for Perón's political program, as we shall see in the next chapter Peronist technopolitics had even greater transformative effects on the aviation industry itself—for better and for worse. The government spending from 1946 to 1955 created Argentina's modern aviation infrastructure and many of the institutions which persist to this day.

Yet there was a high cost for the state's unprecedented sponsorship of the national aviation industry. The Peronist authorities' intervention in the civil aviation sector approached near total domination. For Army aviation boosters and their allies, this presented an opportunity to create a national industry on the scale they had long craved. Some private actors in the industry benefited from this expansion and reorganization. Although the rhetoric of Peronist aviation was fixated on the working class, the vague lines separating the working and middle classes and the real need in the aviation industry for white-collar administrators, engineers, and other professionals ensured there was some room for more affluent Argentines to benefit from the aviation program. But for many others, the state's dominance of the aviation industry resulted



in reduced power and opportunity. The civilian flight sector was placed almost entirely under military control. In the censored media environment under Perón, open dissent from those who found themselves on the outside of the Peronist project was rare, an aspect discussed in the next chapter.

Peronist technopolitics thus politicized the national aviation industry, producing a powerful and lasting tension that both entrenched and threatened its institutions. Those that benefitted from the state's polarizing activities maintained the memory of the Peronist era long after Perón's ousting in 1955. Yet simultaneously, those whose livelihoods and/or social status were threatened by Peronism ignored or denigrated the advancements in national aviation attained under Perón's leadership. This tension mirrored the broader political schism at the heart of Argentine politics ever since *el Conductor* appeared on the national stage.

**Chapter Eight**  
**The Peronist State and the National Aviation Community, 1943-1955**

*“Sabían los precursores que la memoria de sus mártires no caería en el olvido y que habría de llegar la hora en que una generación de argentinos recogería la lección que ellos dieran en días de prueba. Ya la hora llegó con Juan Perón y Eva Perón.”*

“[Our aviation] precursors knew that the memory of their martyrs would not be forgotten and that the time would come when a generation of Argentines would recognize the lesson that they gave in days of trial. That time has come with Juan Perón and Eva Perón.

M.d. Aeronáutica, *Alas Argentinas*, n.p.

Late in the summer of 1950, a contingent of soldiers was sent up into the Andes in the area of Las Cuevas, Mendoza. They fanned out across the many valleys, mountain passes, and faint footpaths among the highest mountains of the region on the Chilean border. The soldiers were searching for a “relic” from Argentina’s recent past. On February 4, they finally found what they were looking for. On a steep slope at an altitude of over 4,000 meters (13,123 feet), the searchers discovered the weathered wreckage of a Nieuport 28 airplane that had lain there since 1919. With the fabric and most of the wood long-since eroded away, the contingent hauled the Rhône engine and what remained of the metal frame back down the mountain. One year later, the wreckage occupied the position of honor at Buenos Aires’ main aviation exhibition for 1951, the *Exposición Alas Argentinas* [Exposition of Argentine Wings], organized by the Ministry of Aeronautics.

The wreckage belonged to one of the “martyrs” of Argentine aviation, Lt. Benjamin Matienzo, who died attempting to cross the Andes at Uspallata Pass on May 28, 1919. The young military aviator from Tucumán began his attempt with Pedro Zanni and Antonio Parodi in a formation flight, but when the weather deteriorated the other two pilots elected to turn back. Matienzo—for reasons forever unknown—decided to continue forward up into the high pass. His

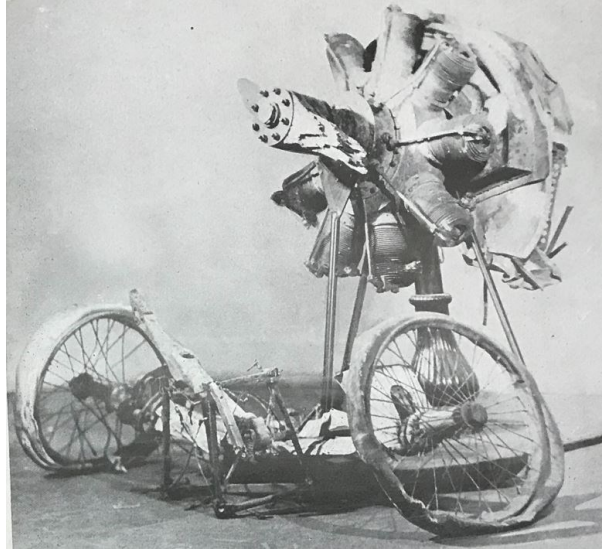


Figure 8.1. The remains of Matienzo's airplane that were publicly displayed in 1951. M.d. Aeronáutica, *Alas Argentinas*, n.p.

body would not be discovered until the next spring. Matienzo survived the crash, and evidently attempted to walk back to civilization in the storm, only to succumb to the cold.<sup>1</sup> As his body was located far from the wreckage, his shattered Nieuport remained lost for over thirty years.

The memory of Matienzo was enjoying a moment in the popular limelight in 1951, with state media often paying homage to the fallen pilot. He had been long remembered as one of the foremost Argentine aviation “martyrs,” the military counterpart to the civilian Jorge Newbery. Matienzo's death had caused a national period of mourning at the time. The memory of Matienzo gained newfound prominence when Perón declared 1950 a year of celebration of General San Martín, who crossed the Andes with an army during the wars of independence. Matienzo—a soldier who died in search of greatness crossing the Andes—made a natural fit for state propaganda which emphasized patriotic service and sacrifice.

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<sup>1</sup> Lironi, *Misiones aeronáuticas extranjeras*, 82.

Homages in the form of poetry and essays in newspapers and state media in honor of fallen aviators were par for the course throughout the first fifty years of flight in Argentina. But the retrieval and public display of the wreckage of a long-failed heroic flight was unusual. This decision for the *Exposición Alas Argentinas* reflected the impassioned rhetoric of Peronist officials when it came to the development—not of *la Patria* and *el Pueblo*—but the flight community itself.

State propaganda presented their aviation policies as the definitive realization of the “conquest of the sky” begun in 1910. As a pamphlet created for the 1951 exposition proclaimed:

*Alas Argentinas* shows, in a brief and tight synthesis, two moments of national aviation. The first, started at the turn of the century, was born thanks to the tenacious effort of a group of civilian and military men, who set out to conquer our sky without baggage other than enthusiasm and courage... The second moment, which finds its plenitude in today’s magnificent reality culminated thanks to the Justicialista government.<sup>2</sup>

Matienzo’s airplane, “an authentic relic,” was displayed alongside images and models of the latest creations of the Argentine state aviation industry, most of all the Pulqui II jet prototype. Military aviation, once in its “childhood,” was “today full matured.” The spirit of the old heroes of flight, some of whom—Eduardo Olivero, Teodoro Fels, and Paul Castaibert—came to the exposition in their twilight years, was alive and well among the guiding officials of Peronist aviation. But whereas previously the development of national aviation “continued slowly and laboriously,” in Perón’s Argentina “the Argentine wings [have] arrived at their summit.”<sup>3</sup> All of

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<sup>2</sup> “*Alas Argentinas expresa, en breve y apretada síntesis, dos momentos de la aviación nacional. El primero, iniciado con los albores del siglo, nació merced al tesonero esfuerzo de un grupo de hombres civiles y militares, que se propusieron conquistar nuestro cielo sin más bagaje que el entusiasmo y el valor... El segundo momento, que halla su plenitud en la magnífica realidad de hoy, logró su culminación gracias al gobierno justicialista.*” M.d. Aeronáutica, *Alas Argentinas*, n.p.

<sup>3</sup> Ibid.

the new programs, institutions, and infrastructure described in chapter seven were presented at the exhibition as evidence of this ostensible bookend to local aviation.

The notion of a “definitive” conquest of the Argentine sky bears resemblance to the historiographical concept that opened this dissertation: technological assimilation. Peronist officials were, in essence, presenting their efforts as the successful “assimilation” of aviation technology in Argentina. As historian Eduard Beatty argued in his study of technology transfer in Porfirian Mexico, industrialization required not only the importation of new machines, but the dissemination of technological knowledge among common people. Chapter four argued that the popular enthusiasm for such technical knowledge grew over the interwar period as more and more *argentinos* believed technology was the route to upward mobility and a dignified quality of life. This expectation of opportunity in the aviation industry coalesced prior to any large-scale public or private investments in aviation beyond the small factory in Córdoba. For aspiring aviators or mechanics, there were few opportunities for technical education and even fewer stable positions for employment in the industry beyond the military.

As we saw in the previous chapter, much of this—though not all—began to change after 1943, with a rapid acceleration in the wake of Perón’s election in 1946. For the first time, the national government articulated a clear “technopolitics” and had the financial resources and political capital to deliver on many of its promises. In contrast to the patchwork regulation and organization of the earlier period, the state now took responsibility for aviation across nearly all its facets—training, infrastructure, air transport, production, and more. Peronist officials characterized air services as a public good and necessity. The state, in essence, formalized and expanded a national system for flight technology under its control.

The most important result of this shift in the state's relationship to aviation technology was the creation of a relatively consistent operating environment for flight enterprises and individual practitioners. The "anarchy" of the interwar period was greatly reduced; the technology was, in effect, becoming standardized in Argentina. The state codified and enforced technical practices for the construction of aviation materials by contractors, the education of new technicians and flight crew, the design and operation of infrastructure, and more. As chapter five illustrated, the creation of nationwide standards for aviation did not arise from a "voluntary consensus process" among the technology's practitioners. Instead, the standardization process was carried out in an aggressively top-down manner, usually at the hands of military officials.<sup>4</sup>

The national aviation program was integrated into one of the Peronist state's main efforts: the reformation of the Argentine economy. Peronist officials sought to expand the industrial sector and pass the resultant wealth onto the lower classes. As we will see, this was to be accomplished through state planning and the sponsorship of industries of "national interest," but not necessarily outright state control of the economy. Under Peronist officials, state planning—exemplified by the two Five Year Plans—was elevated to the highest priority, with decidedly mixed results.

As the experience of the aviation community over the period will reveal, behind the façade of "organic" organization schemes was a reality of disarray, instability, and discontent. State funding and plans proved just as erratic as before, although the institutions and infrastructure established or expanded during the Peronist years were far more enduring than their interwar counterparts. This organized chaos of Peronist aviation was clearly evident in the

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<sup>4</sup> Andrew L. Russell argues that one of the fundamental philosophical debates about standardization processes during the twentieth century was whether such standards "should be promulgated from a government body or, instead, emerge from a voluntary consensus process." Russell, "Standardization in History," 4.

two sectors of the industry we have been following since chapter two, aviation education and aircraft production, as well as areas that represented significant new state investments, infrastructure and air services.

This chapter will follow the trajectory of each of these aspects of the Peronist aviation “system,” as state media now described the collection of mutually-supporting institutions and infrastructures for flight technology. New airports were built across the nation and the nationalization of radio navigation stations brought the menagerie of private and public installations under a single authority for the first time. Officials reformed the aero club and military education system that had served as the foundation of Argentine aviation since 1912. New domestic and international airlines were formed under state direction.

The factory in Córdoba, the Instituto Aerotécnico (formerly Fábrica Militar de Aviones), saw its fortunes radically reverse. The nationalist military officials at the helm of the state after 1943 breathed new life into the Army’s industrial armaments projects. Infamously, Peronist officials invited former Axis or collaborationist personnel from the German, Italian, and French aircraft industries to flee to Argentina. In what is undoubtedly the most well-studied aspect of Argentine aviation, this infusion of foreign knowledge and state patronage resulted in the factory’s “golden age.” Yet the boons to Peronist propaganda and employment opportunities in Córdoba aside, the “golden age” proved a disappointment in many ways. Few aircraft were put into production and—most strikingly—from 1952 to 1955 the plant’s resources were largely shifted away from aircraft production.

This last transformation reflected a harsh reality for the aviation community after 1949. State planning could just as easily reward the industry as marginalize it. The rapid shift from favoritism to relegation was driven by the badly-deteriorating economic situation halfway

through Perón's first term in office. A paucity of the literal currency of post-war modernity—the US dollar—ground much of the Peronist aviation program to a halt. Ironically, as the nation's economy developed, aviation was proving too expensive. Despite the arguments of interwar military officials that aviation was an essential catalyst for development, many of their projects were put on the back burner as the state rationalized its plans.

Chapter seven revealed the importance of aviation programs and flight culture to Perón's broader political project of a populist national renewal. In this final chapter, I will analyze the reality behind the undoubtedly hyperbolic rhetoric of Peronist officials in relation to the aviation industry itself. How did the state policies around flight technology connect to the Peronist state's efforts to reform and industrialize the Argentine economy? To what extent did officials succeed in transforming Argentine aviation into a self-sustaining and "mature" industry? In essence, did the Peronist state bring the long "conquest of the air" to a definitive end in their nation?

## **The State and Aviation during World War II**

When Argentine aviation boosters looked back upon the interwar years, they largely came to one conclusion: the country lacked a cohesive aviation policy [*política aérea*]. In June 1937 the prominent lawyer and aviation enthusiast Eduardo Bullrich was commissioned by the Justo administration to study the industry's condition and propose reforms. One year later, Bullrich produced a seven-hundred page report in which he argued that the state had a responsibility to promote aviation as a public service, citing such thought from his counterparts and government officials in Europe and the United States. The current "anarchy" in national aviation was unsustainable. Bullrich's "primary fundamental conclusion" was that "Only an organic law, of a national nature, can establish the content of this policy and establish the



fundamental rules that allow the scientific and technical development of...aviation in the present and in the future in all its aspects.”<sup>5</sup>

Bullrich’s emphasis on the need to set a “cohesive” policy was a critique of the limited breadth of state activity in aviation, often narrowly focused on flight training and aircraft production, without consideration of the other sectors and needs of the industry. Bullrich echoed the ideas of Antonio Biedma Recalde and others who faulted the improvisational and narrow nature of the aero club subsidy system ten years prior. Such policies, in their estimation, did little to further aviation as a viable commercial industry or create sustainable work for pilots and their support staff beyond military institutions.<sup>6</sup> Unlike the economic nationalists in the Army, men like Biedma Recalde and Bullrich believed that such industry should still be largely independent of military control.

These aviation boosters were arguing, in essence, for the expansion of the civilian government’s regulatory and financial responsibilities in the industry. Army aviation officials, for their part, continued to advocate for an expansion of their mandates in aircraft production, domestic airlines, regulation, and the management of flight infrastructure. State interventionism in the economy more broadly had been on the rise in Argentina since the onset of the Great Depression, as economic theorists and bureaucrats devised plans to insulate Argentina from the global downturn. As political scientist Oscar Oszlak has argued, initiatives like the “National Economic Action Plan of 1933” marked the birth of the modern state in Argentina—one with the technical and bureaucratic capability to effectively intervene in the national economy.<sup>7</sup> Although

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<sup>5</sup> “...sólo una ley orgánica, de carácter nacional, podrá establecer el contenido de esa política y fijar las reglas fundamentales que permitan el desarrollo científico y técnico de la aviación civil y comercial en el presente y en el futuro en todos sus aspectos...” Bullrich, *Régimen y organización*, 14.

<sup>6</sup> *Ibid.*, 14; Biedma Recalde, *La aeronáutica civil amenazada*, 4.

<sup>7</sup> Oscar Oszlak, *La formación del Estado argentino. Orden, progreso y organización nacional* (Buenos Aires: Ariel, 2006), 34-5. In Oszlak’s formulation, the maturation of the Argentine (and Latin American) state during the interwar period centered on the maintenance and expansion of North-Atlantic capitalism in the region.

the 1930s was a period of professionalization among civil servants, the subsequent history of the Peronist planning initiatives reveals that the state's capability to effectively manage the economy was rudimentary at best.

The frequent infighting among private flyers, civilian officials, the Army, the Navy, and others prevented the formalization of a national aviation policy in any meaningful sense. The fractious and ineffectual nature of aviation policy in this period was nowhere better revealed than the effort to produce 5,000 civilian pilots by the Junta Argentina de Aviación (JAA) begun in June 1940. The JAA represented an alliance among factions of the Army and the civilian aviation community. With Julio A. Noble as president, members of the "consulting" commission included the ex-presidents Alvear and Justo, Aaron de Anchorena, and many other prominent politicians and aviation officials from the past thirty years of flight.<sup>8</sup>

Despite having Noble at its head, the contours of the JAA program were remarkably similar to the old decentralized aero club system from before 1936, only with larger subsidies. The Fábrica Militar de Aviones even shifted back to the original design for a civilian trainer, this time designing the "Boyero" to supply the clubs.<sup>9</sup> Officials seemed to have absorbed one lesson from the 1935 scandal: they imported 37 Piper Cub trainers from US while the Boyero underwent development and production. Nevertheless, exasperated editorials in *La Prensa* and *Ciencia Popular* noted that this had all happened before to little benefit. The government was embarking on a risky industrial project, pouring funds into rudimentary flight training while ignoring the paucity of aviation mechanics and other support staff.<sup>10</sup>

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<sup>8</sup> Junta Argentina de Aviación, *5.000 pilotos civiles reclama la patria para su defensa en la guerra y su progreso en la paz* (Buenos Aires: Junta Argentina de Aviación, 1940), n.p.

<sup>9</sup> Halbritter, *Historia de la industria aeronáutica*, 304-5.

<sup>10</sup> "Vasto proyecto de organización para formar pilotos aviadores civiles," *La Prensa*, July 27, 1940; "El nuevo avión para aficionados construido en Córdoba," *La Prensa*, November 9, 1940; "La Formación de Pilotos Aviadores," *Ciencia Popular*, August 1940, 283.

The JAA's program during World War II represented a modest increase in scale from its previous iterations during the interwar period. The government allocated 30 million pesos for the initiative with another 1.5 million pesos donated by the public.<sup>11</sup> Yet despite the increase in spending and its high-profile nature, the JAA program proved overambitious. Although the inconsistencies of official statistics make it difficult to fully assess its performance, the aviation community did see significant growth. The number of licensed and active sport or level "A" pilots had grown from 453 in 1939 to 1,847 in 1944. Perhaps more revealing of the new gains was a nearly three-fold increase in professional pilots over the same period, from 66 to 190.<sup>12</sup> But these numbers were far below the 5,000 new pilots called for by the JAA, leaving the program open to harsh criticism.

The program suffered from a paucity of training aircraft and flight instructors. An investigation in mid-1941 by *Ciencia Popular* found that aero clubs still had few working airplanes and training remained too expensive for most aspirants. In the more popular clubs, hundreds of members might have to jockey for the use of one airplane.<sup>13</sup> When it came to teachers, aviation officials had only recently begun to regulate flight instruction beyond state facilities through the creation of a "flight instructor" certification—a reform intended to foster professionalism and, above all, consistency across training environments. Despite these badly-needed improvements, there were nowhere near enough instructors to train 5,000 new pilots in any reasonable timeframe.<sup>14</sup>

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<sup>11</sup> "Para el fomento de la Aviación Civil Serían Destinados 30 Millones," *La Prensa*, July 24, 1940; D.G.d. Aeronáutica Civil, "Donación de \$1.250.000 m/n. por parte de la [JAA] para el fomento y desarrollo de la aviación civil," *Boletín de Aeronáutica Civil*, no. 10 (1942), 83-5.

<sup>12</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 154.

<sup>13</sup> "Las Actividades Aeronáuticas en Nuestro País," *Ciencia Popular*, May 1941, 263.

<sup>14</sup> *La Prensa* argued that it would take two to three years just to train the needed instructors. "Vasto proyecto de organización para formar pilotos aviadores civiles," *La Prensa*, July 27, 1940.

Within weeks of the June 1943 coup d'état, GOU officials began to unravel the JAA. The new director of the Dirección General de Aeronáutica Civil (DGAC),<sup>15</sup> Oscar Muratorio, decried in a speech the “lack of unity in the orientation, management, and support of aerial activities,” and set up an “intervening and investigatory commission” to study alleged financial irregularities. He went so far as to claim the JAA “had the effect of compromising popular support for any subsequent aeronautical work and weakening rather than strengthening the faith of the people in their authorities, to carry out any task of aeronautical augmentation.”<sup>16</sup> According to the investigatory commission, the Junta only produced 45 pilots of dubious capability, an egregious exaggeration if the government’s own statistics are to be believed. In October 1943, the state officially dissolved the JAA.<sup>17</sup>

Although the JAA had undoubtedly proven a disappointment, the vehemence of the rhetoric and actions undertaken by the Ramírez administration suggests they had deeper motives. Muratorio’s speeches and decrees had an air of retribution against civilian officials and their military allies that had challenged the Army’s authority in the 1930s. The Ramírez administration placed the DGAC back under the Ministry of War. The state revoked the regulatory powers of the Asociación Aeronáutica Argentina, a civilian-led umbrella organization for the aero clubs created in 1942.<sup>18</sup>

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<sup>15</sup> The Dirección General de Aeronáutica Civil maintained its pre-WWII name until some point between 1950 and 1951, when it was changed to the Subsecretaría de Aviación Civil, which it kept until 1953 when it became the Dirección Nacional de Aviación Civil. For the sake of simplicity, I will refer to this directorate as the DGAC, as its function remained the same throughout the period.

<sup>16</sup> “...tuvo por efecto comprometer el apoyo popular para cualquier obra aeronáutica ulterior y debilitar más que fortalecer la fe del pueblo en sus autoridades, para realizar cualquier tarea de incremento aeronáutico.” D.G.d. Aeronáutica Civil, “Comunicado de la Dir Gen de Aero Civil Aclarando la situación de la misma al pasar a depender del Ministerio de Guerra,” *Boletín de Aeronáutica Civil*, no. 11 (1943), 6.

<sup>17</sup> D.G.d. Aeronáutica Civil, “Decree No. 12.977, October 30, 1943. Declarando Disuelta la asociación Junta Arg de Aviación Pro Formación de 5.000 pilotos,” reprinted in *Boletín de Aeronáutica Civil*, no. 11 (1943), 120-1.

<sup>18</sup> D.G.d. Aeronáutica Civil, “Comunicado de la Dir Gen de Aero Civil Aclarando la situación de la misma al pasar a depender del Ministerio de Guerra,” *Boletín de Aeronáutica Civil*, no. 11 (1943), 6-8.

The actions of the Ramírez administration against the JAA also reflected their hostility to the pro-Allied sectors of the Argentine state that had grown in prominence under President Ortiz. The national government seized the recently imported Piper Cubs, as well as 33,000 pesos of credit at the Banco de la Nación Argentina that was intended for the purchase of “aeronautical materials” in the US.<sup>19</sup> This movement against Allied interests in the state was not simply an imposition from the Ramírez government onto the aviation community. In the summer of 1941, a conspiracy led by the Commander of the Army Air Forces General Ángel M. Zuloaga and General Benjamín Menéndez came to light that was quickly suppressed by the national government. Although their motives remain obscure, the most accepted account states the conspirators intended to create an authoritarian military government committed to neutrality.<sup>20</sup> As with the broader Army officer corps, many of these officials had long held personal ties to Germany and Italy due to foreign postings, training under German military advisors, and a general affinity for Fascist ideology.

Army aviation officials and their allies in government had long responded to critics of state policy in the 1930s with their own frustrations over the reluctance of “democratic forces” to fully fund their programs or pass their proposed laws. The failure of the JAA gave the economic nationalists in the aviation corps new momentum in the final years of World War II. But Army aviation boosters were also listening to the criticisms leveled by civilians like Bullrich and Biedma Recalde. When political winds shifted dramatically in the Army aviation community’s favor after June 1943, officials were quick to institute an unprecedentedly expansive plan for the governance and support of national aviation.

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<sup>19</sup> D.G.d. Aeronáutica Civil, “Decree No. 12.977,” 121.

<sup>20</sup> Potash, *The Army & Politics in Argentina, 1928-1945*, 157-8. Zuloaga and Menéndez were both released after a brief period of imprisonment.

As discussed in the previous chapter, Perón as Minister of War spearheaded the creation of an independent government branch—the Secretariat of Aeronautics—in 1945. Just as importantly, on April 27, 1945, an executive decree established the nation’s first “*Política Aérea del Estado*” [State Aviation Policy], which outlined the government’s regulatory, financial, and managerial responsibilities in the aviation sector. After declaring national “sovereignty” over its skies, the executive decree established the national government’s monopoly on aviation policy and formalized the state’s requirement to provide air services for the benefit of the citizenry.<sup>21</sup> Upon his ascension to the national presidency in 1946, Perón gave his allies in the newly-created Fuerza Aérea Argentina (FAA) and Secretariat of Aeronautics the funding and political room to implement the “*Política Aérea del Estado*” to its fullest extent. To the likely consternation of the government’s critics over the previous twenty years, the state would sponsor a slew of new, expensive aviation enterprises under its direct control. A “complete” plan offered to transform the nation’s aviation industry while also crushing any pretensions to financial and political independence.

### **The Peronist Aviation System and State Planning during the “Good Years,” 1946-1948**

The early years of Juan Perón’s first presidency from 1946 to 1948 were a period of immense change in the relationship between the state and the economy. Perón’s platform called for the improvement of the living standards for the lower classes at the heart of his electoral power through industrialization, new labor regulations, and social welfare programs. Authorities, as discussed in the previous chapter, presumed that technical work in industrial settings would provide a more comfortable and “dignified” living standard than menial or agricultural labor.

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<sup>21</sup> P.E. Decree No. 12.911, April 27, 1945, reprinted in S.d. Aeronáutica, *La Aeronáutica nacional*, 27-8.

Although the state intervention in the economy radically increased, Perón and his advisors were wary of outright state ownership of industry. They hoped to use a package of relatively light-handed economic tools to boost the nation's industrial sector and reduce its dependence on agricultural exports.<sup>22</sup> These tools included mixed-ownership enterprises, state subsidies, and, most importantly, planning—all three of which were deployed to develop the national aviation sector.

As historians of the Peronist economy have argued, Perón's first presidency and its main economic initiative—the First Five Year Plan—focused on the expansion of existing industry and a new social welfare system, not necessarily the creation of new industries.<sup>23</sup> New state agencies were created to study and manage the national economy. The Secretaría de Asuntos Técnicos [Secretariat of Technical Matters] was established in 1946 to outline and direct the First Five Year Plan. All foreign trade was nationalized under the control of the Instituto Argentino de Promoción del Intercambio [Argentine Institute for the Promotion of Trade](IAPI), which purchased all domestic commodities intended for export. IAPI ensured the state received an increasingly-large share of the dividends from agricultural exports that were redirected to industrial subsidies and welfare programs.<sup>24</sup>

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<sup>22</sup> Claudio Belini, *Historia de la industria*, 274. Claudio Belini, one of the preeminent scholars of the Peronist economy, has argued that contrary to popular belief, Argentina's more intensive experiments with import-substitution industrialization policies came in the 1960s. Officials were largely focused on reforming the existing light industry and avoiding direct management of individual operations. The exception were the military industries of "national interest" that will be discussed below.

<sup>23</sup> For the history of the Peronist state and the mid-twentieth century economy in Argentina, I rely on the extensive scholarship by, and in dialogue with, the scholars Claudio Belini and Marcelo Rougier. Claudio Belini, *La industria peronista* (Buenos Aires: Edhasa, 2009); Marcelo Rougier, ed., *Estudios sobre la industria argentina 2* (Carapachay: Lenguaje claro Editora, 2013); Marcelo Rougier, ed., *Estudios sobre la industria argentina 1* (Carapachay: Lenguaje claro Editora, 2014); Marcelo Rougier and Juan Odisio, eds., *Estudios sobre planificación y desarrollo* (Carapachay: Lenguaje claro Editora, 2016); Belini, *Historia de la industria*, chapter 5.

<sup>24</sup> Belini, *Historia de la industria*, 235-6.

As historian Leandro Sowter argues, officials legitimized their economic interventions by characterizing their policies as representative of supposedly “unquestionable” values like “justice, liberty, and sovereignty.” Their economic plans were ostensibly necessary for an “organized community” built on collaboration between “the national bourgeoisie and the workers” instead of confrontation. The state became the only legitimate arbitrator among the major players in the Argentine economy like labor unions and industrialists. In their newfound power as the custodians of the economy, Peronist officials had two priorities: “to achieve a better distribution of income (‘social justice’) and a national centralization of economic decisions (‘economic independence’).”<sup>25</sup>

All these efforts required unprecedented amounts of capital, both human and financial. As the immediate post-war era was a time of prosperity in Argentina, the state had many of the financial resources necessary to jump start domestic industry. From 1946 to 1955, national authorities allocated a total of nearly two billion pesos for the Secretaría de Aeronáutica—a figure which after 1949 did not include the spending on state airlines. The budget for national aviation throughout the period represented about 20 percent of military spending, and a peak of 6.2 percent of the entire national budget in 1948. Although the budgetary priority remained on the Army (generally 50 percent of military spending) and the Navy (the remaining 30 percent), the air force was the newest and most specialized branch of the armed forces.<sup>26</sup>

For all the financial resources heaped on the aviation industry, human capital—people with technical knowledge and experience—quickly became a bottleneck. The state’s roster of

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<sup>25</sup> Leandro Sowter, “La planificación estatal y la cooperación económica en el primer peronismo,” in *Estudios sobre planificación y desarrollo*, ed. Marcelo Rougier and Juan Odisio, 59-98 (Carapachay: Lenguaje claro Editora, 2016), 62-65, 69.

<sup>26</sup> “Presupuesto de Aeronáutica comparado con los demás ministerios militares y con el de la nación, período 1946-1956,” box 15, folder 3, COR, BNA. The annual budgets for the Secretaría/Ministerio de Aeronáutica ranged from about 115 million to 260 million pesos.



technical personnel grew to meet the demands of its new mandates, but it would not be enough to surmount the many challenges across Argentine industry and infrastructure. As Claudio Belini described in relation to the First Five Year Plan, such initiatives demanded “important bureaucratic and technical capabilities on the part of the State, resources whose availability the Peronist government overestimated.”<sup>27</sup> The historiographical narrative of overambition fits neatly onto the experience of Peronist aviation officials and the flight community at large.

The first major reform in the aviation sector carried out by Perón and his allies was the centralization of all state aviation activities under the Secretaría de Aeronáutica—with the notable exception of the Navy air service.<sup>28</sup> Aviation officials like Bartolomé de la Colina and César Raúl Ojeda presented the bureaucratic structure of the Secretaría and its dependencies as a rational and “organic” antidote to the anarchy of the interwar years.<sup>29</sup> The libraries and archives of Argentine aviation are replete with organizational charts laying out the structures of the Secretaría, which give the appearance of a neat and stable consensus on how the entire aviation industry was to be managed (see fig. 8.2).

As noted earlier, officials of all stripes recognized that aviation remained a fragmented and underdeveloped industry. Authorities decided to massively expand the state’s responsibilities in the major segments of the aviation industry: infrastructure, education, air services, and aircraft production. State support for and management of all four were presented as essential for making flight technology a useful resource for common people.<sup>30</sup> The inclusion of substantial

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<sup>27</sup> Belini, *Historia de la industria*, 240.

<sup>28</sup> The Secretaría had the following major divisions: Dirección de Aeronáutica Comercial, Fuerza Aérea Argentina, Dirección Gral. de Infraestructura, Instituto Aerotécnico, Dirección Gral. de Aeronáutica Civil, Dirección de Aeronáutica Deportiva, and Dirección de Transito Aéreo. An overview of the branches of the S.d. Aeronáutica in the early years, as well as each branch’s assigned role in the First Five Year Plan, can be found in “La Secretaria de Aeronáutica en el Plan Quinquenal,” *Argentina Aérea*, Jan-Feb 1947, 6-10, 20.

<sup>29</sup> See, for example, the discussion of the First Five Year Plan in “Aeronáutica y planificación,” *Revista Nacional de Aeronáutica*, January 1952, 9.

<sup>30</sup> S.d. Aeronáutica. *La Aeronáutica nacional*, 23-30.



argued that airports and other installations needed to be standardized, improved, and expanded across the country to allow for proper air services.

The interwar patchwork of private and public fields owned by aero clubs, foreign airlines, and the state was largely unregulated beyond the principal airports in key cities like Buenos Aires, Mendoza, and Córdoba. But even at these airfields, the critical infrastructure like taxiways, terminals, and navigation equipment resembled a menagerie of distinct layouts and technical standards. As we saw in chapter five, there was little consensus in Argentina on how airports should be designed and built—a topic that remained undecided in much of the world at the time. Aero clubs, the most frequent proprietors of rural airstrips, could usually only afford basic facilities such as a level and clear grass field, an Avgas pump, and maybe a hangar. Significant infrastructure tended to accumulate only around military air bases (which were often closed to civilian use) and commercial airports. The practice of commercial air travel was in its infancy, and the first international airlines in regions like South America tended to build their own infrastructure based on company or their home nations' airfield regulations. The supporting infrastructure for long-distance air transportation, namely radio, weather, and navigation installations, materialized in much the same manner.<sup>32</sup>

The high pace of improvement in flight and radio technology created an environment of equally rapid obsolescence. Cutting-edge infrastructure became antiquated in less than a decade as airplanes grew ever larger and faster, and the technical requirements demanded by operators

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<sup>32</sup> For interwar aviation infrastructure generally, see Biedma Recalde, *Crónica histórica*, vol. 1, 263-270. For the state of aviation infrastructure in 1935, see Antonio Biedma Recalde, *Aeropuertos*, 2<sup>nd</sup> ed. (N.p.: “Aviación” Editorial Argentina, 1936).

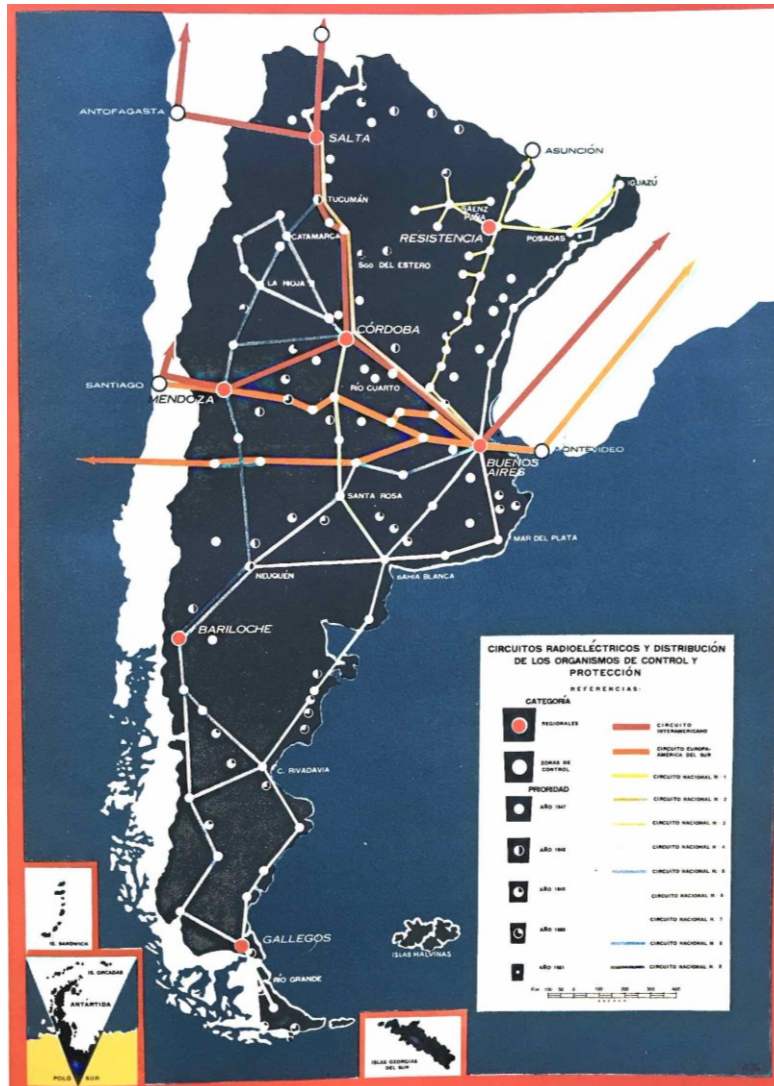


Figure 8.3. The radio navigation and air traffic control network in 1947, with the shaded white circles representing planned stations, and the red dots major installations. S.d. Aeronáutica, *La Aeronáutica nacional*, 93.

grew ever more sophisticated.<sup>33</sup> The result was a disorganized scattering of airfields with greatly varying layouts and facilities that reflected their owner’s resources, technical standards, and the narrow timeframes when they were built.

As we saw in chapter seven, the authorities launched a massive infrastructure construction campaign as part of its First Five Year Plan. The “Política Aérea del Estado” announced in April 1945 declared that all aviation infrastructure would be nationalized, a process

that lasted for years. Law 13.041 from July 1947 formalized the nationalization of all radio installations at the cost of 10 million pesos, which was primarily a deal with the US airline Pan-American Grace Airways (Panagra).<sup>34</sup> Three years later, an editorial from *Revista Nacional de Aeronáutica* revealed that the nationalization process was still ongoing.<sup>35</sup>

With its newly nationalized facilities and the First Five Year Plan just over the horizon, the Secretaría de Aeronáutica finally codified its best practices for airport design in a May 1946 decree. These regulations, clearly borrowed from similar standards in the US and Europe, delineated the proper layout and construction of airport surfaces like taxiways and aprons.<sup>36</sup> These policies were formulated just in time for the construction of the two “crown jewels” of the aviation infrastructure project, Aeroparque and Ezeiza airports in Buenos Aires. Secretaría de Aeronáutica officials then used these showpiece airports in the capital to demonstrate to provincial delegates the proper methods of airport construction.<sup>37</sup>

The First Five Year Plan established the rather ambitious goal of having aviation facilities in every municipality. By 1952, authorities reported having constructed or improved 78

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<sup>33</sup> There was a constant race to widen the operating windows for commercial and military aircraft through new navigational techniques and performance improvements. The use of radio technology to facilitate navigation and landing was particularly important for the development of safer and more regular air operations. For the technical development of radio navigation in the US, see William M. Leary, “Safety in the Air: The Impact of Instrument Flying and Radio Navigation on US Commercial Air Operations Between the Wars,” in *From Airships to Airbus: The History of Civil and Commercial Aviation*, vol. 1, ed. William M. Leary, 97-113 (Washington, D.C.: Smithsonian Institution Press, 1995); T.A. Heppenheimer, *Turbulent Skies: The History of Commercial Aviation* (New York: John Wiley & Sons, 1995), 134-6, 173-4, 264-5, 287-9.

<sup>34</sup> Panagra owned most of the private commercial aviation infrastructure in Argentina at the time. The European presence had been greatly diminished by the Second World War. Guido Ghiretti, “La expansión de la infraestructura,” in *Los orígenes de Aerolíneas Argentinas: La posguerra y un modelo de país (1945-1955)*, 67-102 (Buenos Aires: Grupo Abierto Libros, 2020), 74; Potenze, *La Aviación Comercial*, 27.

<sup>35</sup> “Sistema de infraestructura,” *Revista Nacional de Aeronáutica*, June 1950, 9. For the history of the radio communication network for aviation, see Rodríguez Nogueras, *Comunicaciones aeronáuticas*.

<sup>36</sup> See, for example, *Plan de Pistas y Caminos de Acceso a Aeródromos y Aeropuertos*, Decree No.15.386, May 31, 1946.

<sup>37</sup> The first gathering of provincial officials for such a conference occurred in 1948. Dirección General de Infraestructura, *Conferencias en la primera convención de directores provinciales de aeronáutica* (Buenos Aires: [S.d. Aeronáutica], 1948).

airports and airfields across the nation.<sup>38</sup> Many of these projects involved the installation of basic infrastructure for aero club and military airfields, like navigation installations, maintenance shops, fuel services, and paved runways. Runways were particularly expensive, often taking the lion's share of project funding. Another significant cost for the building program was housing for civilian and military air base and airfield personnel.<sup>39</sup> Officials formed six "construction battalions" under the FAA, each dedicated to a different zone of the country. The FAA engineers often employed new pre-fabricated construction techniques pioneered in housing developments like Levittown in the United States. For major air bases and facilities, the Secretaría de Aeronáutica built some 6,594 residences by 1951.<sup>40</sup> Even minor aero clubs received funds to build kitchens and other comfort facilities adjacent to the runway for passengers, pilots, and airport personnel.<sup>41</sup>

Although the historian Guido Ghiretti emphasizes the many deficiencies with the national infrastructure system (which we will return to), he concedes that the density of airports in Argentina achieved parity with the more developed nations at the time. Ghiretti and historian Pablo Potenze both stress the durability of the infrastructure created during this period. The facilities at Ezeiza, in particular, proved more than adequate for the future development of international air travel for at least thirty years.<sup>42</sup> Just as importantly, that infrastructure was largely standardized, with consistent operating procedures across the country's airports. Officials

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<sup>38</sup> The figure of 78 should be taken with a grain of salt with the well-known Peronist tendency for exaggeration, but there is no doubt as to the large scale of the airport building program. "Que Nos Muestra la Exposición 'La Nueva Argentina'?" *Revista Nacional de Aeronáutica*, January 1952, 14-16.

<sup>39</sup> See D.G.d. Aeronáutica Civil, *Memoria anual 1946*, 144-153, for the allocation of funds before and during the First Five Year Plan.

<sup>40</sup> Ghiretti, "La expansión de la infraestructura," 69.

<sup>41</sup> See, for example, Aero Club Pampeano, *Memoria y Balance, Ejercicio del 1° de Septiembre de 1946 al 31 de Agosto de 1947* (Santa Rosa, La Pampa: Aero Club Pampeano, 1947), 8.

<sup>42</sup> Ghiretti, "La expansión de la infraestructura," 97-8; Potenze, *La Aviación Comercial*, 29. This resistance to obsolescence was naturally very costly, and Ezeiza was by far the expensive airport built during the period.

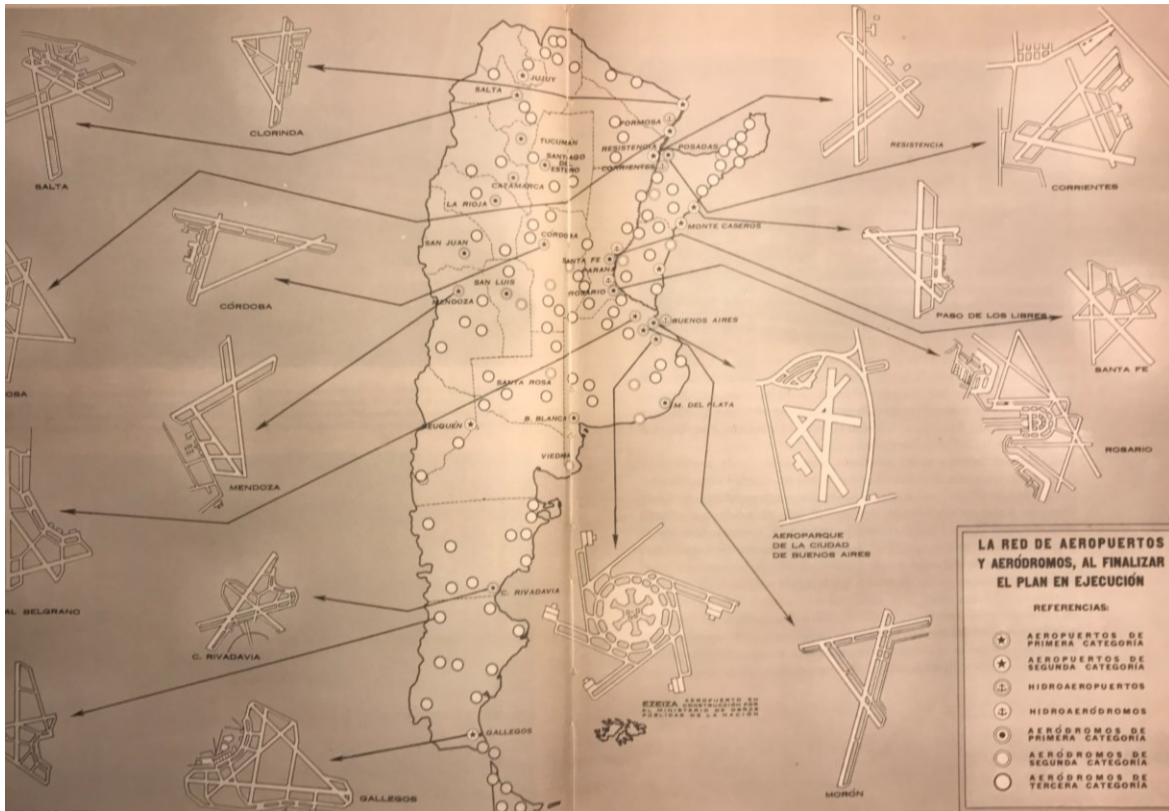


Figure 8.4. The Secretaría de Aeronáutica’s plans for the airport network by the end of the First Five Year Plan. S.d. Aeronáutica, *La Aeronáutica nacional*, 52-3.

organized information about this air navigation system, helping to create the first complete guide to airports, regulations, and other resources in 1948, the *Guía Aeronáutica Argentina*, which would be followed by later publications like the *Guía Shell de Aeródromos* in 1952.<sup>43</sup>

Grafted onto the infrastructure system was a reorganized maintenance network for state aircraft and private paying customers. Maintenance was decentralized from Buenos Aires into a network of “regional workshops.” Authorities built new facilities at strategic hubs in Córdoba, Río Cuarto, and Quilmes. Forty-five technical inspectors from the DGAC oversaw the expansion

<sup>43</sup> Previously, officials released airport information in its bulletins and magazines like the *Boletín de Aeronautica Civil* in the 1930s. Some private individuals provided similar guides, like the series *Aeropuertos* by the ever productive Antonio Biedma Recalde. Vidaldi Fedele and Roberto Pedro Venicio Passarelli, *Guía Aeronáutica Argentina* (n.p.: n.p., 1948); Ghiretti, “La expansión de la infraestructura,” 97.

and regulation of this infrastructure and maintenance system.<sup>44</sup> By 1947, the Río Cuarto and Quilmes workshops alone employed 370 military and civilian personnel.<sup>45</sup>

The cumulative effect of these organizational reforms and investments in infrastructure was to create a far more consistent operating environment for aviation enterprises. Pilots could expect familiar resources and layouts at most of the nation's airports and airstrips. Companies and individuals operating in the vast Argentine interior had access to maintenance workshops without the necessity of a lengthy trip to Buenos Aires.

#### *Aero Clubs and Technical Education: Training Personnel for the Peronist Aviation System*

The paucity of professional pilots and technical personnel for maintenance, radio navigation, airport operations, and other purposes had constrained the growth of Argentina's aviation industry during the interwar period. The state's plans for infrastructure and air services required hundreds—if not thousands—of new skilled workers. Peronist officials expanded the existing system of basic aviation and technical education while sponsoring the creation of new institutions for higher-level training. As we saw in the previous chapter, these reforms made careers in technical and industrial fields viable for a wider segment of the Argentine population. In a time when few Argentines received significant education beyond sixth grade, the slew of new subsidies, programs, and institutions represented a notable opportunity for many in the middle and lower segments of socioeconomic ladder.

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<sup>44</sup> D.G.d. Aeronáutica Civil, *Memoria anual 1946*, 77-8.

<sup>45</sup> Córdoba, owing to the presence of the Instituto Aerotécnico, had over 4,000 employees—which will be discussed below. S.d. Aeronáutica, *Memoria anual 1947*, 44-49.



When it came to civilian pilot training, the heart of the Peronist aviation system remained the not-for-profit aero club.<sup>46</sup> These associations were community hubs for aspiring pilots, aviation enthusiasts, and those simply interested in the some civic-minded frivolity. Peronist officials reformed and expanded the aero club system, infusing the languishing flight community with new life. The various festivals, educational programs, and other public events put on by the clubs continued to be the main way Argentines across the country engaged with aviation.

In the wake of the Junta Argentina de Aviación scandal and dissolution in 1943, military officials might have decided to create new institutions to train basic pilots, expand Army training institutions, and/or encourage commercial flight schools. The JAA's program had placed responsibility for flight training on the aero clubs, and according to Army officials, it had failed spectacularly. But GOU and Peronist officials instead doubled down on the aero club system as the foundation of national aviation. The decentralized system of civic associations fit the Army's and Perón's rural politics. The clubs were the only organized reservoirs of civil aviation skills, experience, and enthusiasm across most of the country. Lastly, the values espoused in many aero club publications—patriotism, progress, service, and community—made them natural partners for military officials who frequently distained commercial or “material” interests.<sup>47</sup>

The aero clubs witnessed a significant downturn in activity during the Second World War, especially as the JAA initiative lost its momentum. The supply of usable aircraft dwindled, foreign manufacturers were focused on war production, and the national government's politics prompted a US embargo on strategic materials. Initially there was little change to the situation as

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<sup>46</sup> The now Escuela de Aviación Militar (EAM) in Córdoba was also expanded, about doubling the number of students admitted each year from 150-200 in 1947 to 350-400 in 1951. S.d. Aeronáutica, *Memoria anual 1947*, 59; M.d. Aeronáutica, *Memoria anual 1951*, 13.

<sup>47</sup> This section utilizes a collection of aero club annual reports at the Biblioteca Nacional de Aeronáutica under “Aero Clubes, Memorias (1943-1956),” which features a selection of *Memorias y Balances* of AC Neuquén, AC Motreros, AC La Plata, and AC Pampeano, among others.

peace returned. It took a year of negotiations to rebuild international supply chains and find purveyors for suitably priced and modern aviation technology that was restricted by US sanctions. But by late 1946 the civilian aviation program kicked into gear, flooding the aero clubs with state aircraft, personnel, and subsidies. For a sense of scale, in 1937 the DGAC distributed 121,080 pesos in subsidies to the aero clubs. Ten years later, authorities paid out 605,460 pesos in “ordinary” subsidies, and a further 987,695 pesos in “extraordinary” funds in a single fiscal year.<sup>48</sup>

Of course the new money came with new regulations. Officials did not allow the clubs to organize as an independent organization that negotiated with the national government—reversing a process that had been underway in the early 1940s with the creation of the Asociación Aeronáutica Argentina.<sup>49</sup> They were instead organized directly under the DGAC within the Secretaría de Aeronáutica. Officials decreed uniform statutes for all clubs for the first time. It is unclear to what degree the clubs protested these actions, since in state documents authorities reported that “the most prestigious institutions” were in favor—which is a dubious claim.<sup>50</sup> To access state subsidies and equipment, aero clubs were required to have flight schools, and over the course of the Peronist period, officials added aviation mechanic and aeromodelling programs onto their mandates.<sup>51</sup>

But there is also evidence that Peronist officials had learned from mistakes during the interwar period. Although still highly decentralized, authorities continued with civilian projects to increase oversight begun late in the interwar period. Peronist officials expanded courses for

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<sup>48</sup> D.G.d. Aeronáutica Civil, *Boletín de Aeronáutica Civil*, no. 4 (1937), 6; D.G.d. Aeronáutica Civil, *Memoria anual 1947*, 82-86.

<sup>49</sup> Which GOU officials disbanded in 1943.

<sup>50</sup> D.G.d. Aeronáutica Civil, *Memoria anual 1946*, 29.

<sup>51</sup> The new regulations for the aero club system were reiterated in the D.G.d. Aeronáutica Civil, *Memoria anual 1946*, 21-34, 48. See, for later additions, D.G.d. Aeronáutica Civil, *Memoria anual 1947*, 113-4.

flight instructor certifications through the Escuela Nacional de Aeronáutica and the DGAC. Instead of tasking student license exams to military officers or the flight instructors themselves, the Secretaría maintained a cadre of technical inspectors that traveled between clubs to conduct exams and monitor institutional practices. The state also took responsibility for aircraft maintenance, mandating a minimum number of technical personnel per club and providing mechanics on the government dime if necessary. The emphasis on civilian instructors, inspectors, and technical personnel likely helped with the optics of such supervision, but as personnel shortages quickly mounted, many clubs ended up receiving military pilots trained in civilian instruction.<sup>52</sup>

Instead of focusing state resources mostly on clubs in the interior and frontier provinces, officials equally rewarded those clubs that already had substantial assets. Many aero clubs were loaned DGAC aircraft, initially the Piper Cubs purchased by the JAA, then a new round of Miles Magister trainers from postwar Britain, and eventually the domestically-produced Boyero. For the smaller clubs, these airplanes allowed them to initiate flight training for the first time in years, if ever. But the Secretaría de Aeronáutica also reimbursed 50 percent of club aircraft purchases, which rewarded the biggest clubs in or near the capital, like the Aero Club Argentino, Centro Universitario de Aviación (formerly Centro de Aviación Civil), and the Aero Club La Plata.<sup>53</sup> When it came to flight subsidies, officials—wisely—changed from the previous system of scholarships for basic training to a blanket subsidy for flight hours if the pilot met certain conditions, namely Argentine citizenship and eligibility for military service.<sup>54</sup> Lastly, First Five

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<sup>52</sup> D.G.d. Aeronáutica Civil, *Boletín de Aeronáutica Civil*, no. 11 (1943), 7-8; D.G.d. Aeronáutica Civil, *Memoria anual 1946*, 21-34. D.G.d. Aeronáutica Civil, *Memoria anual 1947*, 92-3.

<sup>53</sup> The DGAC had this policy in the 1942 aero club regulations, and it was evidently inspired by Bullrich's 1937 study. D.G.d. Aeronáutica Civil, *Boletín de Aeronáutica Civil*, no. 10 (1942), 24.

<sup>54</sup> *Ibid.*; D.G.d. Aeronáutica Civil, *Memoria anual 1946*, 21-34.

Year Plan allocations provided for new infrastructure and facilities that imposed some modicum of consistency across the fifty-some clubs.

With these new tools and regulations, the state released millions of pesos in subsidies to expand the aero club system. These resources and the general economic prosperity of postwar Argentina spurred massive increases in memberships, students, and flight time across the country; from 1945 to 1948, most clubs saw the largest growth in their histories.<sup>55</sup> According to official statistics, civil flight hours (excluding commercial services)—overwhelmingly concentrated in the aero clubs—increased by 405 percent between 1944 and 1948. The number of student pilots likewise quadrupled from the levels during the Second World War, to 5,718 in 1947. The data also suggests that more pilots were maintaining currency and acquiring professional licenses. The nation’s roster of professional “C” level pilots grew by 393 percent from 1944 to 1947, more than double the growth rate of basic “A” pilots.<sup>56</sup>

In many ways, the aero clubs of the boom years represented Peronist aviation in its most favorable light. The clubs were the basis of the popular engagement with aviation discussed in the previous chapter, especially in areas without major FAA installations. Many offered modest air services like medical flights to large cities or the transportation of local officials. In tandem with the military, aero club pilots and aircraft provided aerial baptisms for local children and performed spectacular aerial displays over Aviation Week crowds. The clubs held (at least) monthly *asados* [barbeques], festivals, raffles, and prize competitions for everything from aviation-themed poetry to aeromodelling to baking. Tellingly, aero club membership in the available documentation extended far beyond pilots and students. The Aero Club Neuquén, for

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<sup>55</sup> This was the case with the four aero clubs with available documentation from the period, the AC Neuquén, AC Motreros, AC La Plata, and AC Pampeano. The growth of the remaining clubs are evident in DGAC and S.d. Aeronáutica annual reports.

<sup>56</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 154.

example, had only 54 registered pilots out of 239 members in 1948.<sup>57</sup> Some institutions engendered popular goodwill, receiving discounted or free services and supplies from their communities.<sup>58</sup> In the case of the Aero Club Morteros, a small and remote town in the province of Córdoba, the annual report spoke of the institution as a source of local pride:

...projects and purposes were enunciated, which today we see crystallized in part[,] and... [we] had faith in carrying them out thank to the unanimous support, which we always find in all those people, whether they are directly linked to the Club [or] not yet, they value [our] effort, to give the Aero Club the unusual importance that it currently has. This status is reflected in our town, in the eyes of strangers, since they consider that in Morteros we live with the rhythm of large populated centers.<sup>59</sup>

The decentralization of the aero club system likely reinforced the strong sense of community within the individual clubs. The First Five Year Plan called for the number of clubs to increase from 50 to 138 by 1951.<sup>60</sup> Considering that most of the principal urban centers around the country already had at least one club, these new institutions were intended for smaller suburban and rural communities. By 1952, the number of state-subsidized clubs stabilized at 92, with another handful of independent aero clubs, despite the imposition of austerity conditions in 1949.<sup>61</sup>

In keeping with the state's broader rhetoric of populist opportunity, the training courses offered by the network of clubs were accessible to people of somewhat modest means and

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<sup>57</sup> Aero Club Neuquén, *Memoria y Balance, 13º Ejercicio, 1948* (Neuquén: Aero Club Neuquén, 1949), 10, 24-25.

<sup>58</sup> Aero Club Pampeano, *Memoria y Balance, Ejercicio del 1º de Septiembre de 1946 al 31 de Agosto de 1947*, 8.

<sup>59</sup> *Entonces, se enunciaron proyectos y propósitos, que hoy vemos en parte cristalizados y que teníamos fe en llevarlos a cabo gracias, al apoyo unánime, que siempre encontramos en todas aquellas personas, ya sean vinculadas al Club directamente y aún no estándolo, valoran el esfuerzo que hacemos, para dar al Aero Club la importancia, poco común que actualmente tiene. Esta categoría se refleja en nuestro pueblo, ante los ojos de los extraños, pues consideran que en Morteros vivimos con el ritmo de los grandes centros poblados.* Aero Club Morteros, *Memoria y Balance, Ejercicio July 1948-June 1949* (Aero Club Morteros: Morteros, Córdoba, 1949), 1.

<sup>60</sup> D.G.d. Aeronáutica Civil, *Memoria anual 1946*, 34.

<sup>61</sup> M.d. Aeronáutica, *Memoria anual 1953*, 54-56.

without substantial education. Aviation officials had long insisted on keeping basic pilot training accessible to those without a secondary school education (above the sixth grade)—a rare privilege in the poorer interior. During the JAA program in 1940, the DGAC called for children ages fourteen to eighteen to enroll in aviation programs to lay the foundations of a “militia of the Air.” Aspirants only needed “the course on the elements of aviation that will be taught at the sixth grade at primary schools” to fly at a local aero club on the government’s dime.<sup>62</sup> When officials in Mendoza began to enact the new program, *La Prensa* protested:

It is not admirable that the selection of applicants is made among citizens who have only attended the sixth grade..., when the ideal would be to choose young people of the established age who attend or have completed the upper years of secondary education, if it is not possible to obtain them among those who attend university classrooms.<sup>63</sup>

At a time when the majority of children did not graduate secondary school, much less college, such education limitations would have severely constricted the pool of potential pilots.<sup>64</sup> Likely due to a combination of populist politics and pragmatism, Peronist officials also decided to eschew education requirements for pilots and technical apprentices in many of its institutions.<sup>65</sup>

Despite all of the state’s new subsidy programs, aero clubs still remained institutions for aviation enthusiasts of some means. Aspirants needed to possess the resources to pay for some of their training (subsidies only covered a portion of flight time) and possess sufficient education to pass the written licensing test. Another oft-forgotten demand of training was free time away from work, school, and family.

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<sup>62</sup> D.G.d. Aeronáutica Civil, “Educación aérea de la juventud,” *Boletín de Aeronáutica Civil*, no. 8 (1940), 17-8.

<sup>63</sup> “Por otra parte, no es admirable que la selección de aspirantes se realice entre ciudadanos que sólo han cursado hasta el sexto grado primario..., cuando el ideal sería elegir jóvenes de la edad establecida que cursen o hayan cursado los años superiores de la enseñanza secundaria, si no es posible conseguirlos entre los que concurren a las aulas universitarias.” “Becas para formar aviadores en Mendoza,” *La Prensa*, July 31, 1940.

<sup>64</sup> Nicola Miller, *Republics of Knowledge: Nations of the Future in Latin America* (Princeton: Princeton University Press, 2020), 201-202; Puiggrós, *Qué pasó en la educación argentina*, 134-41.

<sup>65</sup> Pilot training regulations were outlined in D.G.d. Aeronáutica Civil, *Memoria anual 1946*, 30.

For those of humbler means, the Peronist system provided a host of old and new opportunities to gain the skills needed for the aviation industry. Aspiring pilots without the means to pay had little recourse than to join the FAA or the Navy, although even then pilot training was for officers. For enlisted personnel and civilians with few financial resources, the state instead emphasized technical education as mechanics, air traffic controllers, and other support positions.

At the bottom end of the educational ladder, the Secretaría de Aeronáutica maintained a series of apprenticeship programs at its aircraft factory in Córdoba and throughout its maintenance network. The largest programs, such as at the Instituto Aerotécnico and the Regional maintenance workshop at Quilmes, had 200 to 300 apprentices each by 1947. The apprenticeship schools were generally made up of adolescent boys who had completed at least the sixth grade.<sup>66</sup>

For graduates of the apprenticeship programs, the next step was a “specialty” training program. Within the military hierarchy, specialized training occurred at the Escuela de Especialidades y Mecánica—which was open to civilians too.<sup>67</sup> The partner institution of the Escuela de Aviación Militar (EAM) offered courses for mechanics, radio operators, aerial photographers, radio electricians, and “Técnicos Aeronáuticos Nacionales” [National Aeronautical Technicians]—a certification of somewhat mysterious dimensions that was in between a mechanic and an engineer.<sup>68</sup> The number of students in the Escuela de Especialidades y Mecánica almost tripled from 634 cadets in 1947 to 1,721 in 1951. These students represented

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<sup>66</sup> D.G.d. Aeronáutica Civil, *Memoria anual 1947*, 70.

<sup>67</sup> Military training institutions related to aviation appear to have been open to civilians for the most part. The exception were academies expressly for military purposes, like the Escuela Superior de Guerra Aérea.

<sup>68</sup> The certification for “Técnico Aeronáuticos Nacionales” has unknown origins for the moment, but was established at some point between 1937 and 1946.

the majority of military-trainees in aviation at the time, as the EAM generally admitted 350-400 students a year by this period. This skew toward technical training was an important shift in official priority, which had been previously criticized for overemphasizing pilot training. For each pilot, there needed to be far more support personnel in the air and on the ground.

The Escuela Nacional de Aeronáutica (ENA), an institution from the late 1930s that had endured multiple administration changes and reforms to state aviation policy, was under civilian management. Although Army officials in 1943 had lambasted the ENA, it survived to be revitalized by the Peronist aviation program. The school was originally focused on professional pilot training and certifying flight instructors. But by the Peronist era, it had added courses for technical fields along the same lines as the Escuela de Especialidades y Mecánica. Fifty-seven professors were on staff to teach the 650-odd students in 1946 and 1947. Most students enrolled at the ENA were pursuing certifications in support fields for air services. In contrast to the 76 student pilots, there were 173 radio operators, 134 airport personnel, and 116 mechanics in training during the ENA's 1947 academic year.<sup>69</sup> The civilian academy built connections with more generalized technical institutions that greatly expanded its reach.<sup>70</sup>

At the top end of the technical education hierarchy were a handful of modest engineering programs. Within the military there was the Escuela Superior de Aerotécnica, which had anywhere from a dozen to fifty aeronautical engineers and administrators in training. For civilians there were a few institutions clustered in Córdoba, like the aeronautical engineering program at the Universidad Nacional de Córdoba. But beyond the education of high-level technical officers for the FAA, Peronist authorities showed little interest in expanding

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<sup>69</sup> D.G.d. Aeronáutica Civil, *Memoria anual 1947*, 130.

<sup>70</sup> *Ibid.*, 132. In 1947, the ENA had programs with the Instituto de Mecánica Especializada, the Instituto Incorporado Luis A. Huergo, and the Escuelas Municipales de Artes y Oficios "Raggio," which had hundreds of students among them.



aeronautical engineering education. There was a far greater need for basic technical personnel, and Perón's politics lent itself toward prioritizing such opportunities for common people without the advanced mathematical and scientific knowledge for engineering. Furthermore, as we shall see below, national officials chose to import engineering knowledge from abroad to underpin the expansion of the aircraft factory in Córdoba.

It is difficult to assess the efficacy of these technical education programs since state media was so transparently self-laudatory and internally-reported statistics were inconsistent. At the very least, there was modest growth in the number of civilian technical personnel on the Secretaría de Aeronáutica payroll between 1947 and 1951.<sup>71</sup> There is also evidence that aviation officials were creating a more practical system for producing competent technicians. Aviation and technical education boosters during the interwar period had frequently criticized the nation's education institutions for overemphasizing theoretical knowledge at the expense of practical experience; in essence, students were spending too much time in the classroom and not enough time in the cockpit or workshop. This pedagogical bias was naturally exacerbated by the small-scale of the interwar aviation industry and the elite prejudice against "hands-on" education. But by the late 1940s, the state had built up aviation infrastructure across the country and its educational programs harnessed them for practical instruction. State documents emphasized the balance of theoretical and practical instruction. Technical students at the ENA and the Escuela Superior de Aerotécnica, for example, visited and trained at state maintenance workshops, the Instituto Aerotécnico, civilian airports, and FAA air bases.<sup>72</sup>

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<sup>71</sup> The number of civilian technical professional personnel grew 46% and the number of civilian technical "sub-professionals" grew 32%. Military technical personnel were not consistently reported, since official statistics often only listed personnel by rank. S.d. Aeronáutica, *Memoria anual 1947*, 70; M.d. Aeronáutica, *Memoria anual 1951*, 21.

<sup>72</sup> D.G.d. Aeronáutica Civil, *Memoria anual 1946*, 72; D.G.d. Aeronáutica Civil, *Memoria anual 1947*, 131-2; Escuela Superior de Aerotécnica, *Memoria anual año 1951*, n.p.; Escuela Superior de Aerotécnica, *Memoria anual año 1954* (N.p.: Cuartel Maestre General de Aeronáutica, [1955]), n.p.

The cumulative effect of the new and reformed programs was to create a consistent environment across the nation for aviation education, whether in the cockpit or at the work bench. The institutions of the Peronist era were a far cry from the night school and correspondence courses of the interwar period. Yet, the network of education programs was certainly not perfect. Accidents continued to plague the aero clubs in the 1950s,<sup>73</sup> and as we will see below, the supply of trained personnel never met the demand generated by Perón's industrialization program. Nevertheless the standardization and democratization of aviation education—long the goal of the technology's advocates—was well underway.

*Air Services: The Culmination of the Peronist Aviation System*

While there was a sizable system for producing basic pilots and technicians, there needed to be an accompanying expansion of career opportunities for these skilled workers if such programs were to have any real benefits. Few civilian institutions beyond flight training paid for aviation expertise before 1945. When it came to auxiliary air services such as crop dusting and air ambulances, various state agencies like the DGAC maintained small fleets that were prone to extended disruptions due to equipment shortages and failures. Commercial air travel was dominated by foreign airlines that made little effort in the 1930s to hire Argentine personnel despite state decrees to force them to do so. The routes maintained by the foreign carriers prioritized international commercial interests, namely services among the primary Latin

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<sup>73</sup> M.d. Aeronáutica, *Memoria anual 1953*, 64-66.

American cities and capitals such as Buenos Aires, Rio de Janeiro, and Santiago de Chile. Communities that did not fall on these trunk lines rarely received air services.<sup>74</sup>

The only substantial domestic carrier, Aeroposta Argentina, S.A., operated from Buenos Aires to the far south of the country, largely serving towns associated with military installations and oil fields. Aeroposta, then a private company that received small state subsidies, was a remnant of the first international airline to reach the nation, France's Aeropostale. The fledgling airline—battling funding irregularities, a rapidly aging fleet of aircraft, and Patagonia's notoriously fierce weather—maintained its small-scale services through to the Peronist era.<sup>75</sup> But the plucky service employed few planes or personnel; in 1937 Aeroposta's roster included just seven pilots and three mechanics for three aircraft.<sup>76</sup> The vast majority of employed pilots were thus in the armed forces.<sup>77</sup>

After 1943, the national government began to see air services of all stripes as their responsibility. While state funds eventually poured into many different types of services, the clear focus of government patronage and media attention was a series of air transport entities created shortly after the Second World War. Army officials recognized as early as 1944 that the postwar era promised to mirror the conditions after World War I. Thousands of heavy and light transport airplanes had been built by the major combatants—especially the US—and Argentine

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<sup>74</sup> As has been well documented, there was a competition between European and US carriers to dominate commercial air travel in Latin America as a conduit for their national commercial and political interests. For a discussion of this "struggle" shortly after its culmination, see William Burden, *The Struggle for Airways in Latin America* (New York: Council on Foreign Relations, 1943). For a recent analysis from the US perspective, see Van Vleck, *Empire of the Air*, chapters two and three.

<sup>75</sup> For the history of Aeroposta Argentina, S.A., see Piglia, "La Aeroposta Argentina."

<sup>76</sup> "Aeroposta Argentina. Texto del convenio suscripto entre el Gobierno Nacional y la empresa," *Aero*, Aug.-Sept. 1937, 21.

<sup>77</sup> The available documentation from the Secretaría de Aeronáutica and its predecessors rarely give specifics for flight personnel among the Army air corps/FAA. For a general sense, the Secretaría de Aeronáutica had 3,291 military employees at the beginning of 1947, of which 747 were officers and thus might have been pilots. By the end of 1953, the Ministerio de Aeronáutica had 8,560 military employees, with 1,235 officers, from which 514 were aviators. S.d. Aeronáutica, *Memoria anual 1947*, 51-2; M.d. Aeronáutica, *Memoria anual 1953*, 14-6.

officials expected a glut of cheap, war surplus aircraft to hit the market shortly after the cessation of hostilities.<sup>78</sup> People the world over were gaining unprecedented experience as pilots, technicians, passengers, and more. Even neutral Argentina saw dozens of its sons volunteer as transport or ferry pilots behind Allied lines.<sup>79</sup> Just as importantly, the victors were actively organizing the postwar world and its international air services. The US, UK, and the newly-formed United Nations were diplomatically negotiating the increasingly apparent “Air Age” that peace promised to deliver.

The war had also seen the rapid improvement of commercial aircraft technology as a new era of high-altitude, high-speed, and long-distance air travel became a material reality. By the late 1940s, US aircraft manufacturers in particular were launching the most sophisticated and final generation of piston-engine airliners such as the Boeing 377 Stratocruiser, Lockheed Constellation, and Douglas DC-6. In comparison to the workhorse airliners of the 1930s, these aircraft represented a revolution in comfort and capability. Transoceanic and transcontinental air travel with minimal stops was increasingly routine. The severe turbulence and delays of early passenger flight were greatly reduced as pressurized airliners with turbocharged engines flew higher in the atmosphere, (mostly) overflying troublesome weather.<sup>80</sup>

These technological and international developments in the wake of the Second World War naturally presented Argentine officials with significant opportunities and risks as their nation sought its place in a new geopolitical landscape. But unlike the aviation boom that

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<sup>78</sup> Bustamante, *Las posibilidades aeronáuticas*, 24.

<sup>79</sup> Claudio Meunier, “Los hombres que lo hicieron posible,” in *Los orígenes de Aerolíneas Argentinas: La posguerra y un modelo de país (1945-1955)*, 149-170 (Buenos Aires: Grupo Abierto Libros, 2020), 149-151, 154.

<sup>80</sup> For the development of these airplanes in the US, see Heppenheimer, *Turbulent Skies*, chapter five. For a broader look at the North Atlantic airlines in the postwar period, see Van Riper, *Imagining Flight*, chapter four.

followed World War I, this time the Argentine state had the ambition and resources to take full advantage of the rapid transformation of international air travel.

The “Política Aérea” of 1945 established commercial air travel as a public service. In a flurry of activity, within two years the Secretaría de Aeronáutica reorganized its existing airlines, Aeroposta Argentina and the Army-run air services LASO and LANE, and created two new airlines for domestic travel—ALFA and ZONDA.<sup>81</sup> Authorities decided to divide the nation into six different “zones,” each of which would be served by one or two of these financially-independent airlines. The domestic airlines were not given a monopoly on cabotage, but instead had a “right of operation preference” granted by regulators.<sup>82</sup> One more line—Flota Aérea Mercante Argentina (FAMA)—was created as the exclusive international carrier.

Beyond the lines for military personnel, Secretaría de Aeronáutica officials decided to make the services mixed-ownership enterprises, or “*sociedades mixtas*.” Peronist economic authorities, for all their rhetoric about reforming the national economy, were generally cautious when it came to the direct control of industrial and commercial enterprises. State officials like the economist Miguel Miranda—in keeping with Peronism’s corporatist ideology—thought the government should act as an arbitrator between private capital and the public interests. The economic nationalists in power believed that private capital, so often in the hands of foreigners,

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<sup>81</sup> The state bought a stake in Aeroposta Argentina and military officials began to run the airline directly after 1946, turning it into a mixed-ownership enterprise (see below). Línea Aérea Suroeste (LASO) and Línea Aérea Noreste (LANE), created in 1940 and 1944 respectively, were passenger and correspondence services for military personnel under the direction of the Ministry of War. They were reorganized into Líneas Aéreas del Estado (LADE) in 1945, which had the same responsibility and is still active under the Fuerza Aérea Argentina today. Sociedad Mixta Aviación del Litoral Fluvial Argentino (ALFA) was the 1946 reorganization of one of the few private airlines in the country during World War II, Corporación Sudamericana de Servicios Aéreos owned by the well-known industrialist José A. Dodero. Zonas Oeste y Norte de Aerolíneas Argentinas (ZONDA) was a new creation in 1946. Potenze, *La Aviación Comercial*, 31-51.

<sup>82</sup> *Ibid.*, 27.



Figure 8.5. FAMA’s routes in 1947 (red) and planned routes by the end of 1949 (yellow/green). S.d. Aeronáutica, *La Aeronáutica nacional*, 219.

rarely “satisfied in any way the urgent needs of common benefit,” in the words of the Director of Commercial Aviation Eulogio Oscar Gomez in 1948. Yet they also perceived risks with full state control and ownership. Mixed enterprise, Gomez argued, would keep “alive private initiative and...avoid any statist and absorbing tendency.”<sup>83</sup>

<sup>83</sup> Eulogio Oscar Gomez, “Política aérea de la República Argentina,” *Revista Nacional de Aeronáutica*, Jan.-Mar. 1948, 23.

National and aviation officials sought a middle ground between state and liberal capitalism. *Sociedades mixtas*—a corporate structure replicated across the Peronist economy—gave the government a percentage stake in a company, and in turn some decision-making power, while still leaving the majority of capital, managerial responsibilities, and dividends in the hands of private interests.<sup>84</sup> Importantly, in the early phase of these experiments in the 1940s, the private capital had to come from Argentine citizens. In the case of the domestic lines Aeroposta Argentina, ALFA, and ZONDA, the state took twenty percent stakes, leaving the day-to-day management to private individuals.<sup>85</sup> In the case of FAMA, a Peronist prestige project, the government owned a similar stake and directly managed all operations. For all these lines, the officials not only promised to cover all deficits, but also guaranteed a minimum five percent dividend to private investors.<sup>86</sup>

The political and economic justification for mixed enterprise was to bend the forces of capitalism for “public interests.” What exactly then were these “interests” referenced in the state aviation press? Historian Melina Piglia argues in her 2019 article on Peronist commercial aviation policy that the state had two familiar objectives behind its air service program: political sovereignty and economic independence. The rhetorical invocation of “sovereignty” and “independence” in state media differed for the domestic lines—Aeroposta, ALFA, ZONDA—and the international service, FAMA.<sup>87</sup>

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<sup>84</sup> Belini, *Historia de la industria*, 243.

<sup>85</sup> For the overarching structure of the *sociedades mixtas* in the aviation industry, see Dirección de Aeronáutica Comercial, *Sociedades mixtas de aeronavegación* (Buenos Aires: S.d. Aeronáutica, 1945).

<sup>86</sup> Although *sociedades mixtas* certainly fit with the ideology of justicialismo and Peronist corporatist policies, it is worth noting that civilian aviation officials had a predilection for mixed private-public structures for airlines during the interwar period. The desire to fuse private capital and public interests naturally appealed to nations with small state resources and/or underdeveloped aviation sectors. Eduardo Bullrich, in his 1938 study, recommended Argentine commercial air operators follow the mixed enterprise structure of the Belgian airline Société Anonyme Belge pour l'Exploitation de la Navigation Aérienne (SABENA). Bullrich, *Régimen y organización*, 265.

<sup>87</sup> Piglia, “‘Carry Our Colours’,” 52-8.

In the domestic sphere, the new *sociedades mixtas* were couched in the language of nationalist developmentalism in much the same manner as General Enrique Mosconi's first airline proposal in 1921. As we have seen throughout this dissertation, Army aviation boosters and their later successors in the Secretaría de Aeronáutica primarily saw aviation as a tool for the political and economic integration of the vast interior and, as a result, the decentralization of the nation away from Buenos Aires. They believed regular and rapid air service among the interior provinces and productive regions would stimulate development and imbue frontier populations with a sense of national identity. Developing the interior would create the economic capacity for modern war and ensure frontier areas would not fall into the hands of regional rivals.

These same reasonings were deployed by Peronist officials. The new domestic lines were intended to link provincial capitals and productive centers without the usual obligatory trip to the capital. They were supposed to be a remedy for the highly-centralized British railroad network purchased at immense cost by Peronist authorities in 1947. As Director of Commercial Aviation Gomez argued: "Experience has already demonstrated, reliably, the dire economic consequences that, like with the railroads, brings an exaggerated concentration of wealth in the littoral zone [i.e. Buenos Aires]." This concentration had evidently created a "demographic problem" that the "rational internal connection of the centers of each province" by air could ameliorate.<sup>88</sup> For Perón, such plans were primarily aimed at drumming up political support in the far-flung corners of the country. As we saw in chapter seven, Peronist politics often resonated in the impoverished and isolated provinces, despite the popular memory linking Perón primarily to the urban working

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<sup>88</sup> "La experiencia ha demostrado ya, fehacientemente las funestas consecuencias económicas que como ocurre con los ferrocarriles, trae la exagerada concentración de la riqueza en la zona del litoral. Con esta racional conexión interna de los centros de cada provincia, y de las provincias entre sí, se conseguirá por ende una proporcional distribución de la población, aglomerada en la actualidad también en la zona del litoral. Sería ésta, pues, la solución del problema de orden demográfico." Gomez, "Política aérea," 23.





Figure 8.6. Domestic routes for Zonda (blue), ALFA (green), and Aeroposta (red) in 1947 (thick lines) and planned (thin lines). The map in the upper left hand corner is a generous depiction of the state air network in 1943. Notice that under the S.d. Aeronáutica's plans, one would be able to—somewhat laboriously—travel the length of the country without stopping in Buenos Aires. S.d. Aeronáutica, *La Aeronáutica nacional*, 189.

class. In Piglia's words, provincial air services involved “an extra symbolic achievement: it affirmed the presence of the state with the arrival of the plane to these previously isolated population centres.”<sup>89</sup>

<sup>89</sup> Piglia, “‘Carry Our Colours,’” 58.

When it came to international air travel, Peronist objectives reflected the unstable geopolitics of the postwar moment. As Piglia argues, Argentine diplomatic officials harnessed the legal structures of new governing bodies like the International Civil Aviation Organization (ICAO) to push back against US interests that sought unrestricted access to all national airspaces. Peronist officials argued for an “Argentinian doctrine” of bilateral agreements that were predicated on “reciprocity”—in essence a fair division of traffic between each signatory. In the end, the US demand for the so-called “fifth freedom,” or blanket right to operate in another country, was dropped in favor of bilateral agreements, to Argentina’s advantage.<sup>90</sup>

These generally successful negotiations were naturally a propaganda boon for Peronist authorities. They represented a crucial “affirmation of the place of Argentina a new world order.”<sup>91</sup> But if Argentina had no international airline, then the negotiation of reciprocity would be a hollow victory. Flota Aérea Mercante Argentina filled this need, ensuring that “Argentine Wings [are above] the skies of the world” as one advertisement declared.<sup>92</sup>

Yet there was a more concrete benefit offered by the airlines—one that was more obvious from the perspective of the aviation industry itself: jobs. Not just any jobs, but opportunities for the remunerative and prestigious careers long-promised by aviation officials. Airlines and their supporting infrastructure were opportunities *par excellence* due to generally high wages. In 1948, salaries at Aeroposta Argentina, even for the lower level cabin and ground crews, were higher

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<sup>90</sup> Piglia is careful to note that this was not simply due to Argentine objections, since the US had grown increasingly wary of multilateral agreements with the advent of the Cold War. Nevertheless, Argentine delegates delayed negotiations and constantly aired the grievances of the smaller aviation powers. Piglia, “‘Carry Our Colours’,” 51-2.

<sup>91</sup> *Ibid.*, 58.

<sup>92</sup> FAMA Ad, *Revista Nacional de Aeronáutica*, July 1948, 7.

than salaries in the metallurgical or textile industries—sectors of the economy that experienced favorable wage growth at the time.<sup>93</sup>

The airlines also employed a significant number of people, some 3,300 by 1948.<sup>94</sup> There was an abundance of professional piloting jobs in particular. Whereas Aeroposta Argentina, the only domestic air service during the 1930s, employed fewer than a dozen pilots, just FAMA in 1948 had 74 pilots and co-pilots on its roll. Although two-thirds of the captains were foreign personnel due to the shortage of such experienced pilots in Argentina, all 35 co-pilots—captains in training—were Argentine citizens.<sup>95</sup>

When added to the positions available within the Secretaría de Aeronáutica, the aero club and technical education systems, and the national aircraft factory, there were unprecedented opportunities for those with career aspirations in the aviation industry. The annual reports from the aero clubs in Neuquén and Santa Rosa (La Pampa) in 1947 and 1948 noted with excitement that some their members and former students had secured work as flight instructors, commercial pilots, and technical personnel for Secretaría de Aeronáutica programs.<sup>96</sup> This was the first time

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<sup>93</sup> In 1948, Aeroposta Argentina “auxiliary” aircrew (i.e. flight attendants) earned 400 pesos a year, with mechanics earning 850, and pilots reached 1,300. Flight personnel were eligible for flight-time bonuses too. Pablo Potenze, “Aeroposta Argentina, La Línea Aérea más Austral del Mundo,” in *Los orígenes de Aerolíneas Argentinas: La posguerra y un modelo de país (1945-1955)*, 271-306 (Buenos Aires: Grupo Abierto Libros, 2020), 299. CONICET researchers Carlos Newland and Eduardo Martín Cuesta calculated composite salaries during the Peronist era by “constructing” a salary using “a weighting of one-third for skilled workers and two-thirds for unskilled workers.” The results for 1948 for the metallurgical and textile sectors were 317 and 297 pesos, respectively. Carlos Newland and Eduardo Martín Cuesta, “Peronismo y salarios reales: otra mirada al período 1939-1956,” *CONICET Investigaciones y Ensayos*, no. 64 (Jan.-June 2017): 75-98, 64, 93.

<sup>94</sup> Potenze, *La Aviación Comercial*, 44-5, 48, 60.

<sup>95</sup> Marcelo W. Miranda, “FAMA, Alas Argentinas por las rutas del mundo,” in *Los orígenes de Aerolíneas Argentinas: La posguerra y un modelo de país (1945-1955)*, 337-422 (Buenos Aires: Grupo Abierto Libros, 2020), 393.

<sup>96</sup> Aero Club Pampeano, *Memoria y Balance, Ejercicio del 1° de Septiembre de 1947 al 31 de Agosto de 1948* (Santa Rosa, La Pampa: Aero Club Pampeano, [1948]), 5-8; Aero Club Neuquén, *Memoria y Balance, 12° Ejercicio, 1947* (Neuquén: Aero Club Neuquén, 1948), 6-8; Aero Club Neuquén, *Memoria y Balance, 13° Ejercicio, 1948*, 5-6.

such civilian career opportunities were available on any scale rivaling their counterparts in the military.

*Aircraft Production: Military Industry and the Peronist Aviation System*

Perhaps surprisingly, the aircraft factory in Córdoba—renamed the Instituto Aerotécnico (IA) from the Fábrica Militar de Aviones in 1943—was the least integrated major institution in Argentina’s new aviation system. Beyond the provision of technical expertise and jobs for the industry’s newly-minted engineers and technicians, the factory had little to do with the expansion and maintenance of the civil aviation system. As we shall see, the IA largely eschewed its earlier efforts to supply the civilian sector, whether for flight training or air services. Instead, the design and production choices by Secretaría de Aeronáutica and IA leadership reflected a different set of Peronist policy objectives. Nevertheless, the years from 1943 to 1955 represented the most significant period of activity in the factory’s history. Just as millions of pesos poured into infrastructure, education, and air services, so too would the government sponsor a profusion of advanced prototypes and production initiatives. For many historians and enthusiasts of Argentine aviation, the Peronist years were the “golden age” of aircraft production in Córdoba.<sup>97</sup>

The Instituto Aerotécnico under Peronist authorities is the most extensively studied aspect of Argentine aviation. Argentine researchers and chroniclers of aviation often look back on the IA as a “lost” industry of great accomplishment, a period of missed opportunities, or a comedy of errors, depending on their general attitudes toward Peronism.<sup>98</sup> Historians of Peronist

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<sup>97</sup> Noted by Halbritter, *Historia de la industria aeronáutica*, 335.

<sup>98</sup> Frenkel, *Juan Ignacio San Martín*; Halbritter, *Historia de la industria aeronáutica*, chapter 8; Bonetto, *La industria perdida*; Burzaco, *Las alas de Perón II*; Arreguez, *Fábrica militar de aviones*.

economic policies have used the factory as an early example of state capitalism, a test case in evaluating the role of the state in business and industry.<sup>99</sup>

The IA is also the only subject of Argentine aviation to have attracted the attention of international scholars. The effort in Córdoba is often remembered for its employment of former Axis personnel such as Émile Dewoitine and Kurt Tank.<sup>100</sup> English-language histories focus on the IA's most high-profile project: the Pulqui series of jet prototypes, the first such aircraft made in Latin America. These historians argue that the Pulqui saga—which extended for almost fifteen years—was emblematic of the general failure of “technology transfer” to Argentina under Perón.<sup>101</sup> Even the more in-depth and recent analysis by Argentine historian Alejandro Artopoulos branded the project a “successful failure.”<sup>102</sup> Such studies consider the technology that “failed” to transfer was the jet airplane, with their complex swept-wing aerodynamics and cutting-edge turbojet powerplants.

The historiography of the IA has largely neglected the broader technological system that was aviation by the mid-century. The development of advanced aircraft prototypes was but one, albeit eye-catching, facet of the Peronist aviation system. Furthermore, studies of the IA tend not to consider the early period in the 1930s when analyzing decisions made by the factory's leadership. Nevertheless, as historian Mario Raccanello notes and my own investigation has (frustratingly) confirmed, the original documentation from the factory during this period is missing. Thus my analysis here will largely depend on the research pieced together by Argentine historians—especially Francisco Halbritter and Alejandro Artopoulos—from a variety of indirect

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<sup>99</sup> Angueira and Tonini, *Capitalismo de estado*; Raccanello, “Industrias Aeronáuticas y Mecánicas del Estado.”

<sup>100</sup> Potash and Rodríguez, “El empleo en el Ejército argentino de nazis;” Klich, “La contratación de nazis y colaboracionistas por la Fuerza Aérea Argentina;” Stanley, “Transferencia de tecnología a través de la migración científica;” Hagood, “Arming and Industrializing Perón's ‘New Argentina’.”

<sup>101</sup> Hagood, “Why does technology transfer fail?;” Hira and Oliveira, “Take off and Crash.”

<sup>102</sup> Artopoulos, *Tecnología e innovación*, 87.

official and private sources. Lastly, this section cannot hope to address all of the aircraft, motors, and other products made by the IA, nor all of the open debates on the factory's conduct, methods, and results. Instead, we will focus on the IA's broader utility, or lack thereof, to the government's industrialization project through the dissemination of technical standards, the training of local personnel, and the reduction of foreign dependency among the aviation community. As we shall see, the Peronist IA officials achieved some successes in these efforts, but the exigencies of Perón's politics, the challenges of advanced aircraft design, and a worsening economic situation prevented the factory from meeting expectations.

The *Fábrica Militar de Aviones* (FMA), still languishing after the 1935 political scandal, was in a precarious position when war broke out in 1939. The factory focused on the production of licensed models like the Focke-Wulf Fw-44J and Curtiss H750 Hawk. Official and public interest in the FMA was revived by the same 1940 war scare that spawned the JAA. Once again the factory's engineers proposed new original designs—based closely on foreign models—to help supply the Argentine flight community. In mid-1940, the veteran FMA engineers Juan A. Peretti and Clodoveo Pascualini completed the design of a basic trainer aircraft, the FMA 20 El Boyero, which was almost identical to the popular Piper Cub. But the Boyero, as discussed in chapter seven, did not go into production with a private contractor until 1948 due to shortages of strategic materials.<sup>103</sup>

In 1941, the national government finally began to signal a shift in its industrial policy long desired by Army nationalists. Civilian authorities passed decree 12.709 creating a new agency—the *Dirección General de Fabricaciones Militares* (DGFM)—tasked with stimulating strategic industries, namely armaments and their prerequisite materials. Officials placed the

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<sup>103</sup> Halbritter, *Historia de la industria aeronáutica*, 304-5.



Figure 8.7. The I.Ae.22 DL military trainer on display at the Aviation Week capital exhibition in 1947. [S.d. Aeronáutica], *Exposición Argentina de Aeronáutica 1947* (N.p.: [S.d. Aeronáutica], [1947]), n.p., located in box 2, folder 11, COR, BNA.

aircraft factory in Córdoba under the DGFM and planned a host of new metallurgical and chemical plants. Although shortages once again stymied the state's plans until at least 1946, the structure of the DGFM was foundational to later industrialization efforts by Peronist authorities. The 1941 law and a similar 1944 decree—allowing for state patronage of industries of “national interest”—were structured around military needs. Civilian legislators explicitly did not want state industry to compete with private interests in other manufacturing sectors. As Claudio Belini emphasizes, these World War II-era “national interest” decrees were the legal basis of the entire state industrialization program until 1958—including the FMA/IA.<sup>104</sup>

The June 1943 coup d'état by nationalist Army officers proved a turning point for the factory. Decree 11.822 passed on October 20, 1943 redesignated the FMA the Instituto Aerotécnico. The factory began its first new projects in years. From 1943 to 1944 the IA developed the I.Ae.22 DL, a military trainer modeled on the North American T-6 Texan. Made

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<sup>104</sup> Belini, *Historia de la industria*, 243; Belini, “La Dirección General de Fabricaciones Militares,” 50-1.



Figure 8.8. The I.Ae.24 Calquín light bomber. Box 2, folder 9, COR, BNA.

of wood and using a domestically-designed and -built piston engine, the I.Ae.16 El Gaucho, the airplane was able to go into production shortly after its first flight on May 14, 1944. When its production run ended in 1948, the factory had produced 201 units, which stayed in service with the FAA until 1958. Shortly after the I.Ae.22's first flight, design also began on a light, twin-engine bomber called the I.Ae.24 Calquín. Modeled on the de Havilland DH.98 Mosquito, the Calquín was predominately made of wood to avoid the need for strategic materials. After its first flight on July 4, 1946, the bomber was one of the first major production runs for more advanced military aircraft at the IA, reaching 100 units by 1948.<sup>105</sup>

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<sup>105</sup> Taravella, *Setenta años*, 93-4; Halbritter, *Historia de la industria aeronáutica*, 306, 308-12.



Although both models suffered from performance and durability issues, these machines were desperately needed by the Army and later the FAA.<sup>106</sup> US sanctions due to Argentine neutrality had largely cut off the supply of airplanes and related strategic materials until 1948. Even worse for Argentina's military leadership, US military aid was flowing freely to their South American rivals in the form of aircraft, training programs, and infrastructure projects. Brazil in particular had seen a significant influx of US aid for its military and civil aviation during the war. The Argentine Army aviation corps, which had prided itself on its regional superiority during the interwar period, now found itself increasingly outmatched.<sup>107</sup>

The rapid push for new airplanes that could be built with local resources was thus a significant defense imperative by the later years of the Second World War. Perón, who gave a speech at the official presentation of the I.Ae.22 DL in 1944, was a champion of military industry for Argentina to regain regional superiority. The strong demand for new military hardware, coupled with the legal structuring of state support for industry discussed above, ensured that the IA was dedicated almost exclusively to military projects for the duration of its “golden age.”

The Instituto Aerotécnico's renewed push into original design and production largely took place under the leadership of Juan Ignacio San Martín (1904-1966). San Martín, a native of Buenos Aires, graduated from the Colegio Militar de la Nación in 1924 as a sublieutenant in the

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<sup>106</sup> The I.Ae.22 DL was not a particularly dangerous airplane, but when it was evaluated by the Navy, officials returned the airplane without comment—a repeat of their behavior around the *Prototipo* in the 1930s. The wooden structures of the DLs were prone to warping in humid environments, although 150 were still in service with the FAA in mid-1954. The history of the Calquin is far more troubling. The airplane had poor low-speed maneuverability and recovering from spins was difficult. To make things worse, the only engines officials could acquire at the time were underpowered war surplus Pratt & Whitney R-1830-65As. These radial engines had different aerodynamic profiles from the inline Rolls-Royce Merlin engines the Calquin design was intended for, further worsening aircraft performance. In the end, nearly fifty Argentine servicemen died in the model before it was taken off the flight line in 1959. Halbritter, *Historia de la industria aeronáutica*, 308-9, 312.

<sup>107</sup> Military spending as a proportion of the national budget increased from 27 percent in 1942 to 43 percent by war's end. Atropoulos, *Tecnología e innovación*, 66.

artillery corps. In the late 1920s he fortuitously befriended a young Captain Juan Perón. San Martín then entered the Curso Superior del Colegio Militar, graduating as a military engineer with a specialty in aeronautics in 1931, before earning a doctorate in industrial and aeronautical engineering from the Royal Polytechnic Institute in Turin, Italy in 1935. Upon his return to Argentina, the young engineer found himself rapidly promoted up the ranks of the FMA. On February 2, 1944, San Martín was appointed the head of the Instituto Aerotécnico. Due to his close connections to Perón and prominence as the leader of Córdoba's largest industrial operation, San Martín was eventually tapped to be Governor of Córdoba Province from 1949 to 1951, whereupon he ascended to Minister of Aeronautics until the regime's ouster in 1955.<sup>108</sup>

San Martín was trained in the science of "*aerotécnica*" [aerotechnics] espoused by the earlier generation of factory leaders like Bartolomé de la Colina. He defended Army policies when they came under scrutiny in 1937.<sup>109</sup> He also demonstrated from early in his career an interest in logistics and technical organization related to aviation. Starting in 1934, San Martín began to regularly publish articles in military and aviation media about the needs for state support of heavy industry, a cohesive national aviation system, and popular technical education.<sup>110</sup>

Over the 1930s San Martín developed an understanding of the upstream bottlenecks for the Argentine aviation industry in human and physical capital.<sup>111</sup> Under his energetic guidance,

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<sup>108</sup> Halbritter, *Historia de la industria aeronáutica*, 304; Frenkel, *Juan Ignacio San Martín*, 40.

<sup>109</sup> Juan Ignacio San Martín, "La capacidad argentina para la construcción de aviones," *Servir*, June 1937, 894-900.

<sup>110</sup> He advocated for the creation of large, state-run aeronautical laboratories in the same vein as those he saw in Italy. Juan Ignacio San Martín, "Como se presenta el problema de la fabricación de aceros en el país. Estudio general de las condiciones sobre las cuales podría iniciarse," *Revista Militar*, June 1934, 1290-1304; Juan Ignacio San Martín, "Las necesidades actuales de la técnica aeronáutica," *Avia. Revista aeronáutica argentina*, June-July 1936, 131-134; Juan Ignacio San Martín, "Guidonia," *Avia. Revista Argentina de Aeronáutica*, October 1937, 597-599; San Martín, "La capacidad argentina."

<sup>111</sup> Artopoulos, *Tecnología e innovación*, 32.

the IA expanded its technical apprenticeship programs while instituting a balance of theoretical and practical instruction. San Martín had noted in a 1937 publication that more youths needed to be steered toward the “manual arts” while the common Argentine worker of the day needed more theoretical, scientific preparation for “precision work,” especially with flight instruments.<sup>112</sup> His IA became an essential node in the national technical education system, the premier location for practical instruction for the nation’s engineers, mechanics, and technicians.

The factory during San Martín’s tenure also proved far more conciliatory to private firms than one would expect from an icon of state industry. The IA director received praise from later historians for his decision to create a network of local and private suppliers for aircraft parts.<sup>113</sup> San Martín began this policy—a departure from the interwar period—with the I.Ae.22 DL. He shifted IA production away from imported US plywood to native varieties.<sup>114</sup> IA officials managed to convince industrial workshops to invest in the necessary tools and personnel for the kind of precision and metallurgical capabilities demanded by the aviation industry—a difficult task considering the low production rate over the factory’s troubled history.<sup>115</sup>

The Instituto Aerotécnico continued to determine technical standards for metal, chemical, and electrical products, and an expanded team of quality control experts conducted hundreds of inspections at the IA and its private contractors. By 1947, the factory had assembled a network of 107 private suppliers.<sup>116</sup> Historian Ángel C. Arreguez notes that there had been a mere five

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<sup>112</sup> San Martín, “La capacidad argentina,” 895-899.

<sup>113</sup> Artopoulos, *Tecnología e innovación*, 33-5; Bonetto, *La industria perdida*, 99; Arreguez, *Fábrica militar de aviones*, 5, 64.

<sup>114</sup> Previously, officials had taken the simpler route of importing plywood since US sanctions did not limit the sale of wood to Argentina, and presumably local industry was not able and/or willing to supply the factory. Halbritter, *Historia de la industria aeronáutica*, 310.

<sup>115</sup> Artopoulos, *Tecnología e innovación*, 33.

<sup>116</sup> 55 of which were in the capital and 32 in the city of Córdoba. S.d. Aeronáutica, *Memoria anual 1947*, 36. The official support of private industry was highlighted in state propaganda too. See S.d. Aeronáutica, *La Aeronáutica nacional*, 127-30.

“private enterprises dedicated to producing aviation supplies” in 1941.<sup>117</sup> The three civilian designs by IA engineers in the early years, the I.Ae.31 Colibrí, I.Ae.32 Chingolo and Boyero, were contracted out to private workshops, although the last model was the only one to enter into serial production with Petrolini Hermanos in 1948.<sup>118</sup>

With San Martín at the helm of the IA after 1944, the final essential pieces of the factory’s “golden age” fell into place. The factory was moved under the Secretaría de Aeronáutica in 1945, which had his old boss Bartolomé de la Colina at the helm. Perón proved a powerful ally, friend, and supporter of the nation’s military aviation industry, although the leader also kept an ever present eye on the Córdoba region.<sup>119</sup> His rise to the executive mansion in 1946 would open the national tap of funds for projects scarcely before imagined in Argentina. Finally, and most controversially, the end of the war in Europe created an opportunity to acquire new engineering talent, some of whom were working at the cutting edge of aviation technology.

Perón, San Martín, and the Secretaría de Aeronáutica leadership decided to make the factory’s main project an “*avión de caza a reacción*”—a jet fighter. This decision was ambitious to say the least, considering that jet engines were a brand new prestige technology that had only entered the war in its final months. The metallurgical techniques and materials involved in their construction were far beyond the capabilities of the Córdoba operation, or likely any workshop in the country. As Hermione Giffard found in her study of the development of the turbojet in the

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<sup>117</sup> Arreguez, *Fábrica militar de aviones*, 64.

<sup>118</sup> Halbritter, *Historia de la industria aeronáutica*, 333-4

<sup>119</sup> For Perón, San Martín would turn out to be an important ally. The province of Córdoba was among the most resistant areas of the country to the Peronist movement, which was ironic considering the Army’s historied devotion to the province. Sitting in the middle of the Argentine *pampa*, the province was (and is) dominated by its wealthy and politically-connected agricultural interests, many of which felt besieged by Perón’s industrialization program and populist politics. The Peronists had lost the February 24, 1946 election in Córdoba, and series of conflicts arose with national authorities over the next two years. A federal intervention was declared in 1947, and San Martín was later tapped to be governor of the province, a post he held from 1949 to 1951. Atropoulos, *Tecnología e innovación*, 62-3.

US, Britain and Germany, the firms in the best position to develop and produce jet engines were those that had significant experience building advanced piston powerplants.<sup>120</sup> Argentine firms and workshops had elementary experience with aircraft engines by the end of the interwar period. The FMA had only produced its first indigenous, military-grade engine design for serial production in 1944, the 450HP I.Ae.16 El Gaucho motor.<sup>121</sup> Thus jet engines would have to be imported. Since just a handful of firms could produce these new machines, there would be few options for Argentina.

The airframe also posed significant—if not insurmountable—problems for factory engineers and technicians. The main benefit of jet engines was speed.<sup>122</sup> New aerodynamic structures had to be developed for aircraft to function at transonic and supersonic speeds, where the eccentricities of airflows and shockwaves interfered with traditional flight surfaces. German engineers were at the frontier of swept-wing and other designs that enabled controlled flight near and above the speed of sound. Yet such advanced aerodynamic designs were temperamental and required substantial theoretical and practical experimentation using sophisticated tools like supersonic wind tunnels—all of which the IA lacked. The broader economy, much less the factory itself, barely had the capability to produce the aluminum tubes and sheeting needed for the airframe of an advanced fighter aircraft.<sup>123</sup> The whole project was one of “radical technological innovation” in Atropoulos’ estimation.<sup>124</sup>

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<sup>120</sup> Yet also had the design capacity to add jet engines to the more profitable slew of piston projects. Hermione Giffard, *Making Jet Engines in World War II: Britain, Germany, and the United States* (Chicago: The University of Chicago Press, 2016), 237-9.

<sup>121</sup> Halbritter, *Historia de la industria aeronáutica*, 306.

<sup>122</sup> Propellers lose their effectiveness as the blade tips reach the speed of sound, rendering them useless for transonic and supersonic flight. Transonic air flow is a liminal state between sub- and supersonic speeds, about Mach 0.8-1.2, which has its own challenging qualities.

<sup>123</sup> S.d. Aeronáutica, *Memoria anual 1947*, 21; Atropoulos, *Tecnología e innovación*, 80; Belini, “La Dirección General de Fabricaciones Militares,” 81-2.

<sup>124</sup> Atropoulos, *Tecnología e innovación*, 22.

In light of these shortcomings and the advanced requirements of jet aircraft, the decision to take on what became the Pulqui I and II series of prototypes appears wildly ambitious. Such lofty goals represented an intensification of the Army's aggressive plan for development evident in the shift from wood to metal construction in the 1930s. De la Colina, Ojeda, and San Martín were all keen to push the national capability in aviation technology to its limits as quickly as possible.

But the official reasoning behind the venture also reflected the geopolitical and domestic dynamics of the postwar world, which made the project seem both desirable and feasible. Perón and his military allies sought to chart a "Third Position" between US capitalism and Soviet communism. To reinforce Argentina's international independence, Argentine officials hoped not only to supply their own military needs, but also export their weapons to non-aligned nations. The prestige armament demanded by modern war was the interceptor or fighter, and as the Cold War took shape, such weapons needed turbojets to be competitive with US, European, and Soviet designs. US sanctions only further reinforced the need to produce their own military aircraft.<sup>125</sup>

As Perón moved from the Ministry of War to the presidency, and the Pulqui project began to take shape in mid-1946, the airplanes also came to have domestic political significance. The previous chapter showed how the Pulqui I and II were heavily featured in Peronist propaganda representing the progress of the "New Argentina." The prototypes largely fulfilled

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<sup>125</sup> Hagood, "Why does technology transfer fail?" 77-8; Atropoulos, *Tecnología e innovación*, 66. Peronist Argentina also took on the other "prestige" technology of the day, nuclear energy. What became "Project Huemul" under the direction of cold-fusion huckster Ronald Richter proved a useless embarrassment for Perón. See Jonathan Hagood, "Bottling Atomic Energy: Technology, Politics, and the State in Peronist Argentina," in *Beyond Imported Magic: Essays on Science, Technology, and Society in Latin America*, eds. Eden Medina, Ivan Da Costa Marques, and Christina Holmes, 267-286 (Cambridge: The MIT Press, 2014); Mario Mariscotti, *El secreto atómico de Huemul. Crónica del origen de la energía atómica en Argentina*, 1st ed. (Carapachay: Lenguaje claro Editora, 2016).

this political role without any need for serial production. The rhetoric concerning the Pulqui gained a momentum all its own, sustaining the expensive development process in the face of repeated performance issues and accidents. Officials, in their glowing estimations of the future possibilities afforded by the Pulquis, seem to have become intoxicated by of their own supply of technological euphoria around Perón's political and industrial program. A great leap forward was the order of the day as the First Five Year Plan began in 1947, and Peronist jet airplanes would be front and center for the transformation.

To develop these advanced prototypes, officials decided to import aeronautical knowledge and experience from abroad. They leveraged the personal and institutional connections built before the war with Germany, Italy, and Spain to recruit technical personnel. They found a sizable number of engineers and lower level technicians willing to make the journey to Argentina in the wake of the Axis defeat. As has been well studied, the Allied victors claimed former Axis engineers and technical personnel as prizes of war. The US and Soviet Union in particular reaped the largest benefits, acquiring the designers of the most advanced German aerospace technology.<sup>126</sup>

Perón saw an opportunity to recruit some of the few men who managed to evade US and Soviet officials. The subsequent recruitment program was part of a broader effort take advantage of the Axis defeat. The Argentine state nationalized German businesses and industrial operations after the war, with the ex-German construction companies proving especially useful for the state as it launched the First Five Year Plan.<sup>127</sup> But Perón and his nationalist military allies undoubtedly had an ideological affinity for former Axis personnel as well. Perón's "Third

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<sup>126</sup> For an overview of the global dispersion of German personnel, see Michael J. Neufeld, "The Nazi aerospace exodus: towards a global, transnational history," *History and Technology* 28, no. 1 (March 2012): 49-67.

<sup>127</sup> Belini, *Historia de la industria*, 245-6.

Position,” in its condemnation of capitalism and communism, would have certainly sounded familiar to European Fascists.<sup>128</sup> For the mainly German and Italian engineers and technicians that emigrated to Argentina, their new home offered relative freedom and—perhaps more importantly—a modicum of their former prestige and power.<sup>129</sup>

The first major acquisition made by aviation officials was the French aeronautical engineer Émile Dewoitine (1892-1979), whose collaboration with the Vichy government had compelled him to flee to Francoist Spain in 1944. Dewoitine already had a relationship with Ambrosio Taravella from the latter’s periodic visits to France for FMA contracts. He offered his services to Argentina via the embassy in Madrid, and with the end of the war FAA officials hired Dewoitine to produce a jet prototype. Arriving in May 1946, Dewoitine was immediately put in charge of a team of engineers including the Argentines Enrique Cardeillac, Norberto Morchio, Humberto José Ricciardi, and drafter Manuel Fernández. Together with fifteen more assistants, Dewoitine’s team designed and piece by piece assembled the I.Ae.27 “Pulqui” prototype, an all-metal monoplane with a single turbojet embedded in the airframe behind the pilot.<sup>130</sup>

To power the prototype, Argentine officials pulled off a diplomatic coup. They took advantage of a small schism between Great Britain and the United States to acquire a significant amount of dated but usable aviation hardware. US sanctions, which remained in place until June 3, 1947, forbade British officials from dealing with the Argentines. Indeed, US officials pressured their transatlantic counterparts not to buy any IA aircraft from a country that was

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<sup>128</sup> A route out of Europe to South America for ex-Axis personnel, often with help from the Vatican and Spain, materialized by mid-1943. Thousands fled to Argentina during and after the war. Hagood, “Why does technology transfer fail?” 76-77.

<sup>129</sup> Adolf Galland, a famous German ace from WWII that went to Argentina as an advisor for the FAA, wrote in his 1955 memoir: “All over the world there were barriers to everything German. On the other hand, among the Argentine Armed Forces, we do not encounter prejudices of any nature. In the eyes of the Argentine comrades we had lost the war but not [our] honor.” Excerpt reproduced in Burzaco, *Las alas de Perón II*, 34.

<sup>130</sup> Halbritter, *Historia de la industria aeronáutica*, 329.



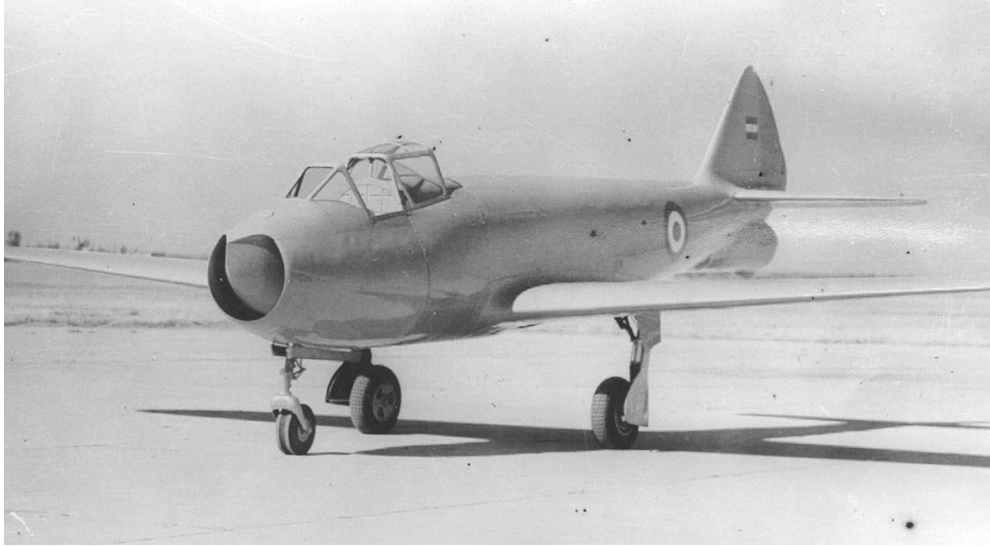


Figure 8.9. The I.Ae.27 Pulqui I, the first jet-powered aircraft designed and built in Latin America. S.d. Aeronáutica, *Memoria anual 1947*, 14.

“unreliable.”<sup>131</sup> But the Argentines and the British were still tied by prewar, bilateral trade treaties. Argentina had accrued large reserves of pounds during the war and Britain was desperate to kick start its own economy. British officials thus ignored US protests and agreed to sell a large number of war surplus aircraft and engines to Argentina.<sup>132</sup> These included advanced aircraft for the Argentines, such as a hundred Gloster Meteors, the first generation of British jet fighters, and thirty Avro Lincolns, the first heavy strategic bombers in Latin America.<sup>133</sup> British authorities agreed to provide the parts for the Rolls Royce Derwent V turbojet engines that powered the Meteors, which could also be used on the Pulqui prototype. IA personnel assembled the Derwent Vs in Córdoba, a milestone for the region’s industry.<sup>134</sup>

The I.Ae.27 Pulqui I with the Rolls Royce Derwent V first took off on August 9, 1947, capturing the title of the first native-built jet aircraft in Latin America. Although the airplane

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<sup>131</sup> Halbritter, *Historia de la industria aeronáutica*, 331-2.

<sup>132</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 77-8.

<sup>133</sup> The Meteors and Lincolns helped the FAA significantly boost its strength while the IA developed a new generation of aircraft. S.d. Aeronáutica, *Memoria anual 1947*, 106.

<sup>134</sup> Halbritter, *Historia de la industria aeronáutica*, 329.

evidently had “excellent flight characteristics,” the Derwent V could not produce enough thrust to reach the Pulqui’s projected top speed by a wide margin. More fatally, the Pulqui I’s aerodynamic design lacked the swept wings that would enable higher speeds. Only one prototype was built in the end, which made numerous appearances at state aviation festivals and events over the next ten years.<sup>135</sup>

FAA officials quickly decided to develop a second, more advanced prototype. They assigned Argentine engineers Morchio and Ricciardi to the project, who returned with a radical design for a swept-wing fighter. According to Halbritter, Perón was so thrilled by Morchio and Ricciardi’s prospective design that he announced an aspiration to secure the world aircraft speed record.<sup>136</sup>

At this point, the Secretaría de Aeronáutica leadership made the fateful decision to greatly expand their recruitment of foreign personnel. Infamously, Peronist authorities arranged for the emigration of German aeronautical engineer Kurt Tank, the chief designer and factory director for Focke-Wulf from 1933 to 1945. Tank was the designer of the famed Fw-190 piston fighter, as well as the Fw-44J biplane trainer that the FMA had produced under license. He was the most high-profile technical official acquired by the Argentine aviation industry, and his flight to Argentina via Denmark provoked a diplomatic scandal with the US. Upon his arrival, Perón met the titan of the German war industry in the Casa Rosada and the two developed a fast friendship typical of the Argentine leader. Tank soon arranged for the emigration of more than 70 engineers and technicians from the German aviation industry to Argentina.<sup>137</sup>

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<sup>135</sup> Today the beautifully-preserved Pulqui I prototype can be seen at the Museo Nacional de Aeronáutica in Morón. Halbritter, *Historia de la industria aeronáutica*, 329-30.

<sup>136</sup> Ibid.

<sup>137</sup> Atropoulos, *Tecnología e innovación*, 51-2.

Tank brought with him the plans for the Ta-183, a swept-wing jet interceptor, which had been designed at Focke-Wulf during the war by Hans Multhopp. The model was actually quite similar to Morchio and Ricciardi's design, although the Ta-183 had a revolutionary new empennage configuration called the "T-tail."<sup>138</sup> Morchio and Ricciardi were blindsided by Tank's arrival. They were evidently in a normal design meeting when San Martín entered the room to introduce a "doctor Matties" and "engineer Choel"—Tank and his assistant. San Martín then instituted a design competition between Morchio and Ricciardi, and Tank. In the end, the German was placed in charge of the Pulqui II project. Shortly after, Morchio and Ricciardi resigned from the team in frustration over their loss of control.<sup>139</sup>

This story at the beginning of the Pulqui II project reveals a broader conflict generated by Peronist aviation policy. Argentina had long benefitted from immigration as a source of technical knowledge and experience. But the engine of technology transfer evident in chapter two had largely evaporated by the Second World War. European immigrants were no longer flocking to Argentine shores, keeping their valuable skills in the Old World.<sup>140</sup> The Argentine aviation industry, rapidly expanding after the war, generated unprecedented demand for advanced

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<sup>138</sup> The "T-tail" has the horizontal stabilizers and elevators at the top of the tail and rudder. The advantage of the design is the position of the horizontal stabilizers far above engine and wing wash. The main downside of the design—which was evident in the Pulqui II—is the possibility of "deep stalls." At high angles of attack (nose up), the main wings can block the airflow over the horizontal stabilizers, resulting in a complete loss in pitch control and an often unrecoverable stall where the airplane falls "butt" first toward the ground. This problem was exacerbated in high-speed aircraft since stalls with swept wings pitch the nose upward due to shifts in the center of lift. Special aerodynamic arrangements and active controls ("stick pushers") were developed after World War II to reduce this problem with Multhopp's design. Lindsay J. Lina and Martin T. Moul, "A Simulator Study of T-Tail Aircraft in Deep Stall Conditions," presentation at AIAA/RAeS/JSASS Aircraft Design and Technology Meeting, NASA Langley Research Center, Hampton, Virginia, July 1965. Multhopp himself ended up working at Lockheed and would take a trip to Argentina after the Liberating Revolution to scoop up disaffected members of Tank's team. Atropoulos, *Tecnología e innovación*, 54.

<sup>139</sup> Morchio and Ricciardi recall this series of events in their brief memoir. Norberto L. Morchio and Humberto J. Ricciardi, *Proceso de Diseño del Pulqui I. Anteproyecto del Pulqui II* (Córdoba: Asociación Amigos del Museo de la Industria, 1999).

<sup>140</sup> The vast majority of immigrants to Argentina arrived between 1880 and 1930. Moya, *Cousins and Strangers*, 4-5.

technical knowledge. The state's educational institutions were desperate for experienced aviators and technical personnel to instruct the next generation of homegrown talent. Secretaría de Aeronáutica officials decided to be proactive about the situation, and greatly expanded its recruitment efforts abroad. Army aviation officials had long recruited small numbers of technicians and engineers during their periodic European trips. After World War II, they sent personnel around the war-torn continent to sweep up German, Italian, French, Czech, Polish and British pilots and technicians eager for a fresh start.<sup>141</sup>

But there was already a body of Argentine engineers and technicians in 1945, many of whom had worked at the Córdoba factory for years. The factory's leadership had strived to reduce the number of foreign workers during the interwar period, and they largely succeeded.<sup>142</sup> Perón, San Martín, and Secretaría officials were keenly interested in popular technical education and were promising jobs upon graduation. This nationalist politics made an awkward fit with the recruitment of European technicians. Peronist propaganda rarely mentioned the assistance of anyone other than Tank, who was too large a national figure to ignore. Thus after praising the Pulqui II's designer, official statements tended to vaguely credit the "workers" for their efforts.<sup>143</sup>

More troublingly for the aviation community itself, the sudden importation of experienced foreign technicians upset expectations of upward mobility for Argentine personnel.

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<sup>141</sup> Although the historiographical focus is on the former Nazi personnel, the Argentine government employed people from all over Europe. For example, retired British Royal Air Force personnel were hired to teach at DGAC institutions and Secretaría officials recruited lower-level technicians from Italy. S.d. Aeronáutica, *Memoria anual 1947*, 1, 255.

<sup>142</sup> Such statistics were tracked in the sporadic Dirección de Aerotécnica annual reports during the 1930s, see chapter six. The 1935 report proudly declared that they only employed one foreign contractor—Clodoveo Pascualini, the professor of aerodynamics from Italy—out of 764 workers. D.d. Aerotécnica, *Memoria 1935*, 2.

<sup>143</sup> See caption for figure 8.10. The German personnel were also not explicitly referenced in the *Alas Argentinas* pamphlet for a 1951 government exhibition which highlighted the Pulqui II, M.d. Aeronáutica, *Alas Argentinas*, n.p.

The factory expanded at such a pace that the arrival of the technicians did little to alter the proportion of native to foreign workers.<sup>144</sup> But the Pulqui project—the most prestigious and well-funded aircraft program of its time—was dominated by foreigners. Naturally the IA’s Argentine personnel were interested in participating in the cutting-edge project of national importance. Furthermore the new personnel were largely upper-level specialists, which blocked local technicians looking to rise to the factory’s highest ranks.<sup>145</sup>

Adding a relatively small group of experienced technicians might have at least stimulated the transfer of advanced knowledge to the much larger pool of Argentine workers across all of the IA’s departments and projects. But as Atropoulos persuasively argues, such a diffusion largely failed to materialize due to a combination of difficult personalities and working conditions. Evidently managing the native and foreign personnel of the IA was akin to herding cats for San Martín. Dewoitine did not get along with his Argentine team—his subordinates thought he was lazy and unmotivated. Tank apparently did not mix well with just about anyone, resulting in bad-blood among him, the Argentines, and even other Germans like the (more amiable) engineer Reimar Horten.<sup>146</sup> The Germans, for their part, grew frustrated over the difficult work environment in the factory, especially in comparison to the lavish facilities and funds they had known in Nazi Germany. Horten later described the “working conditions” during those years as “even more difficult than in Germany during the war.”<sup>147</sup>

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<sup>144</sup> Instituto Aerotécnico, *Labor desarrollada por el Instituto Aerotécnico. Años 1944-1947* (Córdoba: S.d. Aeronáutica, 1948), n.p.

<sup>145</sup> Atropoulos, *Tecnología e innovación*, 97.

<sup>146</sup> Reimar Horten (1915-1993) had his own aviation company in Germany and arrived in Argentina in late 1947. He appears the most sympathetic character among the German emigres. Unlike Tank, Horten learned Spanish quickly and enjoyed his time in Córdoba. He remained in the country after 1955, only returning to Germany from 1962 to 1964. His desire to remain and the fact that anti-Peronists did not boot him from the country (unlike some of his compatriots) is evidence of the good relationship built during this period. Horten’s contrasting experience reveals the importance of personality and personal conduct for such technology transfer projects. Atropoulos, *Tecnología e innovación*, 74-5; Halbritter, *Historia de la industria aeronáutica*, 335-6.

<sup>147</sup> Reported in Halbritter, *Historia de la industria aeronáutica*, 343.

The result was a lack of communication between native and foreign teams, which greatly undermined the transfer of advanced technology from Europe to Argentina. According to the former IA engineer Ricardo Olmedo, the “German group was very closed [off] and their work did not transfer to the rest of the factory.”<sup>148</sup> Argentine engineering personnel grew frustrated over the whole Pulqui II project, with some arguing that it “would have been preferable to work on more mature technologies and to advance on ‘firm ground.’”<sup>149</sup>

Despite all of these conflicts and frustrations, the I.Ae.33 Pulqui II gradually materialized from a drawing to a full-scale prototype from 1947 to 1950. On June 16, 1950, chief IA test pilot Edmundo Weiss flew the sleek, swept-wing prototype powered by a Rolls Royce Nene II for the first time. The airplane certainly looked the part, akin to the famous Soviet MiG-15 fighter, and it could reach a top speed of 1050 kph (650 mph).<sup>150</sup>

But as soon as the Pulqui II touched back down, new arguments ripped through the IA. Weiss felt the airplane needed significant aerodynamic changes. The prototype suffered from poor low-speed handling, a typical problem of swept-wing designs. When added to the risks of the T-tail configuration and an underpowered Rolls Royce turbojet, the airplane was ferociously unforgiving. The factory lacked a large-scale wind tunnel capable of transonic speeds, naturally exacerbating any aerodynamic kinks expected from such a revolutionary design. Weiss asked Horten—a renowned glider designer—to make the alterations. This move offended Tank, who dug in his heels and refused to amend the airplane. Three days later the German test pilot Otto Behrens collapsed the landing gear on a hard landing. Behrens backed Weiss, claiming the

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<sup>148</sup> Atropoulos, *Tecnología e innovación*, 97.

<sup>149</sup> *Ibid.*, 80.

<sup>150</sup> The Ta-183 concept was also acquired by the Soviets and used for the development of the MiG-15. Halbritter, *Historia de la industria aeronáutica*, 337.



Figure 8.10. Coverage of the first public demonstration of the aircraft in February 1951 in the Justicialista Party press. On top left, Perón is seen looking at the cockpit with Tank just visible to the left. The title reads: “Pulqui II: [The] speed of sound is a symbol of the progress of the nation.” The copy conspicuously emphasizes the custodianship of Juan and Eva but makes no mention of the German personnel beyond Tank in a separate caption. *Democracia*, February 15, 1951.

airplane was “brutish” and the most dangerous prototype he had ever flown. Tank blamed Behrens. After much infighting, Tank finally flew the airplane himself on October 23, 1950 and was nearly killed.<sup>151</sup> Upon landing he was apparently convinced that “I had built for the first time an airplane that could be lethally dangerous.”<sup>152</sup> Weiss wisely never again flew the Pulqui II. But

<sup>151</sup> Atropoulos, *Tecnología e innovación*, 58.

<sup>152</sup> Quotation in Arreguez, *Fábrica militar de aviones*, 102.

Behrens was not so lucky, dying in the third Pulqui II prototype after a low altitude stall on October 9, 1951.<sup>153</sup>

The German and Argentine team worked over the subsequent decade to improve the design, but it remained a dangerous aircraft. All but the fifth and final prototype crashed, with two lethal accidents—Behrens’ 1951 crash and another caused by a failed welding joint.<sup>154</sup> Officials tried to keep these massive setbacks from the public, presenting the project as evidence of the vibrancy of Perón’s “New Argentina.” A Pulqui II prototype made a dramatic public demonstration over Buenos Aires on February 8, 1951 with Tank at the controls. The airplane’s incredible speed and noise impressed the onlooking crowd. Tank taxied the airplane up to the presidential platform at Morón airport for the jet’s inaugural ceremony to be personally congratulated by Perón.<sup>155</sup>

Behind the official triumphalist façade lay a reality of atrophy. The I.Ae.33 Pulqui II never entered into serial production. The program limped on until the early 1960s, but most of its German designers and technicians left by 1955 in search of greener pastures in the US and West Germany. Even by the Pulqui’s first flight in 1950, the geopolitical rationale behind the fighter jet was dissipating. Perón increasingly positioned Argentina as a US partner in a hemispheric, anti-communist alliance. The importance of independent arms production declined, culminating in the FAA buying North American F-86 Sabres instead of Pulquis in 1956.<sup>156</sup> More consequentially, the domestic economic and political situation had swung from a period of prosperity to one of belt-tightening after 1948. This forced authorities to reformulate and

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<sup>153</sup> Halbritter, *Historia de la industria aeronáutica*, 339.

<sup>154</sup> *Ibid.*, 340. Captain Vedania Mannuwal was killed during a test flight on May 31, 1951 and there was a dispute once again over whether the accident was pilot error or a technical fault. Halbritter emphasizes the latter.

<sup>155</sup> See coverage in the Justicialista-newspaper *El Líder* from January 30-February 9, 1951.

<sup>156</sup> This was not just political retribution, since the Pulqui II project was soon revived again by anti-Peronist authorities. The Pulqui II was used in the Liberating Revolution’s propaganda, too. Halbritter, *Historia de la industria aeronáutica*, 341.



rationalize their aviation plans. Peronist officials no longer needed advanced jet fighters from their Córdoba factory. By 1952, authorities were instead asking the Instituto Aerotécnico to alleviate the broader bottlenecks in Perón's industrialization program.

This transition reveals the true "failure" of the Pulqui II program that even Peronist authorities themselves seem to have recognized by the early 1950s: the IA's aircraft projects had little to do with the state's broader development effort or even with the rest of the aviation community. The Pulqui program did result in an influx of advanced aeronautical knowledge, a limited amount of which trickled down to Argentine personnel. This probably happened more through German postings at educational institutions than by direct engagement at the IA.<sup>157</sup> But the Pulquis and other IA designs did little, if anything, to alleviate the Secretaría de Aeronáutica's consistent supply problems. None of the advanced prototypes built during the IA's "golden age"—from jet airplanes to flying wing gliders<sup>158</sup>—were of much use to Argentine pilots, institutions, and common people. They may have looked impressive on paper and on display, but few working pilots or their institutions had any desire to fly them, including the aviators of the FAA.<sup>159</sup>

The main benefit for Argentine industry for these projects was the dissemination of contracts and the establishment of technical standards for the production of their constituent parts. But these efforts, which had already been underway with the DL-22, could have been

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<sup>157</sup> Atropoulos, *Tecnología e innovación*, 106.

<sup>158</sup> For the sake of length, I will not discuss the other, advanced prototypes developed by the IA during this period. These included a series of flying-wing gliders designed by Reimar Horten. None of the cutting-edge projects resulted in production models. Halbritter, *Historia de la industria aeronáutica*, 335-352, 369.

<sup>159</sup> Most of these prototypes were only flown a handful of times. Horten's flying wing gliders either crashed or sat unused in gliding club hangars. San Martín's son in an interview with Atropoulos levelled the politically-motivated charge that FAA pilots "were never friends of the airplane factory. Why? Because it interested them more to go get an airplane in England or the United States. They passed a year of commission abroad, flying and collecting good travel expenses, and then they came back. It was different to go get an airplane at the Córdoba factory." Atropoulos, *Tecnología e innovación*, 78. This seems a scurrilous charge considering it was the airmen of the FAA that bore the lethal consequences of the IA's problematic designs and fabrication methods.

applied to more useful projects for the aviation community as a whole. The money, time, and effort might have been better spent on building an indigenous capacity to repair and resupply the state's extensive collection of airplanes from crop-dusters to interceptors to airliners. Instituto Aerotécnico reports do indicate significant production increases for replacement parts,<sup>160</sup> but these did little to alleviate the consistent shortages in the military, civilian sector, and even in their own factory. As we shall see, the economic crisis from 1949 to 1952 spawned a period of reform within the state aviation system. For the factory, this would bring dramatic changes.

### **The Execution of the First Five Year Plan and the Crisis of 1949-1952**

In 1947 the Secretaría de Aeronáutica set about the creation of the system outlined above. When the First Five Year Plan began, “Argentina was a party” in the words of the popular historian Félix Luna.<sup>161</sup> The state was flush with wartime foreign currency reserves and Argentine exports found hungry markets abroad. In the context of prosperity, Perón was able to keep all his allies happy with generous funding—to the point that despite all of the government's rhetoric, there was no effort to establish a clear strategy for industrialization with priorities for state money and effort.

Perón was an astute political operator who saw the end of his first term looming from the moment he took office. He had grand visions for reforming the Argentine economy, and these projects had to bear fruit quickly enough to boost his party at the ballot box. Perón, as his slogan “Perón *cumple*” [Perón fulfils] emphasized, preferred “doers” over “planners,” action over inaction. As a result, his leadership espoused planning, but did not have the patience for a

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<sup>160</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 118-120.

<sup>161</sup> Luna, *Perón y su tiempo*, 13.

gradual, step-by-step industrialization strategy.<sup>162</sup> As we shall see, this resulted in haphazard execution of the state's aviation plans, replete with delays and ballooning costs in materials and personnel. When the international economic situation shifted against Argentina in 1948, the government was still trying to get the First Five Year Plan off the ground. A painful period of crisis, austerity, and reform ensued.

When the Secretaría de Aeronáutica proposed its contribution to the First Five Year Plan, it was confronted with a vast array of challenges. Thousands of new skilled workers were needed for everything from construction to air traffic control, and the very set of institutions meant to feed this growth—technical education schools—also needed to be reformed and expanded. Some of these new jobs were quite sophisticated, requiring significant theoretical knowledge and practical experience that could take years to develop. In short, training these workers would take time. As we saw above, officials did recruit foreign personnel, but they remained a very small percentage—under 3 percent generally—of the workers in Argentine aviation.<sup>163</sup> Moreover, in the long term such workers could pose a problem once their Argentine replacements were ready.

Officials, as it turned out, were never able to achieve a balance between supply and demand for skilled workers in aviation. Shortages of pilots, mechanics, radio operators, airport personnel, and more persisted throughout the Peronist period.<sup>164</sup> Secretaría documentation attests to a consistent dearth of administrative personnel, especially those knowledgeable in industrial logistics. The execution of hundreds of construction projects and other Secretaría initiatives required an immense amount of organization, accounting, and paperwork. Secretaría staff had to

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<sup>162</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 48, 61; Sowter, "La planificación estatal," 73; Belini, *La industria peronista*, 25.

<sup>163</sup> According to the little available data. Frenkel, *Juan Ignacio San Martín*, 79; D.G.d. Aeronáutica Civil, *Memoria anual 1947*, 56.

<sup>164</sup> D.G.d. Aeronáutica Civil, *Memoria anual 1946*, 28; S.d. Aeronáutica, *Memoria anual 1947*, 1, 31, 191-2; S.d. Aeronáutica, *Memoria anual 1948*, 63, 160; Aero Club Neuquén, *Memoria y Balance, 13º Ejercicio, 1948*, 6; M.d. Aeronáutica, *Memoria anual 1951*, 66; M.d. Aeronáutica, *Memoria anual 1951*, 29.

physically place the orders for the hundreds of thousands of parts ordered from domestic and foreign suppliers annually, coordinate the activities of dozens of directorates, and—it seems most laboriously—keep track of all the money.<sup>165</sup>

Secretaría de Aeronáutica annual reports indicate yet another problem with the government's development plans: the skilled workers they trained often left state employment. Government salaries were evidently too low to retain many of the higher-level workers, especially what could be described as the technical administrators, the actual architects of the Secretariat's many projects. This tendency among the civilian employees irked their FAA superiors.<sup>166</sup>

The lack of such logistical personnel naturally aggravated the massive challenges of purchasing, shipping, and delivering the bewildering array of materials and machines needed for the complete renovation of Argentine aviation. Officials not only had to establish what they were going to procure, but they also had to navigate a complex postwar aviation supply network when its main purveyor, the US, was hesitant to deal with them. Secretaría documents attest to their struggles to acquire war surplus aircraft, engines, and parts, despite their successes with the British. The purchase of war surplus aircraft from a variety of nations, including Britain, Italy, Germany, and the United States, only added logistical complexity. Replacement parts, translated manuals, and maintenance tools had to be acquired and replenished on a regular basis. Technical administrators were thus forced to accommodate an ever larger quantity of tasks to maintain the Secretaría's existing capabilities, while also rapidly growing that capability.

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<sup>165</sup> Which, I must say, was an immensely difficult task considering the broader Peronist state's antipathy toward financial transparency and the frequent budget amendments over the course of a single fiscal year endured by the S.d. Aeronáutica.

<sup>166</sup> S.d. Aeronáutica, *Memoria anual 1947*, 191-2; S.d. Aeronáutica, *Memoria anual 1948*, 270.

New aircraft types added new infrastructural requirements. For example, the principal FAA bases had to build new hangars and maintenance facilities for the big, four-engine Avro Lincoln bombers imported in 1947.<sup>167</sup> Runways had to be lengthened and reinforced to handle the new generations of heavy piston and jet airliners. New international airport and air navigation regulations also occasionally forced authorities to renovate facilities completed only a couple of years before.<sup>168</sup> There were problems acquiring basic supplies to meet the greatly expanded government demand for building materials, fuel, lubricants, and more. The sheer quantity of materials flowing in from abroad overwhelmed port authorities in Buenos Aires, and soon dock warehouses were a panoply of machines, tools, and supplies idly awaiting transport to their final destinations.<sup>169</sup>

To make things worse, state industrial projects involved a byzantine web of overlapping jurisdictions and responsibilities among the Secretariat of Aeronautics, the Ministry of Public Works, the Ministry of War, and—later—the Ministry of Transportation. Infrastructure was divided between civilian state entities—like the airlines and DGAC—and military installations held by the FAA and the Navy, which were themselves divided across two ministries.<sup>170</sup> Initially the most troublesome instance of bureaucratic excess was the division of Buenos Aires' new airport projects between the Ministry of Public Works, in charge of Ezeiza, and the Secretaría de Aeronáutica, responsible for Aeroparque. But this puzzling situation worsened over time as upper-level officials shuffled around responsibilities. In 1948, the state airlines were moved under the Secretariat of Transportation, including their facilities.<sup>171</sup> As a result, by the 1950s a

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<sup>167</sup> S.d. Aeronáutica, *Memoria anual 1948*, 55.

<sup>168</sup> In the case of the major airports, new ICAO regulations forced authorities to update their infrastructure during the Second Five Year Plan, to be discussed shortly. Ghiretti, "La expansión de la infraestructura," 89.

<sup>169</sup> S.d. Aeronáutica, *Memoria anual 1947*, 2, 76, 108-111.

<sup>170</sup> Gustavo Marón, "La aviación naval y la doctrina de la bipolaridad," in *Los orígenes de Aerolíneas Argentinas: La posguerra y un modelo de país (1945-1955)*, 47-9 (Buenos Aires: Grupo Abierto Libros, 2020), 49.

<sup>171</sup> Potenze, *Aviación Comercial*, 28-34.

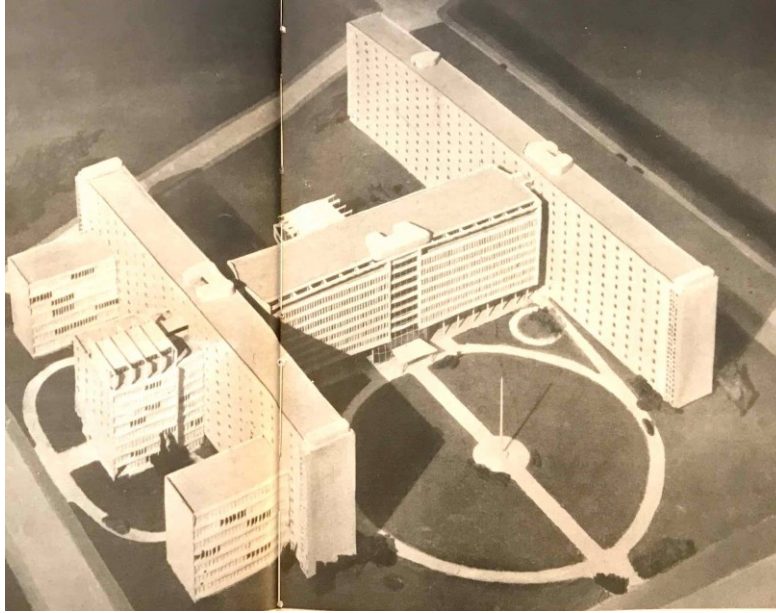


Figure 8.11. The plans for this lavish new administrative building for the Secretaría de Aeronáutica never came to fruition. S.d. Aeronáutica, *La Aeronáutica nacional*, 72-3.

single airport might have three to four national ministries and another provincial or municipal authority overseeing operations simultaneously.<sup>172</sup>

The significant logistical and technical obstacles encountered by Secretaría planners resulted in project delays and cost overruns. Secretaría annual reports in 1947 and 1948 show many infrastructural projects in stasis. They received budgetary allocations, but a lack of construction materials, tools, and/or personnel prevented their execution.<sup>173</sup> Thus during what turned out to be a narrow window of prosperity, some of the state's plans for new airport facilities, administrative buildings, and more could not be completed (see fig. 8.11).

While some projects struggled to get off the ground, others suffered deleterious cost overruns. It seems as if everything turned out to cost more than initially planned. There was a snowball effect, wherein one group of acquisitions would prompt a cascade of additional

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<sup>172</sup> Ghiretti, "La expansión de la infraestructura," 86

<sup>173</sup> S.d. Aeronáutica, *Memoria anual 1948*, 160-70.

expenses. Every initiative undertaken by the Secretaría required purchases. Its expanded offices needed new furniture, typewriters, file systems, etc. New personnel needed uniforms, tools, housing, healthcare, recreational facilities, and schools for their children.<sup>174</sup> Even the smallest objects could be expensive when purchased at the scale demanded by the First Five Year Plan. A thousand leather bags for air navigation personnel cost nearly 1.2 million pesos.<sup>175</sup>

This is to say nothing of the capital requirements demanded by the IA and the FAA to renovate their equipment and develop new airplanes. In just 1945—before the First Five Year Plan had been proposed—Secretaría officials allocated 41 million pesos for aircraft development, and a further 132 million pesos to purchase aircraft abroad.<sup>176</sup> Even in 1952, when the Pulqui II was languishing in accidents and unmet expectations, officials allocated over 20 million pesos for that project alone.<sup>177</sup>

The most painful financial blow of the entire aviation program came from the state-sponsored airlines. The Secretaría stipulated that its subsidies would cover all operating losses for the mixed public-private airlines created in 1945 and 1946. Aeroposta Argentina, ALFA, ZONDA, and FAMA all ran substantial deficits during their four year runs as separate airlines. The *sociedades mixtas* cost the state somewhere between 119 and 151 million pesos by 1950.<sup>178</sup> As we saw earlier, these airlines represented major concentrations of expensive skilled workers. But it was the cost of acquiring and maintaining commercial airliners that proved a massive

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<sup>174</sup> S.d. Aeronáutica, *Memoria anual 1947*, 2, 186-7; S.d. Aeronáutica, *Memoria anual 1948*, 265, 323.

<sup>175</sup> S.d. Aeronáutica, *Memoria anual 1948*, 265.

<sup>176</sup> Dirección General de Estadística Aeronáutica, *Memoria anual 1946* (N.p.: S.d. Aeronáutica, [1947?]), 212. Spending levels at the IA must have increased until 1948 considering the factory's activity, although the paucity of documentation from the factory makes any specific assessment impossible for the time being. S.d. Aeronáutica *memorias* are silent on the costs of aircraft development at the IA.

<sup>177</sup> M.d. Aeronáutica, *Memoria anual 1951*, 112.

<sup>178</sup> These are Potenze's estimates, Potenze, *Aviación Comercial*, 28. See also the government's more modest figures in M.d. Aeronáutica, *Aerolíneas Argentinas. Nacionalización y unificación* (Buenos Aires: Ministerio de Aeronáutica, 1950), 14.

burden for the state. Airlines, just like military air arms, were strongly pressured to keep their equipment up to date; for civilian operations, the competitive pressure came from well-funded foreign carriers like Pan-American World Airways, KLM, and Air France. Cheaper war surplus aircraft from Britain and prewar stocks of Ju-52s and DC-3s were rendered obsolete by the first postwar generation of airliners from US and European manufacturers. Aircraft such as the Douglas DC-6 and DC-7 were far more sophisticated and capable airplanes than their prewar ancestors and were thus far more expensive.<sup>179</sup> The Secretariat of Aeronautics agreed to replace the fleets of its airlines every five to seven years—which promised to be an ever more costly process.<sup>180</sup>

To cover the ballooning expenses, Secretaría officials were constantly shifting money between agencies and projects, and petitioning Perón for more. The financial documentation reveals a convoluted patchwork of spending bills, budget projections, and policy revisions on an annual basis. Such an environment naturally lent itself to official corruption. Robert Potash in his study of the Army notes evidence of corruption by purchasing agents, IAPI administrators, and Peronist officials.<sup>181</sup> Although anti-Peronist authorities in their 1956 investigation of the Peronist aviation industry found little cause to suspect financial malfeasance,<sup>182</sup> it seems probable that some individuals took advantage of the vast quantity of money flowing through state agencies and private contractors.

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<sup>179</sup> For reference, according to information available from Delta Airlines, the airline purchased 21-seat Douglas DC-3s in 1940 for around \$115,000. The DC-6, 56 passenger aircraft cost “nearly a million dollars” in 1948. Finally, the cost of a 69-seat DC-7 was \$1,750,000 in 1954. The jet age only intensified the race to the top. In the early 1960s, a first generation jet airliner would be on the order of \$5 million. See aircraft data on Delta Museum website: <https://www.deltamuseum.org/>.

<sup>180</sup> Potenze, *Aviación Comercial*, 28.

<sup>181</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 62.

<sup>182</sup> Marón, “Fin de Ciclo,” 459. The exception was the Ezeiza project, but this largely involved the Ministry of Public Works. Potenze, *La Aviación Comercial*, 29.



For all these challenges, Peronist aviation officials did manage to execute many of their plans. Every month, new skilled workers were graduating from technical programs. The initial logjam of imported materials gradually began to clear. The centerpieces of the Peronist infrastructure project—Aeroparque and Ezeiza—opened in 1947 and 1949, respectively. Domestic commercial airlines were transporting twice as many passengers in 1947 as 1943, a number that would triple by 1950.<sup>183</sup> Activity at the IA picked up as the Calquín bomber went into series production and the various projects like the Pulqui II got underway.<sup>184</sup> It seemed that given enough time, most of the Secretaría's ambitions could become a reality.

But the Argentine economic position rapidly deteriorated over the course of 1948. The main reason for the postwar Argentina's first "stop-and-go" recession was a crisis in the balance of international payments. The First Five Year Plan and other state purchases had largely drained the nation's reserves of foreign currency. As Raúl Prebisch famously articulated, the Argentine economy was experiencing a decline in its "terms of trade." The state was purchasing increasingly expensive industrial goods while depending on receipts from agricultural exports whose value was relatively low and inelastic.<sup>185</sup> The Peronist officials largely neglected the rural engine of their economy too. Dividends from agricultural exports sponsored industrial projects like the IA, but little money was reserved for improving agricultural output. The situation was worsened by the activities of the Truman administration. Although they ended formal sanctions in mid-1947, US officials blocked Argentine participation as a supplier in the Marshall Plan for continental Europe. Almost overnight, Argentina lost a major market for its key exports and

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<sup>183</sup> Piglia, "'Carry Our Colours'," 14.

<sup>184</sup> S.d. Aeronáutica, *La Aeronáutica nacional*, 119.

<sup>185</sup> Raúl Prebisch, *The Economic Development of Latin America and its Principal Problems* (New York: Economic Commission for Latin America, UN Department of Economic Affairs, 1950), 1-7.

prices for the remaining markets began to drop.<sup>186</sup> The recession would last until 1952, although the country continues to be buffeted by periodic and severe economic downturns to this day.

Ironically, some of this crisis was the result of Perón's successes; as Atropoulos put it, "the country was a victim of its own growth."<sup>187</sup> Hundreds of thousands of Argentines had seen a substantial boost to their living standards. The democratization of consumer culture strained the nation's balance of payments, especially as Argentines purchased expensive, imported consumer durables like cars and appliances. A similar progression occurred with the state's industrial policies. The expansion of national industry required more capital-intensive imports to create and sustain new technological systems and industrial processes. These forces combined to produce an economic emergency of such proportions that state officials had to quickly institute significant reforms.<sup>188</sup>

For the aviation community, the initial prescription was austerity. Military aviation felt the effects first. Total FAA flight hours dropped by 23 percent from 1947 to 1948. New aircraft procurements were largely ended and the existing fleet degraded due to a lack of replacement parts.<sup>189</sup> Civil flight hours began a slow but steady decline; by 1951 civilian pilots were flying fewer hours than in 1947.<sup>190</sup> Infrastructure projects sat unfinished and the ambitions at the Córdoba factory were greatly reduced.

The mixed-enterprise airlines were comprehensively overhauled once authorities recognized that their deficits were untenable. The aircraft and replacement parts demanded by the multiple operations were significant drains on foreign currency reserves. The four *sociedades*

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<sup>186</sup> Belini, *Historia de la industria*, 232-7, 247; Gambini, *La primera presidencia*, 141-2.

<sup>187</sup> Atropoulos, *Tecnología e innovación*, 67.

<sup>188</sup> Atropoulos, *Tecnología e innovación*, 67-8; Raccanello, "Industrias Aeronáuticas y Mecánicas del Estado," 188-90.

<sup>189</sup> M.d. Aeronáutica, *Memoria anual 1951*, 22. By 1953, only 253 of 705 FAA airplanes were still in service. M.d. Aeronáutica, *Memoria anual 1953*, 29-32.

<sup>190</sup> M.d. Aeronáutica, *Memoria anual 1951*, 22.

*mixtas* used aircraft from half a dozen countries and different technological generations. The practice of contracting out the maintenance of FAMA airplanes to foreign workshops at the airline's European and US destinations was costing precious dollars, pounds, francs, and Dutch guilders.<sup>191</sup>

In response to the economic crisis, Peronist officials fused the *sociiedades mixtas* into one airline fully-owned and -operated by the state: Aerolíneas Argentinas. Unlike its predecessors, the airline was granted a monopoly over cabotage routes. The reorganization was characterized as a badly-needed “rationalization” of air services in the *Revista Nacional de Aeronáutica*. Officials decided to offload much of its eclectic fleet and focus on Douglas and Convair aircraft to reduce the demands for foreign currency.<sup>192</sup> Despite such efforts, Aerolíneas Argentinas struggled with aircraft shortages, disruptions of service, and cost overruns as soon as the airline emerged from the reorganization process in 1951.<sup>193</sup>

Lastly, aero clubs suffered a particularly harsh reversal despite their small proportion of the Secretaría's overall budget. From 1946 to 1948 most of the aero clubs had expanded at breakneck speed, doubling or tripling in size, thanks to unprecedented state subsidies. They purchased new airplanes, hired instructors and mechanics, and built new facilities. Then suddenly—in what amounts to pulling the rug out from under someone running at full speed—the good times came to an end. Subsidies at the Aero Club Pampeano dropped by over 80 percent between 1948 and 1949. In 1950, the clubs were informed that the DGAC would no

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<sup>191</sup> Potenze, *La Aviación Comercial*, 85.

<sup>192</sup> “Aerolíneas Argentinas,” *Revista Nacional de Aeronáutica*, July 1950, 36-7.

<sup>193</sup> Potenze, *La Aviación Comercial*, 84-94.

longer pay for the maintenance of club aircraft or subsidize individual flight hours.<sup>194</sup> Some strategically located aero clubs managed to make up for some of this loss by charging for the use of their facilities. The Aero Club Neuquén, for example, had enough private traffic to generate most of its income by 1949.<sup>195</sup>

But smaller aero clubs without much private traffic were devastated by the policy changes, which invited a cascade of negative consequences. The documentation of the Aero Club Pampaneao reveals one such saga around a Piper aircraft the club used as an air ambulance. The airplane of unknown model had been acquired in the recent past with the help of state money and a bank loan. After about a year of use, the Piper experienced a cylinder-head failure in February 1947. As the part could not be purchased in Argentina, it had to be special ordered from the US, all the while the airplane sat idle at a Piper aircraft importer in Rosario. The process ended up taking until late 1949, with the repairs costing about a third of the initial purchase price of the airplane. The Aero Club Pampaneao had to pay for these repairs, as well as service their debt for the Piper, precisely when state subsidies were drying up. The members had to individually loan the aero club money to meet its payments, although a public raffle helped them recoup some of their losses. In the end, the club sold the airplane to a generous buyer in late 1950 or early 1951

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<sup>194</sup> They still received money after 1949, but it was a smaller lump sum without any tie to flight activity. Aero Club Pampeano, *Memoria y Balance, Ejercicio del 1° de Septiembre de 1948 al 31 de Agosto de 1949* (Santa Rosa, La Pampa: Aero Club Pampeano, [1949]), 12; Aero Club Pampeano, *Memoria y Balance, Ejercicio del 1° de Septiembre de 1949 al 31 de Agosto de 1950* (Santa Rosa, La Pampa: Aero Club Pampeano, [1950]), 11; Aero Club Pampeano, *Memoria y Balance, Ejercicio del 1° de Septiembre de 1950 al 31 de Agosto de 1951* (Santa Rosa, La Pampa: Aero Club Pampeano, [1951]), 9.

<sup>195</sup> Aero Club Neuquén, *Memoria y Balance, 14° Ejercicio, 1949* (Neuquén: Aero Club Neuquén, 1950), 21. In 1955, the AC Neuquén earned a whopping 89,992 pesos in “airport fees,” whereas state subsidies were a mere 2,534 pesos. Unfortunately, the annual reports do not detail what the fees were for or who paid them. Aero Club Neuquén, *Memoria y Balance, 20° Ejercicio, 1955* (Neuquén: Aero Club Neuquén, 1955), 11.

without ever again using it as an air ambulance.<sup>196</sup> Similar stories undoubtedly unfolded across the country as the aero clubs adjusted from a time of prosperity to one of austerity.

The worsening economic situation and its political responses generated new tensions within the state. As early as 1947, Perón had his first major disagreement with his aviation officials, in particular Secretary of Aeronautics Bartolomé de la Colina. As Potash chronicles, Peronist officials were considering inviting foreign investment to expand Yacimientos Petrolíferos Fiscales (YPF) production as it became clear that local capital would be insufficient. Perón, who was “far more pragmatic than his public rhetoric about economic independence,” found himself pitted against Army and FAA nationalists like de la Colina who instead argued for the expropriation of the remaining foreign oil operations on Argentine soil. De la Colina was evidently the most “vocal” proponent of expropriation.<sup>197</sup> Although the exact reasons are unknown, de la Colina would resign from his post as Secretary of Aeronautics a year later. The national government, in the end, did elect to solicit foreign investment after 1953 in order to revive the state’s industrialization program.<sup>198</sup>

Discontent in the armed forces was generally on the rise after 1949, driven by both Perón’s turn away from hardline nationalist policies and his growing authoritarianism. Perón was keenly aware of the dangers to his leadership and political “revolution.” He was constantly maneuvering to increase his power and ensure the longevity of his “New Argentina.” Perón’s many powerful opponents—especially the landed elite—threatened to unravel his “organized community” as soon as *el Conductor*’s term came to an end in 1951.

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<sup>196</sup> Aero Club Pampeano, *Memoria y Balance, Ejercicio del 1° de Septiembre de 1946 al 31 de Agosto de 1947*, 13-4; Aero Club Pampeano, *Memoria y Balance, Ejercicio del 1° de Septiembre de 1947 al 31 de Agosto de 1948*, 9-10; Aero Club Pampeano, *Memoria y Balance, Ejercicio del 1° de Septiembre de 1948 al 31 de Agosto de 1949*, 8; Aero Club Pampeano, *Memoria y Balance, Ejercicio del 1° de Septiembre de 1949 al 31 de Agosto de 1950*, 7-8; Aero Club Pampeano, *Memoria y Balance, Ejercicio del 1° de Septiembre de 1950 al 31 de Agosto de 1951*, 5.

<sup>197</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 72-5.

<sup>198</sup> Belini, *Historia de la industria*, 252.

His first move was to alter the constitution to allow for sequential terms, resulting in the Constitution of 1949.<sup>199</sup> Perón then intensified his suppression of opposition media, introduced new economic controls, and began a more concerted effort to “Peronize” public institutions. This final aspect fell particularly hard on the armed forces from 1949 onward.<sup>200</sup> Officers deemed politically reliable were promoted at the expense of others—an ironic repeat of Yrigoyen’s policies in the 1920s that generated discontent among Army officers and precipitated the 1930 coup d’état.

Sure enough, dissatisfaction among the three military branches produced a revolt in September 1951. Led by the perennial troublemaker General Benjamín Menéndez, FAA and naval aviators showered leaflets declaring a rebellion over major cities. The revolt quickly unraveled and most of the military pilots fled to Uruguay.<sup>201</sup> The affair spooked Perón, who relied on the military as a key anchor in his political alliance. The government announced a state of internal war, prompting new authoritarian measures. There was a wave of resignations and forced retirements in the FAA, Army, and Navy, which swept up then Minister of Aeronautics César Raúl Ojeda.<sup>202</sup> Despite the clear unease within the military, Perón largely continued to politicize their institutions. After 1952, the Peronist “national doctrine” was made a required subject in all military training programs.<sup>203</sup>

The recession of 1949 to 1952 also created an opportunity for the civilian opponents of the Peronist aviation program to flex their political muscle for the first time during Perón’s

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<sup>199</sup> See chapter seven for how aviation was used to promote the constitutional reform. The Constitution of 1949 also allowed for more “ministry” level agencies within the executive branch, which for our purposes led to the rebranding of the Secretaría de Aeronáutica as the Ministerio de Aeronáutica.

<sup>200</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 107.

<sup>201</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 128-134.

<sup>202</sup> According to Frenkel, Perón expressed confidence in Ojeda after the revolt, but Ojeda elected to resign anyway. Frenkel, *Juan Ignacio San Martín*, 83.

<sup>203</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 153-4; Atropoulos, *Tecnología e innovación*, 79.

tenure. Civilian dissent is difficult to find in the documentation of Peronist aviation due to the government's censorship. The radio network was brought under strict government control and the newspapers faced government retribution if their coverage was too critical of Perón. *La Prensa*, a frequent thorn in the side of nationalist Army/FAA officials, was shut down by authorities in 1951.<sup>204</sup>

Despite these authoritarian measures, small protests and critiques managed to find their way to the public—especially from the early years. For the most part, the civilian community pushed back against the military dominance of national aviation. In July 1946, the interwar civilian aviation journalist Josué Quesada conducted a radio interview with well-known interwar pilot and airline manager, Vicente Almandos Almonacid. The program, entitled “Aeronautical Consciousness in [our] country was the result of private effort,” detailed the flight community’s achievements without state subsidies. Josué’s brother Julio published a booklet the following year which highlighted the roles of civilians like Jorge Newbery and Aarón de Anchorena in the beginning of Argentine aviation.<sup>205</sup> Newspapers also occasionally editorialized against specific state policies—such as *La Prensa*’s critique of the state’s airline plans in 1946—although such coverage tended to be cautious.<sup>206</sup>

Civilians finally weakened the military control of aviation when they managed to wrestle the management of commercial air services away from the Secretaría de Aeronáutica. As the deficits mounted, civilian officials and lobbyists convinced the leadership that airlines, as

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<sup>204</sup> Peronist censorship had its roots in the GOU regime from 1943 to 1946. Authorities harassed and/or closed leftist and conservative newspapers that did not fall in with first the “June Revolution” and later the Peronist movement. Even one-time allies such as labor union officials could find themselves facing state retribution if they fell on the wrong side of *el Conductor*. This authoritarian behavior would only intensify over time. Romero and Brennan, *A History of Argentina*, 92, 108-9, 124-7.

<sup>205</sup> “La Conciencia Aeronáutica en el país fue el resultado del esfuerzo privado,” *Radio Excelsior, Diálogos de Sobremesa*, July 18, 1946. Transcript held in box 9, folder 5, COR, BNA; Julio A. Quesada, *Los verdaderos fundadores de la aeronáutica argentina* (Buenos Aires, 1947).

<sup>206</sup> See coverage in *La Prensa*, January 6, 1946.

commercial enterprises, should not be managed by military men. Military control would only bring inefficiencies and a disconnect from civilian needs—the main customers.<sup>207</sup> Such arguments were in the same vein as *La Prensa*'s 1949 critique of the Peronist “political economy” which involved an “official commitment [to] ‘produce expensively what can be acquired cheaply.’”<sup>208</sup> In 1948, the *sociedades mixtas* were moved under the Secretaría de Transportes, which was evidently under civilian control. When Aerolíneas Argentinas was formed in 1950, it remained under the then-Ministerio de Transportes.

This major concession aside, the civilian community remained beholden to FAA officials throughout the Peronist period. This would only grow more painful as the state reformulated its economic and political strategies for a new industrialization effort in 1952. The aviation community would largely find itself sidelined for the Peronist state's final act, the Second Five Year Plan.

### **The Second Five Year Plan and the Final Years of Peronist Aviation, 1952-1955**

The national government during Perón's first term from 1946 to 1951, for all its shortcomings, represented the fulfillment of many of the military aviation community's aspirations. The state had deemed air services as a societal necessity and a basic responsibility of government. Official pronouncements around state aviation featured much of the language deployed by interwar aviation boosters. Cabotage service would in the official estimation facilitate the growth of commerce and industry outside of Buenos Aires. New provincial institutions and infrastructure would create jobs. As one editorial in the *Revista Nacional de*

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<sup>207</sup> Marón, “Fin de Ciclo,” 443.

<sup>208</sup> Similar criticisms were levelled against FMA officials in the 1930s, see chapter six. *La Prensa*, quotation from Belini, *Historia de la industria*, 277.



*Aeronáutica* succinctly declared in October 1951, “Nations with large [air] merchant fleets and numerous internal communications are rich nations.”<sup>209</sup>

These long-held presuppositions, most espoused by Army aviation boosters and then their FAA successors, finally ran out of steam after 1951. Peronist officials turned away from harnessing aviation as a method of fostering development. When times were good, the Argentine state was more than willing to invest in aviation to create new and better jobs, build national technical capabilities, provide political propaganda, and ensure national defense. But when authorities had to make choices among different paths to industrialization—the key ingredient of Perón’s plan to make a more prosperous and independent Argentina—the aviation community found itself relegated to a minor role. The rhetoric of military aviation boosters and their civilian allies became more measured, even to the point of admitting that flight technology was a burdensome activity for the economy.

This shift largely occurred during Perón’s second presidential term from 1952 until his ousting in the so-called “Liberating Revolution” in September 1955. Although he easily won reelection in November 1951, the national political situation remained highly volatile. The 1951 military revolt had intensified the climate of suspicion and repression. Eva’s death in July 1952 was another blow to Justicialista Party morale. The following year saw an anti-Peronist terror bombing campaign and an eruption of street violence at the hands of Peronist “youths.” Perón, characteristically seeking to control but defuse the national tension, called for a period of

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<sup>209</sup> “La Aviación Civil, Símbolo de Riqueza,” *Revista Nacional de Aeronáutica*, October 1951, 13. For examples of this rhetoric from the time, see “Al margen de la exposición aeronáutica de Farnborough,” *Revista Nacional de Aeronáutica*, October 1948; “Contribución de la Aeronáutica al Progreso de la Patagonia,” *Revista Nacional de Aeronáutica*, April 1950, 5.

national peace in 1953 while the state carried out its latest plans to restructure and industrialize the Argentine economy.<sup>210</sup>

The Second Five Year Plan [Segundo Plan Quinquenal] materialized over 1952 before its formal codification and launch on January 1, 1953. The economy and international situation had recently improved, giving Perón the opportunity to push for a new round of state investment in the economy. This bout of state spending, 33.5 billion pesos from 1953 to 1957,<sup>211</sup> was a far more pragmatic and thoughtful program than its 1947 predecessor—a reflection of the state’s maturing technical capabilities and the recent economic crisis. Unlike the First Five Year Plan, the second established priorities for state investment and strategies for removing the bottlenecks in Argentine industry. Its purpose in official documentation was to “fortify” the achievements of the first plan, namely the expansion of basic industry and improvement to working people’s standard of living.<sup>212</sup> This would be accomplished through a state emphasis not on growth but economic equilibrium, efficiency, and coordination.<sup>213</sup>

Officials turned their focus away from expanding existent light industry to the creation of heavy industry—the large-scale production of metals, chemicals, and the equipment to make durable goods like automobiles or airplanes. Peronist officials aspired to transition from what Belini calls the “easy stage” of industrialization—manufacturing non-durables—to the “complex phase...starring more technologically sophisticated industries that produce basic inputs, durable consumer goods and machinery.”<sup>214</sup> Investing in heavy industry was seen as a solution to the nation’s declining terms of trade and shortage of foreign currency. But the creation of new

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<sup>210</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 153-4.

<sup>211</sup> See “Distribución de las realizaciones,” in Poder Ejecutivo de la Nación, *2º Plan Quinquenal. V Planes Militares, Planes Complementarios* ([Buenos Aires]: [P.E.d.I.N.], 1953), XXX.E.4.

<sup>212</sup> See, for example, “La Aeronáutica en la Difusión del 2º Plan Quinquenal,” *Revista Nacional de Aeronáutica*, August 1953, 46.

<sup>213</sup> Sowter, “La planificación estatal,” 83; Belini, *Historia de la industria*, 247.

<sup>214</sup> Belini, *Historia de la industria*, 254.

foundries and plants required a massive amount of capital to acquire the sophisticated and often scarce equipment.<sup>215</sup> Military authorities had aspired to develop a local metallurgical sector since World War I, but the funding for such capital intensive operations or the needed equipment from abroad largely failed to materialize until the 1950s.<sup>216</sup> While the domestic economic situation had improved by 1952, Peronist authorities were still forced to solicit foreign investment the following year—a surefire way to generate nationalist discontent among Perón’s allies. The turn to foreign money was all the more necessary since officials wanted to be more cautious in their exploitation of the agricultural sector.<sup>217</sup>

In a striking reversal, Peronist officials turned to the aviation industry to help realize the Second Five Year Plan. They asked not for new airplanes but motor vehicles for civilian use. The rise in wages had generated a rapid growth in the local demand for cars, trucks, and motorcycles. Such vehicles had to be imported and they now represented a massive drain on the nation’s foreign currency reserves. In 1951, Argentine officials had petitioned for foreign car manufacturers to open local plants—not mere assembly plants but fully production lines—to reduce this trade imbalance. But the car companies refused, citing the underdevelopment of the industrial sector.<sup>218</sup>

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<sup>215</sup> Belini, *Historia de la industria*, 257-71.

<sup>216</sup> For the steel industry and the state during this period, see Belini, “La Dirección General de Fabricaciones Militares,” 57-82; Patricia Jerez, “Treinta años en la evolución de la industria siderúrgica argentina: 1947-1976. Una cuestión de oferta y de demanda,” in *Estudios sobre la industria argentina 1*, ed. Marcelo Rougier, 121-144 (Carapachay: Lenguaje claro Editora, 2014).

<sup>217</sup> Officials also did not want to dampen consumption to stimulate domestic saving. Belini argues that the long-held historiographical idea of a “*cambio de rumbo*” [change of course] in Peronist policy during his second term—wherein Perón retreated from his industrialization plans and turned to fostering the agricultural sector—has been overstated. Belini, *Historia de la industria*, 246-52; Belini, *La industria peronista*, 27.

<sup>218</sup> Raccanello, “Industrias Aeronáuticas y Mecánicas del Estado,” 190;

According to Frenkel, San Martín had been present at these meetings and subsequently told Perón “Sir, if you allow me, I will manufacture cars for you in the country.”<sup>219</sup> The Army and Navy were uninterested in devoting their modest industrial operations to automobile manufacture.<sup>220</sup> The Ministerio de Aeronáutica had the most significant industrial complex under full state control, involving more than 5,000 employees, dozens of experienced engineers, materials laboratories, an extensive network of private contractors, and a significant concentration of modern equipment for industrial fabrication. Realistically, the aviation industry in Córdoba was the only national resource that officials could immediately deploy to alleviate their economic woes. Any other strategy would have likely taken far longer and been more vulnerable to disruption. Nevertheless the shift in production in Córdoba was improvisational; it was not the original intension of aviation or Peronist officials for the IA—the epicenter of the nation’s military industry—to become a manufacturer of consumer goods.<sup>221</sup>

San Martín’s evidently enthusiastic proposal to take on automotive production represents the maturation of a nationalist devotion to military-driven development. Officials since de Arteaga and de la Colina in the late 1920s had aspired to transform Córdoba into the industrial heart of the Argentine interior. These men had believed that the Army should create an aviation factory to generate this industrialization—in effect, that aviation technology, more than the other mechanized weapons or vehicles, would be particularly useful for developing the Argentine economy. Indeed, through such activity, the FMA and then IA evolved into the nation’s premier center of technological expertise, experimentation, and regulation.

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<sup>219</sup> “Señor, si usted me permite, yo le voy a fabricar automóviles en el país.” Frenkel learned this story from another official of this period, Ferro Sessarego, in 1985. Frenkel, *Juan Ignacio San Martín*, 97.

<sup>220</sup> Mario Raccanello and Marcelo Rougier, “Tractores y mitos del Estado empresario peronista,” in *Estudios sobre la industria argentina I*, ed. Marcelo Rougier, 145-198 (Carapachay: Lenguaje claro Editora, 2014), 155.

<sup>221</sup> Raccanello, “Industrias Aeronáuticas y Mecánicas del Estado,” 213.

The shift to automobile production was thus a logical if awkward step for San Martín and his allies—it was an outgrowth of the IA’s technical competence, while also undermining long-held beliefs in the power of aviation technology in particular. The eventual result was a significant expansion of military-directed import-substitution industrialization schemes in the 1960s and 1970s. These efforts were far more focused on the basic sectors of heavy industry than building airplanes, the reverse of conditions during the interwar period.<sup>222</sup>

Perón accepted his friend’s proposal to build motor vehicles, and with decree 6.191 on March 28, 1952, the IA was transformed into Industrias Aeronáuticas y Mecánicas del Estado [State Aeronautical and Mechanical Industries](IAME). From 1953 to 1955, the Banco Industrial de la Nación invested nearly 600 million pesos in new production lines for cars, trucks, and motorcycles. The first prototypes, the “Institec” two-door sedan and the “Justicialista” and “Justicialista Rural” pick-up trucks, were displayed at the festivities for the Día del Trabajador [Day of the Worker] on May 1, 1952.<sup>223</sup> The factory was also slated to produce tractors to help improve agricultural production without increasing imports.<sup>224</sup> Ambrosio de Taravella was the project lead to develop a V-8 engine. Officials allocated 60 million pesos of credit for IAME to import the needed machine tools and equipment just for the manufacture of such engines.<sup>225</sup>

Although these prototypes performed well-enough for the state’s purposes, the serial production of cars, trucks, and motorcycles followed an all too familiar trajectory. The prototypes were completed quickly, but it took two years to build the factory lines for large-scale

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<sup>222</sup> See Conclusion.

<sup>223</sup> Raccanello, “Industrias Aeronáuticas y Mecánicas del Estado,” 191-7. For the history of IAME’s automobile production, in addition to Raccanello, see Juan Facundo Picabea and Hernán Tomas, *Autonomía tecnológica y Desarrollo nacional: historia del diseño y producción del rastrojero y la moto puma* (Buenos Aires: Atuel, 2015); Feder, *Un siglo de autos*, 175-99.

<sup>224</sup> For the history of tractor production at IAME, see Raccanello and Rougier, “Tractores y mitos.”

<sup>225</sup> The V-8 project is the only aspect of the Peronist years that Taravella discusses at length. Taravella, *Setenta años*, 114-9.

automobile production. IAME swelled to the largest size in the long history of the Córdoba factory—nearly 10,000 workers in 1953, most of whom were metal fabricators and mechanics. Belini notes that the following year, the IAME’s workers represented half of all the people employed in the “vehicles and machining sector” nationwide.<sup>226</sup> The network of private contractors was expanded from just over 100 in 1952 to 320 by 1955.<sup>227</sup> A commission of engineers from the US automaker Kaiser Motors visited Córdoba in 1954 and found much to praise with the technical capabilities of the Argentine personnel. But they also noted “a deficient internal organization of the plant.”<sup>228</sup> Few processes were automated and workers lacked important fabrication tools for churning out vehicles *en masse*. Indeed, according to Mario Raccanello serial production never reached “Fordist levels.”<sup>229</sup> In the end, Peronist officials quickly floated the idea of privatizing the automotive sections of IAME as early as May 1953, which is revealing of the Peronist state’s reluctance to engage in the direct management of industry. The eventual sale of many IAME assets to FIAT and Kaiser Motors caused a ripple of nationalist outrage and was later condemned by anti-Peronist authorities after 1955.<sup>230</sup>

Paradoxically, the shift to automotive production saw the factory in Córdoba reach its greatest size, while also signaling the marginalization of aviation technology as a key facet of the state’s industrialization strategy. The vast majority of the factory’s resources were dedicated to its new mission. Whereas the First Five Year Plan saw the completion of 212 aircraft, a mere nine airplanes were built from 1952 to 1955—fewer than during the FMA’s worst period in the late 1930s.<sup>231</sup>

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<sup>226</sup> Belini, *Historia de la industria*, 251.

<sup>227</sup> Raccanello, “Industrias Aeronáuticas y Mecánicas del Estado,” 197.

<sup>228</sup> Belini, *Historia de la industria*, 264.

<sup>229</sup> Raccanello, “Industrias Aeronáuticas y Mecánicas del Estado,” 193.

<sup>230</sup> For the sale of the automotive plant, see Angueira and Angueira, *Capitalismo de Estado*, 81-99; for the sale of the tractor plant, see Raccanello and Rougier, “Tractores y mitos,” 165-177.

<sup>231</sup> Raccanello, “Industrias Aeronáuticas y Mecánicas del Estado,” 212.

IAME's aeronautical departments maintained a façade of activity. On September 7, 1953, Perón personally announced eight new airplane projects, collectively dubbed the "Justicialistas del Aire," at the IAME facilities in front of dozens of high-level provincial and national officials. He used the inaugural presentation of one of those models, a twin-piston light transport aircraft designated the IA 35, as an opportunity to reiterate his grand visions for IAME and Córdoba. Perón declared the city the "ideal" place for the nation's industrial development, and that it would soon be the "heart of the Republic."<sup>232</sup> In front of the IA 35 prototype, the president reiterated his fundamental promise: "We have raised the 'standard' of living of our people considerably, but...it is necessary for our people to progress even more, twice as much as their 'standard' of living has [so far] improved." According to Perón, such "happiness" and "tranquility" could come about by "only one way: working."<sup>233</sup> The new round of aircraft production was thus an essential component of how the Second Five Year Plan was sold to the people of Córdoba and Perón's broader constituency.

Of the eight proposed airplanes, the only successful prototype was the IA 35 itself, which had actually begun development in 1950 and just happened to be completed in time for Perón's September 1953 announcement. Despite the IA 35's solid flight characteristics and reliability, the aircraft fabrication shops of IAME were far too undermanned and underfunded to initiate

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<sup>232</sup> "Una intensa actividad desplegó en Córdoba en el presidente de la Nación," *La Nación*, September 8, 1953.

<sup>233</sup> "Nosotros hemos elevado el 'standard' de vida de nuestro pueblo considerablemente, pero...es necesario que nuestro pueblo mejore más todavía, el doble de lo que ha mejorado su 'standard' de vida. Pero el 'standard' de vida de los pueblos se levanta de una sola manera: trabajando...Ni a los pueblos ni a las naciones nadie les regala nada. El límite de su progreso, el límite de su tranquilidad y de su felicidad está fijado, por su esfuerzo y por su sacrificio." "Una intensa actividad," *La Nación*, September 8, 1953. While *La Nación* had the most extensive—yet measured—coverage of the day's events, the coverage in *El Laborista* for a more enthusiastic reception of the state's plans in Córdoba. "Córdoba será en el futuro el gran centro industrial argentino, afirmó Perón," *El Laborista*, September 8, 1953.

series production.<sup>234</sup> Those workers still assigned to aviation work, especially the foreign personnel such as Kurt Tank and his team, grew frustrated with the change in the factory's direction, precipitating the "atomization and disintegration of the design groups" created by the First Five Year Plan.<sup>235</sup>

Defensive editorials in the *Revista Nacional de Aeronáutica* attest to the discontent in the FAA and aviation community at seeing the jewel of the Argentine aviation industry diverted to produce cars.<sup>236</sup> The editorial in May 1952 was revelatory of the awkward position IAME's proponents found themselves in. The author declared that state aviation's "generous and disinterested" contribution to the Second Five Year Plan would be the "temporary ceding of part of its technical-industrial capability to satisfy" the economic needs of the nation.<sup>237</sup> But the editorial's final lines betrayed the basic understanding of how aviation related to development. It promised that aviation would see its investments recouped "when the time comes to receive the benefits that the development of the Economic Plan will bring." "In effect, aerial activity is irremediably onerous," it concludes, "and its development is subject in direct proportion to the economic possibilities of the country. The increase of [the latter] will result in the increase of [the former]." Improving the country's economic prosperity, the "general wellbeing," will help the Argentine "*poder aéreo*" [air power] realize its full potential.<sup>238</sup> The orthodoxy that aeronautical technology would drive development was now inverted—perhaps permanently.

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<sup>234</sup> The IA 35 would finally enter series production in the late 1950s and early 1960s. Halbritter, *Historia de la industria aeronáutica*, 345-8.

<sup>235</sup> Atropoulos, *Tecnología e innovación*, 73.

<sup>236</sup> "Política Aeronáutica," *Revista Nacional de Aeronáutica*, March 1952, 5.

<sup>237</sup> "Una buena inversión," *Revista Nacional de Aeronáutica*, May 1952, 9.

<sup>238</sup> "...cuando llegue el momento de percibir los beneficios que el desarrollo del Plan Económico ha de reportar, tendremos el derecho y la satisfacción de recuperar el capital invertido, aumentado por los intereses devengados. En efecto, la actividad aérea es irremisiblemente onerosa y su desarrollo está supeditado en directa proporción, a las posibilidades económicas del país. El incremento de éstas se traducirá en el incremento de aquélla." "Una buena inversión," 9.



The situation for the flight community beyond IAME only deepened the malaise within late Peronist aviation. Initially, the Second Five Year Plan suggested a revival of national aviation. Funding levels for infrastructure, aero clubs, air services, and other critical institutions increased. Officials pledged to purchase ten new airliners for Aerolíneas Argentinas, which was desperate for updated machines.<sup>239</sup> The aero clubs—also aching for replacement aircraft and funds to match the glory days from 1946 to 1948—were injected with a bit of life. The Ministerio de Aeronáutica announced a new campaign for civil aviation in 1954 entitled “*El Avión, Herramienta de Trabajo*” [The Airplane, Tool for Work]. The program issued new light aircraft to the aero clubs and created incentives for private pilots and clubs to use their airplanes for economic purposes.<sup>240</sup> But in both cases, the funds did not match earlier levels and the needed airplanes failed to materialize in the promised numbers.<sup>241</sup> Aerolíneas Argentinas—for its part—remained mired in deficits and scandal as official attempts at restructuring bore few fruits.<sup>242</sup>

National infrastructure was not faring much better. Although authorities aimed to complete the provincial airport network by 1957, the increased budgets—in the estimation of Guido Ghiretti—only barely matched inflation.<sup>243</sup> Ministerio de Aeronáutica documentation from 1953 had worrying signs for the health of existing infrastructure too. While the spending on

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<sup>239</sup> Potenze, *Aviación Comercial*, 93.

<sup>240</sup> “El Avión, Herramienta de Trabajo,” *Revista Nacional de Aeronáutica*, May 1954, 9; “Aeroclubes: Necesidad de Una Nueva Orientación,” *Revista Nacional de Aeronáutica*, 75.

<sup>241</sup> “Aeroclubes: Necesidad de una Nueva Orientación,” 75; Potenze, *Aviación Comercial*, 93.

<sup>242</sup> Gustavo Marón is much harsher in his appraisal of AA in these years: “Aerolíneas Argentinas was born with a deficit, a ship-island that could never be sunk because it would always be... rescued from its terrible administration by the always generous arm of the National State.” Marón, “Fin de Cielo,” 445.

<sup>243</sup> Some of that money had to go to revising existing infrastructure to meet new ICAO standards too. Ghiretti, “La expansión de la infraestructura,” 89-92.

building construction grew by 16 million pesos, or 431 percent from 1952, the allocations for maintenance were less than a third of the previous year.<sup>244</sup>

The last—and perhaps most neglected—sector of the aviation community was ironically the Fuerza Aérea Argentina. The foreign aircraft purchased from 1946 to 1948 were obsolete by 1953. Officials were having trouble acquiring replacement parts from abroad as some of the airplanes' original manufacturers shut down production lines. Although the US opened its doors to Argentine purchases in 1947, the outbreak of the Korean War in 1950 caused an international shortage of military aircraft, parts, and equipment.<sup>245</sup> Finally, the IA and its successor IAME failed to produce the planned replacement aircraft or parts. The Pulqui II, for example, had been intended to replace the Gloster Meteors.<sup>246</sup> As a result, by 1953 only 235 of the FAA's 705 airplanes were in service.<sup>247</sup> The *Revista Nacional de Aeronáutica*—in the hands of anti-Peronist authorities—claimed in December 1955 that “some military observers have compared the current situation of the Fuerza Aérea Argentina to that which characterized the Luftwaffe after the Second World War.”<sup>248</sup>

As if these systemic problems were not enough, the final period from 1952 to 1955 saw the worst excesses of Perón's authoritarianism and cult of personality. In a period when most aero clubs still found themselves in austerity conditions, the DGAC paid for a squadron of Boyero aircraft to visit all 93 clubs in 1953, with each receiving a banner for the Second Five Year Plan and, of course, a framed photograph of Perón.<sup>249</sup> A huge aero club meet at the San

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<sup>244</sup> M.d. Aeronáutica, *Memoria anual 1953*, 102-4.

<sup>245</sup> M.d. Aeronáutica, *Memoria anual 1951*, 146; M.d. Aeronáutica, *Memoria anual 1953*, 76.

<sup>246</sup> Atropoulos, *Tecnología e innovaciones*, 22.

<sup>247</sup> M.d. Aeronáutica, *Memoria anual 1953*, 29.

<sup>248</sup> “Comentarios aeronáuticos: Material para la Fuerza Aérea Argentina,” *Revista Nacional de Aeronáutica*, December 1955, 16.

<sup>249</sup> M.d. Aeronáutica, *Memoria anual 1953*, 34.

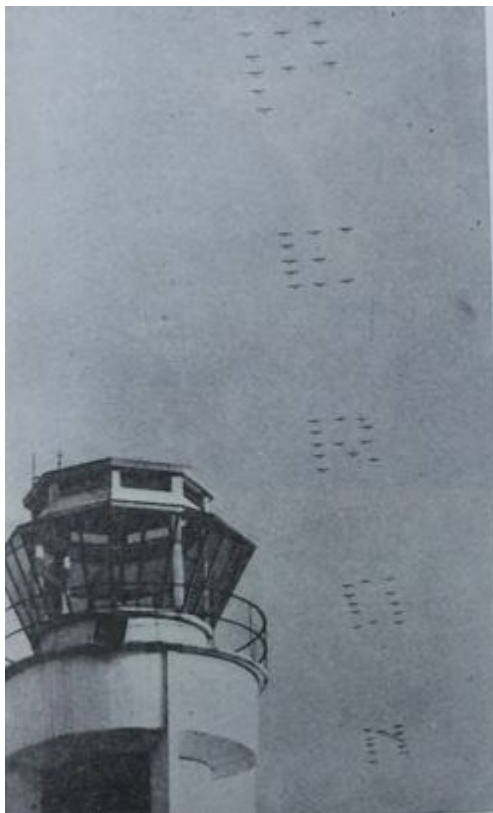


Figure 8.12. Fifty-seven aero club airplanes spell out “Perón” in the sky.  
“La Aviación Civil en el Homenaje del Deporte,” *Revista Nacional de Aeronáutica*, May 1954, 29.

Justo airfield just outside Buenos Aires was organized to spell out Perón’s name with fifty-seven airplanes in a formation flight (see fig. 8.12). That same year, the DGAC also created a new air race between the renamed provinces of “Presidente Perón” (Chaco) and “Eva Perón” (La Pampa).<sup>250</sup> Finally, Ministerio de Aeronáutica officials decided to “intervene” in the Aero Club Argentino and the Centro Universitario de Aviación—the most important clubs in Buenos Aires—as they were evidently not meeting the state’s expectations. FAA officers were put in charge of both institutions for “the benefit of the associates.”<sup>251</sup>

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<sup>250</sup> “Un Abrazo Simbólico con las Nuevas Provincias Presidente Perón y Eva Perón,” *Revista Nacional de Aeronáutica*, July 1953, 42.

<sup>251</sup> “Aeronoticias,” *Revista Nacional de Aeronáutica*, June 1953, 10; “La Dirección General de Aviación Civil y los Aeroclubes,” *Revista Nacional de Aeronáutica*, July 1953, 38-9.

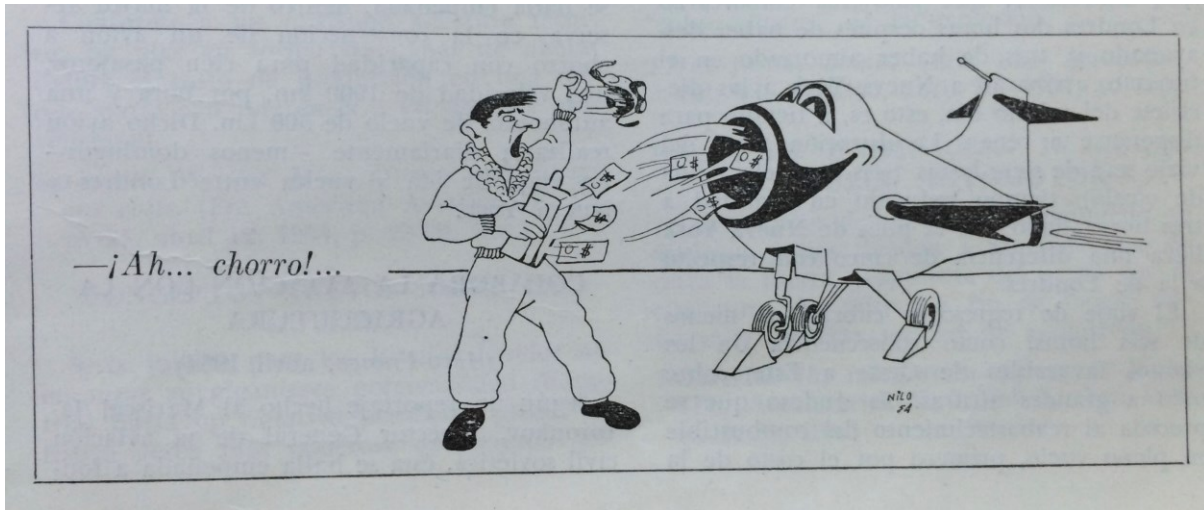


Figure 8.13. A Pulqui II vacuums up money as the pilot exclaims: “Ah... jet!” *Revista Nacional de Aeronáutica*, August 1954, 75.

The cumulative effect of all these failures and excesses was to open a gulf of discontent that was even evident within the state’s own media. In 1954, criticisms of state policies began to appear in the *Revista Nacional de Aeronáutica*. Commentators bemoaned the neglect of civilian, commercial, and military aviation.<sup>252</sup> One cartoon in August showed the Pulqui II happily sucking up money from a hapless pilot (see fig. 8.13). By 1955, the official magazine’s civilian aviation commentator, Robert A. Quiroga, felt comfortable blaming the “virtual disappearance” of civilian flying on the Ministerio de Aeronáutica’s “dominant mentality.”<sup>253</sup> The lack of replacement parts and airplanes for private flying was his biggest complaint. Ministry officials tried to mollify their critics with a softer approach in late 1952, and a rhetorical pivot to

<sup>252</sup> “El Avión en los Presupuestos,” *Revista Nacional de Aeronáutica*, September 1954, 33; “Nuestra Política de Importaciones,” *Revista Nacional de Aeronáutica*, October 1954, 16; “Comentarios aeronáuticos: Siempre en Atraso,” *Revista Nacional de Aeronáutica*, April 1955, 14.

<sup>253</sup> Robert A. Quiroga, “En Torno a la Aviación Privada,” *Revista Nacional de Aeronáutica*, April 1955, 55.

emphasizing private flying in 1954.<sup>254</sup> But such appeals fell on deaf ears after years of neglect and military dominance.

The disgruntlement in the aviation community mirrored the tensions in broader society that rapidly eroded Perón's political position in 1955. In the narrative of Perón's ousting in the September 1955 "Liberating Revolution," historians of modern Argentina point to a number of crises in the national political scene. The most significant conflict was *El Conductor's* sudden turn against his long-term ally, the Catholic Church. The Peronist movement and Catholic Church's newfound antagonism helped to unify the many disparate opponents to Perón's government.<sup>255</sup>

Tensions finally exploded into tragic violence on June 19, 1955 when the Navy launched a failed rebellion. The third branch of the Argentine armed forces had strong attachments to the elite rungs of Argentine society and were generally uninterested—if not hostile—to the populist politics of Perón or his Army/FAA allies.<sup>256</sup> Naval and FAA aviators, in their efforts to attack the Casa Rosada, bombed and strafed a crowd of gathered Peronist supporters outside the executive mansion. Although Perón managed to retain power for a few more months, a brief *détente* and attempts to reorganize his political coalition failed.<sup>257</sup>

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<sup>254</sup> Officials began to signal a reproachment with civilians in late 1952. A new umbrella organization was created for the aero clubs, the Federación Argentina de Aeroclubes. "La Creación de la F.A.D.A.," *Revista Nacional de Aeronáutica*, November 1942, 41. For other overtures to the civil aviation community and reforms, see "Noticias," *Revista Nacional de Aeronáutica*, April 1953; "Hacia un porvenir mayor," *Revista Nacional de Aeronáutica*, August 1953, 9; "Las Provincias en el Desarrollo de la Aviación Civil," *Revista Nacional de Aeronáutica*, December 1954, 69; "Nueva Estructura de la Aviación Civil," *Revista Nacional de Aeronáutica*, March 1955, 55.

<sup>255</sup> Romero and Brennan, *A History of Argentina*, 127-30.

<sup>256</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 182.

<sup>257</sup> There are some discrepancies between Potash, and Romero and Brennan, on their account of the June 16 revolt. Potash claimed far more dead and the involvement of the FAA. Romero and Brennan give the figure of 300 killed and place the responsibility for the rebellion squarely on the Navy. Potash, *The Army & Politics in Argentina, 1945-1962*, 189; Romero and Brennan, *A History of Argentina*, 129.

On September 16, 1955, a more powerful military rebellion commenced that successfully ejected Perón from office. Led by Army General Eduardo Lonardi, all three branches of the armed services participated. Two unnamed FAA captains were involved in the revolt's planning and the coup began from the military installations in Córdoba.<sup>258</sup> Six days later, the most powerful leader of twentieth-century Argentina found himself seeking refuge in the Paraguayan embassy. Many of his allies from the previous twelve years were also soon out of power, if not imprisoned or exiled, such as Juan Ignacio San Martín, Juan Pistarini, and Kurt Tank.<sup>259</sup> The Peronist aviation project had definitely come to an end after a turbulent decade of growth, transformation, and decay.

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Although Peronist aviation officials were certainly premature in their self-congratulatory rhetoric, there was indeed an element of truth in their claims to have made the “conquest of the air” definitive. As I have argued, the Peronist state created the national Argentine system for large-scale aviation—including infrastructure, education institutions, air services, and aircraft production—after nearly three decades of lobbying by aviation enthusiasts and boosters. The state declared aviation technology a vital responsibility of government, one officials would never again relinquish. Most of the institutions and regulatory structures created by Peronist authorities have remained in place ever since with minor modifications—a subject that will be briefly addressed in the conclusion. The state support of all four major areas of the aviation industry was now permanent if still highly variable. The historiographic emphasis on the “failure” of

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<sup>258</sup> Potash, *The Army & Politics in Argentina, 1945-1962*, 183, 200-1.

<sup>259</sup> Frenkel, *Juan Ignacio San Martín*, 41, 77.

technology transfer during the period, based on the narrow evaluation of the Pulqui II project, appears exaggerated when the entirety of the Peronist aviation system is taken into account.

The centralization of authority under the state facilitated the standardization of technical design, production, and operation across what had previously been a scattered and overly-eclectic industry. Infrastructure was unified under state control and, to some degree, homogenized for the first time; aero clubs and technical education programs were supervised by state technical officials to ensure consistency and professionalism among their graduates; the Córdoba factory created a network of private suppliers that could meet aviation's high quality standards. Safe and effective air services—the purpose of the state's program—depended on the creation of this standardized operating environment for the aviation industry.

In effect, aviation technology became fully intertwined with national politics after 1943; for the first time, the state had the political will and resources to support the industry. Perón's "technopolitics" proved deeply amenable to many of the aviation community's interests, particularly in the then-Army air corps. The subsequent political alliance among the national government, the military aviation community (excluding the Navy), and their civilian allies produced an aviation boom and the Córdoba factory's "golden age."

There was an inevitable cost to the political alliance between aviation technology and Juan Perón. Perón's concentration of power and the nation's postwar prosperity made previously little-imagined projects possible. These programs were naturally tailored to Perón's political interests. Sometimes this was beneficial; certainly few in the aviation community would have complained about the generous subsidies that poured into the aero clubs from 1946 to 1948 or the new jobs available at the airlines and their supporting institutions.

But in other cases, national politics steered its aviation projects in undesirable directions. Perón's authoritarian tendencies and love of self-aggrandizement affected the aviation community as it did many other sectors of Argentine society. The concentration of authority by military officials and the executive branch resulted in tremendous activity, but civilians had little control over the planning and execution of the Peronist aviation program. Peronism's insatiable desire for propaganda also tended to concentrate funds and resources in a few prestige projects, such as Ezeiza, the Pulqui prototypes, and, later, IAME. Less glamorous yet essential projects were sometimes neglected, especially when the period of prosperity proved shorter than expected.

The odyssey of the Pulqui program is illustrative. The national government's desire for locally-built, cutting-edge jet interceptors was motivated less by the realistic capabilities of the Córdoba factory or needs of the national aviation industry than a desire for domestic propaganda and weapons to make Perón's "Third Position" attractive for potential foreign allies. Indeed, as Atropoulos acknowledges, the primary benefit of the Pulqui program to Perón was state propaganda. In that sense it was a successful program—the actual production of the airplane for combat duty was irrelevant.<sup>260</sup>

Nevertheless, the development of such an advanced prototype was expensive in time, resources, and even lives. Had factory leadership focused on more modest projects—like the DL-22 and IA 38 programs—there would not have been a need to import such so many costly and politically-controversial foreign personnel. The factory might have also dedicated its efforts to the decidedly more useful yet unglamorous work of producing replacement parts for the state's increasingly large pool of military and civilian airplanes. The FAA, Aerolíneas Argentinas, and

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<sup>260</sup> Atropoulos, *Tecnología e innovaciones*, 58-62.



the civilian community all remained heavily dependent on foreign suppliers by 1955. But while the aviation community languished in shortages and outdated equipment, authorities shifted their only asset capable of alleviating these problems to automobile production. The collective body of technical expertise and experience carefully accumulated in the state's aviation institutions were directed not at their founding *raison d'être*, but the state's broader political and economic program.

Thus the aviation community learned through bitter experience that the state could give, and just as easily take away. When the politics of the national government became misaligned with the interests of aviation's practitioners and enthusiasts, the fragile constellation of public and private institutions that made large-scale aviation possible rapidly degraded. With few private sources of patronage, the aviation community needed state support; but for the state, aviation represented but one, albeit powerful, tool to affect political or economic change. This made for an unstable yet still durable relationship between the government and aviation.

In a final irony, aviation technology, at the very moment its large-scale implementation became a reality in Argentina, was losing its political cache. Aviation was, in an important sense, a victim of its own success. Initially Peronist officials enthusiastically poured funds into national aviation as part of its renovation of the Argentine economy. But when the true costs of large-scale aviation became apparent and the prophesized benefits proved slow to materialize, officials harshly reduced their investment in the industry, even stripping away its technical capabilities for other purposes. The state's own aviation media went so far as to call the technology "irremediably onerous" for the economy in 1954.<sup>261</sup>

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<sup>261</sup> "Una buena inversión," 9.

More and more, aviation technology became a mere status symbol, a representation of the benevolence of the state and a remembrance of prosperous if polarizing times. Yet the technology would no longer be asked to drive that prosperity. The emancipatory promises of aviation to revolutionize Argentina, its economy, and the world, were rapidly diminishing. In essence, aviation had become a symbol of Argentine development, but not a method for generating that development. The rhetoric of the “Air Age” was fading away just as it fully arrived in Argentina.

**Conclusion**  
**Technology, Culture, and the State: The First Fifty Years of Heavier-than-Air Flight in Argentina**

When Secretaría de Aeronáutica officials placed an order for one hundred Gloster Meteor Mk.4s in early 1947, they could have hardly imagined the destinies of the British warplanes. Eight years later, two waves of heavily-laden Meteors labored into the air over the Morón air base. They turned east toward downtown Buenos Aires to assassinate the president. On June 16, 1955, the horrors of violence from above finally arrived in Argentina; between nine and fourteen tons of bombs and rockets, as well as innumerable machine-gun bullets, rained down near the executive mansion and downtown ministries. More than 300 people were left dead in their wake. The first combat use by military aircraft in Argentina was not on a foreign battlefield or fending off Brazilian or Chilean invaders but was against the state and its own citizens.<sup>1</sup> Meteors were used by both sides during the rebellion, resulting in at least one air victory by a loyalist airplane. Although the revolt failed, it did not represent the culmination of such violence in Argentina. Instead, it was a tragic herald of the future. Aircraft were deployed during the subsequent and successful September 16, 1955 coup d'état. The aged Meteors would see their last round of domestic combat service attacking Navy rebels during what amounted to a civil war between the military branches in April 1963.<sup>2</sup>

The airplane, once a symbol of Argentine strength, progress, and development, had become an instrument of state violence against its own people, drawn into the interminable political struggles among Peronists, anti-Peronists, and the many splinter factions that arose in

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<sup>1</sup> Eduardo Luis Duhalde, "El Bombardeo de Plaza de Mayo – 16 de junio de 1955," Secretaría de Derechos Humanos, Ministerio de Justicia y Derechos Humanos, 2010, accessed January 9, 2022, <https://www.argentina.gob.ar/derechoshumanos/el-bombardeo-de-plaza-de-mayo-16-de-junio-de-1955>.

<sup>2</sup> Juan Carlos Cicales and Santiago Rivas, "Argentina's Meteors: Latin America's First Jet Fighters," *International Air Power Review* 7 (2002): 120-8.



Figure 9.1. A mural commemorating the June 1955 bombing by the artist Andy Riva commissioned by the Secretaría de Derechos Humanos [Human Rights] in 2021 by the Fernandez administration. See Conclusion, footnote 15.

the wake of 1955. Authorities quickly proscribed the Justicialista Party while Perón gave vague promises of a triumphant return from exile. His loyal supporters, especially in the working classes, remembered the social and economic privileges of the Peronist years. Some factions stubbornly sought a return to a national politics of social justice and economic independence, whether by the ballot box or domestic terrorism. The amalgam of anti-Peronist factions—an ideologically-diverse group—moved to unravel many of these privileges for the lower classes. They hoped to develop the economy through foreign investment, import-substitution industrialization, and the liberalization of labor laws.<sup>3</sup> There were, in some cases, surprising

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<sup>3</sup> Romero and Brennan, *A History of Argentina*, 131-52.

overlaps in national policy between the Peronist and later anti-Peronist government as in the case of aviation. But the cultural and political schism of the mid-twentieth century proved profound and enduring. The cycles of political violence intensified with every act of repression and rebellion, of state and non-state terrorism.

This vortex of violence resulted in modern Argentina's darkest hour—the “Proceso de Reorganización Nacional” [Process of National Reorganization], or the “Guerra Sucia” [Dirty War] as its commonly remembered. From 1976 to 1983, a military junta unleashed a ruthless campaign of state terror against suspected left-wing and Peronist activists. Abduction and torture were routine. In the end, somewhere between 9,000 and 30,000 people were murdered by the state. The airplane had its own role to play as an agent and symbol of state terror. Military officials are documented to have “disappeared” condemned activists by throwing them out of airplanes high above the ocean.<sup>4</sup> State aircraft were thus not merely instruments of death, but of psychological torture as such stories filtered back to the many potential targets of official violence.

Yet aviation did not hold only negative meanings for Peronists and their allies after 1955. A folklore developed in the late 1950s and early 1960s that Perón would soon return to them on a “*avión negro*” [black airplane]—essentially that one day a secret flight would bring their hero back from exile.<sup>5</sup> There was still a sense, however remote, that an airplane could reverse the Peronists' many setbacks since the “Liberating Revolution.” The vibrancy of the aviation industry under Perón became a powerful memory for his supporters that survived the tumults of the 1960s and 1970s to be revived with the return of democracy in 1983. Sympathetic journalists, historians, and even military officials presented the Peronist aviation system and/or its parts like

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<sup>4</sup> Romero and Brennan, *A History of Argentina*, 215-20.

<sup>5</sup> *Ibid.*, 137.



Figure 9.2. The first cover of the *Revista Nacional de Aeronáutica* after the 1955 coup featured a well-to-do rancher with an imported Beech Bonanza, a clear signal of the new priorities of state aviation. Cover, *Revista Nacional de Aeronáutica*, September 1955.

the Instituto Aerotécnico and Fuerza Aérea Argentina as foundational achievements in the nation's industry and development.<sup>6</sup>

Just as important were the real legacies of the Peronist years. 1955 did not prove an inauspicious year for national aviation by any means. In fact, most of the major Peronist programs continued, even if the state's rhetoric shifted to emphasizing private flying (see fig.

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<sup>6</sup> See, for example, Carlos R. French, "El desarrollo de la Fuerza Aérea Argentina durante la primera presidencia de Perón," in *El Justicialismo, su historia, su pensamiento y sus proyecciones*, ed. Leopoldo Frenkel, 309-25 (Buenos Aires: Editorial Legasa, 1984); Frenkel, *Juan Ignacio San Martín*; Bonetto, *La industria perdida*; Javier R. Fernandez, "El Proyecto Pulqui. El desarrollo de la industria aeronáutica en el primer peronismo," *Página 12*, October 12, 2012, accessed January 12, 2022. <<https://www.pagina12.com.ar/diario/suplementos/cash/17-6355-2012-10-21.html>>

9.2). The Ministerio de Aeronáutica, renamed the Secretaría de Aeronáutica since national officials nullified the Constitution of 1949, was reorganized but actually saw its power reinforced when the state airline was once again moved under its control.<sup>7</sup> The state never fully renounced its custodianship over the nation's aviation infrastructure and its many workers.

Within weeks of the September coup d'état, IAME was changed back to the Instituto Aerotécnico.<sup>8</sup> The following year, officials pledged to return the factory to aircraft production.<sup>9</sup> The military authorities at or near the helm of government in the 1960s and 1970s focused on broader import-substitution industrialization schemes for heavy industry. But they also funded a series of small production runs for what turned out to be effective aircraft, such as the IA 35 utility transport, the FMA IA 58 Pucará light attack airplane, and the FMA IA 63 Pampa jet trainer. The Córdoba factory even produced a successful civil trainer similar to the Boyero called the IA 46 Ranquel, later models of which are still in service today. Although it never again produced airplanes at the rate of 1945 to 1948, the factory managed to remain in more or less continuous activity to the present day, employing hundreds of workers.<sup>10</sup> Today called the Fábrica Argentina de Aviones "Brigadier San Martín," the Córdoba complex survived a period of privatization from 1995 until its 2008 renationalization by the leftist Kirchner government.<sup>11</sup>

The other major institution of the Peronist era, Aerolíneas Argentinas, narrowly avoided political retribution. Anti-Peronist officials elected to maintain the service despite advice from the famed economist Raúl Prebisch to privatize the expensive and troubled airline. According to Pablo Potenze, Secretaría de Aeronáutica officials preserved Aerolíneas Argentinas due the

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<sup>7</sup> Potenze, *La Aviación Comercial*, 103.

<sup>8</sup> Raccanello and Rougier, "Tractores y mitos," 179.

<sup>9</sup> "Producción de aviones," *Revista Nacional de Aeronáutica*, December 1955, 16.

<sup>10</sup> Atropoulos, *Tecnología e innovación*, 87; Halbritter, *Historia de la industria aeronáutica*, 347-8, 374-6, 405-16, 433.

<sup>11</sup> For the history of the IA after 1955, see Halbritter, *Historia de la industria aeronáutica*, chapter 8.

“social and union problems” that would result from the inevitable “mass layoffs.” The new “*política aérea*” decreed on July 12, 1956 allowed for private competition on domestic cabotage routes, but otherwise was quite similar to its Peronist forebearer.<sup>12</sup> The airline proved an almost unsinkable political creation until it too was temporarily privatized from 1990 to 2008.<sup>13</sup> In a 2018 report published by the International Air Transport Association, researchers estimated that air transport, including Aerolíneas Argentinas, private airlines, and the infrastructure network, directly employed 71,000 *argentinos*, with a further 79,000 people working in related industries that supply the aviation sector.<sup>14</sup> In many ways, the dream of the aviation industry as a source of remunerative work for common people is today a reality, even if such opportunities for prosperous careers are still too limited.

The impacts of these two sides of national aviation in Argentina—of political repression and of economic opportunity—were evident in the recent politics of the left-wing Kirchner (2003-2015) and Fernández (2019-2023) governments. Both administrations claimed to be the successors of mid-twentieth century Peronism. Under President Christina Kirchner in 2009, state propaganda honored the victims of the June 1955 bombing with public ceremonies and the allocation of reparations for the families of the dead. Just over ten years later, President Alberto Fernández commissioned a mural to portray the horrors of that bloody June day (see fig. 9.1).<sup>15</sup>

At the same time, the Kirchner administration renationalized both Aerolíneas Argentinas and the Córdoba factory after nearly twenty years as private enterprises. The rhetoric in official

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<sup>12</sup> Potenze, *La Aviación Comercial*, 103-5.

<sup>13</sup> For the history of Aerolíneas Argentinas during the neoliberal period, see Mabel Thwaites Rey, *Alas rotas: la política de privatización y quiebra de Aerolíneas Argentinas* (Buenos Aires: Temas Grupo Editorial, 2001).

<sup>14</sup> “El valor de la aviación en Argentina,” *International Air Transport Association*, 2019.

<sup>15</sup> “La Secretaría de Derechos Humanos de la Nación inauguró un mural para recordar a las víctimas del bombardeo del 55,” June 16, 2021, Ministerio de Justicia, accessed January 11, 2022. <<https://www.argentina.gob.ar/noticias/la-secretaria-de-derechos-humanos-de-la-nacion-inauguro-un-mural-para-recordar-las-victimas>>.



and media sources on the renationalization of the state airline was revealing. Officials hoped to rebuild Aerolíneas Argentinas to its former glory, which according to Federal Planning Minister Julio de Vido, only existed “in our memory.”<sup>16</sup> When the policy was up for debate, the major labor union the Central de Trabajadores de la Argentina (CTA) announced plans to mobilize on behalf of nationalization. In words that could have been spoken seventy years earlier, the General Secretary of the Asociación del Personal Aeronáutico of the CTA Edgardo Llano wrote: “Aviation [personnel] from all over the country are going to march *en masse* to the National Congress...to say that Aerolíneas Argentinas once again belongs to the State, for the benefit of the workers and Argentine society.”<sup>17</sup> Allowing the airline to continue degrading under private management “is without consultation, inconsistent, suicidal, and goes against national development, regional integration and is ultimately a stance against the 9,000 aeronautical families and Argentine society as a whole.”<sup>18</sup> The opinion piece concluded, “We do not want [an] absent State anymore, but rather commercial aviation policy and a flag carrier.”<sup>19</sup> At least for those within the industry, state aviation remained a powerful symbol of socioeconomic opportunity and development in their nation.

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<sup>16</sup> “Fernández anuncia la nacionalización temporal de Aerolíneas Argentinas y Austral,” *El País*, July 21, 2008.

<sup>17</sup> “*Vamos a marchar masivamente los aeronáuticos de todo el país al Congreso nacional junto a la Central de Trabajadores de la Argentina (CTA) para decir que Aerolíneas Argentinas vuelva a ser del Estado, en beneficio de los trabajadores y de la sociedad argentina.*” Edgardo Llano, “Por la nacionalización definitiva,” *Página 12*, August 21, 2008.

<sup>18</sup> “*La postura de los partidos de la oposición con el pedido de quiebra de Aerolíneas Argentinas-Austral es inconsulta, inconsistente, suicida y va en contra del desarrollo nacional, la integración regional y en definitiva es una postura en contra de las 9000 familias aeronáuticas y la sociedad argentina en su conjunto.*” Llano, “Por la nacionalización definitiva.”

<sup>19</sup> “*No queremos más Estado ausente, sino política aerocomercial y una Aerolínea de bandera.*” Llano, “Por la nacionalización definitiva.”

During the first half of the twentieth century, an assortment of political and social groups in Argentina harnessed the rhetorical and symbolic power of aviation technology and culture to advance the practice of flight in their nation and—in the process—articulate an aspirational Argentine technical identity. Beginning with a landmark airshow during the independence centennial of 1910 in Buenos Aires, aviation permeated Argentine society as an elite sporting activity. Elites celebrated the prosperity and progress of turn-of-the-century Argentina by taking to the sky. The discourse of early aviation depicted the “bird-men” of the era—epitomized by Jorge Newbery—as manly, selfless heroes who were expanding man’s dominion over nature. Through their dangerous and spectacular acts, the nation’s aviators were, in effect, rearticulating modern progress as a fundamentally masculine endeavor.

While Argentines had little trouble learning to fly, building airplanes proved extremely challenging. At the outset of heavier-than-air flight, there were few technical standards or resources for builders in Europe and the United State, much less in distant and peripheral Argentina. Local industry was underdeveloped and unable to supply most of the metal components needed by aircraft and their powerplants. State investment in aviation was minimal for its first fifteen years, ensuring the motley collection of aero clubs and military aviation institutions remained small, fragile, and highly dependent on supplies of foreign machines, materials, and expertise.

By the interwar period, popular media increasingly used pilots and airplanes in exciting stories of adventure and danger. In these stories, airplanes were agents of adventure, liberation, and dominance. Argentines learned that with flight came power. They worried that their nation might fall on the wrong side of progress, history, and evolution, doomed to marginalization and extinction. In the popular perception, heroic flights of daring *aviadores* and *aviadoras* reinforced

and dispelled these fears—depending on their fortunes. Celebrity pilots became a new benchmark with which to measure racial-biological fitness in the age of velocity. The men and women who sat in the cockpit became icons of normative masculinity and of transgressive femininity as Argentines contended with the new ideas of gender radiating out from the North Atlantic nations. In the context of mass immigration, émigré communities and nationalist intellectuals also harnessed the symbolism of flight to advocate for their identities and ideas on the national stage.

In the end, it was the growing association of flight culture with working men that defined the technology for much of the twentieth century. Despite its initial popularity among Argentina's "high society," I have revealed throughout the dissertation how common people participated in national aviation as audiences, patrons, and advocates for the new technology. Elites in *belle époque* Argentina generally denigrated the manual labor involved in the construction, maintenance, and operation of technology—practices associated with humbler *argentinos*. But by the 1920s, the acclaim heaped on heroic pilots elevated the social prestige of their accompanying mechanics. Mechanical skills and knowledge gained newfound prominence in the narratives of national progress omnipresent in popular and official media. Media commentators and state officials increasingly presented technical careers, especially in aviation, as a route to upward mobility, national aggrandizement, and importantly, masculine confirmation. The narrative of opportunity in the aviation industry spun by officials, boosters, and the media was explicitly directed at men. Women could and did fly from the beginning, occasionally to great fanfare and acclaim. But few working women would find employment in the aviation industry, whether as pilots or technicians.

The champion of this source of opportunity for the common *argentino* was the Army, which had an ever greater need for technologically-skilled personnel as it expanded Argentina's military and industrial capabilities. Army officials saw the airplane as a tool to develop the interior, foster industrial growth, and ensure national security. Such associations were focused on the workers of the aviation industry, driving efforts by military officials to build their own airplanes and organize supporting infrastructure.

State investment in aviation remained small until 1927, when the founding of the *Fábrica Militar de Aviones* in Córdoba heralded the beginning of military industry in Argentina. The *Fábrica* was an important early institution for the development of technical standards for metallurgy and engineering in Argentina. The factory's laboratories and libraries catalogued, translated, and disseminated the latest foreign and domestic knowledge on metals, woods, chemicals, and other construction materials. The production history of the FMA was checkered at best; by the mid-1930s the factory's policy of original design was mired in political controversy. Despite its many trials and tribulations, the institution became a critical locus of early industrial and technical knowledge and experience in Argentina, one which would later prove essential when the state launched far more ambitious plans.

These trends reached their zeniths during the presidency of Juan Perón from 1946 to 1955, which established air services as a fundamental responsibility of government. Peronist officials invested millions of pesos into a heavily-politicized popular aviation program and established most of the nation's current flight infrastructure. Harnessing the rhetoric of the interwar aviation community, state propaganda depicted the aviation industry as an agent of social justice through its creation of remunerative and "dignified" jobs for working people. Perón

articulated a “technopolitics” that put aviation front and center for his transformative project to forge a “New Argentina.”

With Perón’s rise, aviation had become deeply tied to national politics, for better and for worse. The industry experienced the full gamut of possibilities under Peronist governance. It saw unprecedented prosperity and authoritarian repression, unfettered optimism and despair, dizzying growth and decay—all within a decade. The state created a veritable aviation system for air travel and other services in a matter of years, although not without substantial setbacks and frustrations. The one major problem that bedeviled the national aviation community—dependency on foreign suppliers—was never resolved despite the nationalist politics of Peronist regime. Nevertheless, the Argentine state was now dedicated to the provision of air services, a duty it upholds to this day.

Flight technology had become a fundamental aspect of Argentine politics and society, a symbol of the state’s modernity and benevolence to its citizens. The technology of flight was, and is, deeply embedded in the discourse of working- and middle-class dignity and opportunity—one which also remains inextricably bound to Juan Perón and his populist movement. Although aviation would never again receive the level of state investment and attention as during the mid-twentieth century, it had been firmly rooted within the modern Argentine state. Not even the prevailing pressures of neoliberalism since 1980s could excise this responsibility for long. Aviation institutions like Aerolíneas Argentinas remain representations of the power of technology and the state to improve the lives of common people. They serve as poignant reminders of that promise made by Peronist aviation officials half a century earlier: “In Argentina, everyone flies.”

## **Technology, Culture, and the State**

Technology and culture are inextricable. Culture creates the meaning that motivates people and their institutions to develop and use technology, just as material objects and the capabilities they provide deeply affect their host societies. The cultural valuation of a technology sustains its development in its original context and drives the transfer of the technology to new ones. For the receivers of technology invented elsewhere, imported objects and their supporting knowledge have little effect if local people do not believe such technology will improve their lives and/or empower them to achieve any number of political, social, and economic aspirations. Such notions motivate boosters, engineers, tinkerers, and others to modify the technology to fit local conditions and/or modify any number of societal structures and institutions to accommodate the new material practice. As this dissertation has made clear, this adoption and adaptation is neither simple nor easy even though nations like Argentina rarely bore the cost of the original development of a technology. Technology transfer is thus a cultural process as much as it is a laborious technical one.

For such a dangerous and expensive technology like flight, there was a particularly pressing need for a robust cultural valuation. In all but the wealthiest nations, few private institutions or individuals had the resources to practice large-scale aviation, that is, to make air services and aircraft production a reality. It thus fell almost universally on governments to organize, regulate, and often, directly fund the majority of a nation's aviation institutions and infrastructure. The technology and its culture, in effect, had to be politicized; it had to be incorporated into the lexicon and toolchest of government. Such a technology needed a "technopolitics" at a national level, which demands a powerful set of accepted cultural and political assumptions about the relationship between technology and society.

No cultural discourse proved as influential as the many articulations of national identity in Argentina during the first half of the twentieth century. The people of Argentina—whether they were newly-arrived or long local—searched for a new national narrative to knit together Argentina’s diverse citizenry and to make sense of the massive demographic, political, cultural, and economic change in the late nineteenth century. Expressions of *Argentinidad*, of proper “Argentineness,” involved a multitude of cultural notions, all of which were consciously and unconsciously mapped onto aviation technology. The local and transnational discourses of normative gender, racial-biological fitness, nationalism, and working-class dignity worked alongside the powerful package of sentiments around progress, science, and technology to imbue flight with ever-changing yet powerful meanings.

The perception of pilots as heroic, masculine, and modern increased the social cache of flight, and undoubtedly spurred many *argentinos* to take up the dangerous practice that offered little chance of remuneration—at least until the 1940s. Women joined their ranks for the same reasons despite immense social obstacles, viewing the airplane as a possible source of liberation and self-empowerment. The Army’s belief in the utility of airplanes for its mission of “progress and civilization” shaped their programs to train new pilots and to build airplanes for national defense *and* development. Even seemingly technical decisions by Army aviation officials were deeply affected by cultural beliefs. The *Fábrica Militar de Aviones*, for example, built metal airplanes since they were *perceived* as the future of flight technology. The preference for metal reflected a cultural perception of metal being more “industrial” and “scientific” than wood.

More profoundly, aviation boosters and their allies frequently expressed the Argentine cultural expectation that their nation *should* be as modern, prosperous, and powerful as the North Atlantic industrial powers. Industrialization was perceived as *the* route to development,

especially for the nationalist military officers so often near or at the helm of government. Although many social commentators and politicians argued for limiting the uptake of foreign social and political ideas like feminism or even democracy, most agreed that Argentina should match the material progress that had garnered nations like the United States, Britain, France, and Germany so much wealth and global power. This expectation of technological parity with the north ensured most interwar analysts and commentators wrote their criticisms of the state of Argentine aviation with an air of impatient exasperation.

Understanding the reciprocal effect of aviation on the culture of Argentina is more difficult, not least because flight was one of many new technologies of the twentieth century such as radio, automobiles, motion pictures, and more. All these technologies encouraged cultural change as Argentines gained newfound mobility and access to foreign media and objects. They developed habits of consumption around these technologies. Collectively, technological objects such as radios, cars, and airplanes were the material incarnations of the “progress” sweeping the globe. They gave form to the social, political, and economic change of the nineteenth and twentieth centuries, even if technology was not the primary driver of that change. The new technologies served as visual and rhetorical metaphors for the profound transformations. They created new metrics—the number of pilots, radios, or cars—to measure the nation’s modernity.

In the popular Argentine imagination, the airplane was a particularly powerful representation of such social, political, economic, and material change. Unlike radio, it was visible; people and goods were physically moving across oceans and continents. The speed and power of the airplane was self-evident as the machines roared overhead. Certainly the many colorful descriptions of flight by its early practitioners attest to the significant emotional meaning



ascribed to flying. The obvious physical risks and stresses of flight ensured pilots were seen as effective measures of national biological capability. Heavier-than-air flight was commonly presented as the last word in the long conquest of space and time, the ultimate incarnation of velocity and its ability to create civilization. The airplane, liberated from the contingencies of geography, could deliver on its promises with far less investment, at least if the nation was content to import its airplanes. There was a sense of exigency in national discussions of aviation since many believed that any backwardness could imperil national security and the ability of Argentina to take advantage of the dawning “Air Age.” In essence, the power and importance ascribed to the airplane, and its real ability to impress those who witnessed its use, convinced many expert and lay Argentines that there was something to the idea that speed drove progress.

These cultural beliefs were extremely influential since in many ways aviation proved an inefficient catalyst for industrialization, especially in Argentina. As Peronist officials discovered, it would largely fall to the state to develop basic heavy industry. But the Argentine state did not have the financial and technical resources to invest equally across the industrial supply chain. Basic production like steel and aluminum smelting took enormous amounts of capital. Even if there were miraculous moments when economic prosperity and a political will coincided—such as after World War II—these windows of opportunity were brief. The vicissitudes of the international economy and domestic politics ensured that the aviation industry and other industrial sectors in Argentina were always in a precarious situation.

To make things even more difficult for authorities, investment in aircraft production—ostensibly a way to reduce dependency on foreign suppliers—just changed the nature of that dependency. Instead of ordering an airplane from a foreign manufacturer, the factory’s administrators were importing most of the basic parts and materials from abroad. Although

officials of course aspired to find local suppliers, local industry largely failed to produce effective substitutes for foreign industrial goods. The factory's creations thus did little to save the state money. By the mid-century, aircraft production, maintenance, and supply were sources of significant financial pain as the drain of foreign currency turned out to be the Achilles' heel of Perón's industrialization program.

Lastly, industrialization via aircraft production introduced novel risks to the technology's users. At a basic level, aircraft design and construction were already difficult, let alone developing the capability to produce the multitude of industrial products that made up such machines. There were a number of deadly aircraft accidents due to deficient materials or joining methods, which were often new to Argentine engineers and technicians.

This risk was magnified by the lack of rigorous and independent oversight. As the civilian opponents of the Army's policy in 1935 articulated effectively, flying was made more dangerous when all aspects of its governance were collected under one authority—especially if that authority was producing airplanes. The same military officials oversaw the regulation, inspection, and production of airplanes. When problems arose with these airplanes, the flight community felt it could not trust the national authorities to properly regulate its products and keep everyone safe. In essence, the political and economic motives of Army factory officials exacerbated the risks of flight for local pilots. The tendency for authorities to push their airplanes on aero clubs instead of purchasing easier to use and more reliable foreign airplanes meant that such risk was often hoisted upon the unwilling.

It is all the more remarkable, then, that aviation technology occupied such an important place in the development of Argentine industry and technology. The cultural fascination with and belief in flight technology not only sustained the dangerous and expensive practice but gave it an

outsized role in twentieth-century Argentina's modernization. When Argentines saw airplanes overhead, it caused them to think deeply about themselves, their communities, and their new nation. For many, it would inspire them to engage with the technology and science that made flight possible, if not take part in the great adventure in the sky themselves.

The cultural valuation of technical knowledge and skills was the technology's greatest legacy in Argentina. The prestige of aviation as a modern, scientific, patriotic, courageous, and necessary endeavor spilled over onto the workers who made it happen. The interwar period saw the rise of the working and middle class "*técnico*" as a desired and important member of society worthy of state sponsorship. The figure of the heroic aviation mechanic was central to this reappraisal of the value of the technological knowledge and experience possessed by humbler Argentines. Now more than ever, political authorities, the media, and common people alike believed that the nation's future security and prosperity depended on the labor of these *técnicos*—whether in aviation or any other industrial sector. Peronist officials crafted a "technopolitics" to take advantage of these long-building associations among class, labor, technology, and progress. In the process, they created Argentina's modern aviation system and, more consequentially, forged an as-of-yet indivisible link between technology and the dignity of working people.

As a journalist wrote for *Ciencia Popular* in June 1940, "With truth it has been said that we are in the Technical Age [*Era de la Técnica*]. Day by day and in all activities such an assertion is eloquently demonstrated."<sup>20</sup> Although the context of war, the "pathological state of the world," gave this reality an ominous character, the journalist was nevertheless determined for

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<sup>20</sup> "Con verdad se ha dicho que nos encontramos en la Era de la Técnica. Día a día y en todas las actividades se demuestra elocuentemente tal aseveración." "Los Conocimientos Técnicos," *Ciencia Popular*, June 1940, 329.

Argentines to stay abreast of the world's technological development. The anonymous writer, like so many of his or her contemporaries, felt that technical knowledge and work were societal necessities despite the violent underbelly of the modern materialism:

Our ever-growing population and the constant assimilation of all the world's progress make the development of national industry necessary, for which *técnicos* are indispensable above all else. And these cannot be improvised; patient study is necessary... This and no other [must be] the path of our youth if they want to find useful possibilities in the future.<sup>21</sup>

Technology and industry were thus essential for the nation's present and future. Few national efforts did more to convince Argentines of this fundamental assumption of modernity than their conquest of the sky.

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<sup>21</sup> *"Nuestra población siempre en aumento y la asimilación constante de todos los progresos mundiales hacen necesario el desarrollo de la industria nacional, para la cual es indispensable antes que todo que haya técnicos. Y éstos no pueden improvisarse; es necesario el estudio paciente, único camino de conducir a la especialización necesaria. Este y no otro es el camino de nuestra juventud si es que quiere encontrar posibilidades útiles en el futuro."* "Los Conocimientos Técnicos," 329.

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## CURRICULUM VITAE

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