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THE HOPES AND THE REALITIES OF AVIATION IN FRENCH INDOCHINA, 1919-1940

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THE HOPES AND THE REALITIES OF AVIATION IN FRENCH INDOCHINA,
1919-1940

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Arts and Sciences
at the University of Kentucky

By
Gregory Charles Seltzer

Lexington, Kentucky

Director: Dr. Jeremy D. Popkin, Professor of History

Lexington, Kentucky

2017

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ABSTRACT OF DISSERTATION

THE HOPES AND THE REALITIES OF AVIATION IN FRENCH INDOCHINA, 1919-1940

My dissertation examines how and why the French employed aviation in the five constituent parts of French Indochina (Annam, Cambodia, Cochinchina, Laos, and Tonkin) during the interwar period of the 1920s and 1930s. I argue that the French, believing that the modern technology of powered flight possessed seemingly endless potential, saw aviation as a vehicle for extending, consolidating, developing, and protecting their interests both within the colony and around Southeast and East Asia. Aircraft, whether civil or military, were viewed and used as a multi-purpose tool of empire. Indeed, planes were employed for a variety of tasks in Indochina: transportation and communication; delivery of patients and medical supplies; colonial development projects; scientific studies; imperial propaganda; internal policing and assertion of authority; and air defense of the colony.

My argument is that the realities of what was accomplished with aviation fell far short of the sky-high hopes that government and military officials and aeronautics enthusiasts had for flight technology in the empire. My dissertation also examines the causes and the effects of this yawning gap between what was hoped and what was accomplished in matters of aviation. When aviation failed to “get off the ground” to the extent that the French hoped, the reasons typically related to a recurring combination of unfavorable weather and geography, insufficient funding and aeronautics materials, the limits of the era’s flight technology, and foreign competition that originated in Europe as well as Southeast and East Asia. Challenges to French aerial supremacy were present within the colony itself, although in a more indirect manner, through the ways that the colonized responded, or failed to respond, to French aviation. In sum, as much as the French envisioned aircraft as being able to rather easily vanquish the perceived challenges of the colonial landscape, aviation, in reality, failed to do so or only did so after a protracted period of time.

My dissertation is positioned at the intersection of colonial aviation history and the history of French Indochina. While studies in each of these fields have considered parts of this dissertation’s subject matter, there has been a lack of sustained critical analysis on French aviation in Indochina. My project contends that Indochina presents a

rich area of study for colonial aviation history because, more so than anywhere else in the French empire, the aviation efforts in Indochina encapsulated all that the French hoped to accomplish with aircraft, the era's most modern, symbolically saturated transportation technology. In addition, my topic reveals much about the hopes and the realities of the French colonial project in Indochina as well. Thus by analyzing how aviation was viewed and used in the context of the Indochina, my dissertation provides insight into not only what the colonizers wanted to achieve in Indochina but also why this effort failed.

KEYWORDS: Aviation, Indochina, French Empire, French History, Interwar Period.

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July 27, 2017

THE HOPES AND THE REALITIES OF AVIATION IN FRENCH INDOCHINA,
1919-1940

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I dedicate this dissertation to Professor Ellen Furlough, who led me to this project, and
Kylie Seltzer, who helped me get it finished.

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INTRODUCTION: AVIATION HISTORY AND COLONIAL HISTORY IN FRENCH INDOCHINA

Pierre Cordemoy, who wrote at length on aviation and Indochina in the *Bulletin de l'Agence Economique de l'Indochine* in the 1930s, affirmed that “the airplane is a marvelous colonial tool particularly adapted to Indochina, one of the most immense and most distant of our colonies.” Aviation, he declared, was “an asset of the highest importance in the overt struggle between nations for...a prominent position in the Pacific Hemisphere.” Furthermore, Cordemoy described three ways that aviation could be utilized for the colonial project in Indochina: “the consolidation of peace and security; the establishment of rapid, scheduled postal links; [and] the extension of French influence to the interior and exterior of the colony.”¹

My dissertation analyzes statements like Cordemoy's, examining both the logic that drove such remarks and the ways that French aviation succeeded—and failed—in the work with which it was charged in Indochina during the 1920s and 1930s.² The reasons for these successes and failures—and the resulting consequences—are also considered. Overall, the French imagined that aviation would make a modern, distinctive, and significant contribution to French colonialism in Southeast Asia. The various ways in which aircraft were put to use in Indochina not only reflected this faith in aviation but also revealed the challenges that the French faced both within the colony and throughout the empire during this period.³

¹ Pierre Cordemoy, “L'Indochine et l'aéronautique,” *Bulletin de l'Agence Economique de l'Indochine* (February 1930): 45, 37.

² By this period in time, French Indochina consisted of five parts: Cochinchina, Tonkin, Annam, Cambodia, and Laos.

³ My dissertation uses the term “air force” interchangeably with “military aviation” and, where appropriate, “air service.” Utilizing the term “air force” in the context of pre-1933 France is, technically, anachronistic; an independent air force was only established on April 1, 1933, a

As a relatively new, multi-purpose “tool of empire,” the airplane represented the ascendant hopes and superiority of the French in Indochina. John Tully argues that the image of the “heroic aviator” replaced that of the “intrepid explorer” as a symbol of the French mission in Indochina. Across the French empire and in the context of European imperialism in general, aviation carried this type of symbolic weight during the 1920s and 1930s. Thus Robert Aldrich states that aircraft “seemed a fitting symbol for the [French] colonialists’ new aspirations and initiatives” during this period, and Daniel R. Headrick contends that these years saw “the pioneering aura that railways had once possessed passed on to the automobile and the airplane.”⁴

Yet as my dissertation emphasizes and as Cordemoy’s remarks indicate, the appeal of aviation went beyond representation and symbol. In addition, aircraft were perceived and utilized—by government and military officials, scientists, commercial airlines, and local businesses—as a vehicle for extending, consolidating, developing, and protecting French interests both within Indochina and throughout Southeast and East Asia. While aviation may have appeared to be the preeminent “tool of empire,” my

date prior to which military aircraft were attached to either the army or the navy. My analysis nonetheless employs this term for the entirety of the interwar years as a means of avoiding excessive repetition and adding variety. In any case, the creation of the air force in the spring of 1933 did not have much of a direct, immediate impact on Indochina’s squadrons. Christophe Cony and Michel Ledet explain that “the parliamentary turmoil linked to the creation of the future [air arm] hardly affected the colony.” They note that there was “little change” for the time being, as the functioning of the air force units—“the nature itself of the air squadrons”—kept them in the service of the land-based army. Of course, the creation of the air force did result in certain alterations to the structure and financing for military aviation, such as how infrastructure work would be funded. Christophe Cony and Michel Ledet, *L’Aviation française en Indochine: Des origines à 1945* (Outreau: Lela Presse, 2012), 202, 210.

⁴ John Tully, *France on the Mekong: A History of the Protectorate of Cambodia* (Lanham, MD: University Press of America, 2002), 261; Robert Aldrich, *Greater France: A History of French Overseas Expansion* (New York: St. Martin’s Press, 1996), 116; Daniel R. Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850-1940* (New York: Oxford University Press, 1988), 49-50.

analysis reveals otherwise.⁵ Thus my dissertation argues that the realities of aviation in Indochina—and, indeed, the realities of aviation throughout the French empire—in the 1920s and 1930 never reached the sky-high hopes that were attached to powered flight. This gap between what was envisioned and what was achieved was evident—though to differing extents—across the entire spectrum of aviation usage in the colony. The realities of flight fell short of the hopes most completely and most noticeably with regard to utilizing airpower as a defense against external threats. In other ways, aviation was more successfully employed. Prominent among these successes was the gradual development of commercial air routes to, within, and through Indochina as well as and the application of aerial photography and reconnaissance to colonial development projects and scientific studies. The success of other fields of aircraft usage can be judged as falling somewhere in the middle. On the whole, even in cases that the French could cite as aerial achievements, the realities of aviation tended to fall short of the hopes according to some metric—whether cost, usage, practicality, efficacy, or speed of development.

There were various reasons that aviation failed to meet French expectations as the

⁵ The phrase “tool of empire” is taken from Headrick’s book, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century*. In this study, Headrick examines how developments in different types of technology—these related to breakthroughs in medicine, communications, weapons, railroads, and water transport—encouraged European imperial expansion during the nineteenth century, particularly from mid-century onward. Contending that the Europe’s imperialist projects required appropriate motives as well as sufficient means, Headrick asserts that the aforementioned period was characterized not only by new technology but also by renewed interest in the penetration, conquest, and consolidation of large swaths of Africa and Asia. He argues this point by considering “the technological changes that made imperialism happen, both as they enabled motives to produce events, and as they enhanced the motives themselves.” Headrick concludes that “the flow of new technologies in the nineteenth century made imperialism so cheap that it reached the threshold of acceptance among the peoples and governments of Europe, and led nations to become empires.” Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (New York: Oxford University Press, 1981), 9-11, 206.

arch tool of empire in Indochina. To begin with, the limitations of the era's planes and the colony's unfavorable weather and challenging geography kept aircraft grounded.

Additionally, along with European nations and the United States, neighboring Asian powers contested, implicitly or explicitly, the supremacy of French aviation in this part of the globe. As they worked to establish routes to and through Southeast Asia, French aviation interests often were required to negotiate contracts on supposedly equal terms. In such cases, the French found themselves in, at best, a position of near-equal footing that required compromise or, at worst, a position of weakness and vulnerability vis-à-vis their counterparts. Even within the colony, albeit in a more indirect manner, the supremacy of French aviation was challenged by the native populations.

Furthermore, the process of installing and maintaining aviation—from developing an infrastructure to acquiring aeronautics materials and personnel to finding a customer base—proved difficult, if not impossible at times, and often yielded returns that were meager compared to the immediate costs involved. The necessary terrestrial infrastructure—networks of airfields, radio and meteorological posts, and fuel sites—was itself a hindrance that kept aviation very much tethered to the earth. Aviation in Indochina remained tethered to—and frequently handicapped by—developments in France as well. Indeed, aviation was an expensive, specialized technology, and the funding and resources required to keep it aloft in a colony that was distant from the metropole were not always forthcoming; this was an especially problematic issue during the 1930s as the economic crisis of the first half of the decade gave way to the reality of another war in Europe in the later 1930s. As my dissertation demonstrates, these bonds to the metropole related more to large-scale economic, military, and diplomatic concerns

than to specific policy changes that accompanied the political shifts within the French government amidst the tumultuous climate of the mid-to-late 1930s.

The Significance of Aviation and Empire in the Interwar Years

While fostering the growth and technological refinement of the aeronautics industry, the First World War had aptly demonstrated the usefulness of aircraft for military purposes. The postwar years witnessed further rapid development in aeronautics. Robin Higham points out that this period experienced “a revolution in various aviation technologies.” Higham explains that “as the range, speed, ceiling, and carrying capacity of aircraft became greater, the aircraft and engine industries started to flourish.” Aware of such technological improvements, governments and entrepreneurs began to grasp that aviation potentially possessed “global diplomatic and economic significance.” In turn, this realization heightened desires throughout the West to develop national aeronautics industries.⁶

In addition, public interest in flying dramatically increased during the 1920s and 1930s. Historian Bernhard Rieger states that European and American publics had followed aviators’ exploits since the Wright brothers’ pioneering flights of December 1903. Yet after the First World War, this fascination with pilots transformed into a

⁶ Robin Higham, “Introduction,” in *The Influence of Airpower upon History: Statesmanship, Diplomacy, and Foreign Policy since 1903*, ed. Robin Higham and Marik Parillo (Lexington: The University Press of Kentucky, 2013), 8. For analyses of the French aeronautics industry in the twentieth century, see Emmanuel Chadeau, *De Blériot à Dassault: Histoire de l’Industrie Aéronautique en France, 1900-1950* (Paris: Fayard, 1987) and Herrick Chapman, *State Capitalism and Working-Class Radicalism in the French Aircraft Industry* (Berkeley: University of California Press, 1991).

“subject of popular curiosity verging on the obsessive.”⁷ Discussing the general appeal of aircraft in the 1930s, Robert Wohl argues that “no other machine seemed to represent as fully humankind’s determination to escape from age-old limitations, to defy the power of gravity, and to obliterate the tyranny of time and space.”⁸ Yet as aviation was a still-developing technology in the postwar years, Western nations considered the destructive and bellicose potential of aircraft alongside the globally unifying and humane possibilities for flight.⁹

⁷ The nature of this conflict had itself magnified the symbolism of human flight. The image of the pilot freely soaring above the trenches to engage in combat with a single aerial adversary harkened back to romantic notions of knightly conduct in battle, thus offering a sharp contrast to the faceless slaughter in the mud below. In this manner, the airplane—“the most significant technological achievement of the modern world”—functioned as a way to affirm traditional values. “Through the postwar decade flying retained these associations,” Modris Eksteins asserts. Modris Eksteins, *Rites of Spring: The Great War and the Birth of the Modern Age* (Boston: Houghton Mifflin 1989), 264-265. Yet Robert Wohl cautions that the reality of how aircraft were utilized in the First World War did not reflect such notions: the “passion for aces and their exploits...concealed the fact that airplanes were used primarily during the First World War to observe movement on the surface of the earth.” Robert Wohl, *A Passion for Wings: Aviation and the Western Imagination, 1908-1918* (New Haven, CT: Yale University Press, 1994), 285.

⁸ Bernhard Rieger, *Technology and the Culture of Modernity in Britain and Germany, 1890-1945* (Cambridge: Cambridge University Press, 2005), 117; Robert Wohl, *The Spectacle of Flight: Aviation and the Western Imagination, 1920-1950* (New Haven, CT: Yale University Press, 2005), 1-2, 4, 279.

⁹ Contemporary discussions about aviation within governments and among the public reflected both hopeful expectations and profound dread about the potential of powered flight. For example, in referencing the “fearsome dangers” and “unexpected opportunities” of aviation in this period, Peter Fritzsche remarks that “the air age was both fabulous and horrible.” However, as Wohl observes, aerial attacks on civilians “moved from a threat to a destructive reality” between the start of the Spanish Civil War in the summer of 1936 and August 1945. The Western public’s view of aviation was ultimately changed by news headlines about horrific events stretching from the German Condor Legion’s bombing of Guernica in late April 1937 to the Allied incendiary attacks on the city of Dresden in February 1945 to the atomic bombs dropped on Japan that August. By the end of the Second World War, the use of airpower to level cities and decimate civilian populations had seemed to confirm people’s worst fears about aviation’s destructive potential. In his chronologically broad comparative study of aviation, Emmanuel Chadeau contends that Western nations have struggled since the start of the twentieth century—and continue to struggle—to reconcile their desires for what has been these opposing yet intertwined elements of flight: the capacity of aviation to uplift individuals and unify all of humanity; and the capability of aircraft to be a tool of power and conquest. Peter Fritzsche, *A Nation of Fliers: German Aviation and the Popular Imagination* (Cambridge, MA: Harvard

The interwar years were also a significant period for the French empire. While the empire reached its greatest extent during this time, consolidation and development replaced conquest as the primary goals in the colonies.¹⁰ Moreover, French governments launched an extensive propaganda campaign to arouse public interest in, and knowledge of, the constituent parts of the empire.¹¹ “The mark of empire on the contemporary world was made in the interwar period,” Raymond F. Betts writes. He explains that “local populations [were] mobilized, regional resources [were] exploited, and the general environment—both physical and cultural—[was] altered to suit European needs.”¹²

Though French imperialists touted the progress made in harnessing colonial resources and developing the empire during this era, these years witnessed the rise of local nationalist and anti-colonial movements. Threats to the empire originated from beyond a given territory’s borders as well. “Colonial domination faced unprecedented challenges from within and without,” Martin Thomas observes. These challenges came from a variety of sources, “from marginalised and exploited colonial peoples, from critics

University Press, 1992), 5, 218; Wohl, *The Spectacle of Flight*, 3; Emmanuel Chadeau, *Le Rêve et la Puissance: L’Avion et son Siècle* (Paris: Fayard, 1996).

¹⁰ Aldrich, 114, 120-121. A key component of these new aims—and, indeed, a term that encapsulated the era’s economic projects for the empire—was the *mise en valeur* of the colonies. Detailed by then-Minister of the Colonies Albert Sarraut in the early 1920s, the *mise en valeur* program was a “wholesale plan to develop colonial resources to increase production and stimulate trade between France and the empire. This demanded substantial French investment to improve roads and railways, port facilities and transport links, schools and hospitals.” For several reasons, Sarraut’s proposals were never fully implemented. While certain government officials deemed the plans too expensive, others either believed that the metropole had pressing needs that should take precedence or simply disapproved of the government intervention that Sarraut’s program required. These various objections were being raised even before the Depression and the threat of war in Europe made the actualization of Sarraut’s plans only more difficult. Nonetheless, Aldrich notes, Sarraut’s ideas “exercised considerable influence in colonialist milieux and led to the assumption of a greater economic role by the state in the interwar years. They also fed into the debate on the merits or hazards of colonial industrialisation.” Aldrich, 115, 172.

¹¹ As part of this effort, France hosted colonial expositions in Marseille in 1922 and in Paris in 1931.

¹² Raymond F. Betts, *Uncertain Dimensions: Western Overseas Empires in the Twentieth Century* (Minneapolis: University of Minnesota Press, 1985), 11.

of imperial practice across the French political spectrum, and from hostile nation states opposed to a French colonial presence in Africa and Asia.” This surge of anti-colonial sentiment and activity was indicative of a larger trend. As Michael Adas points out, imperialists across Europe found that their long-held view that “their unprecedented material achievements entitled them to dominate the globe and chart the course of development of subjugated peoples” was increasingly being criticized and contested after the end of the First World War.¹³

The interwar years also marked a significant period for aviation in French Indochina. Though the colony’s first flight had occurred in December 1910, aviation would not truly get off the ground until after the First World War. As Governor General Albert Sarraut explained, the end of hostilities in Western Europe had created a “new situation” for aviation in Indochina. Henceforth, Sarraut noted, aviation could be reoriented toward “economic and political goals” in the colony, all while ensuring that military obligations were not neglected. Air force commandant François Glaize likewise reflected in February 1924 that “the armistice arrive[d] without any really serious result having been obtained in Indochina in matters of aviation. Everything must be restarted.”¹⁴ For the colony’s air force in particular, the interwar years were the period in which this

¹³ Martin Thomas, *The French Empire between the Wars: Imperialism, Politics and Society* (Manchester: Manchester University Press, 2005), 2; Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca, NY: Cornell University Press, 1989), 401. Adas’ study considers how from the early years of European overseas exploration to the end of the First World War, Europeans’ views of their own scientific and technological achievements “shaped their attitudes toward and interaction with peoples they encountered overseas.” Adas, 4.

¹⁴ Gen. L.-M. Chassin, “Débuts de l’Aviation en Indochine,” *Forces aériennes françaises* 110 (December 1955): 1007; ANOM, GGI 66499, “Télégramme Officiel. Gouverneur Général à Colonies,” November 23, 1918; ANOM, GGI 66499, “Note sur l’Aviation en Indochine. Demandée par le Gouvernement Général,” [February 3, 1924; a cover sheet preceding this document has this February date].

service expanded in size and actually acquired a structure and purpose.¹⁵ Moreover, the progress of civil aviation followed closely behind that of military aviation; thus it is reasonable to conclude—and history bears out the case—that the 1920s and 1930s also witnessed the development of non-military aviation to, within, and through the colony.

The History of Colonial Aviation

As a topic of scholarly research, aviation has received considerable coverage.¹⁶ While some of this work touches on flight and empire, colonial aviation has in general been the subject of fewer studies. Within the field of colonial aviation history itself, there has been even less focus on French Indochina. A pair of recent French-language books that are described at the end of this section—these publications proved essential to my own analysis—are notable exceptions.

Scholars have considered how Western nations used civil aviation as a vehicle for furthering their imperial agendas. For example, Gordon Pirie—Pirie's work was very helpful for my own project—has analyzed British colonial aviation during the interwar

¹⁵ Of the nine squadrons established in the colony between 1917 and 1940, five were created between 1927 and 1939; the first two squadrons were formed in 1917 and 1918, and the last two were set up in October 1940. Christophe Cony and Michel Ledet, *L'Aviation française en Indochine: Des origines à 1945* (Outreau: Lela Presse, 2012), 628-631.

¹⁶ There is no shortage of works on French military aviation and the French aeronautics industry. In particular, several articles and books have examined the struggles to modernize and rearm the nation's air force as war threatened Europe beginning in the mid-1930s. See, for example, Patrick Facon's numerous publications on the French air force, including *Histoire de l'armée de l'air* (Paris: La Documentation française, 2009) and "Politics and French Aviators: A Prism on the International European Crises of the 1930s," in *The Influence of Airpower upon History: Statesmanship, Diplomacy, and Foreign Policy since 1903*, ed. Robin Higham and Mark Parillo (Lexington: The University Press of Kentucky, 2013), 61-84; Christopher Anthony Cain, "L'Armée de l'Air, 1933-1940: Drifting toward Defeat," in *Why Air Forces Fail: The Anatomy of Defeat*, ed. Robin Higham and Stephen J. Harris (Lexington: The University Press of Kentucky, 2006), 41-70; Charles Christienne and Pierre Lissarrague, *A History of French Military Aviation*, trans. Frances Kianka (Washington: Smithsonian Institution Press, 1986); and Robert J. Young, "The Strategic Dream: French Air Doctrine in the Inter-War Period, 1919-1939," *Journal of Contemporary History* 9, no. 4 (October 1974): 57-76.

years,¹⁷ and Mark Dierikx has written about Dutch aviation as well as air travel in general. For the United States, Jenifer Van Vleck has studied the symbolic and actual importance of aviation in the country's rise to the status of an international power in the twentieth century.¹⁸

With regard to colonial military aviation, David E. Omissi has examined how aircraft were used in the British Empire during the interwar years; notably, his study contains a comparative discussion of the French air force's activity in Morocco and the Levant during this period.¹⁹ Likewise, David Killingray has written about the use of aviation as a tool of colonial authority in British Africa, and Priya Satia has considered the intertwined issues of British airpower and Orientalist views in Iraq after the First World War.²⁰ Headrick brings the topic of air control closer to the present day. In his analysis of the relationship between technology and Western imperialism, Headrick

¹⁷ Gordon Pirie, *Air Empire: British Imperial Civil Aviation, 1919-39* (Manchester: Manchester University Press, 2009). Other useful works on civil aviation in the British Empire include Robin Higham, *Britain's Imperial Air Routes, 1918-1939: The story of Britain's overseas airlines* (Hamden, CT: Shoe String Press, 1961) and Robert McCormack, "Great Britain and the 'Scramble for Africa,' 1919-1939," *Canadian Journal of African Studies* 10, no. 1 (1976): 87-105.

¹⁸ Marc Dierikx, "Routes Versus Revenue: Pioneering Commercial Aviation in Holland, 1919-1940," *Revue belge de philologie et d'histoire* 78, no.3 (2000): 889-911 and *Clipping the Clouds: How Air Travel Changed the World* (Praeger: Westport, CT, 2008); Jenifer Van Vleck, *Empire of the Air: Aviation and the American Ascendancy* (Cambridge, MA: Harvard University Press, 2013).

¹⁹ Employing Headrick's framework for understanding the relationship between European technology and European imperial expansion, Omissi argues that aviation was involved in the phases of colonial penetration, conquest, and consolidation. Aircraft, Omissi writes, not only helped to penetrate and map areas of imperial interest but also "crushed primary resistance movements" and assisted with putting down rebellions. Moreover, once nominal imperial control was established, planes were used to "extend state power to marginal areas of swampland, mountains or deserts." David E. Omissi, *Air Power and Colonial Control: The Royal Air Force, 1919-1939* (Manchester: Manchester University Press, 1990), 4.

²⁰ David Killingray, "'A Swift Agent of Government': Air Power in British Colonial Africa, 1916-1939," *The Journal of African History* 25, no. 4 (1984): 429-444; Priya Satia, "The Defense of Inhumanity: Air Control and the British Idea of Arabia," *The American Historical Review* 111, no. 1 (February 2006): 16-51.

includes discussions of military aviation from 1911 to 1936 and from 1946 to 2007; this latter part, which factors into my dissertation's conclusion, has a section on French airpower in the First Indochina War and American airpower in the Vietnam War. More generally, Headrick asserts that local conditions need to be considered when examining the links between technology and imperialism, which is an argument that informed my own work.²¹

For military aviation and the French empire specifically, Martin Thomas has studied how local intelligence gathering in North Africa and the Middle East influenced British and French imperial policymaking. As part of his argument regarding the “symbiotic relationship between intelligence and empire,” he incorporates discussion of aerial reconnaissance and air policing.²² In another publication, Thomas contends that airpower was one of the most apparent “innovation[s] in organized colonial violence” that the French deployed as a means of maintaining and extending their authority.²³ As a

²¹ “Western imperialism,” Headrick points out, “was subject to environmental forces as much as by the encounters between peoples.” He explains that “nature is extremely varied, and so is its influence on historical events. In some situations, environmental factors greatly aided the conquerors; [i]n others,...the environment was an obstacle to conquest.” As my dissertation demonstrates, the environment—namely, the local climate and geography, whether across the peaks and fog of the Annamese Mountains or the wetlands and rice fields of the delta regions—proved to be a major “obstacle to conquest” for aviation in French Indochina. Daniel R. Headrick, *Power over Peoples: Technology, Environments, and Western Imperialism, 1400 to the Present* (Princeton, NJ: Princeton University Press, 2010), 5-6.

²² Martin Thomas, *Empires of Intelligence: Security Services and Colonial Disorder after 1914* (Berkeley: University of California Press, 2008), 13. In another comparative study, Thomas considers how the French and the British dealt with their crises of decolonization in the years after the Second World War. *Fight or Flight: Britain, France, and their Roads from Empire* (Oxford: Oxford University Press, 2014). Thomas has also published more general studies of the French empire during the interwar years and in the Second World War. *The French Empire between the Wars: Imperialism, Politics and Society* (Manchester: Manchester University Press, 2005) and *The French Empire at War, 1940-1945* (Manchester: Manchester University Press, 1998).

²³ Martin Thomas, “Introduction: Mapping Violence onto French Colonial Minds,” in *The French Colonial Mind: Violence, Military Encounters, and Colonialism*, vol. 2, ed. Martin

final point, Thomas has analyzed airpower in the context of the strategies for defending the empire that were drawn up in the mid-to-late 1930s.²⁴

For the topic of civil aviation and the French empire, Dominique Legarde has detailed the development of commercial aviation from the first decade of the twentieth century through the era of decolonization. Focusing on aviation throughout the empire, he describes the efforts of the myriad airlines, which often collaborated with military and government officials, to establish air transport both from metropole to the colonies and within the colonies themselves. In doing so, Legarde observes noteworthy connections between empire and aviation during this period. “For more than half a century,” he points out, “the performances of aviation have faithfully accompanied the colonial saga.” Legarde identifies a common spirit of adventure as well as a shared idea that flight and the far-flung territories of the empire each represented a type of last frontier. “In men’s dreams and ambitions,” he contends, “the airplane and the colony could not more closely coincide.” Legarde also notes that commercial aviation in the empire and the French empire itself traced similar trajectories of ascendancy and decline from the early twentieth century until decolonization.²⁵

Thomas (Lincoln: University of Nebraska Press, 2011), xi-liii. The airpower reference is from xxiii-xxiv.

²⁴ Martin Thomas, “Plans and Problems of the *Armée de l’Air* in the Defence of French North Africa before the Fall of France,” *French History* 7, no. 4 (1993): 472-495; “At the Heart of Things?: French Imperial Defense Planning in the Late 1930s,” *French Historical Studies* 21, no. 2 (Spring 1998): 325-361; “Economic Conditions and the Limits to Mobilization in the French Empire, 1936-1939,” *The Historical Journal* 48, no. 2 (June 2005): 471-498.

²⁵ Dominique Legarde, *Aviateurs d’Empire: L’épopée de l’Aviation Commerciale dans la France d’Outre-Mer* (Chanac: La Régordane, 1993), 5. Robert Blufffield’s comparative study of interwar air transport includes a section on the development of air travel to and within Indochina. As is often the case with publications that reference air transport and Indochina, Blufffield’s book provides a straightforward description but no further analysis. Robert Blufffield, *Over Empires and Oceans: Pioneers, Aviators and Adventurers. Forging the International Air Routes, 1918-1939* (East Sussex: Tattered Flag Press, 2014).

Several other publications that deal with air transport in the French empire contain useful information about Indochina. Among the numerous materials relating to the history of Air France, three issues of the aeronautics journal *Icare* provide details regarding air transport to and within Indochina.²⁶ In addition, an older article by a General L.-M. Chassin highlights events and personalities from the history of French aviation in Indochina from approximately 1910 to 1940.²⁷ Last, while focusing on military aviation in particular, three books that were published as part of the 1931 Colonial Exposition in Paris present details about flight within Indochina from the 1920s to around 1931.²⁸

²⁶ Air Orient is covered in two issues of *Icare* that were published in the fall of 1978—no. 86—and the fall of 1979—no. 90. This journal also examined Air France's line to Indochina in no. 163, published in 1997. More general studies of Air France include: Fabienne Autier, Gregory Corcos, and Georges Trépo, *Air France: Des années héroïques à la refondation* (Paris: Vuibert, 2001); Philippe-Michel Thibault and Anaïs Leclerc, *Air France: L'art du voyage* (Paris: Gallimard, 2008); and Robert Espérou, *Histoire du transport aérien français* (Saint-Malo: Pascal Galodé, 2008). Additionally, Michèle Kahn's study of the Emeraude airplane crash in January 1934 includes information about French air travel in the context of Indochina. Michèle Kahn, *La Tragédie de l'Émeraude* (Monaco: Éditions du Rocher, 2007). For a broad survey of the history of air transport—including a section about air travel in the context of Indochina—see, Camille Allaz, *The History of Air Cargo and Airmail from the 18th Century*, trans. John Skillbeck (London: Christopher Foyle Publishing, 2004). Likewise, Chadeau's study of aviation in the twentieth century contains a discussion of the development of mail and passenger air service to Indochina. Chadeau, *Le Rêve et la Puissance*. See, also, Edmond Petit, *La vie quotidienne dans l'aviation en France au début du XX^e siècle, 1900-1935* (Paris: Hachette, 1977).

²⁷ Gen. L.-M. Chassin, "Débuts de l'Aviation en Indochine," *Forces aériennes françaises* 110 (December 1955): 1001-1019. Chassin also describes notable moments of flight from the pre-aircraft era of the late eighteenth and late nineteenth centuries.

²⁸ Exposition Coloniale Internationale, *Indochine Française. Section générale. Troupes de l'Indochine. L'Aéronautique militaire de l'Indochine* (Hanoi: Imprimerie d'Extrême-Orient, 1931); Exposition Coloniale Internationale, *Indochine Française. Section générale. Troupes du groupe de l'Indochine. Les services militaires en Indochine* (Hanoi: Imprimerie d'Extrême-Orient, 1931). Jean-Baptiste Manchon frequently references a pair of publications from the Colonial Exposition, which he cites as follows: Exposition coloniale [1931; Paris], Section Indochine, *Indochine Française. Section générale. Aéronautique militaire. Historique de l'aéronautique d'Indochine* (Hanoi: Imprimerie d'Extrême-Orient, 1930); and Exposition coloniale [1931; Paris], Section Indochine, *Indochine Française. Section générale. L'Aéronautique militaire de l'Indochine* (Hanoi: Imprimerie d'Extrême-Orient, 1931). Jean-Baptiste Manchon, *L'aéronautique militaire française outre-mer, 1911-1939* (Paris: Presses de l'université Paris-Sorbonne, 2013).

A reference should also be made to Edward M. Young's history of aviation in Thailand. In this study, Young examines the development of Thai military and civil aeronautics, with a focus on the period from 1911 to 1945. This book deserves mention because it provides an illuminating comparative perspective.²⁹ When placed beside my dissertation, Young's analysis reveals parallels between aviation in Thailand and aviation in Indochina. These parallels were evident not only in terms of the development and the utilization of aviation but also in terms of the challenges the Thai and French faced in getting their respective air services off the ground.³⁰

Two recent books were integral to my dissertation, providing information upon which my work relied as well as historical analysis upon which my project aims to expand and improve. Published in 2012, Christophe Cony and Michel Ledet's *L'aviation française en Indochine: Des origines à 1945* is an "overview of the history of French aviation in Indochina." They point out that that their topic is one on which "nothing or almost nothing had been undertaken or realized."³¹ To rectify this situation, Cony and Ledet offer a great amount of detail on all aspects of military and civil aviation in the context of Indochina through the end of the Second World War. These authors thus seek to document the day-to-day activities of the military squadrons—whether naval, army, or air force—and the shifting material and administrative structures of these units. In addition, Cony and Ledet report on significant long-distance flights between France and

²⁹ Edward M. Young, *Aerial Nationalism: A History of Aviation in Thailand* (Washington: Smithsonian Institution Press, 1995). Thailand was known as Siam prior to late June 1939. For the sake of continuity, my dissertation utilizes "Thailand" rather than "Siam."

³⁰ Among the common problems, the most apparent was the challenge of ensuring an adequate stream of funds and aeronautics supplies. Young, *Aerial Nationalism*, 13, 39.

³¹ Cony and Ledet, 6.

Southeast Asia, and discuss the development of not only commercial aviation but also the local aero clubs in Indochina.

The second major contribution to the history of aviation in French Indochina is Jean-Baptiste Manchon's *L'aéronautique militaire française outre-mer, 1911-1939*. Based on his doctoral dissertation, Manchon's text analyzes how military aviation functioned as "a tool of colonial power." Manchon explains that "the objective of this study is to understand how and why French military aviation deployed in the empire evolved from an aviation of domination, dedicated to the control and the development of colonial territories, to an aviation of defense and protection." He contends that the history of the empire's air forces is best understood as a three-stage progression. The initial "confused phase" lasted from 1911 to around 1919; this was a period during which "aviation tried to find its way, [and] pragmatism won out over overall coherence." This stage was followed by a "colonial phase," which stretched from approximately 1920 to 1934, in which aircraft were primarily utilized for "civilizing" purposes in the empire (*une aviation militaire civilisatrice dans l'Empire*). The final stage—the "imperial phase"—lasted from 1934 to 1939 and consisted of "the unfinished progression toward an aviation of defense and deterrence."³²

In more detail, Manchon applies the term "colonial aviation" (*aviation coloniale*) to this first stage. He indicates that there was neither a clearly defined purpose for the squadrons stationed in the empire nor a distinct difference between these units and those located in the metropole at this time.³³ Then, at the start of the 1920s, a shift occurred regarding the role and structure of the colonial air forces. Because the French empire's

³² Manchon, 18-21.

³³ Manchon, 20.

squadrons faced no imminent threat from an enemy air force, these units focused on political and economic tasks within a given territory instead of undertaking properly “military” missions and defense operations. Manchon asserts that this politico-economic emphasis was the hallmark of the second stage, the period of “aviation in the colonies” (*aviation aux colonies*).³⁴ He determines that, in terms of both organization and functioning, the peak of this second phase was from 1928 to 1933.³⁵ Importantly, Manchon emphasizes that aviation’s military and politico-economic duties were interlinked, with the two operating in support of one another. In this manner, aviation was able to contribute to the work of maintaining and strengthening the French empire.³⁶

The third phase of Manchon’s analysis is “imperial aviation” (*l’aviation impériale*).³⁷ This transition to imperial aviation—which remained unfinished as Europe was plunged into war in September 1939—was the result of a combination of factors that arose during the course of the mid-to-late 1930s.³⁸ According to Manchon, this third

³⁴ Regarding this transformation, a particular legislative text—adopted January 19, 1920—was especially important. This directive defined “colonial aviation” as a branch of military aviation that was under the direction of the Minister of the Colonies and laid out how this service arm was to be employed for military, political, and economic missions across the empire. This directive thus marked a clear difference between the purpose and activity of the air forces deployed overseas and those in the metropole. Manchon, 20, 204.

³⁵ Manchon, 272-273. While 1928 witnessed the creation of the Air Ministry, an independent air force was created in 1933. This era, moreover, saw the stabilization of the squadrons stationed in the empire; the amount of credits allotted to overseas aviation quadrupled in during these years, and 1932 was the year in which the funding for the colonial air forces reached a maximum for the interwar period.

³⁶ Manchon, 654.

³⁷ Manchon argues that 1934 was a watershed year for military aviation in the empire. Along with Cony and Ledet, Manchon notes this was the year that France’s air force actually was given its structure and role. Cony and Ledet, 210; Manchon, 526. Enlarging upon aviation historian Patrick Facon’s assessment that 1937 was a turning point for French air doctrine as metropolitan air force leadership embraced strategic bombing, Manchon explains that this year was also critical for aviation in the empire. Thus Manchon asserts that 1937 clearly signaled “the irreversible development toward an *imperial aviation*.” Manchon, 576.

³⁸ Manchon highlights the following factors: the creation of an independent air force; the worsening international climate; and the swift progress of aeronautics technology. Manchon, 21.

stage entailed a shift from a focus on non-military missions within the borders of a given colonial space to the development of a service arm “dedicated principally to the tasks of defense and air superiority.” The colonial squadrons were integrated into broader strategies for protecting France and its empire, and the primary purpose of these air forces thus became providing defense against external enemies in possession of “powerful and developed” armed forces. Consequently, Manchon explains, “exclusively colonial work...became a secondary concern.”³⁹

Compared to Manchon’s and Cony and Ledet’s books, my study has a narrower focus. The subject matter itself—aviation in French Indochina during the interwar years—of course overlaps with aspects of these other two works. Yet there are notable differences between my dissertation and what Manchon and Cony and Ledet present. My analysis aims to address problematic elements and lacunae in their books while underscoring different connections between the history of aviation and the history of the French empire.

With Cony and Ledet, a basic problem is the lack of sustained critical examination. In addition and in contrast to my dissertation, they do not seek to connect their work to broader themes in the history of aviation or, for that matter, the history of French Indochina. In other words, they do not fully explain the significance of their contribution. Also, unlike Cony and Ledet’s book, my project does not include discussion of Indochina’s aero clubs or the various long-distance flights during this period. Instead, my work centers on aviation as it related to military, government, and commercial efforts within the framework of French interests in Indochina and beyond. Thus the individuals and initiatives linked to endurance flights—voyages that sought to set and break

³⁹ Manchon, 526, 21.

records—or to flying as sport do not factor prominently in my dissertation. It is important to acknowledge, though, that the aero clubs and the bold attempts to fly farther, faster, and longer did have a significant propaganda effect in favor of aviation in the French empire.

With regard to Manchon's book, my dissertation analyzes a particular area of his wide-ranging study. In doing so, my project presents an interpretation of how Indochina's air force developed that differs from his three-stage argument for overseas military aviation. Simply put, Manchon's characterization of the shift in 1934 from the era of "aviation in the colonies" to the short-lived period of "imperial aviation" does not emphasize the continuity in purpose and activity of Indochina's air force during the interwar years. Also, Manchon seems to overestimate the immediate impact of the creation of the air force, at least locally in Indochina. Finally, the broad scope and military focus of Manchon's work naturally leaves certain analytical and topical gaps, especially with regard to the role of airlines and non-military aviation within Indochina.

Overall, in terms of the history of French colonial aviation, my dissertation argues that Indochina presents a rich area of study. More so than anywhere else in the empire, the aviation efforts in Indochina encapsulated all that the French hoped to accomplish with aircraft. In other words, aviation, in all its iterations, was on full display in Indochina as it was nowhere else in the empire. While planes were perhaps used more extensively for a particular purpose elsewhere in the empire, nowhere else were aircraft used in such a variety of ways during the interwar period. An analysis of aviation in Indochina thus lays bare the totality of the hopes and the realities of aviation in the French empire.

The History of Indochina

My work contributes not only to the history of French colonial aviation but also to the history of French Indochina. While filling a gap in the literature on this subject, my dissertation adds another perspective to scholarly understandings both of the relationship between the French and the native populations and of the French experience in Laos. Through the lens of aviation, my project also provides a fresh perspective on French relations with Thailand during this period. More broadly, and more significantly, my dissertation contends that an analysis of aviation reveals much about the history of the French experience in the colony.

Generally, published studies of different aspects of French Indochina include only passing references to aviation. For instance, Pierre Brocheux and Daniel Hémery's survey of the colonial period includes only brief mentions of aviation. In addition to noting that aircraft were used in the reprisals that followed the Yen Bay uprising in the fall of 1930, they cite air travel in the 1930s in their discussion of how the French worked to improve metropole—colony communications in the first four decades of the twentieth century.⁴⁰ In other studies of the component parts of Indochina—or in texts that address a specific aspect of history during the colonial period—aviation typically is mentioned only in passing. These references tend to discuss either the usage of airpower against anti-colonial activities and pockets of dissident populations in the late 1920s and early 1930s or the establishment of commercial air travel to or within the colony.⁴¹

⁴⁰ Pierre Brocheux and Daniel Hémery, *Indochina: An Ambiguous Colonization, 1858-1954*, trans. Ly Lan Dill Klein, with Eric Jennings, Nora Taylor, and Noémi Tousignant (Berkeley: University of California Press, 2009), 318, 184.

⁴¹ For references to airpower, see Alexander B. Woodside, *Community and Revolution in Modern Vietnam* (Boston: Houghton Mifflin, 1976), 175-176; Truong Buu Lâm, *Colonialism Experienced: Vietnamese Writings on Colonialism, 1900-1931* (Ann Arbor: University of

While the relationship between colonizer and colonized is not the focus of my project, my dissertation does show that members of the indigenous populations were part of the French aerial endeavor in Indochina. Most of this participation took place on the ground. Sources document individuals, typically Vietnamese men, working as aircraft mechanics, in aeronautics workshops, or on airfield maintenance. Native personnel also accompanied the French air force on missions, usually in the capacity of mechanics. Notably, there were instances of the Vietnamese receiving flight training, serving as pilots, or taking part in operations in which the French deployed airpower against dissident groups. As Manchon notes though, the indigenous personnel “only rarely” were involved in such policing missions.⁴² In addition, members of the local populations—

Michigan Press, 2000), 20, 36 n.32. Geoffrey Gunn, *Rebellion in Laos: Peasants and Politics in a Colonial Backwater* (Bangkok: White Lotus Press, 2003), 121, 127; Gerald Cannon Hickey, *Sons of the Mountain: Ethnohistory of the Vietnamese Central Highlands to 1954* (New Haven, CT: Yale University Press, 1982), 319-321. Hickey also describes how aerial reconnaissance was utilized in 1925 as a means of determining the best itinerary for a future road. For examples of references to air travel both to and within the colony, see, Tully, 261; Penny Edwards, *Cambodge: The Cultivation of a Nation, 1860-1945* (Honolulu: University of Hawai'i, 2007), 156; and Aline Demay, *Tourism and Colonization in Indochina (1898-1939)* (Newcastle upon Tyne: Cambridge Scholars Publishing, 2014), 141. Scholars have also discussed the symbolic importance of flight in the context of Indochina. For instance, Panivong Norindr notes that, in their advertisements and posters, travel companies like Air France depicted Indochina as an exotic commodity. This graphic art contributed to French government and commercial efforts to present the colony as “an alluring and commodified object, a familiar icon or sign to be desired or possessed.” Panivong Norindr, *Phantasmatic Indochina: French Colonial Ideology in Architecture, Film, and Literature* (Durham, NC: Duke University Press, 1996), 4. Also, Christopher E. Goscha, in his analysis of Jean Marquet's 1928 publication *The Five Flowers: Indochina Explained (Les cinq fleurs: L'Indochine expliquée)*, demonstrates how the French employed the symbolism of aviation to reinforce their colonial authority, knowledge, and technological prowess. Christopher E. Goscha, *Vietnam or Indochina? Contesting Concepts of Space in Vietnamese Nationalism, 1887-1954* (Copenhagen: Nordic Institute of Asian Studies, 1995), 34. Certain of the aforementioned citations are incorporated—and discussed in more detail—into the relevant chapters of my dissertation.

⁴² For instance, during the First World War, Cao Dac Minh was an airplane mechanic for the French before becoming certified as a pilot in the fall of 1915. Recalled to Indochina closer to the end of the conflict, he perished in a plane crash on December 27, 1918, as he undertook a flight in Cochinchina; Cao Dac Minh, for whom the central hangar at the Bach Mai airbase in Tonkin would be named, was the first aviator killed in Indochina while in the service of military aviation. In another example, a Vietnamese aeronautics mechanic, Sargent Hoang Van Hao, flew

often elites involved in the colonial administration or regional nobles—traveled on aircraft and were given short “first flights” (*baptême de l’air*) by French aviators. Generally, these individuals seemed enthusiastic about French aviation, at least from the French perspective.⁴³ Finally, in more routine circumstances, native peoples submitted requests for a variety of economically oriented tasks, including aerial photography work and airdrops of business-advertisement leaflets.⁴⁴

In the context of my dissertation, the overall picture of the relationship between colonizer and colonized reflects Dierikx’s observation that “flying [in the colonies] was a ‘white man’s business.’” As he explains, “the airplane was the colonizer’s new travel instrument, an agent of European vigor and power” throughout Asia and Africa.⁴⁵ Likewise, David W. Del Testa argues that “the availability of new forms of transportation, mainly automobiles but to some degree airplanes, enhanced the possibilities for separation of the Vietnamese and the French.”⁴⁶ Del Testa’s point reinforces how the French tended to view aviation not as a means of bringing colonized

on one of the aircraft that took part in the bombing campaign in Kontum in March 1929—this mission is discussed in chapter six—and, along with three other French air force officers, was cited for his distinguished service during the operation; Manchon reports that two more Vietnamese non-commissioned officers participated in this particular assignment. Cony and Ledet, 32; ANOM, GGI 66545, “Année 1929. Ordre Général No. 12,” April 24, 1929; Manchon, 345.

⁴³ Prince Tiao Phetsarath of Laos was perhaps the most recognizable of the indigenous notables who took to the skies with French pilots somewhat regularly during the interwar years. See, Cony and Ledet, 198-199, and Manchon, 405.

⁴⁴ For examples of such requests—not all of which were ultimately approved—see ANOM, RSTNF 2732 and ANOM RSTNF, 4250.

⁴⁵ Dierikx, *Clipping the Clouds*, 33.

⁴⁶ David W. Del Testa, “Paint the Trains Red: Labor, Nationalism, and the Railroads in French Colonial Indochina, 1898-1945” (PhD Diss., University of California, Davis, 2001), 154. For Del Testa’s publications on transportation technology in Indochina, see David W. Del Testa, “‘Imperial Corridor’: Association, Transportation and Power in French Colonial Indochina,” *Science, Technology, and Society* 4, no. 2 (1999): 319-354; and David W. Del Testa, “Automobiles and Anomie in French Colonial Indochina,” in *France and Indochina: Cultural Representations*, ed. Kathryn Robson and Jennifer Yee (Lanham, MD: Lexington Books, 2005), 63-78.

and colonizer closer together in Indochina but as a way to keep distance between the two groups and the French above the natives, both literally and figuratively. Thus while the indigenous populations participated in French aviation in the colony, their participation was regulated by the French and was in the service of French interests. This is not to say that the French would not deploy aviation to “help” their Indochinese subjects. In fact, officials professed at least some feeling of responsibility to use aircraft to protect their colonial protégés against external threats.⁴⁷

Continuing, my analysis moves Laos more to the foreground in the history of French Indochina. Indeed, Laos often appeared as an afterthought in the minds of contemporaries and tends to play only a minor role in histories of the colony. It should be noted that this neglect is not necessarily unjustified. As Martin Stuart-Fox observes, Laos was the least important and least developed part of Indochina. The colonial administration essentially viewed this protectorate as an economic and strategic extension of French territory in Annam, Tonkin, and Cochinchina.⁴⁸ As my analysis shows though, Laos factored prominently into French officials’ plans regarding commercial air travel and medical aviation. The protectorate also played a significant role in the earliest effort at military air transport. In each of these three cases, the aviation work was part of the drawn-out process of improving communications and access to Laos, thus “unblocking”

⁴⁷ Governor General Brévié underscored the negative consequences of not providing adequate fighter squadrons to the colony and leaving large sections of the territory “open to adverse aerial incursions.” Brévié remarked, “without insisting on the disadvantages of a military nature presented by such a situation, it is beyond doubt that we would assume a weighty responsibility toward the indigenous populations having confidence in our protection.” SHAA, 2B33/D1, “Le Gouverneur Général d’Indochine à Monsieur le Ministre des Colonies,” March 11, 1938.

⁴⁸ Martin Stuart-Fox, “The French in Laos, 1887-1945,” *Modern Asian Studies* 29, no. 1 (Feb. 1995), 111-112.

this region of Indochina.⁴⁹ In addition, my project demonstrates that Laos was one of the primary targets for aircraft missions that the French launched in an effort to assert their colonial authority.

Moreover, my dissertation reveals the complexities of the Franco-Thai relationship in Southeast Asia. Thailand and Thai aviation frequently factored into French discussions of aviation, from medical transport to propaganda tours, airmail to air defense. The crux of the French position, in civil as well as military circles, was to cultivate a positive relationship with Thailand. In doing so, France could maintain—and then expand—its military and commercial presence in this area of the world; in this latter regard, it was particularly important for the French to be able counterbalance Great Britain’s predominant influence in the region. Also, France would of course benefit from remaining on friendly terms with the countries that bordered Indochina. Conversely, Thailand—and China as well—looked to the French as they worked to develop their own air forces beginning in the early 1920s; the goal for these two nations was an advantageous relationship with France that would allow for access to French aviation resources.⁵⁰

Describing aviation visits exchanged between Thailand and Indochina between September 1930 and January 1931, Manchon writes that “Franco-Siamese fraternization

⁴⁹ However, Stuart-Fox does not include aviation in his discussion of how the French sought to unblock the region. “Landlocked Laos had to be ‘unblocked’ in the sense of being provided with access to the sea, by river, by rail or by road, and via Vietnam, not Thailand. This for a succession of French administrators became the first priority in effecting the *mise en valeur* of the territory.” Stuart-Fox, 123.

⁵⁰ Manchon, 468, 454.

was at its zenith.”⁵¹ Such amicable gestures “soon became rare” though. Manchon explains that Thailand, convulsed by the Depression crisis of the 1930s and with a more aggressive post-coup regime that looked less favorably upon the French, began to reconsider its relationship with Indochina.⁵² Despite any surface-level indications to the contrary, the Franco-Thai relationship had been somewhat tense since the start of French imperialist expansion into Southeast Asia in the second half of the nineteenth century. Eventually, France—and Great Britain, too, in Malaya and Burma—forced Thailand to relinquish large parts of what had been considered Thai territory. “Treaties with England and France confirmed Siam’s independence and its borders,” Young writes, “but the price of these had been heavy.”⁵³ Unsurprisingly, the effect in Thailand was that “suspicion of the colonial powers remained for a long time.”⁵⁴

Finally, though powered flight had a comparatively short existence in the history of French Indochina before the Second World War, this topic encapsulates not only imperialists’ highest hopes for the colony but also the reasons that these hopes were never fully actualized. The French viewed aviation as a powerful new instrument that could be wielded in the service of the colonial project in Indochina. Eyeing the multi-purpose potential of flight technology, metropolitan and colonial officials imagined that aviation

⁵¹ Thailand and China intermittently exchanged such visits with the French in Indochina, with most of these occurring in a period from the beginning of the 1920s until the early 1930s. For additional information, see Young, *Aerial Nationalism*, 23, and Manchon, 468-469.

⁵² Manchon, 471-472, 472 n.341; Cony and Ledet, 186-187. Regarding the overthrow of government in Thailand, a coup in late June 1932 overturned the monarchy and brought to power a regime that was more militaristic and nationalist. Young, *Aerial Nationalism*, 148.

⁵³ Young details how the British and French acquired large swaths of territory and concessions from Thailand: “In 1893 French gunboats blockaded Bangkok to support French demands for Siam to cede the whole of Laos east of the Mekong River. In 1907 Siam had to agree to cede three provinces in western Cambodia to the French, and in 1909 four states in northern Malaya to the English. Economic and financial concessions put a further drain on the country’s limited resources.”

⁵⁴ Young, *Aerial Nationalism*, xxv, xxviii.

would, as Pirie asserts for British colonial aviation, “modernise, maintain, protect, reassert and legitimate Empire.” Yet, Pirie adds, “anticipation and intention exceeded actuality and implementation: what was hoped for and promised from aviation was less than what it actually achieved on the imperial stage.”⁵⁵

Like Pirie’s study, my analysis underscores how colonial power and authority—even in the form of a modern, multi-purpose machine like the airplane—were neither omnipotent nor omnipresent. In the end, aviation failed to adequately rejuvenate, maintain, and strengthen French colonial rule. My dissertation thus demonstrates in a stark manner the weaknesses and the limits of French control and technological prowess in the empire as well as the long-term consequences that these weaknesses had for the French in Indochina and for the French empire itself.

Aviation provides a vehicle for understanding some of the reasons for why the French project in Indochina faltered and then failed. As Pirie points out, studies of colonial aviation in many ways “illuminate the embodiment, difficulties, dilemmas, risks, evasions, muddles and struggles of imperialism in practice.”⁵⁶ An examination of aviation in Indochina indeed reveals much about “imperialism in practice.” Specifically, my dissertation shows how a host of issues impeded the work of the colonial project in Indochina: financial and material limitations; disagreements among officials; a cumbersome, at times confusing, administrative machinery; the vulnerabilities of colonial power, technology, and authority against local populations, geography, and climate; and—as was plainly evident in the second half of the 1930s—a metropolitan government that simply could not afford to sacrifice itself to protect its empire, especially the most

⁵⁵ Pirie, 2, 236.

⁵⁶ Pirie, 4.

distant parts. Many of the problems that worked against aviation in Indochina during the interwar period—especially the challenge of obtaining resources from the metropole, the insufficiency of the aerial infrastructure, and the unfavorable weather and geography—were magnified during the Second World War and still more significantly during the First Indochina War. As a result of France’s shocking defeat in this latter conflict, French colonialism made its exit from Southeast Asia. In a larger context, by the end of the First Indochina War, it had become clear that the French empire itself would not ultimately survive. As Brocheux and Hémery contend in describing the French experience in this conflict, the nation “exhaust[ed] itself in a war that was the first step toward the extinction of its colonial empire.”⁵⁷

Overall, then, my dissertation positions aviation at the intersection of multiple facets of the history of French Indochina: technology; transportation and communication; medicine; colonial development; social science; propaganda; international relations in Southeast and East Asia; metropole-colony connections; and the complicated relationship between colonizer and colonized, what Brocheux and Hémery describe as the “ambiguity of the Indochinese colonial situation.”⁵⁸ Therefore, in a different iteration of what Eric T. Jennings accomplishes in his multi-faceted study of the French resort of Dalat, my dissertation argues that aviation provides a type of “window onto the actual workings of empire,” a means of “compar[ing] grand imperial schemes against results on the ground, imperialist rhetoric against local practices.”⁵⁹

⁵⁷ Brocheux and Hémery, 337.

⁵⁸ They observe that the colonial encounter in French Indochina was complex, diverse, and neither “fundamentally civilizing, even if faulty...[nor] purely dominating, repressive, and exploitative.” Brocheux and Hémery, xiv-xv.

⁵⁹ Eric T. Jennings, *Imperial Heights: Dalat and the Making and Undoing of French Indochina* (Berkeley: University of California Press, 2011), 3.

Dissertation Chapters

My project is organized topically around the different ways in which the French used aircraft in the context of Indochina. The two sections—which are composed of individual chapters—involve the concepts of transportation and communication and of colonial development, internal policing and control, and external defense. Chapter one offers an overview of how an aviation infrastructure was established within Indochina. The development of this infrastructure was a fundamental part of getting aviation off the ground in the colony. The necessity of preparatory groundwork—and the problems that could and did result—reflects how aviation remained tethered to the earth despite its capabilities to pass high above the landscape. The experience and trajectory of creating an aviation infrastructure in French Indochina was similar to that of other European powers that sought to launch aviation services within their empires.⁶⁰

For a limited period of time and to a limited extent, the air force operated scheduled transports within Indochina. These trial attempts of the 1920s and early 1930s, the subject of chapter two, functioned as a precursor to non-military air service in the colony and helped to stir up enthusiasm for air travel. The work that Indochina's air force accomplished in this regard literally and figuratively established the framework for future

⁶⁰ For example, Robert McCormack identifies five factors that impeded Great Britain's efforts to get aviation off the ground in Africa, and these different impediments were certainly apparent for French aviation in Indochina as well.⁶⁰ While local geography and climate posed challenges to a technology that was still relatively unreliable and fragile, the installation of an aviation infrastructure was itself a "costly and time-consuming process." Moreover, with the widespread destruction and dislocation caused by the First World War, European governments needed to devote significant attention and resources to rebuilding within their borders. The fourth factor was that the crippling effect of the Great Depression and the looming possibility of another global conflict limited the materials that could be directed toward the colonies as the 1930s progressed. Last, McCormack points out that despite the best efforts of flight enthusiasts, European governments remained uncertain about the role of aviation; this ambiguity related to the fact that, into the 1930s, aviation remained an expensive technology with which most people still had not had direct experience. McCormack, 91-92. McCormack also discusses several problems that were specific to the British Empire.

air transport. This chapter, therefore, reinforces the larger point that military and non-military aviation in the French empire were often intertwined during the interwar period, with the development of the former typically preparing the way for the installment and functioning of the latter.⁶¹ By detailing these early efforts at air transport, this chapter also highlights certain of the impediments—in particular, high costs and a lack of infrastructure—that frequently hindered the use of aviation in Indochina.

Chapter three analyzes civil aviation, focusing on airlines' efforts to organize service for mail and passengers. Aviation companies—with the help of the metropolitan and colonial governments—worked to develop routes to and within Indochina and through the colony to East Asia. From the early 1920s, plans for launching civil air service were envisioned with longer connections in mind. In examining how and why the French developed air routes in these different contexts, this chapter reveals the various challenges that arose to slow these endeavors. Notable among these difficulties were foreign aviation competition and a perceived stubbornness on the part of both China and Thailand. Indeed, the reality of flying from France to Indochina and beyond in the interwar years was that foreign assistance and agreeability, while not always forthcoming, remained necessary.

The final part of this section, chapter four, examines Indochina's aeromedical service. Air ambulances were used in the colony to transport patients, doctors, and medicines. Furthermore, these medical flights were intended to function as a demonstration of French mastery over the physical environment and a display of the colonizers' purportedly benevolent civilizing presence. In addition to the shortcomings of

⁶¹ This air of cooperation was not always evident, as air force leaders occasionally disagreed with civil authorities regarding the utilization of non-military airfields by military planes. See, for example, Cony and Ledet, 235.

the aerial infrastructure and the lack of suitable aircraft, Indochina's unpredictable and uncooperative weather kept air ambulances on the ground in a manner that noticeably frustrated its advocates. Two other issues that were more unique to the aeromedical service also impeded its use in the colony. First, requesting an air ambulance at times appeared as an extremely cumbersome process. Second, most areas of the colony simply did not need an aeromedical service.

In how it was perceived and how it was utilized, aviation was not just a rapid means of communication and transportation. Thus the second part of my dissertation considers aviation from the perspectives of colonial development, internal policing and control, and external defense. The employment of planes for photography and reconnaissance is analyzed in chapter five. These missions—requested by colonial officials, companies, scientific organizations, or even individuals—assisted in the larger work of understanding, promoting, and developing the colony. Generally, the French in Indochina envisioned the benefits that aerial photography and reconnaissance would bring through the use of the aerial perspective. This vantage point was unimpeded, literally above the messiness of the human and physical landscape below.⁶² Many of the impediments that hindered aerial photography and reconnaissance were familiar to military and colonial authorities: organizational difficulties; a lack of funding; the challenges of the physical environment; and the limitations of the era's technology. Another issue was that, for certain aviation enthusiasts, government officials were not providing enough support for aerial photography and reconnaissance work in the empire.

⁶² Other scholars have explored the relationship between the aerial perspective and Indochina. See, for example, David Biggs, *Quagmire: Nation-Building and Nature in the Mekong Delta* (Seattle: University of Washington Press, 2010) and Jeanne Haffner, *The View from Above: The Science of Social Space* (Cambridge, MA: MIT Press, 2013).

Chapter six considers how aviation was employed within Indochina as a means of combatting what is broadly defined as “internal threats” to colonial authority. Aircraft were sent to areas of anti-colonial activity to bomb and strafe what were viewed as dissident groups. Officials also deployed symbolic demonstrations of airpower that were intended to astonish and coerce the local peoples and to reaffirm French colonial authority; many of these missions were multi-purpose operations that were carried out in the mountainous regions of Annam, Tonkin, and Laos. Whether actual violence was inflicted or not, the overall goal of the missions analyzed in this chapter was the maintenance of French colonial authority. Despite officials’ confidence that aviation would function as the means of defeating supposed internal threats, this use of aircraft was hindered by a host of issues. Chief among these were unfavorable weather, unreliable flight technology, and an inadequate aerial infrastructure. Additional problems were caused by aeronautics competition from Thailand and a fundamental misconception of how colonized peoples would react to the sight of aircraft.

Chapter seven, which mostly details the period from 1934 to 1939, examines airpower as a means of protecting Indochina against external threats, meaning the threats that originated beyond the colony’s borders. The primary menaces were a politically unstable China, a burgeoning Thailand, and an increasingly powerful and aggressively expansionist Japan. From the beginning of the 1930s, it was very evident that an ambitious Japan posed the greatest threat to the colony.⁶³ While the French imagined that

⁶³ Starting with Japan’s invasion of Manchuria in the fall of 1931, Brocheux and Hémery point out, “successive French governments witnessed the crystallization of the menace weighing upon Indochina.” The distance separating metropole and colony ensured that mounting a defense against a Japanese attack would be difficult, particularly as an aggressive Vietnamese nationalist movement had gained momentum during the 1930s. Moreover, by the second half of the decade,

air defense would play a key role in safeguarding Indochina, officials also recognized the deficiencies, in terms of both quantity and quality, of the colony's air force. This chapter shows that the failure to sufficiently reinforce Indochina's air force was not a result of metropolitan negligence or a miscommunication of the dangers posed. Instead, the reinforcement process was mired in a morass of interconnected issues: political and economic problems; an international situation that, in the second half of the decade, made another war in Europe seem almost unavoidable; and, alarmingly for French officials, an aeronautics industry that was ill suited for mass-producing modern aircraft on the scale that would be required to face a mobilizing Nazi Germany.

The conclusion provides a short examination of how aviation factored into the period from June 1940 through the end of the First Indochina War. This section includes a discussion of the Franco-Thai conflict that broke out late in 1940, but the primary focus is on the years of the First Indochina War. Neither Manchon nor Cony and Ledet offer an assessment of the entirety of this particular span of years. While Cony and Ledet include discussions of the Franco-Thai conflict as well as the remainder of the wartime period, they justifiably end their analysis with the Japanese takeover of French Indochina in March 1945; "the time of colonial aviation was definitely over," these authors assert in referencing this particular moment.⁶⁴ While this point is valid, my conclusion suggests that the experience of aviation during the First Indochina War was more connected to the experience of aviation during the interwar years than Cony and Ledet indicate. While the wartime necessities of the 1940s and 1950s required that military and non-military

the looming threat of war in Europe had exacerbated the troubling reality of the French position in Southeast Asia. Brocheux and Hémery, 336.

⁶⁴ Cony and Ledet, 425.

aircraft both function in a narrower scope than was the case during previous decades, the hopes and the realities of aviation proved similar for both eras of flight.

A Note on Sources and Names

My dissertation utilizes published materials as well as archival collections. Notable among the former are documents and books produced as part of France's colonial expositions and articles from aeronautics-themed journals or bulletins about Indochina. Regarding the archival sources, my project incorporates materials from administrators and representatives of commercial airlines, Air France in particular; these documents consist mainly of correspondence and meeting minutes.⁶⁵ Yet among the archival sources—and indeed, among the entirety of the primary materials my research incorporates—my dissertation most frequently references official correspondence and reports composed by French authorities—the majority of whom were stationed in Indochina—who were part of the government, the air force, or the military. Thus my project relies heavily upon the perspectives—and the biases—of locally situated colonial officials.

Moreover, in the pages that follow, several individuals are referenced in multiple chapters. To hopefully assist the reader, some of the more notable of these people are as follows: Jules Bosc, who served as the Resident Superior of Laos for a total of nearly ten years between June 1918 and March 1931⁶⁶; Jules Brévié, Indochina's Governor General for a period of time from 1936 to 1938; Pierre Cordemoy, who published on aviation in

⁶⁵ Unfortunately, due to more than one miscommunication during my time in Paris, I was unable to consult the collection of the Musée Air France. This site has a variety of materials relating to French commercial aviation.

⁶⁶ Martin Stuart-Fox, *Historical Dictionary of Laos* (Lanham, MD: Scarecrow Press, 2008), 395.

the 1930s; Lieutenant Colonel Louis de Durand de Prémorél, the colony's head military officer (*Commandant Supérieur des Troupes du Groupe de l'Indochine*, hereafter *Commandant Superior*) from July 1929 until the end of 1931⁶⁷; François Glaize, who served as chief of Indochina's air force for a total of approximately five and a half years, starting in mid-January 1920, prior to working as a representative for French aviation firms in the late 1920s; Alfred Guyomar, who proceeded Glaize as head of the air force, serving from late April 1919 until mid-January 1920⁶⁸; Inspector of Civil Aviation Louis Hirschauer, who conducted several studies of aviation in Southeast and East Asia during the mid-1930s; Marcel Puypéroux, an air force officer who was in charge of the Hanoi squadron for a period of time in the mid-1930s; and, for clarification purposes, Major General Richard Puypéroux, who was Marcel's father and the *Commandant Superior* in the early 1920s.

⁶⁷ Cony and Ledet, 143. Manchon cites January 21, 1932, as the end of de Prémorél's tenure. Manchon 682.

⁶⁸ The data on Glaize and Guyomar is from Manchon, 682. For additional information on the officers who served as head of Indochina's air force during the interwar period, see Manchon, 681-682.

CHAPTER ONE: DEVELOPING AN AVIATION INFRASTRUCTURE IN INDOCHINA

In February 1930 Pierre Cordemoy wrote in the *Bulletin de l'Agence Economique de l'Indochine* (hereafter *Bulletin*) that Indochina was one and a half times larger than France and had an interior that remained “in large part devoid of transportation routes.” The colony was “a vast field of action open to aviation.” At a conference held six years later during the Exposition Internationale de Paris, a Monsieur Charvet reflected on the progress of air transport in recent years as well as the significance of this development:

Commercial aviation has taken on a crucial importance in the relations between the great colonial nations and their overseas territories. To convince yourself, you just have to glance at the aerial map of the world: a well-conceived air network appears as one of the centerpieces of the economic equipment of the great modern colonial empires.⁶⁹

During the interwar period, metropolitan and colonial officials worked with military authorities to transform Indochina from a “vast field of action open to aviation” to a colony with a “well-conceived air network.” Contemporaries believed that such a network would not only improve conditions for the French within Indochina in multiple ways but also provide a means of linking France to the colony and serve as a springboard for accessing southern China. Overall, the goal was to make air transport to, within, and through Indochina an efficient, safe, and sustainable option that the French could use to further their colonial and commercial interests in Southeast and East Asia.

⁶⁹ Pierre Cordemoy, “L’Indochine et l’aéronautique,” *Bulletin de l'Agence Economique de l'Indochine* (February 1930): 43 [hereafter Cordemoy, February 1930]; M. Charvet, “L’aviation commerciale et l’outillage de la France d’outre-mer,” *Congrès de l’Outillage Public et Privé de la France d’Outre-Mer* (Paris: 1938), 173.

However, before any of these benefits could be reaped, the French needed to establish an aviation infrastructure in the colony.⁷⁰ As a memorandum from the government general observed in the fall of 1929, “aviation will only be able to subsist regularly and economically when the country will be organized to allow aircraft to circulate without too many risks. The basis of this organization is the aerial infrastructure.”⁷¹ In its entirety, the task of installing this infrastructure included creating a system for managing air traffic, planning route itineraries, and constructing a network of landing sites, airfield facilities, and radio and meteorological posts.

This work proceeded in a careful, deliberate manner throughout the interwar period, but a particularly robust effort was exerted during the late 1920s and early 1930s. By this point, it was clear that the infrastructure that had hitherto existed had become insufficient in light of the advances in aviation technology and the projected growth of commercial air transport. With the general organization of the air network essentially fixed by the end of 1930, the remainder of the decade saw continued efforts—even with an economic climate that became increasingly unfavorable to colonial development—to upgrade the infrastructure and catch up with the constantly evolving requirements of air transport.

On the whole, the French consistently struggled to accomplish the goal of providing Indochina with a sufficient air network. This is not to say that there was no

⁷⁰ Unless otherwise specified, “infrastructure” will refer not only to air routes but also to the totality of the features required for a given landing site. Such elements include—but are not limited to—runways, communication and weather equipment, workshops and storage facilities, hangars, terminals, and personnel quarters. This chapter will employ the term “air network” in a similar manner.

⁷¹ ANOM, GGI 66499, “Note sur l’Aviation,” n.d. Regarding the date of this memorandum, the document references a ministerial decree of July 10, 1929, as well as certain events from October—no year is listed but, in all likelihood, this refers to October 1929. A general date of the fall of 1929 can thus be assumed.

worthwhile progress made during the interwar years. Indeed, the infrastructure certainly was upgraded in terms of the quality of the airfields, the coverage and capabilities of the radio and meteorological posts, and the ability to manage the circulation of air traffic. Even so, by the end of the 1930s, the type of modern, safe, and efficient air network that officials had envisioned at the start of the 1920s still did not exist. This fact proved to be a major reason for why the realities of aviation in Indochina fell far short of French hopes for how this technology could be used in the colony.

Reasons for Developing an Aviation Network within Indochina

Gordon Pirie contends that the establishment and maintenance of empire required effective methods of transport. “People and nature may or may not be subdued,” he explains, “but remoteness positively must be subdued.” Transportation links allowed governments to “breach the horizon, spread into new land, occupy and unify distant territory, and then to manage, defend and exploit it.”⁷² Pirie’s analysis of how civil aviation could benefit the British imperial project offers parallels for what the French hoped that air transport would do for their own empire. Indeed, aviation was expected to serve empire in several ways, allowing for:

Better public administration (quicker personnel travel and document exchange); cheaper and more effective aerial survey and management of natural resources; quicker trade in small, light and precious commodities; less alienating (semi-)permanent overseas settlement; more rapid receipt of letters and news; easier social circulation by imperial elites.⁷³

⁷² Gordon Pirie, *Air Empire: British Imperial Civil Aviation, 1919-39* (Manchester: Manchester University Press, 2009), 1.

⁷³ Pirie, 2. Both Great Britain and France pushed to develop civil aviation networks in Africa as well. Robert McCormack describes a “second ‘Scramble for Africa’” that took place in the interwar period and was fostered by the development of aviation and the “new dimension of imperialism” that aircraft offered. Yet in this iteration of the Scramble, the goals were “prestige and influence, routes and ports of call, and traffic in mail, cargo, and people” instead of the

In the case of the French empire in Southeast Asia, officials believed that the development of an air network would have benefits for Indochina itself, for metropole-colony relations, and for French aeronautics interests in China. Within Indochina, a web of air routes would make communications and travel faster and permit easier access to remote areas. For instance, Emmanuel Chaumié, France's Director of Commercial Aviation, depicted the empire as consisting of expanses of unforgiving terrain in which communications were "slow and difficult." He thus argued that the installation of aviation in the colonies had the potential to "truly transform not only the conditions of economic life but even those of existence." Similarly, Alfred Guyomar wrote about the challenges of travelling between Cambodia and Cochinchina, noting that the river and automobile routes did not offer fast enough access to Saigon. "Aircraft," Guyomar opined, "remain the only practical and swift solution" for bettering communications between parts of these two territories.⁷⁴

Aside from improving mail and passenger transportation, an air network offered other benefits for the colonial project in Indochina. For instance, in August 1928 a government-general memorandum judged that aviation had the potential to boost the

territory grab that had characterized the European competition for Africa in the late nineteenth century. Robert McCormack, "Great Britain and the 'Scramble for Africa,' 1919-1939." *Canadian Journal of African Studies* 10, no. 1 (1976): 89.

⁷⁴ M. [Emmanuel] Chaumié, "La coopération internationale," *Congrès International des Transports*, 261; Exposition Coloniale Internationale, *L'Aéronautique militaire de l'Indochine* (Hanoi: Imprimerie d'Extrême-Orient, 1931), 107 [hereafter *Exposition Coloniale Internationale, L'Aéronautique militaire de l'Indochine*"]. As a demonstration of the comparative speed of air transport, this publication provided the reader with a diagram displaying the duration of a voyage between Hanoi and Saigon for each of six different vehicles: sixty days by sedan chair; fifty days by rickshaw; thirty-five days by horse; sixty hours via railroad; thirty-five hours via automobile; and, finally, seven hours by plane when traveling in a straight line.

colonizers' status while strengthening the colony's defensive capabilities.⁷⁵ Other sources likewise commented on how aircraft could serve to reinforce colonial authority and power over the local peoples.⁷⁶ A study from the Société d'Etudes et d'Entreprises Aériennes en Indochine et en Extrême-Orient (hereafter SEEAIEO) declared that "the airplane, even exclusively commercial, nowadays remains a great instrument of prestige, even domination, if...it regularly displays its colors in the sky or makes the drone of its motor heard even in the native houses, as far as the depths of nearly inaccessible forests." As this study's author reasoned, "every influence to acquire or maintain over our Indochinese protégés, we must maintain or acquire it."⁷⁷

Proponents of aviation also directly linked the development of air transport to the French colonizers professed mission of civilizing and protecting the native populations. In a report to air force commandant Raoul Augereau, Captain Pierre Paquier asserted that the flying machine was a powerful physical representation of French paternalistic benevolence. "By enabling air navigation to work in the best conditions of security," Paquier wrote, the colonial government "will very soon make accessible to this modern

⁷⁵ ANOM, GGI 66529, "Note sur l'Activité Internationale en Extrême-Orient en Matière d'Aviation Commerciale et Postale," August 1, 1928. The topic of aviation and colonial defense is analyzed in chapter seven of this dissertation.

⁷⁶ Airpower as a tool of colonial control is the subject of chapter six of this dissertation.

⁷⁷ This undated report is located in the papers of Pierre-Etienne Flandin in the archives and manuscripts division of the Bibliothèque Nationale de France, NAF 28201, Box 24/D4. Regarding the date of this document, it is likely that the report was composed in the second half of 1928. The date range of this carton's material is 1926 to 1928, and, moreover, this document both references events from as late as April 1928 and discusses plans for 1929 and 1930. This report, titled "Etude de la ligne transindochinoise," was prepared by SEEAIEO [hereafter SEEAIEO, "Etude"]. In an apparent reference to this study, Christophe Cony and Michel Ledet cite August 1928 as the date in which the report was submitted to the French government. Christophe Cony and Michel Ledet, *L'Aviation française en Indochine: Des origines à 1945* (Outreau: Lela Presse, 2012). SEEAIEO is discussed further in chapter three.

and admirable civilizing agent that is the airplane the most distant and most deprived areas of the territory that it protects and administers.”⁷⁸

Finally, officials considered the establishment of an air network in Indochina as a means of achieving goals that went beyond fostering quicker transportation within the colony. This larger context entailed creating a metropole—colony air link and developing an aerial connection to China. By installing these long-haul lines, the French hoped to fashion Indochina into an international hub for commercial aviation. The government-general memorandum of 1928 underscored this broader context, arguing against “dwell[ing] on the study of routes designed to pass over only the territory of our colony.” The memo observed, “we must refrain from only seeking the satisfaction of local, immediate needs without a view to the future.” Such shortsightedness, the author pointed out, would make France risk losing the opportunity to connect Indochina, “in favorable conditions” and without costly alterations to itineraries, to what surely was to become a grand network of international air routes.⁷⁹

Scheduled air service between France and Indochina was viewed as a means of tightening the links between metropole and colony. This strengthened bond was judged to have benefits beyond simply reducing communication and travel time between France and Southeast Asia. For example, the SEEAIEO study suggested that a France—Indochina line would have a certain positive psychological effect for the colony’s French

⁷⁸ SHAA, 2B33/D4, “Destinataire: M. le Colonel Augereau. Les terrains d’aviation en Indochine, par le Capitaine Paquier,” May 2, 1931. Authorities aimed to take advantage of the possibilities of aviation as a purported wellspring of imperial propaganda even when no explicit reference to the symbolic value of a particular flight was made. As Jean-Baptiste Manchon points out, “every opening of an air route, every flyover, even if unplanned, was exploited politically.” Jean-Baptiste Manchon, *L’aéronautique militaire française outre-mer, 1911-1939* (Paris: Presses de l’université Paris-Sorbonne, 2013), 382.

⁷⁹ ANOM, GGI 66529, “Note sur l’Activité Internationale en Extrême-Orient en Matière d’Aviation Commerciale et Postale,” August 1, 1928.

population. “The feeling of isolation that our nationals in the Far East may experience will diminish,” the report noted, explaining that “the influence of the metropole on the colony will increase; the union between [the two], their mutual support, will be improved.” In February 1930, Chaumié similarly concluded that a regularly functioning air route had the capacity to “bring our grand colony in the Far East closer to the metropole.”⁸⁰ Into the later 1930s, officials continued to highlight how air transport served to tighten the links between France and its colonies.⁸¹

Politicians and colonial administrators also wanted to utilize France’s footing in Southeast Asia as a springboard for accessing China by air. The government-general memorandum from 1928 stressed this point: “Indochina’s privileged position needs to be considered [because it] allows France to play a leading role in the realization of the Europe—China line.” Air transport not only allowed for “close, amicable collaboration with our neighbors [and] confirmation of our privileged position in the sale of aeronautics material” but also provided France with a means of “peaceful commercial penetration in the Far East.” With Southeast Asia situated only eight days from the metropole by plane, Indochina was poised to gain an enhanced commercial and political status. Therefore, the memo contended that an air network would make the colony “more than ever...worthy of being called by our diplomats ‘the permanent base of French interests in the Far East.’” Cordemoy also supported the idea that France needed to capitalize on Indochina’s

⁸⁰ SEEAIEO, “Etude”; ANOM, GGI 66529, “Le Ministre de l’Air au Lieutenant-Colonel de Prémoré, Commandant l’Aéronautique d’Indochine,” February 14, 1930.

⁸¹ In his talk at the 1937 Exposition, Charvet likened imperial air networks to a “nervous system that allows the central willpower to be felt in all the limbs and to receive all their perceptions.” He added that rapid communications affected not only the economy, defense, and administration of the empire but also the movement of “people, ideas, and opinions or interests,” the increased circulation of which was itself capable of making “a coherent whole of these dispersed territories.” Charvet, 173.

position, placing the present-day jockeying for commercial aviation preeminence within the context of the history of European competition for access to East Asia. He declared in a January 1930 article that the “economic penetration” of southern China “still remains one of the fundamental goals of Western civilization.” An air route to this part of the globe was destined to become “one of the great aerial routes of tomorrow.”⁸²

Managing Air Traffic within Indochina (1920s and 1930s)

As early as 1922, officials in France lauded the recent progress of aviation in Indochina. Yet the metropolitan government was cognizant of the need to plan for the future of air transport in the colony. In the opinion of Minister of the Colonies Albert Sarraut, what was now required for Indochina was a government-directed system for managing the increase in air traffic that would inevitably be brought about by the development of commercial service. The Minister explained: “in preparation for the eventual setting up of such [airlines], it is important to determine the conditions in which they will operate and how...they will be able to use, together with military aviation, the local air network.”⁸³ With these points in mind, Sarraut proposed regulations and outlined several key tasks for which the commandant of the air force would be responsible. Specifically, the commandant was to direct the organization of the colony’s air network, a job that that entailed the selection, construction, technical outfitting, supervision, and upkeep of the local airfields. In addition, this officer was to act as the representative of

⁸² ANOM, GGI 66529, “Note sur l’Activité Internationale en Extrême-Orient en Matière d’Aviation Commerciale et Postale,” August 1, 1928; Pierre Cordemoy, “L’Indochine et l’aéronautique,” *Bulletin de l’Agence Economique de l’Indochine* (January 1930): 9 [hereafter, Cordemoy, January 1930].

⁸³ Sarraut, of course, was a well-known theorist of French colonialism; thus the interest in the potential of aviation was not limited to a handful of specialists.

the Aerial Navigation Service—itsself part of the Undersecretary of State for Aviation and Air Transports (hereafter Undersecretary)—and, in this capacity, was charged with managing the development and functioning of commercial aviation within Indochina.⁸⁴ That an air force official should be tasked with these various responsibilities was not an illogical decision.⁸⁵

From the outset though, this new position did not seem to be much needed in the colony. Indeed, Sarraut's projection for the growth of civil aviation appeared overly optimistic. "Up to the present," a memorandum from April 1925 remarked, "experience has shown that these companies are not viable in Indochina and that the Department's expectations concerning the development of air travel in the colonies were somewhat

⁸⁴ ANOM, GGI 66501, "Le Ministre des Colonies à Monsieur le Gouverneur Général de l'Indochine," May 26, 1922. A subsequent letter further elaborated on this envoy's role. The "Delegate of the Aerial Navigation Service" would be tasked with the following duties: researching and establishing a general program for commercial aviation in Indochina; considering requests for concessions made by individuals or companies and establishing usage agreements; general monitoring of air travel, personnel, and materials used by concessionaires to ensure compliance with any current legislation; and, if necessary, drafting "special regulations" that were "consistent with the principles adopted in France" but adapted to the "specific conditions of life in Indochina." ANOM, GGI 66501, "Le Ministre des Colonies à Monsieur le Gouverneur Général de l'Indochine," December 4, 1923.

⁸⁵ Louis Hirschauer, the Inspector for Civil Aviation, explained the rationale in a report composed following his study of aviation in Southeast Asia: "the reason cited for the putting all aviation under military leadership results from the idea that military aviation, from the perspective of national interest, dominates...all the other forms of aviation, commercial and private." He added that the air force and its administration not only had been established in the colony longer than other types of aviation but also had been responsible for much of the work of installing the local aerial infrastructure. "Mission de l'Ingénieur en Chef Hirschauer, Inspecteur de l'Aviation Civile, en Chine et en Indochine. Septembre-Octobre-Novembre 1936" [hereafter Hirschauer Mission, 1936]. This study is a four-volume report whose different books are located at the following sites: volume one, "La ligne d'Extrême-Orient de l'Air-France: Marseille—Hanoi. Sa prochaine transformation. Les lignes aériennes de la K.L.M. et de l'I.A.W.," library of the Service Historique de la Défense at Vincennes; volume three, "Les lignes aériennes et l'aviation privée en Indo-Chine. L'amélioration de l'infrastructure," Musée de l'Air et de l'Espace at Le Bourget (2156); volume two, "Les lignes aériennes chinoises et leur liaison avec la ligne d'Extrême-Orient de l'Air-France. Les liaisons des lignes aériennes chinoises avec les lignes de la K.L.M. et de l'I.A.W.," and volume four, "Annexes. Cartes. Plans. Horaires. Statistiques," Fonds Jacques-Louis Dumesnil at the Archives Nationales at Pierrefitte-sur-Seine (130AP/38).

excessive.” In addition, the memo frankly stated that air force commandant François Glaize had not had much work to do as the delegate and estimated that “several years” would pass before this position would truly be needed.⁸⁶

Yet the current lack of civil aviation activity did not deter Glaize from subsequently commenting on the challenges that, as head of the air force, he faced—or would face—in attending to the variety of responsibilities that were assigned to him. In 1926 Glaize stated, “no means have been put in the hands of the Commandant of Military Aviation to accomplish the tasks that come under the jurisdiction of this [civil aviation] function, and it is only nominally that he holds this title.”⁸⁷ He described how he possessed neither the resources nor the time to manage the functioning of the entirety of the colonial air services. Reflecting on the problem of having his office charged both with military and with civil duties, he observed that the role of air force chief “sufficiently absorbs his activity so that it is impossible for him to devote to these delegate functions all the time that he should.”⁸⁸

Glaize reasoned that as air services in the colony were poised to expand in the near future, the current system for managing aviation—which he clearly believed to be ineffective—needed to be changed. Arguing that some type of organ specifically dealing with civil aviation was required, the commandant contrasted the administrative structure for aviation in Indochina with the format in France. While the head of Indochina’s air force was at present tasked with directing both military aviation and civil aviation, the

⁸⁶ ANOM, GGI 66501, “Note explicative et propositions,” April 11, 1925.

⁸⁷ ANOM, RSTNF 4280, “Note sur l’Aviation,” n.d. [the content of this reports appears to place the document date to 1926].

⁸⁸ ANOM, RSTNF 4280, “Note sur l’Aviation,” n.d.

metropole had two separate offices for these two branches of aviation.⁸⁹ Glaize characterized the setup in the colony as “detrimental to the development of aviation,” further asserting that “the cause of aviation [in Indochina] suffers from the absence of an agency for inspection and research.”⁹⁰ Overall, Glaize’s comments imply that the development and management of the air network in the colony required the dedicated oversight of a single government bureau.

It appears that the type of department of which Glaize bemoaned the lack was formed in 1928. A government-general decree of April 16 created a bureau of civil aeronautics that was charged with researching and installing routes in the colony.⁹¹ Two years later another directive—this decree was dated April 23, 1930—established an aviation bureau (*Bureau de la Navigation Aérienne*) to replace the existing office. This newer office’s mission involved not only the “creation and the maintenance of air routes” but also the “monitoring of aerial traffic in Indochina.” Therefore, this bureau was to continue the work of its predecessor.⁹²

⁸⁹ In France, the War Ministry oversaw military aviation, and the Undersecretary was responsible for civil aviation and was assisted in this work by a number of Delegates for Aerial Navigation.

⁹⁰ ANOM, RSTNF 4280, “Note sur l’Aviation,” n.d. As envisioned by Glaize, this bureau would be involved with the planning, resources, and functioning of aviation “in all its forms.”

⁹¹ ANOM, GGI 66529, “Le Général de Division Aubert, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” May 15, 1928. At the start of 1928, a Monsieur Brunat, who was an aeronautics engineer, was dispatched to Indochina to serve as a technical advisor to the government general. Brunat conducted the first comprehensive studies for a local air network and recognized the necessity of forming a department for civil aviation. Cony and Ledet, 495; SEEAIEO, “Etude.”

⁹² ANOM, GGI 66502, “Le Gouverneur Général de l’Indochine,” April 23, 1930. The aviation network for which this office was responsible included, specifically, the entirety of the colony’s airfields with the exception of the military bases at Tong—located near Hanoi—and Cap Saint-Jacques, which was situated on the coast of Cochinchina. A footnote in Paquier’s report, which was composed in May 1931, mentioned that the Cap Saint-Jacques facility was currently being constructed. SHAA, 2B33/D4, “Destinataire: M. le Colonel Augereau. Les terrains d’aviation en Indochine, par le Capitaine Paquier,” May 2, 1931.

Apparently, the creation of this department did not adequately address the issue of managing air transport within the colony. In a report from the fall of 1936, Inspector of Civil Aviation Louis Hirschauer determined that the problem related to the fact that the positions of air force commandant and of delegate for civil aviation were veritable revolving doors. From 1920 to 1936, Hirschauer counted seven different individuals as having been in charge of military aviation.⁹³ Similarly, between 1928 and the time Hirschauer composed this report, the list of aerial navigation officials included five people. Moreover, the position of Secretary General of Indochina, a key liaison in the government general in matters of aviation, had switched at least six times from 1921 until 1936. Hirschauer's thesis was that these seemingly constant substitutions had caused great difficulty in establishing continuity of ideas for the development of air transport services in the colony.⁹⁴

Furthermore, Hirschauer found fault, as had Glaize, with having these services be managed by the head of the air force. The argument that this officer should be responsible for the entirety of the aviation-related duties in Indochina was "perfectly legitimate while commercial aviation was very little developed and private aviation [was] nonexistent." In recent years though, private aviation had grown somewhat, and, more importantly, international commercial aviation had significantly expanded—and continued to do so.⁹⁵ Hirschauer thus contended, "the moment has come when we must realize that civil aviation is henceforth called to play a leading role in the economy of Indochina."⁹⁶

⁹³ This position saw more continuity from the summer of 1934 until late 1940. From August 11, 1934, until November 27, 1940, only two officers served as air force commandant. Manchon, 682.

⁹⁴ Hirschauer Mission, 1936.

⁹⁵ Hirschauer Mission, 1936.

⁹⁶ Hirschauer Mission, 1936.

Considering this state of affairs, Hirschauer observed that “we find ourselves obliged, we do not say to reorganize, but to organize civil aviation in Indochina.” Clearly, he viewed the current structure for managing air transport as still lacking the oversight required so that air traffic—the amount of which would surely increase—could circulate efficiently within the colony. Hirschauer’s comment implies that, at least for certain officials—and Hirschauer was a certainly a credible source in matters of colonial aviation—the previously established civil aeronautics positions had not been satisfactory. As a solution, Hirschauer proposed that the creation of a Director of Civil Aviation. Yet as outlined by Hirschauer, the duties of this proposed office actually appear very similar to those of the prior positions.⁹⁷

In any case, the government apparently endorsed Hirschauer’s conclusion that this type of position was needed in Indochina. On December 2, 1937, a decree established a civil aviation department that was to be headed by a special director.⁹⁸ At the end of the decade, the colonial administration put forth another measure to improve the management of air traffic within the colony. On March 15, 1939, Governor General Jules Brévié issued a decree that created two regional centers for aerial navigation, located in Saigon and in Hanoi. These centers were to function as part of the civil aviation service, and the relevant duties were to be handled by the commanding officer at Saigon’s Tan Son Nhut airport and his counterpart at Hanoi’s Gia Lâm airport.⁹⁹ The jurisdiction of the northern center included the routes, the entirety of the landing sites, and “all manifestations of civil aviation activity” within Tonkin, Kouang-Tchéou-Wan, and the areas of Laos and Annam

⁹⁷ Hirschauer Mission, 1936.

⁹⁸ Cony and Ledet, 502.

⁹⁹ The position held by these airport officials had been established by decrees from March and April 1936. ANOM, RSTNF 3421, “Le Gouverneur Général de l’Indochine, [Arrêté],” March 15, 1939.

situated north of the Tourane—Paksé air route. Conversely, the southern center had the same responsibilities but for Cambodia, Cochinchina, and the parts of Annam and Laos located to the south of the Tourane—Paksé line. The airfields at Tourane and Paksé fell under the authority of the Hanoi-based center.¹⁰⁰

This section has demonstrated that from the later 1920s, officials deemed it necessary that Indochina have an administrative office dedicated to managing what was believed would be a future of increased air traffic. However, in a manner that was representative of the plodding pace with which the overall aviation infrastructure was installed in the colony, this type of oversight position was only fully in place as the 1930s came to a close. Of course, the creation of a civil aeronautics bureau was only one component of the machinery that was required to get aviation get off the ground. The following section shows how the establishment of a network of air routes, landing sites, airfield facilities, and radio and meteorological posts was also necessary if the French hoped to have aircraft operate efficiently and safely within Indochina.

The Development of Indochina's Aviation Infrastructure (1920 to 1930)

The late 1920s and early 1930s witnessed a particularly marked effort to organize a network of airfields and air links within Indochina. In fact, colonial and military officials had worked to create an aerial infrastructure in the colony since the end of the First World War. By 1920, a program for “air routes of general interest” had been drawn up. This blueprint, which remained viable until at least the latter part of the decade, included a line along the coast, another on the Mekong River, and a third tracing the

¹⁰⁰ ANOM, RSTNF 3421, “Le Gouverneur Général de l’Indochine, [Arrêté],” March 15, 1939. Kouang-Tchéou-Wan was a small enclave on the southern coast of China that France acquired around the turn of the twentieth century.

border between Tonkin and China.¹⁰¹ A scheme for categorizing the colony's various airfields was also developed in the early 1920s. Writing to the Governor General at the end of May 1922, Minister of the Colonies Albert Sarraut discussed how the landing sites around the colony could be grouped into three categories: auxiliary terrains (*terrains des secours*), which were essentially landing fields for emergencies; secondary airfields (*aérohaltes*), which would have a shelter for planes, a few supplies and spare parts, and some radio and meteorological equipment; and primary airports (*aérogares*), which would be outfitted with a full complement of facilities—hangars, various warehouses, storehouses, workshops, and equipment for wireless communications and for weather—and would serve as air force bases or terminuses for major air routes.¹⁰²

A February 1924 memorandum provides more details about the colony's air network as it appeared in the mid-1920s. In this document, Glaize stated that there were presently sixty auxiliary landing sites—approximately thirty of which were equipped with aircraft shelters and other installations—and larger airbases at Haiphong, Bien Hoa, and Bach Mai. Both civil aircraft and military planes could utilize these various airfields. Moreover, several air routes, ten of which were listed as primary lines, linked destinations around Indochina.¹⁰³ Approximately two years later, Glaize described the air

¹⁰¹ ANOM, GGI 66503, "Le Chef de Bataillon Glaize, Commandant l'Aéronautique d'Indochine à Monsieur le Général de Division, Commandant Supérieur des Troupes du Groupe de l'Indochine," June 4, 1925; ANOM, GGI 66503, "Le Général de Division Andlauer, Commandant Supérieur des Troupes du Groupe de l'Indochine à Monsieur le Gouverneur Général de l'Indochine," June 12, 1925.

¹⁰² ANOM, GGI 66501, "Le Ministre des Colonies à Monsieur le Gouverneur Général de l'Indochine," May 26, 1922. Sarraut also pointed out that "civil aircraft passing through will be able to receive, at the installations managed by military aviation, at the airfields whose extent will allow it, ... temporary shelter, supplies, ... [and] minor repairs."

¹⁰³ ANOM, GGI 66499, "Note sur l'Aviation en Indochine. Demandée par le Gouvernement Général," [February 3, 1924]. These principal routes were as follows: Hanoi to Vinh and Saigon via the coast of Annam; Hanoi to Vinh and Saigon via the Mekong River; Hanoi to Lao Kay; Hanoi to Vinh and Vientiane; Hanoi to Son La, Dien Bien Phu, and Muong Sing;

network as consisting of eighty terrain that were reasonably organized and reasonably well situated.¹⁰⁴

A 1937 article in the *Bulletin* summarized the logic that had guided the efforts to develop Indochina's infrastructure between 1918 and 1930. "On the unquestionable premise that airplanes in this region were veritable cripples[sic]" who would be "in great danger" if they ventured far from an airfield, the writer explained, "the doctrine was to multiply the landing sites in such a way as to end up with a rather dense network so that a plane forced to land could have some chance of finding itself in proximity to an equipped area." Officials thus focused on providing the maximum security possible for pilots, which essentially meant constructing landing fields no more than fifty kilometers apart along the colony's air routes.¹⁰⁵ This reasoning, moreover, underscores the extent to which the local conditions—geography and climate in particular—and the unreliability and fragility of the era's aeronautics technology bothered officials as they worked to install aviation in the colony.¹⁰⁶

Hanoi to Lai Chau; Hanoi to Mon Cay; Saigon to Battambang; Saigon to Cap Saint-Jacques; and Saigon to Dalat. The Hanoi—Saigon course of travel entailed flying from Vinh to Thakhek in Laos and then journeying south along the Mekong River to Cochinchina. A government-general memorandum from November 1930 pointed out that the two routes linking Hanoi and Saigon were complimentary lines and not redundant connections. Because flying along the coast of Annam during the winter monsoon season was a risky endeavor, aviators could utilize the Mekong River route during this period, resuming travel along the coastal itinerary during the summer. This memo also remarked that the terrain around Dalat did not offer any locations for which a landing field could be established "short of considerable costs that do not justify the center's importance." The selected alternative was to utilize the airstrip at Dran to access Dalat by plane. ANOM, GGI 66529, "Note pour Monsieur le Gouverneur Général," November 22, 1930.

¹⁰⁴ ANOM, RSTNF 4280, "Note sur l'Aviation," n.d.

¹⁰⁵ "L'Aviation en Extrême-Orient: L'oeuvre aéronautique accomplie en Indochine," *Bulletin de l'Agence Economique de l'Indochine* (April/May/June: 1937): 33 [hereafter "L'Aviation en Extrême-Orient"].

¹⁰⁶ It should be noted that this density of installations had not been achieved in France itself at this time, likely due to the fact that having terrains clustered together in this manner was simply unnecessary: the metropolitan landscape offered more opportunities for safely carrying out—and surviving—an unexpected landing.

By the end of the 1920s, certain officials were expressing satisfaction with the progress made in providing French aviation with a safe, reliable air network in Southeast Asia.¹⁰⁷ Even so and with an eye to the future of flight in Indochina, the colonial and military administrations had by this point determined that the existing infrastructure needed to be reevaluated. Already in 1926, Glaize recognized that with the “normal development of aviation,” officials could anticipate that Indochina’s aeronautics facilities would soon require upgrades.¹⁰⁸ Two years later, the work of analysis and planning was under way.¹⁰⁹ A government-general memorandum from the fall of 1929 subsequently concluded that the infrastructure was “already rather advanced” but needed to be

¹⁰⁷ Writing to the Governor General, the Minister of the Colonies declared that “it was especially pleasing to observe the real effort thus far accomplished for the organization of civil air routes in your group of colonies.” ANOM, GGI 66529, “Le Ministre des Colonies à Monsieur le Gouverneur Général de l’Indochine,” July 22, 1929.

¹⁰⁸ ANOM, RSTNF 4280, “Note sur l’Aviation,” n.d.

¹⁰⁹ Cony and Ledet, 495. As footnote twenty-three of this chapter states, Brunat had carried out studies of the air network at the beginning of 1928. This planning and organization was continued through the rest of the year and into 1929 by Etienne Bruzon, who was the head of the colony’s meteorological service and as well as the chief of the civil aeronautics bureau; Hirschauer also contributed to this effort. Charles Borzecki then completed the work between 1930 and early 1931. Cony and Ledet, 495. In addition, in 1928 an “organizational project” (*projet d’organisation*) had been drawn up for the colony’s meteorological service, but, as Hirschauer pointed out in 1934, this plan could not be carried out “for lack of sufficient means.” This meteorological program was likely the result of a study conducted the previous year. ANOM, GGI 66503, “Le Gouverneur Général de l’Indochine à Monsieur le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” November 28, 1927. Notwithstanding Hirschauer’s observation, the late 1920s to the early 1930s was a period in which the colony’s radio-meteorological network was notably improved. In particular, the principal cities of the colony were outfitted with more powerful radio posts in the early 1930s, which was a time that also witnessed a “remarkable enhancement” in the quality of the meteorological data that was collected. Cony and Ledet, 496. Hirschauer’s comment from 1934 is found in “Mission de l’Ingénieur en Chef Hirschauer, Inspecteur de l’Aviation Civile. Octobre-Novembre 1934” [hereafter Hirschauer Mission, 1934]. Like his study from 1936, this report is a multi-volume work, with the locations of the books as follows: volume one, “La ligne Marseille—Saigon de 1934-1935,” and volume three, “La Ligne d’Extrême-Orient à Partir de 1936,” Musée de l’Air et de l’Espace (2158). Volume two, “Voyages sur l’Imperial-Airways et la K.L.M.,” was not consulted.

completed and, in some cases, modified. Furthermore, this memo described the colony's "radio-weather network" as essentially non-existent.¹¹⁰

While these assessments were being made in the late 1920s, the major changes to the infrastructure only began around and after 1930. "In matters of aeronautics," a memorandum from late November 1930 stated, "Indochina has...devoted its efforts in 1929 and 1930 to the modification of landing sites."¹¹¹ This comment was reinforced by the colonial administration's financial expenditures for this work in the first half of the 1930s. Between 1930 and 1935, the government general allocated the most funds for the construction and maintenance of airfields in 1930, with this amount being reduced each year thereafter.¹¹²

In mid-January 1930 Lieutenant Colonel Louis de Durand de Prémoré, the Commandant Superior, concisely explained the problems with the existing infrastructure. The network of airfields in the colony was planned and constructed at a time when the air force not only had few resources at its disposal but also was outfitted with planes that did not require large runways for landings and takeoffs. However, de Prémoré believed that this infrastructure had become "absolutely insufficient." Most of the landing fields were not large enough to accommodate modern aircraft, and, as a result of flooding and bad

¹¹⁰ ANOM, GGI 66499, "Note sur l'Aviation," n.d. This document noted that while certain runways could not accommodate modern aircraft, other landing fields were poorly situated or were too easily subjected to flooding. The airfields that served Hanoi and Saigon were both deemed insufficient as well, with the former site—Bach Mai—being singled out as inadequate for the future development of military and civilian aviation. Furthermore, the memorandum remarked that "certain important hubs" located either in isolated regions or areas to which ground access was difficult, "do not even have an airfield that, in case of political or medical necessity, would allow for communication to be maintained with the country's vital centers (*les centres vitaux du pays*)."

¹¹¹ ANOM, GGI 66529, "Note pour Monsieur le Gouverneur Général," November 22, 1930.

¹¹² Hirschauer Mission, 1934. According to this report, the figures provided for the years between 1930 and 1935 are as follows: 600,000 for 1930; 195,720 for 1931; 108,000 for 1932; 102,000 for 1933; 62,000 for 1934; and 55,400 for 1935.

weather, several of these terrains were usable only part of the year and required costly repairs after each season of poor weather. De Prémorél thus determined that it had become necessary “to go back over the old aeronautics program with a view to its adaptation to the new conditions required by aviation.” Captain Paquier pointed out that this reassessment would be accompanied by an infrastructural reorganization that included building new landing sites, enlarging certain others, and “decommissioning the terrains that could not be improved (sites [that were] difficult to reach, regularly flooded, not open to enlargement, or too far from inhabited places, etc).”¹¹³

A wide-ranging program was subsequently drafted to address these various issues. The *Bulletin* reported that the overall goal was improving the existing airfields as opposed to increasing their number.¹¹⁴ Regarding the colony’s air routes, the project detailed a network that appears similar to what already existed within Indochina.¹¹⁵ Specifically, this program listed four main routes: the two Hanoi—Saigon lines; a line between Vientiane and Vinh; and a line from Saigon to the Cambodian locale of Sisophon. In addition, several “less important” routes linked with these primary lines.¹¹⁶ Moreover, it was advised that Vinh, Vientiane, Hanoi, and Saigon have airports that

¹¹³ ANOM, GGI 66502, “Exemplaire du Programme d’organisation d’infrastructure Aérienne d’Indochine (suite à communication téléphonique du 17 Février 1930)” ; SHAA, 2B33/D4, “Destinataire: M. le Colonel Augereau. Les terrains d’aviation en Indochine, par le Capitaine Paquier,” May 2, 1931. De Prémorél’s remarks are from a letter of January 15, 1930, that is attached to this document.

¹¹⁴ “L’Aviation en Extrême-Orient,” 34.

¹¹⁵ See footnote thirty-five for a description of the colony’s air network in the mid-1920s.

¹¹⁶ SHAA, 2B33/D4, “Destinataire: M. le Colonel Augereau. Les terrains d’aviation en Indochine, par le Capitaine Paquier,” May 2, 1931. The plan also envisioned a Europe—Indochina route and a line to China. Finally, in the realm of colonial defense, the program called for a network of seven airfields located along the China—Tonkin border as well as several “fallback terrains” (*terrain de repli*) to serve as a secondary line of defense.

could accommodate the growth in air traffic that an increased civil aviation presence and an upgraded infrastructure were likely to foster.¹¹⁷

Another component of the program of 1930 was grouping the colony's air routes and landing sites into different categories based on their intended purpose. An Air Ministry directive forwarded to the government general in August 1930 stated that the routes and airfields were to be categorized as either "general interest" (*d'intérêt général*) or "regional interest" (*d'intérêt régional*); the former category suggested the potential for use as an international line while the latter implied a use that was more local.¹¹⁸ The colonial budget would be responsible for funding the infrastructure work for both groups. These costs consisted of not only an airfield's "purchase, organization, signalization, [and] maintenance" but also the site's access roads, water, electricity, piping, radiotelegraphic equipment, and telegraph and telephone communications. The "superstructure work"—the purchase and assembly of hangars, the construction of workshops, warehouses, offices, and personnel quarters—would be the responsibility of the Air Ministry.¹¹⁹

While the aviation project of 1930 was to address the deficiencies of the entire radio-meteorological network, certain routes were particularly in need of improved

¹¹⁷ Cony and Ledet, 495. Saigon's airfield at Tan Son Nhut was constructed in the late 1920s, and, in 1931, a location situated to the northeast of Hanoi was chosen as the site for the Gia Lâm airport; this facility was inaugurated the following year. Cony and Ledet, 496.

¹¹⁸ ANOM, GGI 66529, "Note pour Monsieur le Gouverneur Général," November 22, 1930. A document from the previous summer defined an interior line as "an air route established for a local-interest objective in a colonial territory or a group of colonies but capable of being linked...to international air routes in operation or under consideration." ANOM, GGI 66502, "Le Ministre des Colonies à Monsieur le Ministre de l'Air," July 30, 1929.

¹¹⁹ ANOM, GGI 66529, "Note pour Monsieur le Gouverneur Général," November 22, 1930; ANOM, GGI 66502, "Le Ministre des Colonies à Monsieur le Ministre de l'Air," July 30, 1929. The letter from the Minister of the Colonies indicated that the superstructure work could also be entrusted to an aviation company authorized to operate on the relevant route. In this case, the colonial government was to provide any assistance needed to facilitate the work.

coverage. Specifically, Chaumié noted that crossing Laos and northern Annam to reach Hanoi was “very difficult” because of the region’s equatorial forests. Like other contemporaries frequently observed when considering the possibilities of aviation in Laos, northern Annam, and Tonkin, Chaumié identified the Annamese Mountains as the most formidable obstacle.¹²⁰ He wrote of the necessity of acting “with the utmost prudence” in this area, arguing that a complete network of meteorological, radiotelegraphic, and radiogoniometric equipment was required before planes could be expected to provide regular service in this region. This was a view shared by the Governor General as well as officials in the Air Ministry and the Ministry of the Colonies.¹²¹

Over the course of 1930, progress was made on key parts of the colony’s four main air routes. Already in February 1930, Cordemoy reported that renovation work had started on the Vientiane and Vinh airfields and that the French planned on installing twelve auxiliary terrains between these sites.¹²² Then, in late November 1930, a government-general memorandum noted that the work launched at the beginning of the year on eight auxiliary landing sites would be completed by the end of December. Furthermore, the Vientiane airfield had by this point been upgraded, and the improvements to the landing field at Vinh were to be finished toward the end of the

¹²⁰ Chaumié explained that atmospheric conditions tended to differ on either side of the range. Thus aviators often met favorable weather on one slope of the mountains but encountered haze on the opposing side.

¹²¹ ANOM, GGI 66529, “Conseil Economique. Section des Travaux Publics, des Moyens de Communications, de la Marine Marchande et des Pêches. Séance du 9 Mai 1930,” [n.d.].

¹²² Cordemoy, February 1930, 43. In a later article, Cordemoy counted only six auxiliary terrains between Vientiane and Vinh. Pierre Cordemoy, “L’Essor aérien de la France vers l’Extrême-Orient (1930-1931),” *Bulletin de l’Agence Economique de l’Indochine* (July 1931): 257.

year.¹²³ The colony's other primary lines were upgraded as well during the year. For instance, the November memorandum stated that work on several terrains that were part of the route from Saigon through Cambodia—which then connected to Bangkok—had commenced at the beginning of the month. In addition, upgrades would be made along the coastal itinerary that linked Saigon and Hanoi as soon the government general received specific information from certain provincial administrators. Finally, a study of the “insufficient” auxiliary terrains that interspersed the Mekong River line was scheduled for December.¹²⁴

Indochina's Aviation Infrastructure after 1930

With the general framework of the infrastructure established by the end of 1930, the remainder of the decade saw efforts to complete, and then improve, Indochina's air network. Specifically, government and military officials worked to upgrade the colony's airfields, streamline the functioning of air routes, and increase radio-meteorological coverage. In doing so, the French were seeking to keep pace with—and often to catch up with—not only the projected growth of air transport but also an aeronautics technology that was constantly modernizing. Though impeded by the era's economic crisis, the infrastructure work continued through the decade.

Jean-Baptiste Manchon points out that the program for Indochina's air network that was drawn up in 1930 was followed until the start of the Second World War.¹²⁵ Yet

¹²³ These different projects pertained to the infrastructure, meaning that the superstructure—the various buildings required at the landing sites—had yet to be completed.

¹²⁴ ANOM, GGI 66529, “Note pour Monsieur le Gouverneur Général,” November 22, 1930.

¹²⁵ Manchon, 435; Hirschauer Mission, 1934. Beginning in the mid-1930s, there were proposals for alterations—as well as actual changes—to the colony's air routes; these changes are

this observation does not mean that, in the years after the plan was drafted, further changes were deemed unnecessary. Indeed, in his report from 1934, Hirschauer noted that colonial officials were proposing measures that aimed to lower the expenses associated with the air network. In particular, to ease the financial burden of airfield maintenance—a burden that had recently been weighing heavier on the colony’s general budget—the colony’s Secretary General and the president of Hanoi’s Chamber of Commerce suggested that the number of functioning airfields be reduced. Hirschauer, considering the issue from the perspective of pilot safety, determined that this proposal was not an option at present. With the types of aircraft in use, the current infrastructure represented the minimum “in a region where every landing outside of the airfields is impossible without accident.” Hirschauer explained that it would be several years—a period during which more modern, more powerful aircraft would hopefully be sent to Indochina—before officials could contemplate reducing the density of the colony’s air network. “If at the end of this time,” Hirschauer asserted, “the airplanes are still able to reach important airfields, to fly for 100 or 200 kilometers in the poorest atmospheric conditions with a stopped motor, on that day we will be the first to say: the plan is excessive and you can do away with 20, 30, or 40 percent of the airfields.”¹²⁶

The need to improve Indochina’s air network to accommodate newer and more powerful aircraft was a more pressing concern than Hirschauer’s comments seem to indicate. Hirschauer himself observed in the fall of 1936 that modifications were required. He remarked that the layout of Indochina’s airfields had not, on the whole, been

discussed in the section of chapter three that deals with air transport within Indochina. For the most part though, these modifications did not fundamentally alter the appearance of the aviation infrastructure.

¹²⁶ Hirschauer Mission, 1934.

revised since his previous mission to Southeast Asia. According to his 1936 report, the colony's air network was comprised of ninety-eight terrains for airplanes and twenty landing areas for seaplanes. In addition to the two Hanoi—Saigon lines, the primary air routes included a line that linked Bangkok with Hanoi via Vientiane and a connection from Bangkok to Saigon via Cambodia.¹²⁷

Hirschauer stated that this web of landing sites, while impressive, still did not fully correspond to the needs of modern aviation. Elaborating, he explained that the network was planned at a time when the aviation presence in Indochina consisted only of single-engine military aircraft. Until the mid-1930s, the logic for constructing the aerial infrastructure thus remained the same: place terrains relatively close to one another at regular intervals so that a plane could easily reach an airfield in case of mechanical failure.¹²⁸ However, Hirschauer argued that with the power and weight of modern aircraft and the increasing likelihood of flying during non-daylight hours, “the question arises under a very different aspect today.” Already by 1935, Christophe Cony and Michel Ledet point out, most of the colony's runways were ill suited to handle year-round newer aircraft that were heavier and faster than the planes produced at the start of the decade. The totality of this situation led Hirschauer to assert that “a comprehensive revision of the airfields” would be a sensible objective for 1937. This modification plan basically aimed to decrease the number of landing fields by examining which terrains were rarely used

¹²⁷ Hirschauer Mission, 1936. As depicted in a *Bulletin* article, the airfield network remained essentially the same in the late spring of the following year. See, for example, “L’Aviation en Extrême-Orient,” 34.

¹²⁸ Hirschauer Mission, 1936. Even with the growth of civil aviation after 1930, Hirschauer believed that the number of landing sites was not superfluous.

and decommissioning these sites. The available resources, while limited, would then be employed to upgrade the remaining airfields.¹²⁹

While the Air Ministry had joined with colonial officials in 1934 to develop a program for improving the primary landing sites within Indochina, this project's goals evidently had not been satisfactorily met by the fall of 1936. A significant reason for this lack of progress involved financial constraints. In fact, this prior plan had proved to be an expensive undertaking from the start. Cony and Ledet write that "the work was such that its absorbed practically all the funds of the aerial navigation budget for 1935." Then, beginning in 1936, drastic cuts to the Air Ministry budget affected this effort over the longer term. Even though the government general managed to partially compensate for the diminished funding from the metropole, the project nonetheless remained subject to delays.¹³⁰

Regarding the status of Indochina's meteorological network around this time, the number of stations along certain routes was judged "insufficient" in the fall of 1934.¹³¹ Officials were attempting to address this inadequacy, at least in part. Cony and Ledet note that between 1934 and 1935, the meteorological service was focused on improving the coverage along the Indochinese portion of the route that linked Bangkok and Hanoi via Vientiane and Vinh.¹³² Whatever the extent and success of this work—and possibly an indication that this project, too, had stalled due to funding problems—Hirschauer observed in his 1936 study that the colony's meteorological network had not been significantly modified since his previous mission. While appearing reasonably satisfied

¹²⁹ Hirschauer Mission, 1936; Cony and Ledet, 498.

¹³⁰ Cony and Ledet, 498.

¹³¹ Hirschauer Mission, 1934.

¹³² Cony and Ledet, 497.

with the number of meteorological stations, Hirschauer offered critiques of the radio-transmitting system, which helped to broadcast local weather conditions.¹³³

Nearing the end of the decade, commentators continued to point to improvements that were still needed for the airfield, radio, and meteorological facilities along the colony's main air routes. Speaking at the Exposition Internationale de Paris in 1937, Charvet stated that the landing fields situated along the two primary itineraries—the north-south link from Tonkin to Cochinchina and the east-west line that connected Laos with Hanoi—were “in proportion to the aviation of fifteen years ago, not only by their size but...by their radiogoniometric equipment.”¹³⁴ Charvet placed the colony's infrastructural deficiencies in a global context, which suggests an undercurrent of concern that French aviation would be bested by foreign competition. He declared that the “backwardness in which the organization of the infrastructure and ground equipment in Indochina finds itself in comparison to other areas of the world” could not be overemphasized. Charvet thus urged public authorities to strive to ensure that the colony's problems “will not much longer remain one of the black spots of imperial aviation.”¹³⁵

¹³³ Hirschauer Mission, 1936. Hirschauer reported that elements of the radio transmitters at Vientiane dated from 1917 and had needed to be replaced for over a year. In addition, there was no radio post along the Mekong River for the Vientiane—Saigon route. Finally, he stated that only Vinh and Hanoi possessed reliable radio direction finders (radiogoniometers), but even these devices provided information that was at times “riddled with errors.” In Hirschauer's opinion, the shortcomings of this system had to be remedied in order to make air travel within Indochina safer. The mid-1937 article in the *Bulletin* counted forty-six stations in Indochina that transmitted weather bulletins after receiving data from one of two observatories in the colony, located in Tonkin and in Cochinchina. “L'Aviation en Extrême-Orient,” 35.

¹³⁴ Charvet, 184. Charvet cited certain work that was “urgently necessary” at Vientiane, Vinh, Paksé, Hanoi, Saigon, and in the Red River Delta. In general, these tasks involved building or enlarging runways and installing equipment to assist aerial navigation, particularly at night.

¹³⁵ Charvet, 184-185.

Around the same time Charvet delivered these remarks, officials in Indochina were seeking to address some of the complaints that he had voiced. In a letter from December 31, 1937, Governor General Brévié informed Minister of the Colonies Marius Moutet that over the course of the upcoming year, the colonial government planned to devote a “considerable effort” toward improving and expanding the aerial infrastructure. Brévié specified that the general budget had 1,110,000 francs earmarked for various airfield upgrades and runway construction projects in 1938. The Air Ministry provisionally designated another 300,000 francs to finance this program, whose total funding—1,410,000 francs—was an increase of 500,000 francs from the previous year’s allotment for aviation projects. The scope of this plan was indeed extensive. Included in the overall program was improvement work to the facilities at Gia Lâm, Vinh, Vientiane, Tan Son Nhut, Tourane, Phnom Penh, Paksé, and Luang Prabang.¹³⁶

Conclusion

Installing a reliable aviation infrastructure required more than just constructing a handful of airstrips. What was ideally needed was a network of different types of landing sites, radio-meteorological posts, and a cluster of ground facilities to house supplies, personnel, tools, and planes. In addition, an efficient management structure was required to oversee the circulation of air traffic. Cognizant of these different components, the French endeavored to lay the foundation for air transport in Indochina. Furthermore, the infrastructure was planned and developed with goals in mind that were larger in scope than mail and passenger delivery within the colony’s borders. Drawn up in its basic

¹³⁶ SHAA, 2B33/D1, “Le Gouverneur Général de l’Indochine à Monsieur le Ministre des Colonies,” December 31, 1937.

features at the start of 1920s, this infrastructure program was pursued with particular vigor in the late 1920s and early 1930s as the French sought to meet the needs of a flight technology that was continuously modernizing and an aviation presence that was projected to considerably expand. Despite the economic woes of the mid-to-later 1930s, officials continued to strive for the goal of providing Indochina with an air network suited to the requirements of the present as well as the future.

On the whole, this infrastructure consistently seemed to be a step behind the needs of modern air transportation. The French undoubtedly made progress with regard to improving the infrastructure: runways were lengthened and reinforced; the airfield network was given more coherence; radio-meteorological posts were upgraded; and a system for better management of air traffic was put in place. Yet these achievements were, more often than not, a response to what had already become a glaring need or the fulfillment of an objective that had been outlined in prior years. In other words, French aviation was typically catching up with its infrastructure needs as opposed to setting a standard to which other aviation services could aspire in the 1920s and 1930s.

A reliable infrastructure was doubtless of critical importance for the functioning of aviation in general. This reality was even more crucial for the particular situation of time and place in which the French found themselves in Southeast Asia. In an era when the aeronautics technology itself was relatively fragile and unreliable, this was not only an environment where geography and climate were unfavorable to setting up aviation but also a location where the chief source of materials and funding was located thousands of miles away. As the remainder of this dissertation demonstrates, the inadequacies of this infrastructure would play a major role in why aviation failed to achieve all that the

French hoped it would within Indochina. Even into the years after the Second World War, the air network was a topic of central importance for French aviation in Indochina. The need for a reliable air network—and, indeed, the consequences of not having one in place—would be dramatically underscored during the First Indochina War.

CHAPTER TWO: MOVING MAIL AND PASSENGERS ON MILITARY PLANES

In mid-July 1926, Deputy Léon Archimbaud submitted a report to the Chamber of Deputies that summarized the seemingly indefatigable transport capabilities of the military aircraft deployed in the empire:

In the colonies during recent years, France as well as other countries have acquired experience [that] clearly emphasizes the important role of military aviation. Above inhospitable regions devoid of transportation routes, the airplane...is not stopped by difficult trails, bridgeless rivers, mountains covered with virgin forests, foul swamps, or unfriendly tribes.... [The airplane] traces its path straight through the sky and in a few hours travels distances that require weeks or months by ordinary means.¹³⁷

Archimbaud's comments indicate that military planes were recognized as making a key contribution to colonial transport by the mid-1920s. Indeed, the period in which the air force was most conspicuously involved with regular mail deliveries—and very limited passenger service—within Indochina lasted from the 1920s until the early 1930s. By the middle of the decade, civil aviation proceeded to take on the majority of these responsibilities.

Indochina's military squadrons were involved in three key instances that related to transporting post and people during the aforementioned period. The first of these was an aerial tour across the colony that was undertaken in January 1921. This voyage was crucial for arousing interest and inspiring confidence in the functioning of long-distance air services. The journey also motivated efforts not only to connect Hanoi and Saigon but also to improve communications to parts of Laos. Moreover, the government dialogue surrounding this trip encapsulates many of the hopes, anxieties, and practical problems

¹³⁷ ANOM, GGI 66499, "Extrait du Rapport, fait au nom de la Commission des Finances chargée d'examiner le projet de Lois portant fixation du Budget Général de l'Exercice 1926 (Ministère des Colonies et Budgets Locaux des Colonies) par M. Léon Archimbaud, Député," [a stamped date on this document reads February 4, 1926. In footnotes for his book, Jean-Baptiste Manchon cites July 12, 1925, as the date on which Archimbaud composed this report].

that the French encountered in working to develop air transport in Indochina. Second, the air force operated a short-lived line that functioned in the mid-1920s and represented the colony's first scheduled air service. This route linked the Kratié airbase in Cambodia with the Savannakhet landing field in Laos; this itinerary was briefly extended south from Cambodia to Saigon. Last, military aircraft undertook mail and limited passenger flights between Hanoi and Saigon in 1929, continuing this service sporadically in the first half of the 1930s. This line not only was the realization of the type of transport touted by the 1921 mission but also at last linked the colony's northern and southern hubs through the skies.

Overall, the flights on these routes were not reminiscent of a regularly scheduled airmail or passenger service. Instead, the primary focus was propaganda—in the case of the Kratié-to-Savannakhet line, this effort was directed toward counterbalancing Thailand's presence in the region—aircrew training, and filling out the colony's air network while establishing a foundation for commercial services.¹³⁸ Conversely, the actual delivery of letters, cargo, and people typically appeared as a secondary concern. Moreover, French officials consistently voiced apprehension about the safety of these transports and at times even questioned the necessity of such flights.¹³⁹ Authorities expressed further concerns about the costs and funding of what were in fact very

¹³⁸ Speaking to this last point, Jean-Baptiste Manchon describes how the air force played a fundamental role throughout the empire in establishing airmail lines that would be beneficial to both the public and the military. With a view to transports eventually being entrusted to commercial firms, French officials agreed that the colonial squadrons had the “vital task” of creating an aviation infrastructure within which such companies would be able to safely operate. Jean-Baptiste Manchon, *L'aéronautique militaire française outre-mer, 1911-1939* (Paris: Presses de l'université Paris-Sorbonne, 2013), 398, 430.

¹³⁹ The prerequisite of being able to adequately manage the hazards of geography and weather, for instance, was the reason that almost seven years passed between the first nonstop Saigon-to-Hanoi journey in 1923 and the inauguration of scheduled airmail between the cities. Manchon, 401.

expensive mail lines. To exacerbate this issue of cost, customers did not seem willing to readily trade the standard means of transport for a service that, while more glamorous and swifter, was undoubtedly a pricier option. Thus the more practical purposes of these routes related to the said tasks of reconnoitering itineraries, providing training, and projecting French power and colonial authority.¹⁴⁰

As a final point, Indochina's air force provided transport in two other capacities as well. In addition to delivering passengers and mail in certain instances when the regular modes of transportation failed, military planes carried out various as-needed transports.¹⁴¹ While these supplemental and on-demand uses are briefly discussed in the following section, this chapter's focus is the January 1921 aerial tour and the two military airmail lines because these flight occasions facilitated the development of non-military air service.¹⁴²

Temporary and Supplemental Transports of Passengers and Mail in Indochina

At the start of the 1920s, many areas of the empire remained isolated and without an adequate transportation network. As a result and in the absence of commercial air

¹⁴⁰ As in Indochina, military aircraft elsewhere in the empire were used to deliver mail on scheduled lines only on a limited basis. Indeed, the majority of the postal flights resulted from the need to supplement interruptions to standard modes of delivery. Manchon provides a tripartite explanation for the infrequent and temporary nature of scheduled military airmail in the empire. First, the gradual development of the land-based communications infrastructure made such air transport—itself a costly investment—unnecessary. Second, the air forces' "operational priorities" tended to push these missions into the background. Third, the funding for these flights could not be permanently assured. Manchon, 401, 398.

¹⁴¹ Christophe Cony and Michel Ledet diligently attempt to record many of these flights. Christophe Cony and Michel Ledet, *L'Aviation française en Indochine: Des origines à 1945* (Outreau: Lela Presse, 2012).

¹⁴² As chapter six explains, aviation missions did at times have multiple purposes. It appears that one of the tasks of the aerial operations that took place along the Laos-Tonkin border beginning in late December 1922—this mission is discussed further in chapter six—was the delivery of mail from Hanoi to this region. Cony and Ledet, 76-77.

service that was “organized and sustainable,” military aviators were charged with ferrying “important people of the colonial world.” In fact, pilots deployed in the empire undertook this type of mission as early as the end of the Belle Époque.¹⁴³ Within Indochina, the air force was carrying passengers on as-needed basis from the early 1920s. Jean-Baptiste Manchon characterizes these transports as some of the “first significant air missions” undertaken in the colony. For example, the head French administrator in Lao Kay was flown from Hanoi to his residence in northern Tonkin in January 1922, and, in April, Major General Ernest Blondlat and Colonel René Debailleul traveled by air from Saigon to Hanoi. Similarly, in recounting the “politically important” air force missions in the southern half of the colony in 1923, Christophe Cony and Michel Ledet include the transport of Indochina’s Director of Financial Inspection (*Directeur du Contrôle Financier de l’Indochine*) from Saigon to Dalat and a regional aerial tour for Léon Garnier, the French Resident in Dalat; during his time in Dalat, the pilot also gave plane rides to numerous passengers, at least one of them an indigenous notable.¹⁴⁴

Overall, this selection of flights reflects the types of everyday military transports that were carried out in the colony during the interwar period. Yet in Indochina and throughout the empire, it was only in the 1930s that there was significant growth in the usage of this service.¹⁴⁵ A trajectory of increasing use was not always evident though. For

¹⁴³ Manchon, 403. Manchon cites instances of aviators transporting army officers around Morocco just prior to the start of the First World War.

¹⁴⁴ Manchon, 404-405; Cony and Ledet, 65, 86.

¹⁴⁵ He identifies the limits of the available aeronautics technology as the reason for this slow development. Up to this time, the colonial squadrons were outfitted with models of combat planes whose open-cockpit design offered an uncomfortable ride. In addition, many of these aircraft were powered by engines that, while relatively robust, were not free from breakdowns. Around 1930 though, the arrival in the empire of the more powerful Potez 29 aircraft signaled more comfort and security for air travel; this model, equipped with a closed cockpit and cabin, was better suited for passenger transport. As the decade progressed, military and administrative

example, writing from Hanoi in late January 1935, Captain Marcel Puypéroux observed, “it is quite obvious that at present the local governments or the provincial administrators do not officially call upon, so to speak, our aerial collaboration.” He theorized that the reason was linked to meager monetary resources, stating that officials perhaps were concerned about the cost of air transport. More generally, Puypéroux argued that “important people” and colonial officials should utilize air travel more frequently than was currently the case.¹⁴⁶ Of course, for reasons of security and of necessity-versus-cost, requests for military transports were not always granted; this proved to be the case even into the 1930s, when aviation had become more firmly established in Indochina and flying had become a safer, more regular means of travel.¹⁴⁷

On occasion, military aviators also undertook airmail deliveries and a few passenger transports when roads and rail lines were temporarily disabled. For instance, when the Red River flooded in September 1923 and September 1924, seaplanes from Tonkin’s squadron were called on to deliver mail between Haiphong and Hanoi. Once again in September 1926, Cony and Ledet indicate, the air force was assisted with transport after the region around this waterway became inundated. Round-trip postal flights were deployed daily from September 16 until September 28, when the railroad

officials throughout the empire more frequently utilized aviation as a swift means of transport. Manchon, 407-410.

¹⁴⁶ SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935.

¹⁴⁷ See, for instance, the discussion—and refusal—to grant an air transport requested by Tonkin’s deputy postal director in the fall of 1929. ANOM, GGI 66545. For a later example, see the discourse and rejection of an inquiry for daily mail flights between Haiphong and Hanoi in the late summer of 1937. ANOM, RSTNF 2770.

connecting Haiphong and Hanoi was restored; overall, these twenty-six voyages carried a total of 351 kilograms of mail.¹⁴⁸

The Hanoi—Saigon Aerial Tour of 1921

In the years immediately after the First World War, colonial and military officials were actively investigating the possibilities for connecting Hanoi and Saigon by air. Most notably, a test flight between the two cities was organized in January 1921 in coordination with a multi-purpose air operation to Xieng Khouang in Upper Laos.¹⁴⁹ Cony and Ledet characterize this pair of missions, which involved a total of eight aircraft, as the air force's "first grand sortie." Aside from their political significance, these long-distance voyages—along with another noteworthy operation that had taken place over several days in December—had demonstrated "all the advantages of linking the four grand provinces of Indochina by air."¹⁵⁰ Observers indeed recognized the potential value of the Hanoi—Saigon voyage even before it was launched. On January 9, interim Governor General Maurice Le Gallen described the planned flight as having "economic and political" aims that related to the establishment of regular air routes in the colony. He

¹⁴⁸ Cony and Ledet, 87, 119-120; Manchon, 399. One contemporary source noted that during the course of the September 1926 missions, several passengers were ferried as well. Exposition Coloniale Internationale. Paris 1931. *Indochine Française. Section Générale. Troupes de l'Indochine. L'Aéronautique militaire de l'Indochine* (Hanoi: Imprimerie d'Extrême-Orient, 1931), 89. As discussed further in chapter five, the aviation missions that were requested in the aftermath of flooding events also involved photography and reconnaissance work.

¹⁴⁹ Chapter six provides an analysis of the Xieng Khouang mission.

¹⁵⁰ Cony and Ledet, 51-52. While not clearly indicated by these authors, it seems that the unreferenced province—the fifth piece of Indochina—was probably Cambodia. The reason is that the December 1920 and January 1921 missions primarily involved travel and stopovers within Cochinchina, Annam, Tonkin, and Laos; the December journey consisted of a flight from Hanoi to Thakhek via Vinh. Cony and Ledet, 49; Gen. L.-M. Chassin, "Débuts de l'Aviation en Indochine," *Forces aériennes françaises* 110 (December 1955): 1013. Chassin describes this trip as both the "first real long-distance air rally (*raid*)" for the colony's air force and the first flight that passed through the Annamese Mountains.

later noted that the mission had allowed him to personally examine the economic possibilities of a rapid connection between the northern and southern parts of Indochina.¹⁵¹

While the benefits of the aerial tour were appreciated, certain individuals objected to parts of the operation, voicing concerns about the risks of the flight and the possible consequences of a failed attempt. Major General Richard Puypéroux, serving as Commandant Superior, was the source of much of this apprehension. He linked his views to a broader argument in favor of exercising discretion regarding the cost and purpose of the missions undertaken by the air force. These remarks underscore how the French desire to utilize aviation as a tool of empire was not tantamount to unbridled enthusiasm and rash action.

In a letter to the Governor General drafted on January 4, 1921, Puypéroux emphasized that meticulous preparation was required for any significant aerial operation—especially when the passengers included high-ranking colonial officials—taking place during what was still the developmental phase of military aviation. This careful planning would both reduce the risks and increase the likelihood of success. He further warned that the completion of a given long-distance mission did not necessarily mean a future of routine flights. In other words, officials would be mistaken in concluding forthwith that the prior accomplishment of a round-trip journey between

¹⁵¹ ANOM, GGI 66492, “Ordre de Mission,” January 9, 1921; ANOM, GGI 66492, “Télégramme Officiel. Gouverneur Général à Résuper Laos,” January 26, 1921. The mission order—as well as subsequent citations of a similar nature—are found in a folder titled “Aéronautique d’Indochine. Compte-rendu des missions d’aviation. 1. du Haut Laos 2. du voyage Hanoi—Saigon,” n.d. This larger report and this telegram—just as with the other telegrams referenced in this chapter—are located after a summary sheet that is labeled “Bordereau récapitulatif des pièces adressées à Monsieur le Gouverneur Général de l’Indochine,” March 9, 1921.

Hanoi and Thakhek was an indication that such a result would henceforth be repeated “when we want and at a date determined in advance.”¹⁵²

Puypéroux had expressed similar concerns the previous month, which had prompted a dispute with air force commandant François Glaize. Specifically, the Major General questioned the necessity of Glaize’s proposal for an aircraft to travel to Thakhek as part of a reconnaissance operation; this assignment was likely related to the flight that was carried out in January 1921.¹⁵³ In Puypéroux’s estimation, the proffered mission—unlike certain other operations—lacked a “tangible objective.”¹⁵⁴ He characterized Glaize’s journey as being similar to an air rally (*raid*), and he remain opposed to such flights—“these have no practical utility”—as long as the colony’s air routes had not been outfitted with a sufficient number of auxiliary landing sites. Furthermore, Puypéroux linked what he understood to be an unnecessary mission to the larger need to carefully map out how military aviation would function in Indochina. Otherwise, the air force would flounder from task to task without a discernible goal while wasting precious resources. Puypéroux accepted the likely reality of needing to quickly arrange “a few very exceptional, very urgent, and very confidential missions” but still emphasized the importance of drafting longer-term plans. “In the absence of such established projects,” Puypéroux wrote to the Governor General, “the work of aviation is done without

¹⁵² ANOM, GGI 66492, “Le Général de Division Puypéroux, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” January 4, 1921. This letter is found after “Bordereau récapitulatif des pièces adressées à Monsieur le Gouverneur Général de l’Indochine,” March 9, 1921. As a reminder, Major General Richard Puypéroux was the father of Marcel Puypéroux.

¹⁵³ On November 20 Glaize had notified Puypéroux of his intent to deploy a plane to Thakhek to inspect the recently finished airfield. ANOM, GGI 66492, “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine à Monsieur le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” November 20, 1920.

¹⁵⁴ As an example of a mission with a more clear aim, Puypéroux cited a flight to Tran Ninh that was intended to intimidate certain dissident elements among the area’s population.

continuity, in fits and starts, often following a passing impulsion, that is to say, with the maximum expense for the minimum return.”¹⁵⁵

In a response to these comments, Glaize stressed that the Thakhek mission had a purpose: “the *reconnaissance...of an airfield* considered important [italics original].” The operation was not “simply an ‘air rally,’” he protested, pointing out that the flight had “a very precise goal determined by the installation of the Hanoi—Saigon route.” He then stated that this reconnaissance work was part of the previously approved program for organizing Indochina’s air network. Glaize also mentioned that the specific missions of the colony’s air force—as well as the funding required—were subject to some uncertainty due to situational needs, weather conditions, and the nascent state of this service arm. Nonetheless, Puypéroux maintained that Glaize’s argument had not altered his original opinion regarding the Thakhek operation.¹⁵⁶

For the Hanoi—Saigon aerial tour scheduled for January 1921, the seaplane trip between Thakhek and Saigon was especially concerning to Puypéroux due to lingering questions about safety. He again used the air-rally comparison, noting that the selected itinerary not only possessed too few auxiliary airfields but also had had not been thoroughly reconnoitered. Puypéroux wrote that such flights, while impressive and

¹⁵⁵ ANOM, GGI 66492, Le Général de Division Puypéroux, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” December 2, 1920.

¹⁵⁶ ANOM, GGI 66492, “Le Chef de Bataillon Glaize, Commandant de l’Aéronautique d’Indochine à Monsieur le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” December 3, 1920; ANOM, GGI 66492, “Le Général de Division Puypéroux, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” December 8, 1920. While recognizing that the air force had experienced difficult beginnings in the colony, Puypéroux contended that this service now required a more specific aviation program with which all the relevant authorities—himself included—needed to be familiar; this latter part of his observation suggests that there had been a lack of clear communication among French authorities regarding the air force’s missions and plan of organization.

courageous, inevitably included “contingencies,...risks, [and]...mishaps” and advised the Governor General against the mission. Furthermore, he judged that the failure of the operation would have broad, long-term repercussions for French Indochina. Puypéroux explained that “the moral consequences of a non-success, from the viewpoint of French prestige as well as that of the future of Indochinese aviation itself, appear to me too grave...[to] express in all frankness my way of seeing this subject.”¹⁵⁷

Governor General Le Gallen himself appeared disinclined to draw too much attention to the flight, commenting on January 9 that he worked to “limit the publicity made around my trip.” Likewise, the mission report noted that the Governor General “wishes that the air rally be disclosed as little as possible.” The report left the specific reason unstated, but it can be assumed that this thinking was influenced by the voyage’s potential to cause alarm within the Thai government; this supposition is grounded in the fact that this document included the reminder that flying over Thailand was formally prohibited. In addition, lending credence to concerns about Thailand, a French military official pointed out that as the Mekong River marked the Thailand—Indochina frontier, foggy conditions could lead a French pilot to land in Thai territory. The implied problem was that such a situation could potentially cause diplomatic or political issues. In fact, competition with the aviation services of other nations in the region played a part in the decision to arrange the January 1921 operation. Le Gallen made a point about pushing ahead with such aeronautics missions and not “restrict[ing] our own rise through too much caution.” This focus on marching forward was a way to ensure that French aviation

¹⁵⁷ ANOM, GGI 66492, “Le Général de Division Puypéroux, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” January 4, 1921.

did not lag behind in comparison to “the [aerial] activity of certain of our neighbors.”

While left unsaid, the main concern was probably Thailand.¹⁵⁸

Another, more evident reason for not wanting to arouse too much public notice prior to the completion of the tour was that a failure would be detrimental to French aviation, in terms both of prestige and of materials and personnel. Indeed, the mission posed various hazards made more dangerous by the technological limitations of the time: long distances, an incomplete network of landing sites, and uncertain weather—particularly east of the Annamese Mountains. Thus a successful journey was not to be taken for granted.

In the end, despite Puypéroux’s protests and urgings of caution, the Hanoi—Saigon operation was carried out as planned. Le Gallen explained to Puypéroux that as Governor General, he was obligated “to make aviation produce the maximum” from both a military viewpoint and the viewpoint of economic policy. Le Gallen further stated that his work in promoting flight technology—“this arm of science and progress”—was aligned with the “political goals” of his office.¹⁵⁹

The mission report described the aerial tour as a three-part voyage: Hanoi to Thakhek, undertaken by two airplanes; Thakhek to Khong, traveled by a pair of seaplanes; and Khong to Saigon, also to be carried out by two seaplanes. A telegram to the Minister of the Colonies recounted a slightly different version of the journey. This

¹⁵⁸ ANOM, GGI 66492, “[Le Gouverneur Général à] Le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” January 9, 1921. This letter is found after “Bordereau récapitulatif des pièces adressées à Monsieur le Gouverneur Général de l’Indochine,” March 9, 1921. ANOM, GGI 66492, “Ordre d’exécution”; ANOM, GGI 66492, Le Général de Division Puypéroux, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” December 2, 1920.

¹⁵⁹ ANOM, GGI 66492, “[Le Gouverneur Général à] Le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” January 9, 1921.

dispatch noted that the operation started on January 13, 1921, as two airplanes—one with Le Gallen as a passenger—departed Hanoi and arrived in Vinh after a turbulent flight marked by unfavorable weather. The following day the aircrews, now accompanied by a pair of seaplanes from Haiphong, crossed the Annamese Mountains in the direction of Thakhek. On January 15, the single seaplane that remained in service—the other plane required minor on-site repairs for a slightly damaged float after it had been forced to land upstream from Thakhek—voyaged south toward Khong with Le Gallen onboard. A lack of fuel forced this aircraft to stop short of Khong, leaving the journey to Saigon for the next day; for this final leg of the trip, it appears that some aircraft from Squadron Two had flown to meet Le Gallen’s plane so that they could travel as a group back toward Saigon.¹⁶⁰

To French officials beyond the colony’s borders, Le Gallen extolled the positive effects of both his flight and the operation to Upper Laos.¹⁶¹ In addition, the triumphant completion of these missions—the flight to Xieng Khouang in particular—fostered an increased interest within the colonial administration for developing an air route to this part of Indochina. In a telegram of January 26, the Governor General declared himself “henceforth a convinced supporter” of utilizing a Mekong River air link to “unblock”

¹⁶⁰ ANOM, GGI 66492, “Ordre d’exécution”; ANOM, GGI 66492, “Télégramme Officiel. Gouverneur Général à Colonies, no.1-S,” January 17, 1921. Cony and Ledet indicate that this escort contingent from Saigon consisted of an airplane and three seaplanes that had been dispatched several days prior. Cony and Ledet, 51. It should be noted that these authors offer certain details that differ from some the departure, itinerary, and aircrew information found in the archival material. For example, they write that two seaplanes left Thakhek for Khong on January 16. Cony and Ledet, 51.

¹⁶¹ ANOM, GGI 66492, “Télégramme Officiel. Gouverneur Général à Colonies, no.1-S,” January 17, 1921. Le Gallen informed the Minister of the Colonies that he had cabled all of France’s representatives in Southeast Asia, emphasizing to them that these voyages were accomplished without any special preparation and by relying on currently available military aircraft. The Governor General left it to the Minister to spread the news of “the prowess of our aviation” in the metropolitan press in a manner that “best serves the interests of our fine colony.”

Upper Laos. Le Gallen aimed to promptly proceed to working on such a route. In a dispatch sent the following day, he indicated his intention to commission a study for the establishment of a seaplane line connecting Cochinchina to this region. Similarly, the mission report pointed out that an airmail service could connect Saigon with Vientiane and Luang Prabang, thus improving the communications infrastructure of the “so very deprived ” protectorate; this account also evaluated different possibilities for postal lines that linked Upper Laos with Saigon and Hanoi.¹⁶²

While the success of the Hanoi—Saigon flight may have alleviated Puypéroux’s worry about the risks and ramifications of that specific voyage, in the months that followed he continued to stress economy and prudence in aviation missions. The immediate reason was that the Minister of the Colonies had implored Puypéroux “to practice the most rigorous supervision” in managing the funds delegated under the Colonial Budget for the operation of the armed services, which was an appeal related to the larger aim of reducing expenditures. Additionally, the metropolitan government desired that the colony’s civil services exercise discretion in utilizing aviation, the employment of which was often “very expensive.”¹⁶³ Consequently, Puypéroux proposed in late April 1921 that air force tasks should only be approved if they demonstrated a “precise and well-demonstrated need.” Moreover, with this same goal of economy in

¹⁶² ANOM, GGI 66492, “Télégramme Officiel. Gouverneur Général à Résuper Laos,” January 26, 1921; ANOM, GGI 66492, “Télégramme Officiel. Saigon [à] Colonies,” January 27, 1921; ANOM, GGI 66492, “Effets et résultats des présentes missions.”

¹⁶³ As a point of clarification, the administrative structure of the air force hindered the extent to which Puypéroux, as the head military official in the colony, could exercise direct control over the financing of this service. While the decree of January 19, 1920, had placed Puypéroux’s office in charge of military aviation in Indochina, the air force was to operate at the disposal of the Governor General for non-military missions. Though the requestor of a given task helped with the costs of the operation, the colonial budget ultimately assumed the majority of the financial burden.

mind, Puypéroux underscored that authorized missions should end when the stated goal was achieved.¹⁶⁴

Though the direct impact of Puypéroux's campaign for caution is unclear, the colonial and military administrations did proceed in a deliberate fashion when considering how to build on the progress represented by the January 1921 missions. Speaking to the positive effects of this pair of flights, a telegram dispatched in mid-January emphasized that this "magnificent achievement...will have [a] very favorable impact" both within Indochina and beyond the colony's borders.¹⁶⁵ Working to translate this "very favorable impact" into concrete results for Indochina's air network, officials thereafter started investigating several options for scheduled air routes. In the summer of 1922 and seeking to follow efforts made in Thailand, French West Africa, and Madagascar, Glaize contemplated developing air transport along three itineraries: Saigon to Luang Prabang; Vinh to Vientiane; and Nha Trang to Tourane. However, Major General Ernest Blondlat, the head military official in the colony at this point, ultimately advised the Governor General against the plan. The cited reasons were the comparatively

¹⁶⁴ ANOM, GGI 66492, "Le Général de Division Puypéroux, Commandant Supérieur des Troupes du Groupe de l'Indochine à Monsieur le Gouverneur Général de l'Indochine," April 28, 1921. To illustrate his point, Puypéroux referenced an operation that was currently underway in Laos. He noted that while the "essential objective" of the work appeared to have been reached, the mission had not as yet concluded. Instead, the operation continued in the form of "a series of demonstrations that, while having a rather remote connection to the studies undertaken, significantly increase this mission's cost." This particular mission may have been completed a few days later, on or before May 3. To explain, a telegram from a French administrator in Laos reported that the air force conducted one or more test flights between Saigon and Luang Prabang around the time Puypéroux composed his letter. These voyages had the declared purpose of researching an itinerary for an air route linking Saigon and Upper Laos. The telegram also implied that the operation also had functioned as a form of propaganda for the colonial authority. ANOM, GGI 66492, "Télégramme Officiel. Résident Supérieur à Gouverneur Général," May 3, 1921.

¹⁶⁵ ANOM, GGI 66492, "Télégramme Officiel. Gouverneur Général à Général Commandant supérieur Hanoi, January 17, 1921.

high cost of air travel—estimated at six to ten times more than traveling by automobile—and the scarcity of express traffic.¹⁶⁶

The next spring witnessed the first significant airmail flight, as a cargo of letters was delivered from Saigon to Hanoi on April 11 via the Mekong River and a crossing of the Annamese Mountains at Thakhek. Manchon points out that the journey resembled a single, long-distance trek that included mail transport rather than the start of a regular postal line. Even so, Cony and Ledet, citing a contemporary colonial bulletin, note that the success of this flight had generated interest in the creation of a regular airmail link between the two cities.¹⁶⁷ While a scheduled postal service would be created over two years later, the itinerary of this military line did not exactly follow what had been investigated between January 1921 and April 1923.

The Kratié—Savannakhet Line (Mid-1920s)

One of the elements included in a military aviation program outlined in an early February 1924 memorandum was the establishment of a trial airmail line on a yet-to-be-determined route. Glaize, who authored this document, emphasized the importance of this task as he ended the memo.¹⁶⁸ When developed, the first air service within Indochina—a route from Kratié to Savannakhet—was understood to accomplish multiple goals that extended beyond the immediate delivery of postal materials on military planes. While the

¹⁶⁶ Cony and Ledet, 69.

¹⁶⁷ Cony and Ledet, 84; Manchon 399. This plane carried 330 letters taxed by the postal authority in addition to some government and military correspondence. Cony and Ledet, 84. Though not part of a scheduled route, the first airmail delivery between Annam and Tonkin took place on May 4, 1929. An administrator conferred a cargo of local mail to one of a group of military aircraft visiting Tourane just as the plane was preparing to depart for the return trip to Hanoi. Cony and Ledet, 141-142.

¹⁶⁸ ANOM, GGI 66499, “Note sur l’Aviation en Indochine. Demandée par le Gouvernement Général,” [February 3, 1924].

transport value was recognized, officials came to view this usage as either too expensive to maintain or impractical once major improvements to the region's ground-based communications network were completed. The fulfillment of other roles—namely, propaganda and expanding the web of air routes within Indochina—proved an equally, if not more, significant and compelling motivation.

These other objectives were evident in early discussions of what would become the Kratié—Savannakhet line. Writing to the Governor General on June 30, 1925, Major General Andlauer referenced a letter from a week prior that mentioned installing a detachment of planes on the Mekong River not only for political and military purposes but also for postal, economic, and medical missions.¹⁶⁹ Given the opinion that Thailand would act similarly, the colonial administration sensed the importance of arranging regular flights along the river and near the frontier.¹⁷⁰ At the end of September, Glaize recounted to the Governor General that a recent Franco-Thai agreement had included authorization for both signatories to deploy unarmed aircraft along the Mekong River.¹⁷¹

¹⁶⁹ ANOM, GGI 66344, "Le Général de Division Andlauer, Commandant Supérieur des Troupes du Groupe de l'Indochine à Monsieur le Gouverneur Général de l'Indochine," June 30, 1925. In a document attached to this letter, the four types of mission for which these aircraft could be used were identified as follows: mail deliveries, medical evacuations, administrative transports, and, eventually, some economic tasks. This plan also indicated that in addition to the principal air force center at Kratié, there would be smaller bases at Stung Treng, Paksé, and Savannakhet. The proposal remarked that three of the seaplanes stationed at Haiphong could be relocated to the Kratié site; these seaplanes were to be replaced with fixed-wheel aircraft in the future. ANOM, GGI 66344, "Projet d'installation sur le Mékong d'un détachement d'hydravions," June 29, 1925. As predicted, airplanes were substituted for these Breguet 14 seaplanes in the spring of 1926. Cony and Ledet, 114.

¹⁷⁰ ANOM, GGI 66344, "Projet d'installation sur le Mékong d'un détachement d'hydravions," June 29, 1925; ANOM, GGI 66344, "Le Général de Division Andlauer, Commandant Supérieur des Troupes du Groupe de l'Indochine à Monsieur le Gouverneur Général de l'Indochine," June 30, 1925.

¹⁷¹ In the plan of June 29, one of the reasons provided in support of Kratié was that this site was outside the neutral zone outlined in this accord. The French thus theorized that the Kratié base could have certain war supplies stockpiled so that the aircraft would be "ready to act quickly at the first opportunity." In addition, Andlauer noted that placing a military aviation detachment

Moreover, he explained that Thailand possessed a burgeoning air force, and the nation would “probably very quickly take advantage of the latitude that is left to it.” Thus it had been recognized that the French needed to demonstrate their aviation capabilities more regularly and with more authority than in the past; this task was deemed particularly important for influencing “our Laotian protégés” living along the waterway.¹⁷²

The actual airmail line appeared as somewhat of a secondary concern to French military officials. When referenced, the subject of airmail typically related to the more general need to develop the air network within Indochina. Indeed, on June 4, 1925, Glaize observed that the “military services” were thoroughly involved with the organization of the aerial infrastructure because “they alone are qualified at this time for the execution of such a task.” For the Kratié—Savannakhet route specifically, discussions of airmail were informed by the challenges of transportation in this area of Indochina, especially Laos. The report from June 1925 described the Mekong River between these two locales as an area in which rapids significantly obstructed transit between the upper and lower sections of the waterway. Addressing how the proposed air link could improve this situation, Glaize asserted that the usage of aircraft for deliveries of both mail and,

at this site would help unify the colony’s air force by providing “concrete [and] effective” contact between the northern and southern squadrons. ANOM, GGI 66344, “Projet d’installation sur le Mékong d’un détachement d’hydravions,” June 29, 1925; ANOM, GGI 66344, “Le Général de Division Andlauer, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” June 30, 1925.

¹⁷² ANOM, GGI 66344, “Etude sur les conditions d’utilisations de la section d’avions stationnée à Kratié pour le transport du courrier entre ce point et Savannakhet.” This study follows a letter titled “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine à Monsieur le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” September 25, 1925 [hereafter “Etude”].

eventually, personnel appeared “particularly appealing in a region as poorly equipped with transportation routes as Laos.”¹⁷³

The Director of Post and Telegraph also analyzed this air route, and his measured appraisal serves as a realistic assessment of the line’s transport potential. Like Glaize, he similarly stated the advantages of utilizing aircraft to ameliorate communications in an area where transportation was a “difficult and very lengthy” process. The Director determined, however, that the Kratié—Savannakhet itinerary was not of great interest in and of itself because rail and automobile lines currently ensured exchanges of correspondence between Saigon and Savannakhet via Nha Trang, Tourane, and Dong Ha. He did note that this coastal path could be modified if the proposed air service both saved an appreciable amount of time over the terrestrial routes and allowed for the delivery of the entirety of the mail. The airmail option was nonetheless viewed as having a limited fiscal value. The Director pointed out that the quantity of correspondence sent from Kratié to Upper Laos averaged 200 to 250 kilograms per week, parcel post excluded. Given the relatively large number of package deliveries, he judged that aircraft would unlikely be able to handle the transport of these items. “Therefore,” the Director explained, “the revenue from the establishment of a surtax on correspondence other than letters will not be very high.”¹⁷⁴

Within Laos, the French administration was more enthusiastic about the potential for aviation to help the region. Both Resident Superior Jules Bosc and Interim Resident

¹⁷³ ANOM, GGI 66503, “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine à Monsieur le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” June 4, 1925; ANOM, GGI 66344, “Projet d’installation sur le Mékong d’un détachement d’hydravions,” June 29, 1925; ANOM, GGI 66344, “Etude.”

¹⁷⁴ ANOM, GGI 66344, “Le Directeur des Postes et des Télégraphes de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” July 21, 1925.

Superior Jean-Jacques Dauplay had consistently requested that “regular and permanent” air transport be developed within the protectorate. Such a service would compensate for the “lack or irregularity” of other means of communication and provide “economic and political advantages” for Laos. Dauplay further contended that the establishment of air transport had become “all the more indispensable” due to current budget difficulties that would delay the completion of the local road network, a project that was itself understood to be critical to ensuring Laos’ prosperity.¹⁷⁵

Following this commentary from the summer of 1925, a decree of December 19 authorized the use of the Kratié seaplanes for weekly round-trip flights to Savannakhet. This line was inaugurated on February 9, 1926, as a plane departed Kratié early in the morning, stopped at Stung Treng and Paksé, and arrived in Savannakhet after midday.¹⁷⁶ Even prior to the first flight, officials had envisioned lengthening the line both in a southern direction toward Saigon and a northern direction toward Thakhek; the southerly prolongation of the route was approved around November 9. Discussing the eventual extension to Cochinchina, Cony and Ledet highlight the promotional effort of the Friends of Aviation League of Saigon (*Ligue saigonaise des amis de l’aviation*). This aero-club’s work to cultivate powered flight in the colony helped unblock the required funds in the spring of 1926.¹⁷⁷ By mid-March, Glaize estimated that the air force would be

¹⁷⁵ ANOM, GGI 66344, “Le Résident Supérieur p.i. au Laos à Monsieur le Gouverneur Général de l’Indochine,” August 1, 1925. Dauplay added that these financial issues would prevent the local government from assisting with the costs of the aviation project.

¹⁷⁶ ANOM, GGI 66344, “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine à Monsieur le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” March 10, 1926; Cony and Ledet, 114.

¹⁷⁷ ANOM, GGI 66344, “Note au sujet de la création de la ligne aérienne Kratié—Savannakhet,” December 1925; ANOM, GGI 66344, “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine à Monsieur le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” March 10, 1926; Cony and Ledet, 114.

prepared to undertake voyages on the new itinerary at the beginning of April. Indeed, the first round-trip flight on the Saigon—Kratie line was carried out between April 3 and April 8. Thereafter, weekly service was offered from the remainder of April through May and June. When needed, the trips were extended north to Savannakhet.¹⁷⁸

Despite the success represented by the establishment of a regular air route, the amount of mail that was transported remained quite limited. According to Cony and Ledet, the overall postal cargo was “insignificant and even non-existent on certain days.” Following a rainy-season stoppage in the summer of 1926, transports resumed on October 31 only to cease the following day due to an operating deficit. A government-general decree subsequently put an end to the Saigon—Savannakhet link on November 16. Already by early September though, officials had been considering discontinuing this service.¹⁷⁹

Other contemporaries, also keenly aware of the line’s shortcomings, offered corrective measures during the fall. On October 9, for instance, the Director of Post and Telegraph judged that the results for the Kratie—Savannakhet service had fallen short of expectations. To remedy this situation, he proposed a reduction in the surtax rates for certain postal materials; this expedient was intended to “encourage the public to utilize

¹⁷⁸ ANOM, GGI 66344, “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine à Monsieur le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” March 10, 1926; Cony and Ledet, 114.

¹⁷⁹ Cony and Ledet, 114. On September 7, 1926, air force commandant Henri Leblanc contacted Major General Andlauer with proposals for stopping flights on this line and for vacating the base at Kratie. Then, on October 18, Andlauer submitted a series of measures for clearing this site. According to Andlauer’s plan, the base’s aircraft and personnel were to be reassigned, but certain of the existing infrastructure was to be left in place. ANOM, GGI 66344, “Le Lt. Colonel Leblanc, Commandant l’Aéronautique d’Indochine au Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” October 6, 1926. ANOM, GGI 66344, “Le Général de Division Andlauer, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” October 18, 1926.

this swift means of communication more often.” The Director’s remarks indicate that the comparatively high cost of transporting letters and parcels by air was perceived to be dissuading people from utilizing this service. Moreover, the public was apparently not convinced—at least to the extent that French officials hoped—that the time saved by sending their correspondence by plane was worth the extra cost of employing airmail. The surtax issue had been debated in the fall of 1925 as well, prior to the inauguration of the Kratié—Savannakhet line. At stake in these discussions was how to develop a service that people would be inclined to use but that was also reasonably cost effective. In sum, the French seemed to recognize that however exciting the prospect of airmail seemed to be for the public, simply having such a service available was not enough to convince people to utilize it.¹⁸⁰

In their overall evaluation of the functioning of the Saigon—Savannakhet line, Cony and Ledet observe that the required expenses were completely disproportionate to the line’s results. While the expectation was that the transports would yield ten thousand

¹⁸⁰ ANOM, GGI 66344, “Le Directeur des Postes et des Télégraphes de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” October 9, 1926. In this particular deliberation, the Director of Post and Telegraph preferred to institute a surtax system from the opening of the route and, if needed, modify these amounts with an aim to making airmail a more appealing option to the public. Conversely, in September 1925 Glaize endorsed having a surtax on parcels, packets, and newspapers but not on letters, at least at the start of the service; a memo distributed three months later explained a portion of Glaize’s reasoning, stating that he wished to apply a surtax to letters “when the public will have gotten into the habit of mail transport by air.” When discussing this issue in September, Glaize referenced an airmail line in Thailand that carried non-surtaxed letters. In order to attract a customer base, this route had operated for more than a year without extra charges on transported items. At that point, Glaize noted, people perfectly accepted the imposition of a surtax because those who used the line were aware of its benefits. Glaize added that this setup would itself be helpful in limiting what had been identified as a “leak” of correspondence toward the Thai airmail services. ANOM, GGI 66344, “Le Directeur des Postes et des Télégraphes de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” November 14, 1925; ANOM, GGI 66344, “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine à Monsieur le Gouverneur Général de l’Indochine,” September 23, 1925; ANOM, GGI 66344, “Note au sujet de la création de la ligne aérienne Kratié—Savannakhet,” December 1925.

piasters during the year, the actual profit was “completely null.” In fact, the service consumed the twenty-six thousand piasters that were earmarked for it, and this amount did not even include the twenty-thousand-piaster operating cost of the Kratié base and its annexes. Furthermore, the line was inaugurated during a difficult year for military aviation in terms of obtaining monetary resources, a situation that is perhaps indicative of an ill-timed decision to launch a trial airmail route. Cony and Ledet explain that 1926 witnessed a financially driven decrease in the number of missions that the colony’s air force carried out. While the funds assigned by the colonial budget for gasoline and supplies had not been augmented between 1921 and 1926, the value of the franc—the currency in which this sum was calculated—had dropped considerably in relation to Indochina’s piaster. In addition, local, piaster-based fuel prices had markedly increased. The result was that the funds provided by the metropole financed 1350 flight hours in 1921 and only 420 flight hours in 1926.¹⁸¹

Almost two-and-a-half years later, French officials were considering launching another military transport service. The goal this time was to set up regular airmail and limited passenger flights between Hanoi and Saigon. Compared to the Saigon—Savannakhet line, this route was a longer, more ambitious course of travel that had greater potential for traffic and—despite how officials in Laos may have felt—offered more practical utility. Yet just as with the prior service, colonial and military authorities viewed the proposed line as having other uses that were equally, if not more, important than meeting an immediate demand for air transport. In other words, the Hanoi—Saigon route also was imagined more as a multi-purpose air link that included mail delivery rather than a regularly operating air service.

¹⁸¹ Cony and Ledet, 114-115, 122.

The Hanoi—Saigon Line (Later 1920s)

In a letter from mid-April 1929, the Minister of the Colonies reported the Air Minister's interest in developing a scheduled airmail route between Hanoi and Saigon. These military transports were to function in coordination with French postal ships arriving in Saigon so that mail could more quickly circulate between metropole and colony. As the Director of the Post, Telegraph, and Telephone (hereafter PTT Director) asserted, the proffered plan "will not fail to improve the postal connections [within Indochina] and those between Tonkin and the metropole." Furthermore, the Minister of the Colonies remarked that this line—the operation of which eventually would be handed over to aviation companies—would demonstrate "the advantages offered by air transport" and serve as training for pilots and crew. Cony and Ledet note, in addition, that that these flights would function as "excellent publicity for military aviation."¹⁸²

Though local aviation firms had attempted some mail deliveries in the first half of 1929, commercial airmail was an impractical option at this point.¹⁸³ The colony's administrative and military authorities agreed with the PTT Director that the air force should be charged with carrying out the Hanoi—Saigon postal trips.¹⁸⁴ The itinerary

¹⁸² ANOM, GGI 66569, "Le Ministre des Colonies à Monsieur le Gouverneur Général de l'Indochine," April 12, 1929; ANOM, GGI 66569, "Le Directeur des Postes, Télégraphes et Téléphones de l'Indochine à Monsieur le Gouverneur Général de l'Indochine," June 10, 1929; Cony and Ledet, 145.

¹⁸³ Cony and Ledet explain that the available commercial aircraft were not suited for this specific task. Moreover, these efforts encountered the problem of profitability, a situation that was not helped by the lack of civil airfields in Indochina at the time. Cony and Ledet, 145.

¹⁸⁴ Cony and Ledet, 145. As an example of an endorsement from military officials, Major General Aubert wrote of his "very favorable opinion" of the proposition; this route could serve the dual purpose of training air force personnel and showing the public the benefits of using aircraft for mail delivery. Likewise, Chef de Bataillon Mathis highlighted pilot training, propaganda, and future use by commercial airlines. Also, he estimated that, with each trip, planes could deliver up to 320 kilograms of letters between the two cities three to four days faster than by other means of transport. ANOM, GGI 66569, "Le Général de Division Aubert, Commandant Supérieur des Troupes du Groupe de l'Indochine à Monsieur le Gouverneur Général de

would follow the coast of Annam, a course of travel that Governor General Pierre Pasquier characterized as the best and safest choice for linking the two cities.¹⁸⁵ Pasquier's opinion was informed by a study from mid-June composed by Chef de Bataillon Mathis, then serving as the interim head of military aviation. This report concluded that the littoral route was preferable to traveling along the Mekong River. While much shorter than the coastal itinerary, the Mekong River option offered aviators less security and more uncertainty than a path that traced the coast of Annam.¹⁸⁶

Mathis outlined a schedule for about fourteen round-trip voyages or a total of twenty-nine flights—fifteen from Hanoi to Saigon and fourteen in the reverse direction—in a period stretching from June 23 to January 6, 1930.¹⁸⁷ The itinerary of the route purportedly would allow for airmail service to several localities between Hanoi and Saigon, namely, Vinh, Hué, Tourane, and Nha Trang.¹⁸⁸ When the postal line was actually operating, the only stopover routinely utilized was Tourane. Indeed, because of its location approximately halfway along the route, Tourane's airfield was to play a strategic role as a transfer and resupply point. According to Cony and Ledet, the journey from Tonkin to Cochinchina was envisioned as a single day's trip, with nine hours

l'Indochine," June 19, 1929; ANOM, GGI 66569, "Rapport du Chef de Bataillon Mathis, Commandant p.i. l'Aéronautique d'Indochine relatif au projet d'organisation d'une liaison postale aérienne entre Hanoi et Saigon en correspondance avec les paquebots poste touchant Saigon," June 14, 1929 [hereafter "Rapport du Chef de Bataillon Mathis"].

¹⁸⁵ ANOM, GGI 66569, "Le Gouverneur Général de l'Indochine à Monsieur le Ministre des Colonies," August 20, 1929. Pasquier explained that this itinerary already had significant infrastructural work along its length, and the route could be utilized in the future by commercial aircraft as a branch of an international line stretching from Europe through Asia. He also noted that the coastal itinerary could be incorporated into defense plans for the colony.

¹⁸⁶ ANOM, GGI 66569, "Rapport du Chef de Bataillon Mathis," June 14, 1929. When following the river, a pilot not only had to navigate the "very serious obstacle" that was the Annamese Mountains but also had to manage flying over a landscape outfitted with significantly fewer landing sites than the littoral itinerary.

¹⁸⁷ Elsewhere in this report, Mathis described a timetable of fourteen round-trip transports between June 25 and January 1, 1930.

¹⁸⁸ ANOM, GGI 66569, "Rapport du Chef de Bataillon Mathis," June 14, 1929.

dedicated to flying and one hour reserved for the Tourane stopover. During this short interval, the postal cargo would be entrusted to the relevant aircraft and preparations would be made for departure. In other words, the pilot arriving in Tourane from Hanoi would hand over the mail to another aviator who would then travel to Saigon. Meanwhile, the plane from Tonkin would wait at Tourane to receive the postal material coming from Cochinchina.¹⁸⁹

A round-trip voyage had in fact been carried out before Mathis drafted his report in mid-June, and another flight was completed the following month.¹⁹⁰ Even with these initial successes, Governor General Pasquier was not willing to conclude that this line should immediately become a regularly functioning service. These two journeys, he explained, were trial flights along a lengthy itinerary that was still “basically equipped” and offered too many risks for scheduled deliveries to be considered at present.

Highlighting the importance of augmenting the route’s infrastructure, Pasquier stated that until such work was finished, flights on this line could take place only intermittently. He added that these missions could include mail transport but without any guarantee. The director of Indochina’s recently established Bureau of Civil Aviation also weighed in on the safety issue. Writing to Pasquier on June 21, this official observed that the line

¹⁸⁹ Cony and Ledet, 145.

¹⁹⁰ Regarding the June operation, two aircraft undertook the southerly journey on June 4 then returned to Hanoi four days later, stopping at Tourane on each trip. The second transport started on July 7, as a group of planes traveled from Hanoi to Saigon with fifteen kilograms of mail for the outgoing postal ship; this vessel arrived in Cochinchina on July 9. Next, a cargo of between 130 and 140 kilograms of letters were transferred to the aircraft on July 10 for delivery to Hanoi that evening. ANOM, GGI 66569, “Le Gouverneur Général de l’Indochine à Monsieur le Ministre des Colonies,” August 20, 1929.

needed more airfields and auxiliary airstrips along its length in order to provide aircraft with as much security as possible.¹⁹¹

As with other uses of aviation in Indochina—which subsequent chapters will reinforce—authorities had to account for weather and atmospheric conditions as they studied the Hanoi—Saigon airmail link. Mathis noted that the most favorable periods of the year for flying did not coincide in the north and south of Indochina, but he did not see this reality as constituting an insurmountable hurdle to launching the air service. He reasoned that the meteorological coverage allowed aircraft to travel on the route “without too much difficulty” for most of the year. This was not a unanimous perspective, however. At the end of August, Major General Aubert, the head military official in the colony, communicated to Pasquier that he had reassessed his previous endorsement for immediately proceeding with deployments on the coastal route. Aubert judged that meteorological protection currently could not be assured in a satisfactory manner along this itinerary. The remoteness of the landing sites only compounded this problem. Therefore—and in a manner similar to Commandant Superior Puypéroux several years prior—Aubert viewed the voyage between Tonkin and Cochinchina as more akin to a long-distance air rally than a routine flight operating with the necessary conditions of security. With these points in mind, he decided to temporarily postpone these aviation missions. Aubert closed his letter to Pasquier by asserting that the Hanoi—Saigon line could regularly function only with the type of safety conditions that had been emphasized in Air Ministry circulars distributed in April and June. This requisite would be met,

¹⁹¹ ANOM, GGI 66569, “Le Gouverneur Général de l’Indochine à Monsieur le Ministre des Colonies,” August 20, 1929; ANOM, GGI 66569, “Le Chef du Bureau d’Aéronautique civile à Monsieur le Gouverneur Général de l’Indochine,” June 21, 1929. The Bureau chief pinpointed a particularly troubling area between Phan Thiêt and Bien Hoa; this 150-kilometer stretch of heavily forested land provided no suitable landing sites.

Aubert explained, when aviators were provided with an adequate blanket of meteorological coverage.¹⁹²

Another concern about this airmail route—and another issue that had factored into discussions about air transport in previous years—was how potential customers would respond to the comparatively steep cost of using this service. Generally, the public was electrified about what aviation successes represented and enjoyed the spectacle of such flights. In Indochina, this enthusiastic response to receiving letters from France sent via airmail was, at least in part, undoubtedly related to the novelty of this means of communication. In the summer of 1929, for instance, the Governor General recounted the excitement that followed the delivery of metropolitan mail transported by air from Saigon: “the European population [in Hanoi] unanimously expressed its satisfaction in receiving mail from France a few days in advance.”¹⁹³

However, this enthusiasm did not immediately translate into a clientele surge for a given air service. Pasquier estimated that potential patrons in the metropole would likely consider the postal surtax to be too high to justify what was—in terms of the days required to travel from France to Southeast Asia—a marginal amount of time saved with airmail. For individuals in Tonkin, air transport would save only some time at departure; as a result, the majority of these potential customers would simply continue to have their correspondence sent via the maritime route. Furthermore, the prior experience of an accelerated automobile-and-railroad postal service between Hanoi and Saigon provided Pasquier with “absolutely conclusive” evidence regarding how the public would likely

¹⁹² ANOM, GGI 66569, “Rapport du Chef de Bataillon Mathis,” June 14, 1929; ANOM, GGI 66569, “Le Général de Division Aubert, Commandant Supérieur des Troupes du Groupe de l’Indochine à M. le Gouverneur Général de l’Indochine,” August 31, 1929.

¹⁹³ ANOM, GGI 66569, “Le Gouverneur Général de l’Indochine à Monsieur le Ministre des Colonies,” August 20, 1929.

respond to an airmail option. He reported that the amount of mail delivered via these fast-track transports was “insignificant” even though this service both had a low surtax and allowed for expedited delivery.¹⁹⁴ “Therefore,” the Governor General reasoned, “we can affirm that the airmail line is not likely to pay for the expenses that it would bring about.” He maintained that the interest of the route lay primarily in its use for training and propaganda purposes.¹⁹⁵

Like Pasquier, the PTT Director was cognizant of the challenges of compelling an appreciable customer base to actually use the air service on a regular basis; his analysis perhaps informed the Governor General’s outlook regarding this postal link. The PTT Director indicated that the public would be hesitant to utilize an airmail line that permitted delivery only forty-eight hours faster than other means of transport while carrying a surtax that was six times higher than that of transports on the accelerated automobile route. In other words, the argument was that, for most people, the time saved by using the airmail line would not justify its comparatively high cost.¹⁹⁶

Reflective of how military air service was often viewed as a temporary substitute rather than a permanent replacement for land and water transports, an issue that spurred officials to campaign for the coastal mail route was the incomplete status of the Hanoi—

¹⁹⁴ The PTT Director deduced that the auto-and-rail link functioned with an annual deficit; he noted that the revenues from surtaxed postal items were “far from offsetting” the operating expenses. ANOM, GGI 66569, “Le Directeur des Postes, Télégraphes et Téléphones de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” July 4, 1929.

¹⁹⁵ ANOM, GGI 66569, “Le Gouverneur Général de l’Indochine à Monsieur le Ministre des Colonies,” August 20, 1929.

¹⁹⁶ ANOM, GGI 66569, “Le Directeur des Postes, Télégraphes et Téléphones de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” June 10, 1929. As a solution to the potential traffic problem, the PTT Director suggested that certain additional stops could be included on the itinerary. The placement of these stopovers not only would speed up the transport of mail destined for, or sent from, northern Annam and Laos but also would augment the traffic on the Hanoi—Saigon route.

Saigon railroad. After the railroad construction was finished though, Pasquier observed, this airmail “would in all likelihood lose much of its interest.”¹⁹⁷ A government memorandum similarly remarked that the air service “will no longer be indispensable” once the railway was operational.¹⁹⁸ Hence the French understood the advantages that air travel offered for passenger and mail transport but were equally aware that other means of travel, while slower, were less expensive and more practical for the time being.

After a successful round-trip journey—the legs of the trip were completed on August 4 and August 7—the postal flights between Hanoi and Saigon were suspended because of severe weather. Pilots attempted to resume service near the end of October, but these efforts fell short due to another bout of unfavorable weather.¹⁹⁹ A letter of November 26, 1929, stated that the voyages between Hanoi and Saigon thus far undertaken should not be considered as part of the scheduled postal service discussed by the Minister of the Colonies in April and the Governor General in August. In addition, the number of round-trip deliveries that were actually carried out was far fewer than the figure of fourteen projected by Mathis in mid-June. These trial flights had nonetheless facilitated the work of establishing an air route between Tonkin and Cochinchina, and, eventually, the creation of the type of airmail line that French officials had described in the spring and summer. Moreover, Cony and Ledet explain that with the satisfactory performance of these transports on two-seater aircraft, the next step was to upgrade the coastal infrastructure. In doing so, the military could proceed to using single-person

¹⁹⁷ ANOM, GGI 66569, “Le Gouverneur Général de l’Indochine à Monsieur le Ministre des Colonies,” August 20, 1929.

¹⁹⁸ ANOM, GGI 66569. “Note du Chef du Cabinet Militaire,” August 16, 1929.

¹⁹⁹ Cony and Ledet, 146. Overall, this line operated from June 4 until October 27. Manchon, 400.

planes; this move suggests not only a more efficient utilization of material and men but also, in all likelihood, more space for postal cargo.

The Hanoi—Saigon Line (1930 and Beyond)

The air force revived the coastal airmail line several months after service stopped in 1929. A total of nine round-trip journeys—thus eighteen individual flights—were carried out at somewhat regular intervals between March 2 and October 19, 1930. Overall, the planes transported 1880 kilograms of mail on a schedule that aimed to correspond with the arrival in Saigon of ocean liners from Europe. Even at this point though, these transports were still viewed as test flights rather than a scheduled airmail route.²⁰⁰ In fact, at least one official had unsuccessfully solicited the colonial administration in May for more regular usage of this service.²⁰¹ In response, Secretary-General Graffeuil commented that the air force presently lacked the means necessary for scheduled trips. Providing more detail, Major General Aubert stated that with the current

²⁰⁰ Manchon, 400; Cony and Ledet, 161. While one round-trip voyage was completed every month from March to October—two transports were carried out in April—the amount of time between each flight differed. For example, for three months in the summer, the deliveries were started on June 21, July 23, and August 10. Furthermore, although the amount of time required to complete the circuit was projected as one or two days—and this was indeed how the majority of the flights unfolded—unfavorable flying conditions did disrupt this schedule. In the case of at least two of these delays, the mail arriving in Tourane from Saigon was transferred to railcars for the remainder of the return trip to Hanoi. Finally, while the postal cargo averaged about 200 kilograms per round-trip journey, this figure differed from month to month; for instance, 150 kilograms of mail traveled on the route in September, but this number increased to 250 kilograms the following month. This data is from Cony and Ledet, 161.

²⁰¹ On May 22 the PTT Director asked that postal flights be deployed between Hanoi and Saigon, or at least between Quinhon and Saigon. These missions, which were likely to last for the duration of the southwest monsoon season, were requested to accommodate a shift in the date on which certain Marseille-bound ships would depart Saigon. Basically, the PTT Director aimed to convert what had essentially been intermittent training flights into a regularly operating service that would make a round-trip journey once every two weeks, according to a memorandum. ANOM, GGI 66545, “Le Directeur des Postes, des Télégraphes et des Téléphones de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” May 22, 1930; ANOM, GGI 66545, “Note pour Monsieur le Chef du Service de Législation et d’Administration,” June 12, 1930.

organization of this air force, this type of proposal “would lead to risks absolutely out of proportion to the results that [the PTT Director] intends to achieve.” He noted, in addition, that his opinions from the previous August—that more safety was required on lengthy itineraries before such routes could offer scheduled air service—remained valid.²⁰² Nevertheless, the operation of Hanoi—Saigon line in 1930 stood as a notable achievement for the French in Indochina: an airmail link that connected the colony’s two major cities and functioned according to a more or less regular timetable.²⁰³

During the next few years, officials aimed to further improve airmail service between Hanoi and Saigon. Captain Puypéroux recounted that in 1931 and 1932, weekly round-trip flights were arranged to work in conjunction with aircraft arriving from France, in principle from April to December. Cony and Ledet offer more information on this line. They confirm that the air force’s slate of missions for 1931 included postal flights, and, for 1932 as well, they cite several airmail trips with deliveries to Hanoi and Saigon. While these efforts indeed represented progress for air transport within Indochina, the line was stopped the following year. Puypéroux reported that the flights

²⁰² ANOM, GGI 66545, “Le Gouverneur Général de l’Indochine à Monsieur le Directeur des Postes, des Télégraphes et des Téléphones de l’Indochine,” June 16, 1930; ANOM, GGI 66545, “Le Général de Division Aubert, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” June 7, 1930.

²⁰³ Manchon, 401. Manchon’s reference to the Hanoi—Saigon line in 1930 indicates that the aircraft flying this route rendezvoused at Tourane to refuel and exchange cargo. This description implies that the planes traveling from Hanoi were in the air at the same time as the planes from Saigon, which is a departure from the way the current chapter has presented the line’s functioning. Though Manchon’s discussion is not fully clear on this matter, his information suggests either a change in how this service worked between 1929 and 1930 or simply a different interpretation of the route’s operation. Manchon, 401.

were carried out with “nearly total consistency,” but the service was nonetheless terminated at the end of 1933 due to a lack of funds.²⁰⁴

As land-based transportation improved in Indochina and elsewhere in the French empire during the 1930s, the air force’s scheduled mail routes were considered a less practical option in terms of both costs and benefits. Manchon notes that, outside of Madagascar, these airmail services were eventually abandoned in favor of the type of as-needed transports that were better aligned with the “nature and equipment” of the air force. The growth of commercial aviation also brought about the gradual cessation of the military postal lines, but this development was neither unplanned nor lamented. In perhaps the final instance of regular airmail service in the interwar French empire, military planes shuttled mail between Rabat and Tunis via Algiers for a few months in 1935; this task was subsequently handed over to civil aviation.²⁰⁵

For Indochina specifically, by the mid-1930s the Hanoi—Saigon air route had lost much of its utility as a scheduled service. Considering the risks of the flights, this line no longer provided a justifiable amount of time to be saved in comparison to the nearly finished coastal railway. By the start of 1934, the construction of the Transindochinese Railroad had progressed enough to allow for transports in only a few days. When the entire rail line was inaugurated in the fall of 1936, the travel time was reduced to forty-six hours. For several years after 1933, then, military airmail was employed on an *ad hoc* basis.²⁰⁶ Puypéroux, for example, observed that pilots carried out two round-trip postal flights between Hanoi and Saigon in rapid succession at the end of October 1934. This

²⁰⁴ SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935; Cony and Ledet, 194, 197, 214; Manchon, 401.

²⁰⁵ Manchon, 402-403.

²⁰⁶ Manchon, 401.

assistance was requested to make up for several closures to the land route through Annam in the wake of a severe typhoon.²⁰⁷

Conclusion

Prior to the launching of regular commercial service in Indochina, the colony's air force was tasked with providing limited mail and passenger transports on scheduled routes from the mid-1920s to the early 1930s. The establishment and functioning of these lines—along with the organization of long-distance flights in general during this period—reflects how the colonial and military administrations devoted earnest attention to ensuring that aviation missions would be undertaken in the safest possible conditions. Nevertheless, officials expressed concern, and even outright disapproval, about these operations. The reasons related to lingering worries about safety, cost, and necessity, especially when the use of aircraft was weighed against available land-based modes of transportation. Taken as a whole, both the protests against such flights and the attention paid to decreasing the risks—and thus reducing the chance for failure—demonstrate that however surefire and powerful aviation may have appeared as a tool of empire, flying during this era presented a more fallible reality.

From the perspective of productivity, consistency, and revenue, the military routes in Indochina failed to excel. The Kratié—Savannakhet and Hanoi—Saigon lines not only had relatively short existences but also were expensive to operate and were utilized infrequently and inconsistently. However, these routes were more successful in terms of pilot training, propaganda, and laying the framework for future civil air service

²⁰⁷ SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935.

in the colony. Generally, officials recognized that these two air links, along with the aerial tour of January 1921, had fulfilled the aforementioned purposes. From this trio of trial attempts, commercial routes—the subject of the following chapter—were progressively developed to, within, and through Indochina in subsequent years.

CHAPTER THREE: MOVING MAIL AND PASSENGERS ON CIVIL PLANES

The June 1930 issue of the *Bulletin de l'Agence Economique de l'Indochine* (hereafter *Bulletin*) reproduced an extract of a recent interview with Air Orient's managing director Louis Allègre.²⁰⁸ Allègre outlined the route from France to Southeast Asia that the company was presently preparing. A seaplane would travel from Marseille to Beirut, which would be followed by an automobile ride to Damascus, a distance of about one hundred twenty kilometers.²⁰⁹ Other aircraft would then carry the cargo and mail to Baghdad and on to Karachi. Due to various reasons—chief among these were budgetary limitations and a lack of infrastructure—the journey from Karachi to Calcutta initially would utilize the existing railroad connecting these cities. The material would finally be loaded on a seaplane for the remaining leg of the trip, Calcutta to Saigon via Rangoon.²¹⁰

Allègre's description hints at the difficulties that the French encountered as they worked to get civil aviation off the ground and regularly functioning during the interwar period. Several factors—each of which was magnified in an increasingly competitive commercial aviation market—hindered the development of French air transport to, within, and through Indochina in the 1920s and 1930s. Chief among these factors were

²⁰⁸ Air Orient was not officially formed until July 1930, a point that is further discussed later in this chapter.

²⁰⁹ As Beirut lacked an airfield—and because the seaplanes flying from Marseille could not make the journey over the desert to Baghdad—the airmail arriving at the seaplane base in Beirut needed to be driven by automobile to Damascus. To solve the problem of driving from Beirut to Damascus, a seaplane base was to be built at Tripoli—in present-day Lebanon—which would allow aircraft to reach Damascus and then Baghdad. Jean Hennequin points out that Beirut was utilized as an arrival point until January 1931, after which the city was replaced by Tripoli. ANOM, GGI 66529, "Conseil Economique. Section des Travaux Publics, des Moyens de Communications, de la Marine Marchande et des Pêches. Séance du 9 Mai 1930," [n.d.]; Jean Hennequin, "Air Orient: Des Messageries Transaériennes (1923) à Air Orient (1930), Tome I" *Icare* no.86 (Autumn 1978): 56.

²¹⁰ "L'aviation marchande en Indochine et en Extrême-Orient," *Bulletin de l'Agence Economique de l'Indochine* (June 1930): 202.

the thorny nature of diplomacy, high costs and poor profits, infrastructural deficiencies, and the limits of the era's flight technology.

Significantly, this chapter demonstrates how the French, in seeking to further their colonial project, were at times required to utilize negotiations, cooperation, and purportedly equal terms instead of the "standard" imperial means of coercion, which typically amounted to a combination of brute force and agreements that were blatantly unfavorable to non-European populations. Indeed, French interactions with Thai and Chinese representatives on the topic of air services in Southeast and East Asia usually consisted of a series of back-and-forth exchanges, periods of waiting, and flat-out denials of French requests. With regard to China in particular, French efforts were consistently derailed by the political turmoil that disrupted China from the late 1920s through the 1930s; this turbulence was not only internal but also included a buildup of tensions with Japan and, eventually, a full-scale conflict with this increasingly belligerent nation. Additionally, the French were competing with other European powers and the United States for aerial supremacy in this part of the globe.

The French had success with civil aviation during the 1920s and 1930s though, especially when compared with the experiences of other types of French aviation in Indochina. In particular, the French were able to develop, and then improve, air transport within Indochina and between metropole and colony. In addition, the French succeeded in winning aviation access to China. As André Evrard notes, Air France was the first foreign airline to operate service to China under its own national flag as opposed to offering flights in joint efforts with the Chinese.²¹¹ Ultimately though, the work of

²¹¹ André Evrard, "La situation de la compagnie Air France en Indochine au cours des années 1939/1940," *Icare* no.163 (1997): 85.

developing air routes to, within, and through Indochina was—as Allègre’s interview indicates—a protracted, difficult process that produced air services that were never as lucrative, widely used, or expansive as the French hoped. Indeed, like the military lines that preceded them, these civil air links were costly to operate and, for most of the interwar years, hindered by the era’s technology.

Civil Air Routes within Indochina (1920s)

Beginning in the first half of the 1920s, attempts were made to develop commercial aviation in Indochina, but these early organizations typically had an ephemeral existence.²¹² A degree of relatively longer-term success was won with the Compagnie Aéronautique Française (CAF), which directed the formation of the Compagnie Aéronautique Française d’Extrême-Orient (CAFEO) in May 1922. In addition to selling French aeronautics materials in Southeast Asia, this firm sought to operate several lines within Indochina; by November 1922, this network was envisioned as being composed of the following routes, with stopovers along certain of these itineraries: Vinh—Vientiane; Hanoi—Vinh; Kratié—Thakhek; Vientiane—Luang Prabang; and Can Tho—Saigon—Phnom Penh. However, the promised government

²¹² In March 1920, aviator Charles Ricou founded an aero-club in Portuguese Macau. He wrote to Hanoi’s chamber of commerce at the end of September, informing the chamber that he intended to set up an Indochina-based air transport company; the proposed firm would serve Saigon, Hanoi, and Haiphong along with several other foreign destinations in the region. Ultimately, by the summer of 1922 and faced with financial difficulties, Ricou had abandoned this project and at least one subsequent plan for air service within the colony. In another instance, pilot Etienne Poulet worked to establish an aviation company in Saigon in the first months of 1922; Poulet’s goals included thrice-weekly mail-and-passenger service between Saigon and Phnom Penh. This attempt experienced some success by the end of year—plane rides and propaganda voyages—but the larger project never fully materialized. As a final example, a company under the name Marcel Chrétien existed very briefly in Indochina. In 1925 and 1926, this firm conducted several photography missions for topographic studies. Christophe Cony and Michel Ledet, *L’Aviation française en Indochine: Des origines à 1945* (Outreau: Lela Presse, 2012), 476-478.

funding for parts of CAFEO's plan never materialized, and, in February 1924, the company discontinued test flights; CAFEO was dissolved the following year.²¹³

Later in the decade and undeterred by CAFEO's failure, CAF launched another program for developing commercial air service in Southeast Asia. The airline that was formed on this second attempt, the confusingly and similarly named Compagnie Aérienne Française, was established at the end of the summer of 1928; the firm's seaplane facility was inaugurated toward the end of March 1929. By February 1930 and after some initial aerial studies, the firm's commercial activity within the colony included the following: "first flights" (*baptêmes de l'air*) for "a rather large number of Annamites and Chinese"; regular air transport of an unspecified type; touristic excursions to Angkor Wat and Dalat; and aerial photography tasks. Yet in another failed attempt at planting a civil air service in Indochina, the Compagnie Aérienne Française ceased operations in the course of 1930 due to the absence of new clientele and the wearing out of its planes.²¹⁴

The formation of the Société d'études d'aviation (SEA) in July 1926 represented the establishment of a somewhat longer-term civil aviation presence in the colony. By early 1927 this firm, which aimed to investigate the "applications and the development of aviation in Indochina and the Far East," had narrowed its focus to assisting with cadastral surveys and setting up air routes between Saigon and Bangkok and Saigon and Hanoi. At the start of April 1928, SEA was incorporated as the Société d'Etudes et d'Entreprises

²¹³ Cony and Ledet, 477-478.

²¹⁴ Cony and Ledet, 481-483; Cordemoy, February 1930, 38-41. This airline also launched trial flights for air transport from Indochina to Hong Kong in May 1929, but these efforts were not followed by any concrete progress for commercial service. Cony and Ledet, 482. Moreover, the company had received authorization on June 11, 1930, to operate a postal link from Marseille to Saigon; however, this route remained similarly unrealized. ANOM, GGI 66569, "Le Ministre de l'Air à Monsieur le Sous-Secrétaire d'Etat des Colonies," August 12, 1930.

Aériennes en Indochine et en Extrême-Orient (hereafter SEEAIEO).²¹⁵ Then, on October 22 of the following year, Air Asie was created from SEEAIEO and as a subsidiary of Air Union Lignes d'Orient (hereafter AULO).²¹⁶ From November to early December 1929, this new airline conducted several test flights within the colony. In 1930 Air Asie planned to launch scheduled service within Indochina while also carrying out trial voyages toward China.²¹⁷ By mid-July 1930, Air Asie and AULO had combined to create Air Orient, whose administration continued these prior efforts to develop commercial air transport to and within Southeast Asia.²¹⁸

The rapid pace with which aviation firms were established, merged, and dissolved—and thus the seemingly constant transformation of the French civil aviation landscape in Southeast Asia at this time—would continue until the formation of Air France.²¹⁹ The primary reason for these frequent changes likely related to the limited availability of aeronautics and financial resources.

²¹⁵ Cony and Ledet, 479-480. In June 1929, SEEAIEO carried out three round-trip trial flights between Nha Trang and Hanoi.

²¹⁶ Pierre Cordemoy, "L'Indochine et l'aéronautique," *Bulletin de l'Agence Economique de l'Indochine* (February 1930): 38 [hereafter Cordemoy, February 1930]; Cony and Ledet, 483. AULO, which had come into existence as the successor to Messageries Transaériennes at the start of June 1927, operated between Marseille and the Middle East. Marie-France Sardain, "L'ère de l'Indochine par les airs, 1919-1938," *Icare* no.163 (1997): 17.

²¹⁷ Cony and Ledet, 484. More specifically, insofar as subsidies from the metropolitan and colonial governments allowed, the company intended in 1930 to open a route between Saigon and Hanoi and conduct several "flight demonstrations" (*vols de démonstration*) along a Hanoi—Canton airway. The flights to Canton were to be extended to Shanghai if possible. In addition, the airline inaugurated an aerial tourism service to carry passengers on round-trip journeys from Saigon to Phnom Penh, Angkor Wat, and Bangkok. Cordemoy, February 1930, 39.

²¹⁸ Sardain, 28.

²¹⁹ At points when more than one airline existed within Indochina, the relationship between the companies was, at least according to one source, more competitive than cooperative. At the start of 1930, a letter to the Governor General maintained that the two local commercial firms, the Compagnie Aérienne Française and Air Asie, quarreled over requests for missions. Each of these firms appeared to have drawbacks in this writer's opinion. While Air Asie was "filled with good intentions" and offered much lower prices than its competitor—and perhaps unrealistically so—the company both lacked equipment and had not yet provided any work on

Civil Air Routes within Indochina (1930s)

In July 1931 Cordemoy argued that Indochina's air routes should be viewed as components of longer international links and not as exclusively interior connections that, in general, were "too short to have a commercial traffic of interest." The Hanoi—Saigon line, he had observed in February 1930, was particularly important as such a link in what appeared as a burgeoning chain of international air routes.²²⁰

In actuality, the development of scheduled commercial service between the capitals of Tonkin and Cochinchina—long a goal of aeronautics enthusiasts and officials in the government and military—was a protracted process. Indeed, even though coastal and Mekong River itineraries between Saigon and Hanoi had been traversed by aircraft relatively frequently since the mid-1920s, regularly operating civil air transport was not a reality until the middle of the following decade. While weekly flights were undertaken from late November 1932 until the end of the year, this service was suspended until the infrastructure between the two cities was completed; this task required almost two years to finish. In January 1935, air force captain Marcel Puypéroux indicated that Air France, which had been formed in the summer of 1933, would offer a direct Hanoi—Saigon link in the near future. In the late spring of 1938, it was reported that there had been interest

which the firm could be judged. On the other hand, the Compagnie Aérienne Française not only had proven itself but was also well suited for cadastral work. However, this airline's mission prices were considered too high. Remarking that an agreement between the two companies was out of the question, the writer proposed that the Compagnie Aérienne Française carry out cadastral tasks and Air Asie handle airmail. ANOM, GGI 66529, "Monsieur le Gouverneur Général," February 7, 1930.

²²⁰ Cordemoy, February 1930, 42-43; "L'Essor aérien de la France vers l'Extrême-Orient (1930-1931)," *Bulletin de l'Agence Economique de l'Indochine* (July 1931): 256; Cordemoy, February 1930, 42-43.

the previous year in establishing such a route, and this service was presently the subject of ongoing negotiations with “the relevant authorities.”²²¹

Concerning the action taken in 1937 toward developing Hanoi—Saigon line, certain French officials appeared anxious to ensure that this route would soon function as planned.²²² This worry stemmed from the opinion that the current agreement for British Imperial Airways planes traveling through Indochina could have unpleasant commercial repercussions for the colony. As Antoine Baffeleuf explained in late October 1937, the itinerary for Imperial Airways’ regularly scheduled service between British Malaya and Hong Kong, in operation since March 1936, traversed the length of Indochina from south to north and included stops in Saigon and Tourane. Yet according to this agenda, neither mail nor passengers, whether destined for or in provenance from the French colony, could take advantage of these stops. “To date,” Baffeleuf lamented, “Indochina alone seems to have remained a stranger to the lively movement apparent in neighboring

²²¹ Cony and Ledet, 491; SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935; AN 19830162/2, “Rapport du conseil d’administration à l’assemblée générale du 17 juin 1938,” [May 23, 1938. This earlier date is found on the bottom of the first page of this report]. In addition, Puypéroux suggested that that several annex lines could be opened to connect “important centers lacking means of communication,” such as Vientiane to Hanoi or Paksé to Saigon.—Regarding the creation of Air France, Air Minister Pierre Cot had decided in April 1933 to create a single aviation firm to provide service for the entirety of the French aerial network. On August 30 Air France was formed by merging the four existing French aviation companies—Air Orient, Air Union, the Société Général des Transports Aériens, and the Compagnie Internationale de Navigation Aérienne—and then adding the liquidated assets of the financially and politically embroiled Aéropostale. Dominique Legarde, *Aviateurs d’Empire: L’épopée de l’Aviation Commerciale dans la France d’Outre Mer* (Chanac: La Régordane, 1993), 52.

²²² The route under consideration in this instance was a twice-weekly French air service that would begin on January 1, 1938. Air France’s managing director pointed out that the colonial administration could fund one of these weekly voyages—serving Vientiane and eventually Hué—and the other flight could simply function as an extension of the company’s France—Indochina connection. ANOM, RSTNF 4272, “Le Président de la Chambre de Commerce à Monsieur le Gouverneur Général de l’Indochine,” October 22, 1937; AN 19830162/2, “Comité d’administration générale. Procès-verbal de la séance tenue le 17 février 1938.”

countries in support of the development and the improvement of their commercial and postal relations by air.”²²³

Louis Hirschauer, the Inspector of Civil Aviation, also had voiced disapproval over this Franco-British arrangement in 1936 when the agreement was drafted. He described the frustrating situation for those in Indochina—specified as rice exporters—who, while seeking to travel or send mail to Hong Kong, watched Imperial Airways’ planes bound for this destination land and depart from Saigon without taking on any local customers or postal material:

They see...an aircraft that contains letters to Hong Kong from their competitors in Batavia and Singapore, letters that will be the same evening in Hong Kong, while their own letters destined for Hong Kong, not being able to be loaded on this airplane..., must take the train to Hanoi and from there be transported next day...to Hong Kong or Canton!

As a result, businesspeople in Indochina were faced with a distasteful situation in which their correspondence to China arrived two or three days after the mail of their commercial rivals. Perhaps unsurprisingly, Hirschauer reported that this state of affairs, which would hopefully be soon remedied, fostered in the colony an “atmosphere unfavorable to Air France.”²²⁴

By the later 1930s, scheduled air service had been established between Saigon and Hanoi, but the specific itinerary continued to evolve until the end of the decade as

²²³ ANOM, RSTNF 4272, “Le Président de la Chambre de Commerce à Monsieur le Gouverneur Général de l’Indochine,” October 22, 1937. Baffeleuf was the managing director of the Société des Transports Maritimes et Fluviaux de l’Indochine and the president of Hanoi’s Chamber of Commerce. French officials’ decision to ban the British airline from utilizing Saigon and Tourane as commercial stopovers was, according to Hirschauer, in part a response to Great Britain’s own refusal to allow Air France to use the company’s stops in India and Burma for similar purposes, which is discussed in the following section. “Mission de l’Ingénieur en Chef Hirschauer, Inspecteur de l’Aviation Civile, en Chine et en Indochine. Septembre-Octobre-Novembre 1936” [hereafter Hirschauer Mission, 1936].

²²⁴ Hirschauer Mission, 1936.

officials modified which destinations were served and how often the route operated. For instance, on April 29, 1939, Governor General Jules Brévié wrote that an agreement had been signed with Air France for round-trip flights each week on a Saigon—Vientiane—Hanoi itinerary.²²⁵ This line was scheduled to open on July 1 after a series of test flights between Hanoi and Vientiane in May and June.²²⁶ In order for this service to function as planned, French officials had to obtain authorization from the Thai government for French planes to pass over a portion of Thai territory—a section between Savannakhet and Vientiane—as they traveled from Saigon to Vientiane.²²⁷ By the end of the 1930s, civil aviation had expanded, albeit rather slowly and not without difficulties, throughout the colony. This growth did not occur in isolation though; the development of these services took place so as to eventually connect with air routes that linked France to Indochina.

Connecting France to Indochina (Mid-1920s to 1930)

The second half of the 1920s was the start of a period in which authorities in France and Indochina worked to realize the establishment of a route to the colony, with the goal being air service that was both reliable and regularly operating. This effort

²²⁵ ANOM, RSTNF 2738, “Télégramme Officiel. Gougal à Colonies,” April 29, 1939. Aside from the obligatory landing at Vientiane, this route could include stops at Savannakhet and Paksé if needed. Cony and Ledet, 507.

²²⁶ The first of these trips would coincide with the inauguration of Thai commercial air service between Bangkok and Vientiane. ANOM, RSTNF 2738, “Télégramme Officiel. Gougal à Résuper, Vientiane,” April 29, 1939. On May 1, 1939, a two-person delegation was dispatched to Vientiane on behalf of Thailand’s Aerial Transport Company. These representatives sought to conclude arrangements with French officials for thrice-weekly air service between the Thai city of Udon and Vientiane. Edward M. Young, *Aerial Nationalism: A History of Aviation in Thailand* (Washington: Smithsonian Institution Press, 1995), 99-100.

²²⁷ ANOM, RSTNF 2738, “Télégramme d’Etat. Gougal à Legafrance, Bangkok,” April 29, 1939.

signaled a move away from—but not a complete abandonment of—the record-setting speed and distance flights that had hitherto characterized aviation to this part of the globe. The problems posed for developing a Europe—Southeast Asia link were broadly categorized as either political or technical, with the former of these appearing as the more challenging concern.²²⁸ Indeed, in the second half of 1934, an evaluation of Air France and its routes remarked that the French imperial air network could not be expected to be as powerful as that of Great Britain. The logic was that Air France mainly operated along a “grid of international links that...must inevitably meet, on the majority of its lines, the competition of national companies that every state of appreciable importance maintains.”²²⁹ In other words, France was required to negotiate and contend with the governments through which French commercial lines passed. In a related vein, because much of the infrastructure for these routes was within foreign territory, Air France and the French Air Ministry French consequently tended to be without “direct means of action” when improvements were needed.²³⁰

By the late 1920s, France had managed to make concrete progress to overcome the political hurdles of the route, namely, the need to negotiate agreements for flights and landings within the various territories that separated metropole and colony. A short article that appeared in the *Bulletin* in April 1929 described this ongoing process. An accord had been signed with Italy, which was necessary for the first portion of the France—

²²⁸ ANOM, GGI 66529, “Note sur l’Activité Internationale en Extrême-Orient en Matière d’Aviation Commerciale et Postale,” August 1, 1928.

²²⁹ AN 19830162/1, “La Compagnie Air France et les lignes aériennes françaises,” [November 19, 1934].

²³⁰ Hirschauer Mission, 1936. Hirschauer was optimistic, though, that the relevant foreign governments would assist in ameliorating the aeronautics infrastructure in a timely fashion: “we can hope, given the common needs of...aviation, that the authorities of each country flown over will hasten inasmuch as possible the execution of the required work.”

Indochina route that extended across the Middle East to Baghdad. French officials had planned talks with Great Britain for the second part of the connection, from Baghdad to Rangoon.²³¹ On July 22, 1929, the Minister of the Colonies wrote that these negotiations were soon to begin, with France's goal being to arrange for Anglo-French cooperation for an air route through British India.²³²

This possibility did not materialize as planned, however. A Ministry of the Colonies letter of November 22, 1929, noted that the British government had determined that beginning in 1930 and until the end of the rainy season of 1931, all air traffic—British and foreign alike—would be prevented from passing over India. The cited reason was the need to undertake extensive infrastructural work in this region.²³³ French officials were incredulous about this rationale though. Vital Ferry explains that the British delayed granting AULO authorization for regular flights through the Indian subcontinent in no small part because Great Britain was not keen on having French commercial aircraft utilize sites in the area as stopovers while Imperial Airways remained without a

²³¹ “L'accord Franco-Siamois,” *Bulletin de l'Agence Economique de l'Indochine* (April, 1929): 94.

²³² ANOM, GGI 66529, “Le Ministre des Colonies à Monsieur le Gouverneur Général de l'Indochine,” July 22, 1929. According to this agreement, France would be responsible for the section between Marseille and Syria while Great Britain would be charged with undertaking the Syria—Rangoon portion; this letter also noted that weekly round-trip service between Marseille and Syria had commenced on June 6, 1929. An article in the February 1930 issue of the *Bulletin* provides additional details on the plans for Anglo-French collaboration. This piece referenced comments made by Air Minister Laurent-Eynac to the Chamber of Deputies. Among his statements, Laurent-Eynac observed that France and Britain had recently signed an agreement for the transport of mail to Southeast Asia. The terms of this accord indicated that French planes would deliver mail from Europe to Baghdad, after which the British would ensure the delivery of the cargo as far as Rangoon. At this juncture, French would exchange mail for Europe with the items bound for Saigon and Hanoi. “L'aviation marchande en Indochine et en Extrême-Orient,” *Bulletin de l'Agence Economique de l'Indochine* (February 1930): 45.

²³³ ANOM, GGI 66569, “Le Ministre des Colonies à Monsieur le Gouverneur Général de l'Indochine,” November 22, 1929.

functioning route to Southeast Asia.²³⁴ For French officials, this type of maneuvering on the part of Great Britain was, to a certain extent, expected. “Great Britain has always been anxious to control the Indies route,” a report stated at the beginning of August 1928. “It is this unchanging desire that inspired its foreign policy during the last century.”²³⁵

The French were more successful in reaching an agreement with the Dutch for the transport of mail between Europe and Indochina. At the beginning of October 1929, a telegram from the Governor General mentioned an accord for a fortnightly service in which Air Asie would ferry to Saigon a quantity of mail that had been transported to Bangkok on a KLM plane. At the end of October, the Minister of the Colonies discussed the specifics of this collaborative effort, explaining that the airmail between Bangkok and Saigon would circulate on a weekly schedule—the circuit was completed every two weeks—and this particular cargo was to be transported only on French aircraft piloted by French personnel.²³⁶ This Franco-Dutch coordination allowed the inaugural delivery of

²³⁴ Vital Ferry, “L’Indochine survolée,” *Icare* no.163 (1997): 64. Great Britain engaged in a similar obstructionist policy regarding the KLM route to Batavia. Mark Dierkx contends that the British decision—which applied to Dutch flights during a period of several months starting in the fall of 1929—related more to British imperial prestige than to the cited motive of a lack of infrastructure in India. Mark Dierkx, “Routes Versus Revenue: Pioneering Commercial Aviation in Holland, 1919-1940,” *Revue belge de philologie et d’histoire* 78, no.3 (2000): 904-905. An additional problem was that Imperial Airways—and, by extension, Great Britain—was itself struggling with the issue of being granted clearance for commercial flights across the Middle East and the Indian subcontinent. In May 1930 Chaumié noted that Great Britain was not currently in a position to grant French airlines certain benefits agreed upon in the Anglo-French accord, namely, the right to fly over Iraq and British India; he stated that France needed to obtain this authorization from the countries themselves. ANOM, GGI 66529, “Conseil Economique. Section des Travaux Publics, des Moyens de Communications, de la Marine Marchande et des Pêches. Séance du 9 Mai 1930,” [n.d.]. By October 1930, Air Orient had been granted authorization to fly over Iraq, Persia, and Thailand. “L’aviation marchande en Indochine et en Extrême-Orient,” *Bulletin de l’Agence Economique de l’Indochine* (October 1930): 356.

²³⁵ ANOM, GGI 66529, “Note sur l’Activité Internationale en Extrême-Orient en Matière d’Aviation Commerciale et Postale,” August 1, 1928.

²³⁶ ANOM, GGI 66529, “Télégramme Privé. Gougal à Genesuper,” October 3, 1929; ANOM, GGI 66529, “Le Ministre des Colonies à Monsieur le Gouverneur Général de l’Indochine,” October 30, 1929. In another apparently unsuccessful attempt at a joint endeavor

airmail from France to Indochina on December 9. In the reverse direction, the first Saigon—Bangkok airmail service was carried out from December 16 to December 18 via Phnom Penh and Battambang.²³⁷

By the first months of 1930, French officials were actively examining two itineraries for the Indochina portion of France's air link to Southeast Asia. The first option entailed traveling from Rangoon to Vientiane and then Vinh while the second involved aircraft proceeding from Rangoon to Bangkok and then Saigon.²³⁸ The former route, which Chaumié preferred, allowed for relatively easy coastal access to Hanoi and appeared advantageous in terms of a possible extension to China in the future.²³⁹ Ultimately though, Chaumié determined that the "most prudent and the most logical" solution was to have the line pass through Bangkok.²⁴⁰

At the end of May 1930, Chaumié updated the Minister of the Colonies on the program for the section of France—Indochina route beyond Baghdad. The Air Ministry had earmarked funds for the extension and support of the airmail line from Baghdad to

from the fall of 1929, French and Dutch officials sought an accord with the British that would entail the responsibilities for air service in Western Europe and in India rotating among the routes of the three signatory nations, perhaps on a weekly basis. Beyond India, Dutch and French carriers would operate on a weekly schedule between Rangoon and, respectively, the Dutch East Indies and Indochina. ANOM, GGI 66569, "Le Ministre des Colonies à Monsieur le Gouverneur Général de l'Indochine," November 22, 1929.

²³⁷ Cony and Ledet, 485. After being transferred to a KLM plane, the postal cargo reached France on December 29.

²³⁸ ANOM, GGI 66529, "Le Ministre de l'Air au Lieutenant-Colonel de Prémoré, Commandant l'Aéronautique d'Indochine," February 14, 1930.

²³⁹ ANOM, GGI 66529, "Le Ministre de l'Air au Lieutenant-Colonel de Prémoré, Commandant l'Aéronautique d'Indochine," February 14, 1930. He noted that the Saigon link offered more immediate advantages, the details of which were left unspecified. Most likely, these advantages were of the type discussed in a Minister of the Colonies letter of January 1930. This correspondence described how the Bangkok—Saigon route allowed for quicker access to the "important economic centers" of Cochinchina and, in addition, offered a less challenging course of travel. ANOM, GGI 66569, "Le Ministre des Colonies à Monsieur le Gouverneur Général de l'Indochine," January 26, 1930.

²⁴⁰ ANOM, GGI 66529, "Conseil Economique. Section des Travaux Publics, des Moyens de Communications, de la Marine Marchande et des Pêches. Séance du 9 Mai 1930," [n.d.].

Saigon as part of its budget for the 1930 to 1931 fiscal year. More specifically, this support would help fund: approximately five round-trip postal voyages on the Baghdad—Karachi and Calcutta—Saigon portions; about twelve round-trip flights between Bangkok and Saigon, scheduled to correspond with KLM’s airmail service to the Dutch East Indies; and several reconnaissance flights between Rangoon and Vinh. Before undertaking any of the airmail trips though, Chaumié added, AULO needed to conduct several test flights on the Rangoon—Saigon course of travel so that the company could definitively select its itinerary and landing sites.²⁴¹

Whatever itinerary French officials chose for reaching their colony in Southeast Asia, France needed to sign an accord with Thailand so that French aircraft could deliver their cargo to Indochina. A SEEAIEO report frankly summarized the need to find a means of cooperating with Thailand: “from Rangoon to Indochina, there is a wall, Siam; we must cross it...by establishing a Franco-Siamese line.”²⁴² A preliminary discussion of a French air route through Thailand occurred in the fall of 1927. In a proposition submitted to Thailand on November 5, French officials proposed the establishment of a Franco-Thai company that would undertake the operation of both the Rangoon—Vinh section of a Europe—China air link and an accessory line from Phitsanulok, located in Thailand, to Saigon.²⁴³

²⁴¹ ANOM, GGI 66529, “Le Ministre de l’Air à Monsieur le Ministre des Colonies,” May 30, 1930.

²⁴² SEEAIEO, “Etude.” For more details about this source, see footnote nine in chapter one of this dissertation.

²⁴³ ANOM, GGI 66529, “Note sur l’Activité Internationale en Extrême-Orient en Matière d’Aviation Commerciale et Postale,” August 1, 1928. An earlier proposal for a jointly operated airmail service, albeit on smaller scale, was offered to the French by Thai officials in December 1922. According to this scheme, the governments would share the cost of routes linking Thailand to Laos and to Cambodia. Legarde, who cites this proposal, does not indicate if the proposition ever moved beyond the planning stage, but it appears unlikely that it did. Legarde, 17-18.

Though seriously considered by the Thai, the French project was rejected. A French government memorandum from August 1928 stated that despite the negotiating skills of François Glaize—by this point, he was working as a representative for what was to become SEEAIEO—and a proposal that was reasonable, the French effort was stymied by “the repugnance of the Bangkok government at any idea of subvention as well as a traditional suspicion of bold innovations.”²⁴⁴ Yet this memo was pleased to report that “new events have occurred since January that in all likelihood modified Siamese opinion and won the cause of Colonel Glaize.” Specifically, the document cited the completion of the Tokyo—Paris leg of French aviators Dieudonné Costes and Joseph Le Brix’s global circumnavigation and the creation of a bureau for civil aeronautics in Indochina. On April 17, 1928—three days after Costes and Le Brix completed their journey and the day after the establishment of the civil aviation department—Thailand notified the French company of their agreement to this proposal in principle.²⁴⁵

The following year, the operation of a Rangoon—Vinh air route became the subject of more serious diplomatic discussions. Thailand’s Prince Purachatra, wanting his country to be prominently involved with the development of commercial aviation in Southeast and East Asia, traveled to Paris in March 1929 to explore the option of a Franco-Thai air service that would operate between Rangoon and Bangkok.²⁴⁶ The agreement that ultimately resulted—this accord was signed by the Prince and French Air Minister Victor Laurant-Eynac on April 9, 1929—entailed the creation of a route from Rangoon to Vinh via Phitsanulok and Vientiane; this trunk route would have branch lines

²⁴⁴ ANOM, GGI 66529, “Note sur l’Activité Internationale en Extrême-Orient en Matière d’Aviation Commerciale et Postale,” August 1, 1928.

²⁴⁵ ANOM, GGI 66529, “Note sur l’Activité Internationale en Extrême-Orient en Matière d’Aviation Commerciale et Postale,” August 1, 1928.

²⁴⁶ Young, *Aerial Nationalism*, 73.

toward Bangkok, Saigon, and Hanoi. The Rangoon—Vinh flight would be undertaken alternately by a “special French company with Siamese participation” and a “Siamese company with French involvement.”²⁴⁷

In his history of Thai aviation, Edward M. Young states that a modified version of this proposal was submitted to the respective governments in June. According to a Ministry of the Colonies letter of July 22, 1929, the terms of the agreement were that a French airline and a Thai airline would alternate in providing service between Rangoon and Vinh.²⁴⁸ Moreover, the prior stipulation for reciprocal participation was removed, and, as Young explains, each of these companies “would have complete freedom of action within its own sphere but would cooperate on ground facilities and infrastructure along the common route.” Ratified in early 1930, this five-year agreement would expire at the end of 1934 but could be canceled with one-year advanced notice.²⁴⁹

The early 1930s would see the establishment of scheduled air service between France and Indochina. During the remainder of the decade, this route would be improved as travel time was reduced and flight comfort and reliability increased. Yet much like contemporary maps of France’s air route to Indochina depicted an irregular line

²⁴⁷ “L’accord Franco-Siamois,” 94; the date of the signing is found in Ferry, 64. This *Bulletin* article noted that these two firms would only be involved with this portion of the route and, if applicable, with any future interior air links within Thailand. The remainder of the route—Vinh to Hanoi and Vinh to Saigon—was to be exclusively the responsibility of the French. Moreover, Cordemoy remarked that Thailand would provide ten percent of the capital for the French-led company and vice versa. “L’Indochine et l’aéronautique,” *Bulletin de l’Agence Economique de l’Indochine* (January 1930): 12 [hereafter Cordemoy, January 1930].

²⁴⁸ Young 73; ANOM, GGI 66529, “Le Ministre des Colonies à Monsieur le Gouverneur Général de l’Indochine,” July 22, 1929. It should be noted that Young indicates that Hanoi, not Vinh, was the terminus in Indochina; it is unclear if this was another, post-July revision to the agreement or if the information provided by either the cited letter or Young is incorrect.

²⁴⁹ Young, 73.

connecting metropole to colony, the development of scheduled service to destinations throughout Indochina was achieved in fits and starts and not without adjustments.

Connecting France to Indochina (1931 to 1940)

A letter from the Air Ministry to the Ministry of the Colonies, dated August 12, 1930, outlined how the upcoming months would unfold for French commercial aviation in Southeast Asia. Air Orient would carry out round-trip mail voyages between Bangkok and Saigon twice a month in coordination with the Dutch route through the region; this service was to operate from the beginning of October 1930 to the end of March 1931.²⁵⁰ In addition, from January 1931 until the end of March, these French flights would be arranged to alternate with the extension of the company's Marseille—Baghdad line as far as Saigon.²⁵¹ The inaugural journey on this long-haul route began on January 17, 1931, with the departure of a seaplane from Marseille. Ten days later a tri-motor airplane loaded with sixty kilograms of mail touched down in Saigon.²⁵² The completion of this circuit was significant for France, in terms of both national prestige and aviation progress. This voyage represented the first time that the metropole—colony air connection was carried out solely by the French.²⁵³ By the end of February, round-trip

²⁵⁰ ANOM, GGI 66569, "Le Ministre de l'Air à Monsieur le Sous-Secrétaire d'Etat des Colonies," August 12, 1930. A French aviator's successful delivery of a cargo of letters from Bangkok to Saigon on October 3 was the first time that airmail had been transported from the metropole to Indochina entirely on a regularly operating route. Air Orient had transported the mail from southern France to Baghdad, after which the cargo was given over to KLM planes and flown to Bangkok. At this juncture, the mail was transferred back to Air Orient for the journey to Saigon. Cony and Ledet, 487.

²⁵¹ ANOM, GGI 66569, "Le Ministre de l'Air à Monsieur le Sous-Secrétaire d'Etat des Colonies," August 12, 1930.

²⁵² Cony and Ledet, 488.

²⁵³ Even with this success, the initial trip had demonstrated that certain difficulties with the route remained; another year of study and adjustment was required to resolve these issues. Jean Hennequin, "Air Orient, Tome II," *Icare*, no.90 (Autumn 1979): 41.

service from France to Southeast Asia had been fixed to operate twice each month; during the intervening weeks, Air Orient arranged for French mail to be transported on KLM planes between Baghdad and Bangkok. With the addition of several more tri-motor aircraft to its fleet, Air Orient was able to begin offering weekly flights to Indochina starting on May 7, 1932. In turn, this adjustment allowed the company to free itself from needing Dutch assistance on the line.²⁵⁴

Officials also sought to develop a regularly scheduled line from France to Hanoi. This goal proved elusive until the mid-1930s despite both the importance of this city as Indochina's administrative headquarters and the progress already made in connecting France with Saigon.²⁵⁵ Even when the link to Hanoi was realized, the specific itinerary for reaching the city shifted several times, much to the displeasure of certain colonial administrators. When Hirschauer composed his report in the fall of 1934, the route from Rangoon to Hanoi via Phitsanulok and Vinh was still not open, in no small part because Phitsanulok was not yet properly outfitted to serve as a stopover. Once operational, this route was to function as the "principal artery of the Orient line," with an eventual extension toward southern China. According to this plan, Saigon was to be linked with Phitsanulok via an annex line through Bangkok.²⁵⁶

To connect the metropole with Indochina's colonial capital, Air France scheduled two round-trip trial flights between Saigon and Hanoi at the end of 1934. Each of these voyages—one in November, the other in December—was arranged so that they would

²⁵⁴ Cony and Ledet, 488-490. Hennequin references as significant a flight that took off from Marseille on April 23, 1932, and a flight that left Saigon on May 7. It is reasonable to assume that these dates signaled the start of weekly service for aircraft traveling in each direction. Hennequin, "Air Orient, Tome II," 46.

²⁵⁵ Of course, Hanoi was also home to one of the major bases for the colonial air force.

²⁵⁶ "Mission de l'Ingénieur en Chef Hirschauer, Inspecteur de l'Aviation Civile. Octobre-Novembre 1934" [hereafter Hirschauer Mission, 1934].

coordinate with the timetable for the France—Saigon flights.²⁵⁷ In addition, at a meeting of the airline's general administration committee (*Comité d'administration générale*, hereafter GAC) on October 18, 1934, the managing director noted that a reconnaissance mission was soon to be deployed to examine the infrastructure between Bangkok and Hanoi as part of the preparations for future air service between these two destinations. This study indicated the preference, at least for the present, for the Bangkok—Hanoi itinerary over the route that passed through Phitsanulok. At the end of January 1935, it was reported that service on this route was scheduled to start at the beginning of February.²⁵⁸ As a temporary measure and to avoid disrupting the organization of the existing Bangkok—Saigon air link, the flights on this route would continue; the line connecting Bangkok and Hanoi would function as a branch route for the time being.²⁵⁹

Hirschauer had indicated in the fall of 1934 that the course of travel linking Bangkok and Hanoi would pass through Vientiane and Vinh, with the former site being be used as stopover only provisionally.²⁶⁰ This longer-term plan did not find unanimous

²⁵⁷ ANOM, RSTNF 4242, "Monsieur le Résident Supérieur au Tonkin," November 12, 1934. The planes traveling between Cochinchina and Tonkin would carry cargo and mail only.

²⁵⁸ AN 19830162/1, "Conférence d'administration générale. Procès-verbal de la séance du 18 octobre 1934"; AN 19830162/1, "Lignes Nouvelles et en Préparation," October 16, 1934; ANOM, RSTNF 4242, "Monsieur le Résident Supérieur au Tonkin," January 31, 1935. The flight between Bangkok and Hanoi appears to have included stops at Vientiane and Vinh on both the incoming and the outgoing trips. However, a particular archival document, perhaps in error, cited Vinh as the only stopover for the trip from Hanoi to Bangkok. AN 19830162/1, "Ouverture du service sur le secteur Bangkok—Hanoi," (n.d.).

²⁵⁹ ANOM, RSTNF 4242, "Monsieur le Gouverneur Général," October 22, 1934. At the beginning of August 1935, Air France announced that, effective immediately, the branch line (*service bretelle*) linking Bangkok and Hanoi would function as the primary route between France and Indochina; the Bangkok—Saigon connection would henceforth serve as the branch line. ANOM, RSTNF 4242, "Monsieur le Secrétaire Général du Gouvernement de l'Indochine," August 2, 1935. According to this modification, passengers in Saigon seeking to travel to France would take the regularly scheduled flight to Bangkok and then transfer to the Europe-bound aircraft arriving from Hanoi.

²⁶⁰ The reasons given for the company's decision about Vientiane were as follows: the site was not located exactly on the Bangkok—Vinh course of travel that was to be utilized until

support within the French administration in Laos though, as certain officials expressed disappointment with Air France's decision for Vientiane. The protectorate's Resident Superior pleaded with Governor General René Robin to highlight the "undeniable advantages" of utilizing this city as a regularly scheduled stop.²⁶¹ The Resident emphasized that national prestige was intertwined with the decision about establishing a stopover at Vientiane; he explained that outfitting this site for regular flights would bring to an end the lamentable situation of airmail between France and Laos being carried along Thai or Dutch lines and passing through—and paying postal taxes to—foreign post offices. The Resident declared, "it would be humiliating...that a French air route, financed in large part by the national budget, serves several foreign countries,...traverses French Laos while neglecting its capital, and compels the French in Laos to continue crossing the Mekong to Siam in order to find an easy means of communicating with their country."²⁶²

Meanwhile, the diplomatic back-and-forth between French Indochina and Thailand continued. By the mid-1930s, the French were examining another option for linking the metropole with the colony, namely, a direct route from Calcutta to Hanoi via Mandalay.²⁶³ By the end of 1935, French officials were actively investigating this

the Phitsanulok—Vinh itinerary was fully outfitted; the stopover would not provide enough revenue to make up for the additional expenses resulting from the Vientiane detour, which was a distance of about 160 kilometers.

²⁶¹ The Resident pointed out that upgrading the Vientiane airfield for the locale's usage as a permanent stopover would not require too great of a financial investment. Moreover, while admitting that flying to Vientiane extended the route, he perceptively noted that this added distance was, comparatively, not that much in terms of a journey from France that already required eight to nine days by air. Additionally, the Resident argued that Vientiane would provide revenue that was "far from being trivial" and included the following sources: metropole—colony postal cargo; mail delivered between Hanoi and Vientiane; "colonists, shopkeepers, [and] civil servants from Upper and Mid-Laos"; and "numerous Indochinese or even foreign tourists."

²⁶² The extract of this letter is found in Hirschauer Mission, 1934.

²⁶³ Due to the lack of infrastructure as well as the need for a more powerful model of aircraft, French officials foresaw that the Mandalay—Hanoi line would not be a viable option for several years, perhaps not until the early 1940s. See, for example, ANOM, RSTNF 4242, "Le

alternative, which was itself emblematic of the continued effort to develop faster air service between Europe and Hanoi. Just as significantly, the Mandalay itinerary freed French planes from the obligation to make a stopover in Thailand. Such a maneuver was viewed as a way to pressure the Thai government to concede to what the French believed were less exacting terms than the arrangements of the current Franco-Thai agreement; Thailand had evidently denounced this agreement, which, in any case, would soon expire. As Indochina's Secretary General explained in January 1936, the French aimed "to demonstrate to this kingdom that the passage through their territory is far from being obligatory." This alternative route was, therefore, "a means of leading [Thai representatives] to reduce the demands that they have expressed for the renewal of the convention."²⁶⁴ Shortly thereafter, Franco-Thai negotiations apparently came to a lengthy standstill. As November 1938 came to a close, the French still had not received a response to a counterproposal delivered that March to Thai representatives.²⁶⁵

As the previous paragraph suggests, the specifics of the talks between French and Thai officials during the mid-to-late 1930s are not completely clear. The archival and

Gouverneur Général de l'Indochine à Monsieur le Résident Supérieur au Tonkin," January 10, 1936; AN 19830162/2, "Comité d'administration générale. Procès-verbal de la séance tenue le 17 février 1938"; and Hirschauer Mission, 1936.

²⁶⁴ ANOM, RSTNF 4242, "Monsieur le Gouverneur Général," December 23, 1935; ANOM, RSTNF 4242, "Le Gouverneur Général de l'Indochine à Monsieur le Résident Supérieur au Tonkin," January 10, 1936. The development of a metropole—colony connection that avoided Thailand was a topic French officials had researched previously. At the end of January 1930, a footnote to a Ministry of the Colonies letter mentioned that, for reference only, an itinerary would be examined that would bypass Indochina's western neighbor; as an option, a route was proposed that connected Muong Sing—located in the extreme northwest of Laos—to Dien Bien Phu and Hanoi. ANOM, GGI 66569, "Le Ministre des Colonies à Monsieur le Gouverneur Général de l'Indochine," January 26, 1930.

²⁶⁵ AN 19830162/2, "Compte rendu de la conférence tenue au Ministère de l'Air le mercredi 23 novembre [1938]." Generally, the goals for the French at this time entailed gaining authorization for aircraft to pass over Thai territory along several itineraries: Mandalay to Hanoi; Bangkok to Saigon; Bangkok to Hanoi; and Vientiane to Saigon. This counteroffer was in fact one of a series of propositions exchanged between the two governments, with the March 1938 offer being a response to previous proposals made by Thai officials dating from 1935.

secondary materials consulted for this chapter are similarly fuzzy on this matter. Sardain, in discussing the accord of 1930, notes that this agreement would be “tacitly renewed per five-year period.” In addition, Young indicates that the French were at least somewhat responsible for the diplomatic discord between Thai and French representatives during this period.²⁶⁶

Aside from the Mandalay route, the French investigated other courses of travel that would allow for quicker air service to Southeast Asia while decreasing French reliance on Thai locales as stopovers. In the fall of 1936, for example, Hirschauer outlined an itinerary that would link Calcutta with Vientiane via Rangoon, thus bypassing Bangkok. Though lengthier than the Mandalay line, this option not only had the advantage of being used “as early as tomorrow” but also was shorter than the current Calcutta—Hanoi route, which included stops at Akyab, Rangoon, Bangkok, and Vientiane. Moreover, according to this proposal, Vientiane would function as the terminus for a Mekong River route to Saigon as well.²⁶⁷

Yet the implementation of the plan described by Hirschauer encountered technical and diplomatic issues that hindered its realization. The result was that, for the next few years, Bangkok continued to be used as a stop for French commercial aircraft traveling to Indochina. At a GAC meeting held in mid-February 1938, Air France’s managing director elaborated on why this layover was maintained. Not only were there still challenges relating to nighttime flying across the Annamese Mountains but also “diplomatic difficulties” (*difficultés diplomatiques*) concerning the abandonment of the

²⁶⁶ Sardain, 23; Young, *Aerial Nationalism*, 85. “In early 1932,” Young writes, “Air Orient...informed the Aerial Transport Company that it did not intend to cooperate with the company in regard to carrying mail or passenger traffic across Siam; what originated with Air Orient would stay with Air Orient.”

²⁶⁷ Hirschauer Mission, 1936.

Thai capital as a stopover. Consequently, this official estimated that for a period of at least two years, the main air link would continue to pass through Rangoon, Bangkok, and Saigon before connecting to Hanoi.²⁶⁸

There were several notable developments for French commercial air service to Southeast Asia between the summer of 1938 and the signing of the armistice in June 1940. In July 1938 the itinerary for the metropole—colony route was again altered. Having acquired a fleet of more powerful aircraft by this point, Air France announced on July 26 that, starting the present week, the company's Indochina service would be adjusted so that the line from Bangkok to Hanoi via Vientiane—a route that Cony and Ledet describe as quite unprofitable—would no longer be utilized.²⁶⁹ This adjustment would bring to an end flights on the branch line connecting Bangkok and Saigon, a change that in turn would result in Saigon regaining its status as the principal terminus for the air connection with the metropole. This reshuffling would also cause the airfield at Vientiane to be momentarily removed from Indochina's regular air network.²⁷⁰

Though French planes would eventually be obligated to avoid Italian territory in the Mediterranean and Africa, the outbreak of war in Europe at the beginning of September 1939 did not markedly alter air service between France and Indochina. Then, on June 25, 1940, France signed an armistice with Germany and Italy, which resulted in

²⁶⁸ AN 19830162/2, "Comité d'administration générale. Procès-verbal de la séance tenue le 17 février 1938."

²⁶⁹ ANOM, RSTNF, 2734, "Communiqué," July 26, 1938; Cony and Ledet, 507. A letter from July 22 identified July 26 as the date on which this modification would be put in place. ANOM, RSTNF 2734, "Monsieur le Chef du Service de l'Aéronautique Civile," July 22, 1938. Presumably providing an explanation for how aircraft would reach Hanoi in this scheme, the communiqué stated that a local line joining Saigon and the Tonkin capital would be operational starting on July 30. ANOM, RSTNF, 2734, "Communiqué," July 26, 1938.

²⁷⁰ ANOM, RSTNF, 2734, "Communiqué," July 26, 1938. According to Ferry, the Vientiane stop was discarded on July 27. Conversely, Cony and Ledet indicate that Air France ceased flying through Vientiane on July 21. Ferry, 71; Cony and Ledet, 507.

the subsequent grounding of all French aircraft, military as well as civilian. From this point and until further notice, Evrard writes, all flights required authorization from France.²⁷¹

The Air Link to Southern China and Beyond (Later 1920s to 1940)

In addition to creating a route from the metropole to Indochina, French aviation interests aimed to link the colony—and, by extension, France—to parts of East Asia as far as Japan.²⁷² Similar to how France's civil aviation efforts unfolded in Southeast Asia, this endeavor to develop air service beyond Indochina was a drawn-out process that required years and lengthy negotiations to produce results. Yet by the summer of 1940, the French had succeeded in gaining aerial access to China.

By the late 1920s the French were cognizant that various foreign competitors—namely, Germany, Holland, Great Britain, Japan, and the United States—were also seeking to become involved with commercial air transport to and within China. France thus needed to be prominently involved with the course of travel between Rangoon and Canton in order to deter, at least temporarily, other nations' aviation initiatives in the region.²⁷³

²⁷¹ Cony and Ledet, 510; Evrard, 89.

²⁷² In a meeting with Chinese officials in April 1928, a Monsieur Brunat—he was serving as a technical advisor for aeronautics to the government general—mentioned that the French plan was to develop an air route from Tonkin that would extend northeast into China as far as possible; this line would serve Canton, Shanghai, and, eventually, Peking and Manchuria. ANOM, GGI 66529, “Note sur l'Activité Internationale en Extrême-Orient en Matière d'Aviation Commerciale et Postale,” August 1, 1928. While the route to Shanghai was not inaugurated until January 16, 1947, the Tokyo connection only opened in the fall of 1952. Hennequin, “Air Orient, Tome II,” 39, 54.

²⁷³ SEEAIEO, “Etude.”

Yet the development of a French air route to China witnessed only tentative steps forward in this decade. As mentioned previously, in the late 1920s François Glaize started working on behalf of French commercial aviation interests in Asia. His duties in this capacity included examining the possibility of an air link between Vinh and Canton via Hanoi. With this goal in mind, Glaize reached out to Chinese authorities in Canton and in Peking at the end of November 1927. This initial attempt was frustrated by the political turmoil within China around this time.²⁷⁴ The following month Glaize again wrote to the French consul in Canton, requesting that this official reinvestigate the opinion of Chinese authorities regarding the Vinh—Canton project. In a letter from March 9, the consul explained that the government in Canton appeared interested but was preoccupied with certain economic concerns. Unfortunately for the French, the Chinese authorities, in an attempt to alleviate these woes, were in contact with British officials in Hong Kong to discuss an industrial-economic agreement. “For the moment,” the consul observed in perceptively summarizing the situation, “the British seem to have a great advantage over us.... The close relations that exist between the Chinese in Hong Kong and Canton give the British a privileged place.”²⁷⁵

Additional talks between French and Chinese representatives took place in April 1928. The officials in Canton reemphasized their enthusiasm for the proposed route but were noncommittal regarding several different options for the line. Writing on April 30,

²⁷⁴ Glaize received word in mid-January 1928 that his proposition for Canton could not be delivered “for lack of the existence of a stable government.” Moreover, France’s minister in Peking informed Glaize that he judged it preferable to delay moving forward with the aviation program. The minister reasoned that negotiations with the Cantonese authorities would likely trouble the government in Peking.

²⁷⁵ ANOM, GGI 66529, “Note sur l’Activité Internationale en Extrême-Orient en Matière d’Aviation Commerciale et Postale,” August 1, 1928. Part of this accord stipulated that the British would supply aircraft to the Chinese.

the French consul judged that the Chinese not only were anxious about the political instability within their country but also harbored “a more or less admitted hostility against any enterprise in which foreigners have a stake and that consequently seems to be a takeover attempt.” This official continued his unflattering assessment of the Chinese: “out of hatred of the foreigner, out of national pride, out of vanity, they are opposed to all Sino-foreign collaboration.” In concluding, the consul remarked that the Chinese were interested in a given undertaking only to the extent that they ascertained in such a project a means of enriching themselves. Even with the hesitations of the local Chinese authorities and the consul’s negative appraisal of the situation, Indochina’s government general remained optimistic about eventually realizing an air link to Canton.²⁷⁶

Almost two years later on April 11, 1930, Glaize drafted a letter to Nanking to remind the Chinese Republic’s Minister of Communications that a study had been submitted at the end of August 1929 regarding a Sino-French air route between Haiphong and Canton. Stating that he had not yet received a response about this proposal, Glaize reiterated that the French were interested in concluding an agreement that was absolutely equal and beneficial for both sides. He stressed that, due to its proximity to southern China, only French Indochina—and French aviation—was in a position to reasonably offer “complete equality between the two countries, where each one would obtain from the other an authorization for operation along a combined route.”²⁷⁷

Moreover, Glaize asserted that the development of this line was an opportunity for China to “define...the position that it intends to take with these international air links

²⁷⁶ ANOM, GGI 66529, “Note sur l’Activité Internationale en Extrême-Orient en Matière d’Aviation Commerciale et Postale,” August 1, 1928.

²⁷⁷ ANOM, GGI 66569, “Monsieur le Ministre des Communications de la République Chinoise,” April 11, 1930. According to this plan, service along the entirety of this line would be carried out alternately by a Chinese company and a French company.

and on the question of Canton.” Elaborating, he noted that agreements for international air transport were being negotiated “almost everywhere.” While British officials in Hong Kong doubtless aimed to connect their imperial enclave to India via a route that would pass over Indochina, the French in Indochina sought authorization for their own flights through India. “Before long,” Glaize warned, “a Franco-British accord could happen that would resolve these questions of aircraft passage; but then the line would lead to Hong Kong and not to Canton.” He pointed out that this type of agreement would effectively allow planes flying on an Anglo-French route to avoid landing in “a strictly Chinese location.” The reason, Glaize explained, was that such an arrangement permitted aviators to “request the application pure and simple of the International Convention of Aerial Navigation of 1919.” Under the terms of this document—the signatories included China, France, and Great Britain—commercial planes were granted certain rights to pass over the participants’ territories. In sum, the Anglo-French accord that Glaize described would have the effect of essentially excluding Chinese aviation interests.²⁷⁸

With this pressure applied, Glaize stated that the terminus of the route—Hong Kong or Canton—depended on whether or not Chinese authorities wanted to proceed with negotiations with the French. As a means of hastening the Chinese government’s decision, Glaize informed the Minister of Communications that his company was presently prepared to send representatives to Canton to so that a satisfactory agreement could be reached. On May 21, 1930, the French received a response in which the Minister of Communications suggested that several French envoys could be dispatched to Nanking, which was the government capital, in order to more easily resolve the question

²⁷⁸ ANOM, GGI 66569, “Monsieur le Ministre des Communications de la République Chinoise,” April 11, 1930.

of the Canton—Haiphong route. Yet this particular attempt does not appear to have yielded tangible results because, as recounted in Hirschauer's study from 1934, another proposition for a joint aerial venture was offered in 1932. This proposal also failed to produce an agreement for air service.²⁷⁹

In 1934 the French continued in their pursuit of an accord for Sino-French air transport. This work, which ultimately had the same result as previous talks, began in May and focused on a line connecting Canton and Hanoi. As part of these efforts, Glaize approached the Nanking-based China National Aviation Corporation (hereafter CNAC), a Sino-American firm, about acting as a local intermediary for Air France in the Chinese capital. Yet, as Hirschauer reported, government officials were reluctant to authorize a foreign airline to operate in Chinese territory. He cited both apprehension about Japan's response and "assured irritation" that negotiations had been conducted with Canton.²⁸⁰ Then, in October, an attaché for the French Air Ministry made another attempt to reach an agreement with the government in Nanking. The terms offered were that personnel from a Chinese airline—Hirschauer presumed the airline would be CNAC—would use French equipment to operate a Canton—Hanoi route. In addition, Air France, upon being

²⁷⁹ ANOM, GGI 66569, "Monsieur le Ministre des Communications de la République Chinoise," April 11, 1930; ANOM, GGI 66569, "Lettre no. 537 du Ministère des Communications de Chine," [received May 21, 1930]; Hirschauer Mission, 1934. According to Hirschauer, the 1932 proposition indicated that a French airline would operate between Hanoi and Canton and a Chinese firm would fly from Canton to Saigon via Tourane. Cony and Ledet provide additional details on these French efforts in 1932. In the fall, several French representatives made a trial flight between Saigon and Hong Kong via Hanoi and Canton. The French delegates met with British envoys in Hong Kong, Chinese authorities in Canton, and the Chinese Minister of Communications. The French delegation's goal was to secure authorization for Air Orient to fly to either of these two foreign locales in order to collect mail destined for Europe. Cony and Ledet, 490.

²⁸⁰ Air France proposed that it would furnish, with eventual reimbursement, the materials and funds required to outfit the itinerary between Hanoi and Canton. After repayment, Canton would receive twenty percent of the revenue from postal traffic and ten percent for all other traffic. French aircraft would be responsible for flying the route, displaying a Chinese flag when traveling in Chinese territory.

granted permission to pass over Chinese territory, would fly between these two cities. Given the “extremely vigorous pressure of the Japanese,” Hirschauer anticipated that China would soon consent to this request for overflying rights.²⁸¹

By the start of 1935, French aviation interests were keenly aware of Great Britain’s goal of—and recent efforts toward—connecting Hong Kong to the British imperial air network across Southeast Asia. This reality provided additional motivation, and urgency, for France to become involved with the China—Europe mail circuit. Sardain writes that during the course of the year, representatives from CNAC informed the French that their airline would soon be in a position to offer service between Canton and Hanoi. On September 30, 1935, an accord was concluded in Nanking that allowed a Chinese company to fly between Hanoi and Canton via Fort Bayard.²⁸²

In his study of CNAC, William M. Leary notes that the Chinese Ministry of Communications awarded the contract for this route to CNAC, much to the dismay of certain Chinese military officials. As reported in the *Far Eastern Survey* in late January 1936, these officials objected to having the Sino-American CNAC be the designated airline. Their concerns, which were voiced to the Nanking government, related to the

²⁸¹ Hirschauer Mission, 1934. It appears that Air France would carry out the flights departing from Hanoi while the Chinese company would fly in the reverse direction. Also, this proposition indicated that French aircrews would pilot the route until the Chinese aviators were “sufficiently familiar with the line.” Finally, the terms for percentages and material and infrastructure reimbursements included in the proposal from May were retained in the October negotiations.

²⁸² Sardain, 48; AN 19830162/1, “Comité d’administration générale. Procès-verbal de la séance tenue le 16 octobre 1935.” The Chinese firm was obligated to make its flight schedule correspond to that of Air France. Sardain adds that officials foresaw that this agreement, which would purportedly be valid for seven years, would be followed in the next three months by an accord between Air France and CNAC to determine the terms and conditions of the route. Meanwhile, the Chinese airline was permitted to borrow pilots from CNAC and use aircraft similar to those of Air France during an initial transitory period of six months. In May 1936 a clause added to the agreement authorized the Chinese company to operate along an itinerary from Canton to Hanoi via Wuchow and Long Tchéou. Sardain, 48; Ferry 68.

possible negative repercussions of further foreign involvement in Chinese commercial aviation. Moreover, the military leaders campaigned for the Southwestern Aviation Corporation (hereafter SWAC) to operate the Canton—Hanoi air link; formed in 1934, SWAC was a Canton-based Chinese firm whose brief existence ended with bankruptcy in 1938. Pointing out that the governments of Kwantung and Kwangsi jointly owned SWAC and the company's planes were piloted by military aviators, Leary argues that the “nationalistic argument” of military officials “was largely if not wholly specious.” He further explains that “South China remained the center of opposition to Chiang Kai-shek, [and] the militarists pushed the claims of Southwestern in order to demonstrate their independence from Nanking. CNAC became caught in the middle.”²⁸³

In the midst of this contentious situation and prior to launching service on the Canton—Hanoi route, CNAC attempted a pair of flights in mid-to-late February 1936. During the second of these voyage, authorities in Canton barred from proceeding further the CNAC plane arriving from Shanghai. As a result, CNAC decided to suspend operations on this line “until Canton and Nanking could settle their dispute.” Leary observes that “the action of the Cantonese dealt a sharp blow to the prestige of the Nationalists.” Officials in Nanking subsequently sought to soothe this escalating tension, at least temporarily: the Nationalist government “swallowed its pride, withdrew the contract from CNAC, and awarded the route to Southwestern.”²⁸⁴ Admittedly, the exact

²⁸³ William M. Leary Jr., *The Dragon's Wings: The China National Aviation Corporation and the Development of Commercial Aviation in China* (Athens: The University of Georgia Press, 1976), 103; “Protests Against New Chinese-French Airline,” *Far Eastern Survey* 5, no. 3 (January 29, 1936): 29.

²⁸⁴ Leary, 103. Hirschauer's report provides additional details regarding the problems with the joint venture by Air France and CNAC to establish a Canton—Hanoi connection. Service on this line not only was expensive to operate—Hirschauer remarked that CNAC was to be entirely responsible for these costs—but also required certain upgrades to radio-meteorological

relationship between the September 1935 agreement, SWAC, and CNAC is not entirely clear.²⁸⁵

On July 10, 1936, SWAC inaugurated its Canton-to-Hanoi air service. Reflective of the tenuous existence of this airline, Hirschauer was uncertain about the sustainability of this Franco-Chinese arrangement. “It is precarious,” he tersely acknowledged in commenting on this route, which he also described as having a mediocre value. Recognizing that the French fleet would shortly be outfitted with a model of newer, more powerful aircraft, Hirschauer contemplated a more reliable program for French commercial aviation in this region. “We have...to consider a complete transformation of our services toward the Far East,” he determined. In Hirschauer’s opinion, the French were thus “oblige[d] to examine the realization of a very sound connection” that linked Canton, Hong Kong, and Hanoi.²⁸⁶

equipment. As a further hindrance, Air France continued to employ a type of aircraft on which “it was pointless to carry the slightest freight.” Hirschauer Mission, 1936.

²⁸⁵ According to Cony and Ledet, French officials had previously entered into negotiations with SWAC representatives in order to find a more efficient means of delivering SWAC passengers and mail from Long Tchéou to Hanoi; the present schedule required a flight from Canton to Long Tchéou and then an automobile ride to Hanoi. For French interests, improving this transportation scheme would allow for easier access to departures from Hanoi on Air France’s link to the metropole. The chosen solution was simply a direct flight between Canton and Hanoi; this service, operated by SWAC, came into force in January 1936. As they traveled between Canton and Hanoi on this semiweekly route, SWAC planes alternated making stopovers at Long Tchéou and at Fort Bayard. Cony and Ledet, 501. It should be mentioned that, somewhat confusingly, an article from the spring of 1937 indicated that SWAC operated the Canton—Hanoi route in conjunction with CNAC. Russell E. Hall, “Expanding Airways in the Far East,” *Far Eastern Survey* 6, no. 9 (April 28, 1937): 97.

²⁸⁶ Hirschauer Mission, 1936. Hirschauer remarked that while SWAC could not continue providing flights in the present conditions, the organization and the materials of the company could be renovated. In fact, the director of SWAC had approached Hirschauer and an Air France representative about this possibility in October 1936. The proposal—which essentially entailed the creation of a Sino-French airline—“was not categorically refused.” The French appeared unlikely to accept the offer though, particularly since another option for dealing with SWAC was to have CNAC undertake the improvements; Hirschauer favored the CNAC alternative.

In the meantime, CNAC had concluded an agreement with Imperial Airways that, beginning November 5, 1936, allowed CNAC's planes to stop in Hong Kong as they traveled on the company's route from Shanghai to Canton. Hirschauer expressed his shock: "three months previously, we were still convinced that...CNAC would never receive authorization to land on an English base without giving an advantageous compensation in return!" Indeed, CNAC had been granted this permission without any apparent concession. With this development in mind, Hirschauer observed that the French and the British had each authorized a Chinese airline to land in their respective territories—SWAC in Hanoi and CNAC in Hong Kong—without receiving any flying accommodations in return.²⁸⁷ "But times change, viewpoints evolve," he opined, explaining that "the English truth of June 1936 was no longer that of October 1936...and who knows if the Chinese truth of July 1936 will still be that of July 1937?"²⁸⁸

While CNAC was allowed to fly to Hong Kong starting in November 1936, French aviation interests moved to gain access to the British enclave shortly thereafter. On December 17, 1936, Air France's general manager reported that the airline was presently prepared to reattempt negotiations with the Chinese for extending its service from Hanoi to Hong Kong.²⁸⁹ Yet, as had typically been the case with the efforts to expand France's air network in this part of the world, the achievement of this extension was a protracted process. In fact, it was not until the early spring of 1938 that the French

²⁸⁷ With frustration, Hirschauer exclaimed that the French still needed to request authorization from Chinese officials when carrying out aero-medical evacuations from Fort Bayard.

²⁸⁸ Hirschauer Mission, 1936. The British example was in reference to the change in status of CNAC right to land in Hong Kong, and the French example referred to China's refusal to authorize foreign aircraft to fly over its territory.

²⁸⁹ AN 19830162/1, "Comité d'administration générale. Procès-verbal de la séance tenue le 17 décembre 1936."

were able to conclude an agreement with the Chinese. This accord, which was signed on March 25, permitted Air France to carry out weekly round-trip flights between Hanoi and Hong Kong, with a stopover at Fort Bayard; these voyages would be coordinated with the schedule for the France—Indochina connection.²⁹⁰ Transport on this line was set to begin in the summer, as an Air France communiqué announced that passenger and cargo service to Hong Kong would start on August 10.²⁹¹

Assessing the Hanoi—Hong Kong route several months later, officials appeared pleased with the line's performance. At a late-November 1938 conference involving government and Air France representatives, it was suggested that the airline should double its "very satisfactory" service between the two cities.²⁹² Yet a source observed

²⁹⁰ ANOM, RSTNF 4242, "[L'Ambassadeur de France au Ministère des Affaires Étrangères de Chine]," May 6, 1938. Cony and Ledet note that this agreement was approved by the Chinese government on May 1 and France's Air Minister on June 16. The date on which France officially confirmed the plan for service to Hong Kong is not completely clear, as the Ambassador's letter of May 6 stated that the French government had already approved the accord from late March. In any case, the agreement stipulated that China would assist with the costs of the line during a period lasting from August 1, 1938, to August 1, 1939. Cony and Ledet, 507; AN 19830162/2, "Etat des négociations pour la ligne Kunming—Hanoi—Hong Kong," February 1, 1940.

²⁹¹ ANOM, RSTNF 2734, "Communiqué," August 10, 1938. This communiqué indicated that the colonial administration still needed to determine the postal surtax before the line could be used for regular airmail deliveries. AN 19830162/2, "Comité d'administration générale. Procès-verbal de la séance tenue le 7 juillet 1938." On September 25, 1938, Air France began investigating a new course of travel through the southern part of the Mediterranean region to reach Damascus from Marseille. Aircraft following this itinerary—which was approximately five hundred kilometers shorter than the existing route, according to Ferry—flew from southern France to Damascus via Tunis, the Libyan cities of Tripoli and Benghazi, and Alexandria. Ferry identifies December 25, 1938, as the date on which Air France began using this course of travel. According to Cony and Ledet, this itinerary was definitively adopted in February 1939, a date after which passengers no longer needed to be transported by seaplane between Marseille and Damascus. Cony and Ledet 507; Ferry, 71.

²⁹² AN 19830162/2, "Compte rendu de la conférence tenue au Ministère de l'Air le mercredi 23 novembre [1938]." By the later 1930s, the French had concluded another noteworthy agreement for air service in this region. In this instance, the French were approached by representatives from Eurasia—this airline was a Sino-German firm that aimed to link China with Berlin via a northerly itinerary through Siberia—about having their company operate a route between Shanghai and Hanoi via Kunming. Eurasia's first Kunming—Hanoi airmail flight took place on December 23, 1937. Hirschauer Mission, 1936; Cony and Ledet, 503. In addition,

that the Chinese apparently declined to renew the agreement for this route. The reason given was that the Chinese delegates were no longer interested in only the Hanoi—Hong Kong line but also desired to collaborate with the French on developing a link from Hanoi to Kunming, the capital of Yunnan Province.²⁹³ Negotiations for China to provide financial assistance for Air France to operate between these two cities—this service would then connect to Hong Kong—started by August 1939 but were soon interrupted by the outbreak of war in Europe. On April 17, 1940, French and Chinese representatives finally signed an agreement for air service to connect these two cities with Hanoi. According to Cony and Ledet, the terms of the agreement stated that Air France, with Chinese financial assistance, would provide fifty-two round-trip flights each year on a Kunming-Hanoi-Hong Kong route. However, this line was never inaugurated.²⁹⁴

Weighing the Costs of Commercial Air Service and Indochina

A prominent theme in the history of French commercial aviation to Indochina is that this enterprise was never profitable.²⁹⁵ As Hirschauer pointed out in 1936, “one will

starting from 1939, the French worked to reach agreements with several other foreign airlines that aimed to provide service to this part of the world. Notable among these were Dutch, American, and Japanese aviation firms. For more information, see Evrard, 85, and Cony and Ledet, 510.

²⁹³ AN 19830162/2, “Etat des négociations pour la ligne Kunming—Hanoi—Hong Kong,” February 1, 1940. Cooperation between French and Chinese interests for air service between Hanoi and Kunming had been under consideration since the spring of 1938, if not earlier. As explained by Air France’s managing director in early July, this arrangement was envisioned as entailing the establishment of a Sino-French company that would fly between these two locales. AN 19830162/2, “Comité d’administration générale. Procès-verbal de la séance tenue le 28 avril 1938”; AN 19830162/2, “Comité d’administration générale. Procès-verbal de la séance tenue le 7 juillet 1938.”

²⁹⁴ AN 19830162/2, “Etat des négociations pour la ligne Kunming—Hanoi—Hong Kong,” February 1, 1940; Evrard, 84; Cony and Ledet, 510.

²⁹⁵ Emmanuel Chadeau characterizes Air France’s efforts in the later 1930s as split between managing its aerial network in Europe and the “ruinously expensive development toward Indochina.” Similarly, Robert Espérou notes that the commercial return for French air routes tended to be much lower for long-haul imperial lines than for the connections within Europe.

not fail to notice that the operation of the Far East line is very costly when it comes to its return.” He calculated that Air France’s commercial revenue for this line in 1935 amounted to 7.5 million francs—the majority of which resulted from airmail—but the company’s expenses for this period stood at 26.7 million francs. Thus it is perhaps unsurprising that Air France relied so heavily on government subsidies for the functioning of its imperial routes during this era.²⁹⁶ Of course, the need for such significant financial assistance was only magnified by the economic woes of the 1930s.

Moreover, the task of ensuring that aircraft were up-to-date, reliable, and competitive consistently proved to be a challenge for French government and airline officials. “Whatever the excellence of the maintenance,” Hirschauer opined, “the airframes gradually become distorted, the metal of the engines wears out, and, as the route’s [flying] material is deteriorating at a uniform pace, the day that the failure appears will be a kind of epidemic.” Already by the mid-1930s, observers were commenting on the need to replace the existing aircraft with a newer, more powerful model. With regard to the Air France fleet operating between Damascus and Saigon, Hirschauer estimated that September 1935 represented a date by which the following milestones would be reached: the entirety of the airframes would have surpassed 2500 flights hours; nine-tenths of the engines would have exceeded 1500 flight hours; and twelve of these engines would have eclipsed 2000 flight hours. The impending exhaustion of the firm’s aeronautics equipment had potential negative consequences that extended beyond safety concerns. This material situation could hinder Air France’s ability to offer scheduled flights while also damaging French influence in Southeast and East Asia as European

Emmanuel Chadeau, *Le Rêve et la Puissance: L’Avion et son Siècle* (Paris: Fayard, 1996), 183; Robert Espérou, *Histoire du transport aérien français* (Saint-Malo: Pascal Galodé: 2008), 45.

²⁹⁶ Hirschauer Mission, 1936.

competitors—KLM in particular—showed themselves capable of providing faster air service to these areas of the globe.²⁹⁷

An additional hurdle faced by French aviation in this period was that due to both the cost of the journey and the carrying capacity of the era's planes, the volume of people and mail transported remained rather limited; indeed, Hirschauer reported in 1934 that passenger traffic on the France—Indochina route was presently “very low.” Aside from the fact that relatively few people needed or desired to journey by air from Europe to Southeast Asia at a given time, a primary cause for the limited traffic was that, simply put, air transport was expensive.²⁹⁸ Cony and Ledet provide an example of the high price of flying in the 1930s. In late November 1931, Minister of the Colonies Paul Reynaud returned to France by plane after completing an administrative tour of Indochina during the fall. Cony and Ledet ironically note that booking passage on this line “cost[ed] a mere 20,000 francs.”²⁹⁹

²⁹⁷ Hirschauer Mission, 1934; Hirschauer Mission, 1936.

²⁹⁸ Hirschauer Mission, 1934. From a different perspective, certain analyses determined that anxiety about flying was partially responsible for the fact that, in terms of the total numbers of passengers, fewer French men and women traveled by air compared to the German, British, and American populations. A study from the fall of 1934 traced the reluctance among the French to the persisting belief that aircraft were not particularly safe. The conclusion was that a more forceful propaganda push was needed to demonstrate that flying was “no more dangerous than any other means of rapid transportation.” AN 19830162/1, “La Compagnie Air France et les lignes aériennes françaises,” [November 19, 1934]. A contributing factor, and perhaps a major reason, for this lingering uneasiness about air travel was that the widely publicized crash of the Dewoitine D.332 *Emeraude*—a powerful, modern model that was to be employed on France's long-haul air routes—remained fresh in the public memory. On its inaugural return trip from Saigon, the *Emeraude* crashed in the snowy countryside of central France on January 15, 1934, killing all ten individuals on board. Among the fatalities were several notable individuals: Pasquier, Chaumié, and Maurice Noguès. Outside of the deaths of several key figures for French aeronautics, this crash had lasting consequences for the nation's commercial aviation. “This national tragedy affected Air France particularly strongly,” Cony and Ledet explain, “especially as [the event] delayed for a number of years the putting into service of the new metallic tri-motors on which the company pinned much hope.” Cony and Ledet, 494.

²⁹⁹ Cony and Ledet, 489. Air Orient had started offering passenger service on its route to Southeast Asia in October.

In addition to being expensive, air travel between France and Indochina was an arduous experience for passengers. This characterization remained apt through most of the 1930s. By the summer of 1931, ten to twelve days were required to fly the nearly twelve thousand kilometers between Marseille and Saigon, with an average of eight days needed to journey from Baghdad to Saigon and through the nine stops in between. At the start of 1933, the time needed for the metropole—colony voyage had been reduced to eight days in the summer and nine days in the winter. Hirschauer reported that Air France required this same interval—an average of eight and a half days—to travel from Marseille to Hanoi in the fall of 1936. In comparison, Imperial Airways operated between London and Singapore in nine days, and KLM flew between Amsterdam and Singapore in only six days. For Air France, even with the incremental reductions in travel time, the trip to Southeast Asia remained a step-laden, multi-conveyance process involving both land and air transport into the late 1930s.³⁰⁰

Despite the various challenges of linking France to Indochina by air, this line was not without tangible value. Moreover, the experience of air travel improved during the 1930s. Indeed, Cony and Ledet describe an increase in traffic and cargo on this route each year from 1931 until 1933. By the end of the 1930s, the volume of material and passengers traveling along the line from France to Hanoi and Hong Kong had augmented considerably in comparison to earlier in the decade.³⁰¹ Air France also worked to upgrade its fleet for the Indochina route in the later 1930s. At the end of November 1937, for example, an airline representative informed the Resident Superior of Tonkin that the

³⁰⁰ “L’Essor aérien de la France vers l’Extrême-Orient (1930-1931),” 255; 256; Pierre Cordemoy, “Les lignes de navigation françaises de l’Indochine et du Pacifique,” *Bulletin de l’Agence Economique de l’Indochine* (January 1933): 5; Hirschauer Mission, 1936.

³⁰¹ Cony and Ledet, 489-491, 507.

inaugural flight on the new Dewoitine D.338—“one of the best machines currently circulating on the world’s commercial air routes”—was scheduled to arrive in Hanoi on December 1.³⁰² Moreover, the Resident himself asserted that the incorporation of this aircraft model “marks an important development in our aerial relations with the metropole.” Indeed, a report from May 1938 stated that Dewoitine D.338 not only allowed the France—Indochina journey to be reduced to five and a half days but also provided passengers with enhanced comfort in the plane’s more spacious cabin.³⁰³ This estimation of the reduced travel time was for the most part accurate; Cony and Ledet observe that in the first months of 1939, the France—Saigon flight required five days while Hanoi could be reached in six. An additional half-day was needed to fly to Hong Kong.³⁰⁴

³⁰² According to Evrard, these Dewoitine aircraft only traveled between Damascus and Hanoi at this point. Seaplanes transported passengers and cargo between France and either Beirut, during the winter, or Tripoli, during the summer; Ferry points out that a newer model of seaplane had been installed on the Marseille—Tripoli portion of the line in 1935. From each of these stopovers, the next leg of the journey was the automobile trip to Damascus. Evrard, 83; Ferry, 68.

³⁰³ The conditions for passengers had compared unfavorably to the flight experience offered by certain of Air France’s competitors through the mid-1930s. In 1934 Hirschauer admitted that the company’s customers who also had flown with KLM underlined the “absence of comfort” on the seaplanes employed for the Marseille—Beirut section and the “very relative comfort” of the airplanes used between Damascus and Indochina. Two years later he recounted the uncomfortable flight on the Fokker planes that were still being employed for this portion of the line. Passengers were exhausted after several days of spending multiple hours in this relatively slow, extremely noisy aircraft; this latter discomfort was worsened as travelers were forced to open the windows because the cabin otherwise lacked a suitable means of ventilation. Hirschauer Mission, 1934; Hirschauer Mission, 1936.

³⁰⁴ ANOM, RSTNF 4254, “Monsieur le Résident Supérieur du Tonkin,” November 29, 1937; ANOM, RSTNF 4254, “Le Résident Supérieur au Tonkin à Monsieur le Directeur de la Compagnie Air France,” December 8, 1937; AN 19830162/2, “Rapport du conseil d’administration à l’assemblée générale du 17 juin 1938,” [May 23, 1938]; Cony and Ledet, 507. By the beginning of October 1938, seven of these Dewoitine planes had been put into service on the metropole—colony route. Sardain, 51. Then, starting in December, flights from Marseille to Hanoi and to Hong Kong were carried out entirely on the Dewoitine D.338. Departing France, the aircraft traveled along the southern coast of the Mediterranean with stopovers at Benghazi and Alexandria before arriving in Beirut. Evrard, 83.

Conclusion

During the interwar period, metropolitan and colonial officials worked with aviation firms to develop air routes to, within, and through Indochina. Never understood as different projects, these efforts were viewed as being intertwined and leading toward a larger goal: the creation of a single transportation circuit that was rapid, profitable, and—for national prestige—conspicuous. The establishment of these different air services proved to be a drawn-out and challenging process. From the mid-1920s until the start of the Second World War, commercial aviation hopes consistently bounded far ahead of the realities of air travel. The French were obligated to deal with foreign competition and what was considered an uncooperative attitude on the part of Thailand and China. Indeed, the reality of flying from France to Indochina and beyond in the interwar years was that foreign assistance and agreeability, while not always forthcoming, remained necessary. Furthermore, French commercial aviation encountered obstacles that related to technology, infrastructure, funding, and revenue; these issues proved problematic for other types of aviation in the colony as well.

Though success was achieved with more difficulty and at a slower pace than aviation and government representatives had hoped, civil air transport had doubtless improved between 1920 and the end of the 1930s. While the number of routes and destinations expanded, air traffic increased, and service was offered with more regularity and speed. The following chapter, which considers medical aviation within Indochina, analyzes how the French sought to put the transport capabilities of planes to use for delivering patients, medical care—and even French civilizing power itself—to sites around the colony.

CHAPTER FOUR: MOVING PATIENTS AND MEDICAL SUPPLIES

Speaking at a conference for colonial medical aviation held in Paris during the 1931 Exposition Coloniale, Marcel Olivier, the fair's Rapporteur General, had "expressed the hope of colonial officials in the development of medical aviation" when he asserted, "if the doctor treats, the medical aircraft saves!"³⁰⁵ Six years prior, Deputy Léon Archimbaud discussed how aircraft had provided crucial medical assistance in the French empire, stating that airplanes "have already saved human lives by transporting sick patients, wounded patients, doctors, and medicines."³⁰⁶

This pair of remarks shows the hopes for "medical aviation"—a term that this chapter uses to denote all manner of duties in the aeromedical realm—as well as the benefits and uses of air ambulances during the interwar period. In Indochina and throughout the empire, military and medical officials worked with colonial administrators to employ aircraft for evacuating sick and injured people and transporting medicine and healthcare personnel. In addition, medical aviation was viewed as a means of gaining control over the colonial landscape; the logic was that the possibility of swift access to medical care would make the tropical climate and inhospitable regions of Indochina less daunting for Europeans. Finally, the aeromedical service was used to bolster the image of France as a benevolent civilizing force, as medicine deliveries and aerial evacuations were said to offer a tangible example of France's proclaimed civilizing mission in Southeast Asia. To demonstrate the aptitude of aircraft for these various tasks, the

³⁰⁵ "Compte-rendus et vœux des congrès: Journées d'Aviation sanitaire coloniale," *Revue des Congrès. Organe officiel de l'Exposition internationale coloniale de 1931*, 5.

³⁰⁶ ANOM, GGI 66499, "Extrait du Rapport, fait au nom de la Commission des Finances chargée d'examiner le projet de Lois portant fixation du Budget Général de l'Exercice 1926 (Ministère des Colonies et Budgets Locaux des Colonies) par M. Léon Archimbaud, Député," [July 12, 1925; February 4, 1926] [hereafter "Extrait du Rapport"].

proponents of medical aviation often highlighted several purported benefits of flight technology, namely, speed, comfort, and safety.³⁰⁷

As was the case with other types of aviation in Indochina though, the hopes and the realities of medical aviation diverged. In addition to the deficiencies of the aerial infrastructure and a lack of suitable aircraft, the colony's unpredictable and uncooperative weather hindered the use of medical aviation. Two further challenges—neither of which had as negative an effect on the usage of aircraft for other purposes in the colony—proved troublesome to the development of the aeromedical service. Specifically, medical aviation struggled to “get off the ground” due to the complexities of actually requesting an air ambulance. Moreover, there was simply a lack of need for aeromedical services in most areas of Indochina. In fact, by the early 1930s, discussions of medical aviation among colonial and military officials appeared to indicate that air ambulances were all but unnecessary and practically unused. Though the aeromedical service did see an increase in usage by the time France capitulated to Nazi Germany in June 1940, colonial medical aviation never reached heights that its proponents had envisioned.

Initial Attempts at Medical Aviation in the Metropole

While the use of aviation for medical purposes was an idea proposed as early as 1910, aerial evacuations were not systematically employed by any of the belligerent nations during the First World War.³⁰⁸ Yet prior to the end of the conflict, more

³⁰⁷ While this chapter focuses almost exclusively on the use of fixed-wheel aircraft for medical aviation, seaplanes were also utilized for these transports. See Christophe Cony and Michel Ledet, *L'Aviation française en Indochine: Des origines à 1945* (Outreau: Lela Presse, 2012), 224, 226, 278, 280, 283-285, 287, 292, 310.

³⁰⁸ David E. Omissi, *Air Power and Colonial Control: The Royal Air Force, 1919-1939* (Manchester: Manchester University Press, 1990), 187; David M. Lam, “The Aerochir: The First

sophisticated technology had been developed for delivering medical aid via aircraft. Specifically, a paper presented to the Académie nationale de médecine in September 1918 reported on the functioning of a new medical airplane known as the “Aérochir.” This device was described a “radio-surgical airplane” that was capable of transporting a two-person surgical team and the requisite materials to perform on-site procedures.³⁰⁹ Despite the successful demonstrations of the Aérochir in early March 1919 and the belief that this aircraft could potentially have “great utility” in the empire, the French government decided not to purchase the plane. In fact, air ambulances had already been employed in the colonies by this point, as several aeromedical flights had been carried out in Morocco in September 1918.³¹⁰

Discussions of Medical Aviation in the Empire

As the previous paragraph suggests, the colonial domain appeared to offer more possibilities for medical aviation than did continental Europe. Many areas of the empire were without the established ground-based transportation networks that crisscrossed Europe, and, in addition, they often lacked a sufficient number of medical personnel and

Flying Hospital,” *Aviation, Space, and Environmental Medicine* 76, no.12 (December 2005): 1174-1175. David M. Lam explains why airplanes were not regularly used for medical purposes during the conflict: “the exigencies of combat, combined with the general popular distrust of aircraft safety and the lack of sufficient numbers of suitable aircraft to provide any significant benefit to the large numbers of casualties being sustained, precluded their [medical planes] use to any significant degree.” Lam, 1175.

³⁰⁹ M.A. Nemirovsky and M. Tilmant, “L’avion radio-chirurgical ‘Aérochir,’” *Bulletin de l’Académie nationale de médecine*, 82, series 3, volume 80 (1918): 202; Lam, 1176.

³¹⁰ Lam, 1176-1177; E.M. Cowell, “Air Ambulances,” *Journal of the Royal Army Medical Corps* 62, no. 4 (1934): 261. According to Cowell, eighteen wounded soldiers were evacuated by air from Tafilalet to Bou-Denib. Yet Jean-Baptiste Manchon notes that the “dramatic evacuation” on January 19, 1919, of General Joseph-François Poeymirau proved more significant for demonstrating the utility of medical aviation in the empire. Jean-Baptiste Manchon, *L’aéronautique militaire française outre-mer, 1911-1939* (Paris: Presses de l’université Paris-Sorbonne, 2013), 411.

healthcare facilities. Moreover, certain regions of overseas France consisted of cities and villages separated by expanses of deserts, forests, and mountains. Colonial spaces such as these thus required a form of transport that could traverse vast stretches with relative ease. A circular of October 21, 1922, from the Minister of the Colonies described the difficulties that colonial medical services faced in providing timely assistance, referencing “the shortage of medical personnel in the colonies, the inadequacy of communication routes, [and] the considerable distance from certain healthcare facilities.”³¹¹

On several occasions during the interwar period, colonial medical aviation was a topic of discussion in the Chamber of Deputies. For instance, Jacques Chassaing, a physician who had worked to organize aerial evacuations in the First World War, explained to the assembled Deputies in November 1926 that aeromedical transport was particularly useful in mountainous regions and deserts and in areas that were either lacking in security or possessed insufficient communication and transportation networks. Two years later Pierre Roux-Freissineng similarly reported to the Chamber on how aircraft offered a means of compensating for the inadequacies of the medical services and the shortage of doctors in French West and Equatorial Africa.³¹²

Observers generally identified three ways in which aircraft could be utilized to assist with medical care in the empire. First, planes could evacuate a patient toward a healthcare facility. Second, in cases where the sick or wounded individual was incapable of being transported to a hospital, a doctor could travel by air to the patient. Third,

³¹¹ ANOM, GGI 66499, “Circulaire. Le Ministre des Colonies à Messieurs les Gouverneurs Généraux, Gouverneurs des Colonies et Commissaires de la République,” October 21, 1922 [hereafter “Circulaire”].

³¹² The information in this paragraph is from Manchon, 410.

aircraft allowed healthcare services to “exercise medical observation,” especially during periods of epidemics. In such a scenario, the standard modes of transport theoretically could not be used due to quarantine measures; a publication that appeared in conjunction with the 1931 colonial exposition elaborated: “by aircraft, the specialist doctor will rapidly be taken close to indigenous localities affected by plague, recurrent fever, [or] cholera, to provide support to the local physician and...the necessary prophylactic measures.”³¹³

The Appeal of Using Aircraft for Medical Purposes

When discussing the advantages of air ambulances, observers typically cited three key assets: speed, safety, and comfort. Regarding the first of these benefits, sources remarked that a swift means of transportation was particularly valuable in the expanses of inhospitable landscape found in the empire. As noted in the ministerial circular of October 1922, an automobile ambulance was suitable for short, uncomplicated trips and in areas with well-built road networks. However, for longer journeys or travel through regions ravaged by infection, planes were preferable because they provided “rapid transport...with a desirable amount of security.”³¹⁴

Similarly, in explaining how the benefits of medical aviation greatly exceeded the drawbacks, the book from the colonial exposition emphasized the speed of aircraft.³¹⁵ In

³¹³ Exposition Coloniale Internationale, *Indochine Française. Section générale. Troupes du groupe de l'Indochine. Les services militaires en Indochine* (Hanoi: Imprimerie d'Extrême-Orient, 1931), 95-96 [hereafter Exposition Coloniale Internationale, *Les services militaires en Indochine*].

³¹⁴ ANOM, GGI 66499, “Circulaire,” October 21, 1922.

³¹⁵ These drawbacks were characterized as the abrupt drop in atmospheric pressure when flying, the high cost of this “new means of transport,” and, more basically, the “inherent danger” of flight. Exposition Coloniale Internationale, *Les services militaires en Indochine*, 92. Despite

fact, this writer contended that, overall, utilizing aeromedical transportation was actually cheaper than doing without this technology. The logic was that the costs associated with slower modes of medical evacuation—namely, “the losses in human capital,” the “interminable days of hospitalization,” and the pensions for invalidity—were higher than the total expenses of employing an air ambulance service. Moreover, the publication pointed out that a faster evacuation “makes it possible to reduce to a minimum” the number of dressings required for infected wounds; this comment implied that an aeromedical delivery allowed a patient to receive care in a timely fashion, thus limiting the spread of infection.³¹⁶

Observers also viewed air ambulances as a relatively comfortable option for patient transport. As the book from the colonial exposition stated, “there is no mode of transport better tolerated than the medical aircraft.” Because the patient could be stabilized in a recumbent position at the center of the plane, the writer argued, the air ambulance “prevails over the comfort of any other vehicle.”³¹⁷ Likewise, two French officers praised aeromedical transport as both smoother and faster than conventional means of evacuation. The airplane, they declared in 1921, had “the dual humanitarian

such concerns, aircraft appear to have been a relatively safe choice for medical transport in the French empire. For example, Manchon reports that in Morocco and the Levant from the establishment of aeromedical services until the end of August 1926, there had been only two accidents out of a total of more than three thousand aerial evacuations. More generally, the Colonial Exposition book noted that an air ambulance put the patient in no more mortal danger than did general anesthesia. In any case, Cowell reasoned that “the possible risks consequent on air transport are less dangerous than the certainty of fatal consequences if the man is not evacuated rapidly to hospital.” Manchon, 414; Exposition Coloniale Internationale, *Les services militaires en Indochine*, 100; Cowell, 264.

³¹⁶ Exposition Coloniale Internationale, *Les services militaires en Indochine*, 100-101.

³¹⁷ Exposition Coloniale Internationale, *Les services militaires en Indochine*, 95.

purpose of sparing the wounded from horrible suffering...and giving them...every chance for surgical salvation.”³¹⁸

Contemporary sources recognized that an aeromedical service would greatly benefit the French in Southeast Asia. In 1920, for example, Alfred Guyomar wrote that the air ambulance was valuable for an area like Indochina, where “communications are difficult and important urban areas are rare and distant.” In addition, the colony had only a few major medical centers (*grands centres sanitaires*), a fact that in and of itself made rapid transport to a healthcare facility difficult. Furthermore, as one writer noted with regard to the size of the territory, “the distance of the interior urban areas is sometimes such that it does not allow repatriates, convalescents, or those suffering from severe anemia after tropical maladies to be taken [quickly] to ports of embarkation.” The expansiveness of Indochina exacerbated the colony’s perceived shortage of physicians. Though “few in number,” the doctors were responsible for “extremely vast districts” and were obligated to travel “by rudimentary means” through “chaotic regions.” Aircraft appeared to provide a solution for these challenges: “the airplane, even if not exclusively medical, will serve the doctor as a *means of transport* [*italics original*].”³¹⁹

Sources also presented air ambulances as the best option for evacuating patients within Indochina. For instance, the publication from the colonial exposition presented a

³¹⁸ Captain Plantey and Medical Officer Vincent, “Les avions sanitaires,” *L’Aéronautique* 3, no. 29 (October 1921): 398. The latter part of this comment was supported by evidence, at least in the case of the Druze rebellion in Syria. In 1926, twenty individuals died out of the 385 military casualties evacuated by air during the conflict. The mortality rate for patients transported via airplane, approximately 5.2 percent, was “extremely low compared to all other types of ambulance.” Manchon, 411, 415.

³¹⁹ Capitaine [Alfred] Guyomar, “L’Aviation en Indochine: Ses moyens, ses buts, ses besoins,” brochure éditée et offerte aux amis, défenseurs et protecteurs de l’aviation française aux colonies par le journal *Le Temps d’Asie*, à Saigon (Saigon: Imprimerie Moderne L. Héloury and S. Montégout, 1920), 23; Exposition Coloniale Internationale, *Les services militaires en Indochine*, 92, 94-95.

lengthy comparison that highlighted how aeromedical transportation was the safest, least painful way to reach a medical facility. With a skilled aviator at the controls of a reliable aircraft, the patient was provided with “security [that] is greater than with the fragile sampans or the automobiles that drive on rutted colonial roads.” The author elaborated on the undesirable scenario in which an individual needing medical care would find him or herself when being transported by land: “evacuated by cacolet or litter along rutted, rain-soaked paths, the sick suffer difficult journeys. Jolted on the ground, they are then loaded on dugout canoes, sampans, or ferryboats and reach their destination only after [a] considerable [number of] stops.”³²⁰ This ordeal was further aggravated by the colony’s unforgiving climate, whose humidity and “sauna temperature crushes the willpower and thought...of even a fit European.” Spending a lengthy amount of time in this oppressive atmosphere could only complicate illness and injury. To make matters worse, the conditions of overland transport had the potential to expose a wound to various types of organic matter, thus causing or advancing an infection.³²¹

Medical Aviation in Indochina

The circular of October 1922 pointed to the organization of the aeromedical services in North Africa and the Middle East as models of how medical aviation should be arranged elsewhere in the French empire, namely, French West Africa and Indochina.³²² Indeed, according to historian John S. Haller, by the mid-1920s the French

³²⁰ Of course, the presented scene entailed conditions that were almost ideal for the airplane option but were far from perfect for the other conveyances.

³²¹ Exposition Coloniale Internationale, *Les services militaires en Indochine*, 100, 92-93.

³²² ANOM, GGI 66499, “Circulaire,” October 21, 1922. In French West Africa, authorities began experimenting with medical aviation at the end of 1922; aeromedical services “operated regularly” in this federation by 1926. Manchon, 417. Medical aviation was developed

experiences in Morocco and the Levant had “demonstrated conclusively” that aerial evacuations were essentially as safe and no more costly than ground transportation.³²³

Yet even prior to this directive, colonial and military officials were working to establish an aeromedical service in Indochina. By the middle of the 1920s, the French were putting the colony’s limited number of medical planes to use for a variety of relevant tasks.³²⁴

Also by this point in the decade, officials had drawn up regulations for authorizing and funding aerial evacuations within Indochina.³²⁵ Air ambulances were most frequently utilized in the colony for transporting medicines, patients, and physicians. In addition, medical aviation did occasionally function as a form of propaganda that aimed to both provide a sense of security to Europeans and reinforce the image of France as a benevolent civilizing power.

comparatively late in other areas of the French Empire. For information about the air ambulance services in Algeria, Tunisia, French Equatorial Africa, and Madagascar, see Manchon 418-422.

³²³ John S. Haller Jr., *Farmcarts to Fords: A History of the Military Ambulance, 1790-1925* (Carbondale: Southern Illinois University Press, 1992), 195. Air ambulances were used numerous times in Morocco as well as in the Levant during the turbulent years of rebellion in the 1920s. For statistics and additional information, see Marcel Olivier, *Exposition Coloniale Internationale de Paris 1931: Rapport général*, vol. 5, bk. 1, *Les sections coloniales* (Paris: Imprimerie Nationale, 1933), 470; Omissi, 187; and Manchon, 415.

³²⁴ This point suggests a corrective to Manchon’s argument that “medical aviation was organized much later in Indochina” than in other areas of the empire. Manchon, 417.

³²⁵ A decree issued by Indochina’s Governor General on April 2, 1924, outlined the procedure for using aircraft to transport military and civilian patients. For military cases, the head military official in the colony had the authority to request a flight. For civilian cases, the Governor General or the local chief administrator was charged with ordering the aerial evacuation. The total cost of the transport—“expenses concerning the material, [fuel] consumption, and travel costs of flying personnel”—fell to the responsible purse, which was either the budget for the colonies or the appropriate general, local, or municipal budget. ANOM, GGI 66499, “Le Gouverneur Général de l’Indochine, [Arrêté],” April 2, 1924. Another source pointed out that the expenses for which remittance was needed included the travel costs of the aircrew and a compensation “equal to the sum that would have been spent for evacuation by standard means (railroad, boat, etc).” If the evacuation was for active military personnel, the colonial budget was charged. For civil servants, non-active military personnel, and the indigent, the appropriate local budget was responsible for payment. Ordinary individuals needing an air ambulance were required to cover the costs themselves. *Exposition Coloniale Internationale, Les services militaires en Indochine*, 99.

In early March 1919 and with the First World War having mercifully ended the previous fall, Minister of the Colonies Henry Simon informed Governor General Albert Sarraut that the duties of Indochina's nascent air force included medical transportation. Then, during the last six months of 1921, the squadrons in Tonkin and Cochinchina each received a pair of airplanes that were to be employed as air ambulances.³²⁶ A test flight for one of these aircraft—"constructed and equipped to transport the wounded and operate [on patients] if needed"—was carried out at the airfield near Saigon at the beginning of December 1921.³²⁷

Despite this seemingly promising start, medical aviation in Indochina soon experienced a setback. Two of the medical aircraft were subsequently been destroyed while attempting to land, and, by early February 1924, replacements had yet to be furnished.³²⁸ Moreover, colonial authorities were not confident in the capabilities of the remaining pair of air ambulances, with two officials agreeing that these "very fatigued" planes needed to be supplemented by additional aircraft.³²⁹ A low point for medical

³²⁶ Cony and Ledet, 34, 61. These authors report that the four planes were the Breguet 14 Tbis, which, Lam notes, markedly improved on the previous model. As described by Plantey and Vincent, the earlier version, the Breguet 14T, was merely a modified military aircraft and not an airplane specifically designed to be an air ambulance; this refashioned plane, they wrote, "present[ed] the drawback of leaving the wounded unattended during the transport, and the comfort is insufficient." Conversely, the Breguet 14 Tbis was outfitted with "a closed cabin placed in front of the pilot" and could comfortably accommodate two stretchers and a seated medical worker. This "medical limousine" had "just been put into service" by the time their article appeared in October 1921. Cony and Ledet, 63; Lam, 1178; Plantey and Vincent, 399.

³²⁷ "L'aérochir aux Colonies," *L'Echo annamite*, December 3, 1921.

³²⁸ ANOM, GGI 66499, "Note sur l'Aviation en Indochine. Demandée par le Gouvernement Général," [February 3, 1924]; ANOM, GGI 66499, "Le Général de Division Blondlat, Commandant Supérieur des Troupes du Groupe de l'Indochine à Monsieur le Gouverneur Général de l'Indochine," August 25, 1923.

³²⁹ Manchon, 417; ANOM, GGI 66499, "Le Général de Division Blondlat, Commandant Supérieur des Troupes du Groupe de l'Indochine à Monsieur le Gouverneur Général de l'Indochine," August 25, 1923; ANOM, GGI 66499, "Monsieur le Ministre des Colonies (Inspection Générale du Service de Santé)," September 13, 1923. A subject line of the September document reads as follows: "Rapport no. 253/3.0 du 25 Août du Général Commandant Supérieur

aviation appears to have been reached by the end of May 1925. On May 28 it was reported that the Tonkin squadron “does not even have a surgical airplane.”³³⁰

While this material situation had improved by the end of the 1920s, this progress brought medical aviation to a satisfactory level of operation for only a brief period of time. By the beginning of 1929, the aeromedical service once again counted four total aircraft.³³¹ In a report dated January 3, Major General Aubert, the colony’s Commandant Superior, stated that each of these planes “is in good condition [and] ready for use.” He judged the current fleet of air ambulances as sufficient for the colony’s needs, observing that it was, for the moment, unnecessary to outfit other, non-specialized aircraft for use as medical transports.³³² However, by the fall of 1930, the quality of the aeromedical service had once again degraded. In October of that year, Lieutenant Colonel Louis de Durand de Prémoré described Indochina’s Breguet 14 Tbis airplanes as “obsolete aircraft” with “well-worn engines.” While indicating that these planes were still capable of assuring “some services,” de Prémoré felt that this model needed to be replaced by another type in the foreseeable future. Likewise, in November the colony’s Inspector General for Health and Medical Services remarked that the “flying material” currently in use seemed to be “a bit old” and needed to be modernized.³³³

sur l’organisation de l’aviation militaire sanitaire en Indochine (Exécution des prescriptions de la Circulaire no. 1794 du 21 Octobre 1922)”; René Robin, Indochina’s Secretary General, was thus submitting to Minister of the Colonies Sarraut a summary of General Ernest Blondlat’s report. Robin inserted several comments but generally seems to have concurred with Blondlat’s assessment.

³³⁰ ANOM, GGI 66499, “Considérations sur le fonctionnement du service de l’aéronautique en Indochine,” May 28, 1925 [hereafter “Considérations”].

³³¹ Three of these air ambulances were stationed in Tonkin at the Bach Mai airbase, and the other was stationed in Cochinchina at the Bien Hoa airfield.

³³² ANOM, GGI 66499, “Le Général de Division Aubert, Commandant Supérieur des Troupes du Groupe de l’Indochine à M. le Gouverneur Général de l’Indochine,” January 3, 1929.

³³³ ANOM, GGI 66499, “Le Lieutenant-Colonel de Prémoré, Commandant l’Aéronautique d’Indochine à Monsieur le Général Commandant Supérieur des Troupes du

As the air force presence in Indochina expanded during the 1930s, the aeromedical service was improved in terms of quantity, quality, and functioning. At the start of 1933, the colony's four squadrons each received a Potez 29 airplane; these aircraft were to replace the "antiquated Breguet 14 Tbis limousines."³³⁴ Five years later, there were six air ambulances in Indochina, two of which were held in reserve, and, by the spring of 1940, seven Potez 29s were stationed in the colony.³³⁵ The local network of landing fields and hospitals became better coordinated as well. According to a May 1931 report from Captain Pierre Paquier, specific "medical terrains" (*terrains sanitaires*)—alternately "medical airfields" (*aérodromes sanitaires*)—were designated within Indochina's expanding web of landing sites; Paquier indicated that these special landing fields were reserved for use by the air force for medical purposes. Moreover, the medical airfields were organized into a network of five large zones that corresponded to the five principal hospital centers within Indochina: Hanoi, Saigon, Hué, Vientiane, and Phnom-Penh.³³⁶

Groupe de l'Indochine," October 8, 1930; ANOM, GGI 66499, "Le Médecin Général Inspecteur Gaide Inspecteur Général des Services Sanitaires et Médicaux de l'Indochine à Monsieur le Gouverneur Général de l'Indochine," November 10, 1930.

³³⁴ Cony and Ledet, 202. This newer plane was capable of transporting three stretcher-bound patients as well as a seated physician or nurse in its closed cabin. Compared to the Breguet 14 Tbis, the Potez 29 allowed for easier loading of patients and possessed superior insulation and ventilation. Manchon, 420.

³³⁵ SHAA, 2B31/D1, "Formations de l'Armée de l'Air détachées en Indochine," [July 20, 1938]; SHAA, 2B33/D2, "Note pour le Cabinet Militaire," May 3, 1940. Regarding the first source in this footnote, the information is from a table found in a folder marked "Dotations Avions aux Colonies." A handwritten edit to this table cites changes made to the document on December 12, 1938; thus the data could be current for December instead of July 1938.

³³⁶ The center to which an air ambulance aircraft was to be directed was flexible though. "This organization is not mandatory," Paquier explained, "the doctor...has complete latitude for designating the airfield to which the evacuation seems easiest." SHAA, 2B33/D4, "Destinataire: M. le Colonel Augereau. Les terrains d'aviation en Indochine, par le Capitaine Paquier," May 2, 1931. Around the same time that this report was composed, a physician proposed the installation of "hospital ships" (*navires hôpitaux*) near Saigon, Haiphong, and Tourane. In this scheme—which appears to have remained unrealized—these floating medical centers would serve as bases

From the early 1920s, the aeromedical service was charged with an assortment of missions within Indochina. While the air force carried out the majority of this work, civil aviation was involved in at least some capacity.³³⁷ In addition to transporting patients and medical personnel, air ambulances delivered medical supplies on request. In late November 1922, for instance, air force commandant François Glaize reported that the Service de Santé had inquired about having “a certain amount of fresh vaccine” transported by plane. More broadly, a guidebook for Indochina stated that aircraft ferried up to five million doses of vaccines each year by 1931.³³⁸

Despite what this figure for deliveries of medicines suggests, the majority of aeromedical missions in Indochina involved the transport of medical personnel or patients. The specifics of these flights varied a great deal. In describing the work of medical aviation in the colony, the publication from the colonial exposition included the following examples: the transport of a gravely ill noncommissioned officer from Lai Chau in northwest Tonkin to Hanoi; the evacuation of a seriously injured Lieutenant

to which seaplanes would transport patients. Exposition Coloniale Internationale, *Les services militaires en Indochine*, 97, n.1.

³³⁷ In the early 1920s, the managing director of the Compagnie Aéronautique Française d’Extrême Orient presented a plan to Governor General Martial Merlin that included a weekly air ambulance service for seriously ill patients along a section of one of the firm’s proposed routes. In addition, during the 1931 colonial exposition, the Compagnie Aérienne Française was recognized for having played a role in transporting patients in the colony. Later, in June 1940, the Governor General requisitioned an aging airplane from Air France’s Indochina fleet. However, after being delivered to the air force and outfitted to function as an ambulance, this plane was damaged during a test flight that took place on July 2, 1940. As a final point, observers recounted specific instances in which civilian aircraft were used for aerial evacuations. In December 1930, for example, an Air Orient plane transported a European shark-attack victim from the coast of Annam to a hospital in Saigon. The information in this footnote is gleaned from Cony and Ledet, 477, 310; “Compte-rendus et vœux des congrès: Journées d’Aviation sanitaire coloniale,” 7; and Olivier, vol. 5, bk. 1, 471.

³³⁸ ANOM, GGI 66492, “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine à Monsieur le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine (pour être transmis à Monsieur le Gouverneur Général de l’Indochine),” November 29, 1922; Henri Gourdon, *L’Indochine* (Paris: Larousse, 1931), 141.

Boulmer from Quang Yen in northeast Tonkin to Hanoi in January 1930; and the delivery of a civilian with a life-threatening head wound from Luang Prabang to Vientiane.³³⁹

Presumably one of the most notable patients to be evacuated by air was Emperor Bao Dai near the end of 1938.³⁴⁰ This transport is especially noteworthy because it represents one of the few instances in which the local population—though, in this case, the representative was a royal official who was probably more highly regarded by the colonizers than was a regular native—was directly in contact with a technology to which the French controlled access.

Officials understood that, aside from supplying lifesaving assistance, an aeromedical mission could have a propaganda effect that was beneficial to France's imperial cause. The logic was that an aeromedical transport—a dramatic display of French capabilities in flight technology and medicine—would serve not only to reassure those Europeans residing in the colonies but also to demonstrate French authority and benevolence among the colonized. The author of the colonial exposition book explained that medical aircraft played a “psychological role” (*rôle moral de l'avion sanitaire*) by alleviating the anxieties of Europeans in Southeast Asia³⁴¹: “a European [who is] isolated in the Indochinese brush will know that, in the event of an accident or grave illness, he

³³⁹ Exposition Coloniale Internationale, *Les services militaires en Indochine*, 100.

³⁴⁰ “L'Accident de S.M. Bao Dai,” *L'Illustration*, December 24, 1938. The sovereign had traveled to Ban Me Thuot in the Central Highlands region of Annam for a hunting excursion in December 1938. While waiting for the expedition to begin, the Emperor broke his left leg playing soccer. Subsequently, an air ambulance, accompanied by an escort plane, flew Bao Dai from Ban Me Thuot to the Bien Hoa airport on the morning of December 15. He was then delivered to a hospital in Saigon. This aerial evacuation had a propaganda effect that was perhaps unintended. Bruce McFarland Lockhart writes that the flight was advantageous for Bao Dai's public image, as a sovereign had not visited Cochinchina in many years. Bruce McFarland Lockhart, *The End of the Vietnamese Monarchy* (New Haven, CT: Yale Center for International Studies, 1993), 93.

³⁴¹ The decree of July 10, 1929—discussed later in this chapter—made a similar reference to “moral support” (*l'appui moral*) and medical aviation. ANOM, GGI 66499, “Le Lieutenant-Colonel de Prémoré, Commandant l'Aéronautique d'Indochine à M. le Général de Division, Commandant Supérieur des Troupes du Groupe de l'Indochine,” September 17, 1929.

can be transported rapidly to a healthcare facility.” In a presentation on medical aviation, E.M. Cowell likewise argued that “colonists have a greater sense of security when they know that in case of illness, they or members of their families can be rapidly transported to hospital.”³⁴²

In addition, medical aviation was recognized as having a positive effect for France’s proclaimed civilizing mission. Officials planned for Europeans and non-Europeans alike to have access to air ambulances throughout the French empire. In 1926 Chassaing, for example, noted that in Morocco and the Levant, aerial evacuations were available to all patients. Similarly for Indochina, Secretary General René Robin pointed out to the Minister of the Colonies that “it goes without saying that [medical aviation] would apply without distinction to all Europeans and to all the Natives of Indochina.”³⁴³ Yet officials also understood that using medical aircraft to help the local populations was a means of enhancing French colonial authority. Remarking that air ambulances provided aid to “indigenous nomads,” a military physician asserted that this particular assistance “plays a most important role in the pacification and the colonization of regions subject to the influence of France.” This official, a Dr. Martinet, stated that an airplane both multiplied a doctor’s influence and increased the prestige of aviation in the eyes of the native peoples. As a result, the aeromedical service “constitutes an agent of medical propaganda rather than a clinic branch.” Similarly, another writer described how, “in the indigenous milieu,” aviation doubtlessly contributed to advancing both “medical care policy” and the work of “bush doctors...in their civilizing mission.” This observer thus

³⁴² Exposition Coloniale Internationale, *Les services militaires en Indochine*, 100; Cowell, 263.

³⁴³ Manchon, 414-415; ANOM, GGI 66499, “Monsieur le Ministre des Colonies (Inspection Générale du Service de Santé), September 13, 1923.

declared that the continued progress of the aeromedical service was intertwined with “our civilizing work in Indochina.”³⁴⁴

A late-December 1930 letter from Jules Bosc, the Resident Superior of Laos, provides a more specific example of medical aviation functioning as both lifesaver and propaganda tool. In this correspondence, Bosc recounted a discussion with the chief army physician in Luang Prabang Province, a doctor Vogel, while the Resident was conducting an aerial tour in Upper Laos earlier in the month. Vogel reported that a European woman, suffering from a severely infected abscess in her arm, required an operation that required two doctors and a general anesthetic, none of which the local facilities had available. Consequently, one of the aircraft that accompanied Bosc was dispatched to Vientiane to retrieve an additional physician and the medicine. The mission achieved its goals, and the patient underwent a successful operation the following day. Bosc highlighted how the plane had delivered timely aid in a seemingly miraculous manner. He characterized the outcome of the surgery as an “unexpected result that could not have been obtained without the providential support that the airplane was able to furnish at the critical moment and in a minimum amount of time.”³⁴⁵

While Resident Bosc’s commentary underscores the vital aid that aircraft delivered, Bosc also emphasized the important propaganda effect of this aerial assistance. The news of this event “spread like wildfire” and even seemed to have a dramatic effect on the local population. In the most favorable conditions, the Resident explained, the trip from Luang Prabang to Vientiane regularly required around two weeks. Thus the

³⁴⁴ “Compte-rendus et vœux des congrès: Journées d’Aviation sanitaire coloniale,” 5; Exposition Coloniale Internationale, *Les services militaires en Indochine*, 100-101.

³⁴⁵ ANOM, GGI 66545, “Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l’Indochine,” December 25, 1930.

indigenous peoples “had difficulty conceiving the miracle by which the voyage [by plane]...has just been accomplished in less than four hours.” In Bosc’s view, the French reaped immediate benefits from this flight: “there’s nothing like it for fueling a propaganda in favor of French aviation.”³⁴⁶

Limitations and Impediments to Medical Aviation in Indochina

Along with deficiencies in infrastructure and aircraft, challenging weather conditions and an overly complex system for requesting missions hindered the progress of medical aviation in Indochina. A final—and perhaps decisive—issue in the slow development of aeromedical services was that, simply put, this type of assistance was not often needed in the colony. The overall situation, then, was that medical aviation was judged to be of great benefit to the French and their colonial project, but only when used in certain parts of Indochina. Problematically though, these areas—Laos and parts of Tonkin—lacked sufficient infrastructure and aircraft and had weather that was unfavorable to flying.

Various officials pointed out that the reason that aerial evacuations were not often required was that much of the colony already had more convenient options available for medical transportation. This proved to be the case even as early as the first half of the 1920s. For example, in September 1923 Secretary General Robin informed the Minister of the Colonies that an air ambulance service was for the most part unnecessary in Cochinchina, Cambodia, the coast of Annam, and the middle region and delta of Tonkin. Each of these areas, Robin wrote, possessed either a river route or a road or rail network

³⁴⁶ ANOM, GGI 66545, “Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l’Indochine,” December 25, 1930.

that allowed for “rapid evacuation” of sick or wounded patients to a healthcare facility “supposing that they cannot be treated on site.” In addition, the Secretary General examined the option of using non-military planes as air ambulances. Robin concluded that the part of Indochina in which civil aviation was most developed, Cochinchina, in fact did not need to rely on aerial evacuations because the territory was equipped with both enough accessible healthcare facilities and adequate means of transporting the sick and wounded.³⁴⁷

The Secretary General did note, though, that medical aviation could be usefully employed in Laos and the upper region of Tonkin. Robin observed that these two areas not only were difficult to access but also lacked a “significant medical center.” However, according to the information he had obtained, “these remote parts of the colony do not have...organized landing sites.” As this comment implies, the absence of a suitable aerial infrastructure in the colony impeded the development of medical aviation precisely where this service seemed to be most needed. Robin’s point thus reinforces a larger theme of this dissertation, namely, the large extent to which the deficiencies on the ground—the infrastructure in this instance—prevented aviation from taking full flight in Indochina.³⁴⁸

In late May 1925 Major General Andlauer, Indochina’s Commandant Superior, described the insufficiencies of the aeromedical service.³⁴⁹ He reiterated Robin’s

³⁴⁷ ANOM, GGI 66499, “Monsieur le Ministre des Colonies (Inspection Générale du Service de Santé), September 13, 1923.

³⁴⁸ ANOM, GGI 66499, “Monsieur le Ministre des Colonies (Inspection Générale du Service de Santé), September 13, 1923.

³⁴⁹ ANOM, GGI 66499, “Considérations,” May 28, 1925. The rather unflattering start to this report, which was a survey of aviation in the colony, set the tone for the remainder of this assessment: “although Indochina’s Aviation has succeeded in recent years in rendering appreciable services to the military services...and the civil services of the Colony..., I cannot say that it constitutes an organization that can always [be relied on] and that would have the productivity that one would expect.”

observation about the limited accessibility to, and infrastructure within, the areas of the colony in which air ambulances would be most beneficial; more specifically, he identified the upper regions of Laos, Tonkin, and Annam as lacking hangars, airfields, and shelters. Moreover, Andlauer reported that the meteorological service tended to have incomplete coverage of the parts of the colony that were mountainous and remote. The Major General found that the prospect of planning and carrying out any type of aviation mission in these particular areas was challenging. “In the presence of the uncertainty of voyages in the upper region,” he stated, “I would not take it upon myself to order, for a fixed day and a defined hour, either an actual aerial military operation, or an emergency medical mission.” Andlauer contended that the weather caused further difficulties, as aircraft were unable to reach the upper part of Tonkin for twenty to thirty consecutive days at certain times of the year.³⁵⁰ Obviously, not being able to deploy an aerial evacuation when needed—and having lengthy periods in which planes could not be sent to certain regions—could have a fatal outcome in urgent cases.

The issue of an inadequate aerial infrastructure and how it affected medical aviation continued to concern French officials into the late 1920s. In January 1929 Major General Aubert observed that the problem with Indochina’s aeromedical service was that the available aircraft were “virtually unused.” In fact, only a single aerial evacuation had occurred since the Breguet 14 Tbis airplanes had arrived in the colony seven years earlier.³⁵¹ “These mediocre results,” Aubert explained, “are the consequence of the

³⁵⁰ ANOM, GGI 66499, “Considérations,” May 28, 1925.

³⁵¹ Cony and Ledet, 134. This medical transport took place on June 7, 1928, and entailed the evacuation of a European noncommissioned officer from Cao Bang in the north of Tonkin to Hanoi. ANOM, GGI 66499, “Le Général de Division Aubert, Commandant Supérieur des Troupes du Groupe de l’Indochine à M. le Gouverneur Général de l’Indochine,” January 3, 1929.

difficulties into which we run in the cases where the utilization of medical aviation would genuinely be advantageous.”³⁵²

Like Andlauer, Aubert echoed Robin’s opinions regarding the parts of Indochina in which medical aviation would be most helpful. Aubert also agreed that aeromedical transport was not needed in the delta regions of the colony because much of this area already had terrestrial routes that allowed for evacuations that were “almost as rapid as by air.” which was a view shared by other officials as well.³⁵³ As Aubert remarked at the end of his report, “the medical airplane is not regularly usable in Indochina where there are methods that are simpler, cheaper, and nearly as rapid.” In Laos and northern Tonkin though, an air ambulance service “would present an interest of the first order.” In Aubert’s judgment, medical aviation was especially valuable in circumstances “where the conditions of distance, terrain, and atmosphere are brought together.”³⁵⁴

This trio of conditions was of course apparent in Laos and northern Tonkin. However, for these very reasons, flying to these areas was still “unpredictable, dangerous, and even impossible.” Like other contemporaries, Aubert pinpointed unfavorable weather and the shortcomings of the aviation infrastructure as the primary obstacles for pilots seeking to travel to these regions. “Certain areas will be a hindrance either during a part of the year, due to the meteorological conditions,” Aubert wrote, “or permanently,

³⁵² ANOM, GGI 66499, “Le Général de Division Aubert, Commandant Supérieur des Troupes du Groupe de l’Indochine à M. le Gouverneur Général de l’Indochine,” January 3, 1929.

³⁵³ This view was shared by other officials as well. For instance, a military physician noted that, in general, the densely populated areas of Indochina were “well-served” by roads and possessed “well-appointed” medical services. This doctor determined that medical aviation was needed only in the mountains of Laos and certain parts of upper Tonkin. “Compte-rendus et vœux des congrès: Journées d’Aviation sanitaire coloniale,” 7.

³⁵⁴ ANOM, GGI 66499, “Le Général de Division Aubert, Commandant Supérieur des Troupes du Groupe de l’Indochine à M. le Gouverneur Général de l’Indochine,” January 3, 1929.

due to the total absence of terrains and the impossibility of constructing them.”³⁵⁵

Concerns about the local weather and infrastructure were voiced as late as 1931. As the publication from the Colonial Exposition commented, these problems “limit the possibilities of medical aircraft.”³⁵⁶

Several months after Aubert drafted his report, air force commandant de Prémorél lamented to Aubert that “medical aviation in Indochina does not render the services that we have the right to expect of it.” In this letter from mid-August, de Prémorél declared that the colony’s aeromedical service “seems to have been completely lost from view.” As evidence, he cited the lone aerial evacuation that had been carried out in 1928 and added that no air ambulances had thus far been utilized in 1929. To increase the frequency with which medical aircraft were deployed, de Prémorél proposed a program for enhancing the functioning of local aeromedical service. More specifically, this four-part plan entailed the following measures: upgrading the airfield network; streamlining the process for requesting aerial evacuations; replacing the Breguet 14 Tbis aircraft with “more modern airplanes” that could more easily manage the smaller landing fields that dotted the hilly terrain where air ambulances were most often required³⁵⁷; and defining a

³⁵⁵ Aubert elaborated on these two problems. Regarding the weather, he stated that a particularly challenging issue was that meteorological conditions tended to differ greatly on either side of the Annamese Mountains. Often, clear weather in Hanoi corresponded to overcast conditions in Laos or Lai Chau, located in northwest Tonkin. Aubert also described his four main concerns with the existing infrastructure: the number of airfields and auxiliary airstrips were both inadequate; the landing terrains were “often impracticable” in rainy weather; many of the runways could not accommodate a fully loaded Breguet 14 Tbis plane; and, generally, the topography of both northern Tonkin and Laos was poorly suited to aircraft landings, thus making emergency landings “very dangerous.” ANOM, GGI 66499, “Le Général de Division Aubert, Commandant Supérieur des Troupes du Groupe de l’Indochine à M. le Gouverneur Général de l’Indochine,” January 3, 1929.

³⁵⁶ Exposition Coloniale Internationale, *Les services militaires en Indochine*, 97.

³⁵⁷ ANOM, GGI 66499, “Le Lieutenant-Colonel de Prémorél, Commandant l’Aéronautique d’Indochine, à M. le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” August 17, 1929. According to Manchon, the Breguet 14 Tbis was

set of the regulations for the aeromedical services.³⁵⁸ Seeming to validate at least part of this program, Aubert replied that an aeromedical service could not be consistently employed where it was most needed—Laos and northern Tonkin—until improvements were made to the regions' airfields and the Breguet 14. This was replaced by a different model of air ambulance.³⁵⁹

A memorandum from the fall of 1929, likely composed after this written exchange between de Prémoré and Aubert, identified another issue that impeded the work of medical aviation in Indochina: the complicated process for actually requesting an air ambulance.³⁶⁰ This problem was becoming apparent earlier in the decade. As Cony and Ledet remark in analyzing the procedure for summoning an aeromedical transport in the early 1920s, "to call upon an *Aérochir* is not easy." At this point in the decade, they explain, only the Governor General and the Commandant Superior could approve such a mission. Unsurprisingly, this requisite authorization could significantly delay the deployment of a critically needed air ambulance. Cony and Ledet provide an example from January 1924 of precisely such a scenario: while the commander of the Cochinchina squadron awaited flight clearance from the government in Hanoi, the chief physician in Saigon's hospital was unable to travel by plane to Qui Nhon to perform an emergency

difficult to fly and needed over six hundred meters of "well-cleared runway" to take off and land safely. Manchon, 416.

³⁵⁸ ANOM, GGI 66499, "Le Lieutenant-Colonel de Prémoré, Commandant l'Aéronautique d'Indochine, à M. le Général de Division, Commandant Supérieur des Troupes du Groupe de l'Indochine," August 17, 1929. De Prémoré reported that the Air Ministry was currently reevaluating the price for employing an air ambulance. He noted that this revision would factor into the proffered regulations.

³⁵⁹ ANOM, GGI 66499, "Le Général de Division Aubert, Commandant Supérieur des Troupes du Groupe de l'Indochine à Monsieur le Lieutenant-Colonel, Commandant l'Aéronautique d'Indochine," September 13, 1929. The back-and-forth between these officials—at least two other letters were sent regarding de Prémoré's original correspondence from mid-August—contains points of disagreement and misunderstanding.

³⁶⁰ ANOM, GGI 66499, "Note sur l'Aviation," n.d. For an explanation of this document's date, see footnote three of chapter one.

operation. The mismanagement of this incident contrasted sharply—and the French were aware of this contrast—with the functioning of Thailand’s aeromedical service, which was regularly carrying out transports by this time.³⁶¹

Returning to the end of the 1920s, the memo from the fall of 1929 determined that the paperwork involved with ordering an aerial evacuation had of late become excessive. Specifically, this memo’s author pointed to a decree issued by the Minister of the Colonies on July 10, 1929. This decree, which sought to expand the use of air ambulances in the empire, was a modification of an earlier directive that dealt with aviation requests more generally. Assessing this prior directive—which was dated June 29, 1927—the author noted that the decree was intended to save time when requesting medical missions. “Only the Governor General’s authority comes into play,” the memorandum explained, stating that “the order must come from him.”³⁶²

Yet the memo judged that the directive of July 1929 needlessly complicated this process. According to this later decree, the Commandant Superior—either “on request or requisition from the Governors or Residents Superior”—was charged with making arrangements for military aircraft to be used as air ambulances for non-military personnel. The author lamented that the more recent directive “runs the risk of delaying evacuations[,] however urgent they may be.” As an example, the memorandum referenced a case in which a M. Tesson had submitted a request “around October 7” for an aeromedical transport to deliver his wife and infant from Xieng Khouang to Hanoi. Having to first be approved by the Commandant Superior, the request only reached the

³⁶¹ Cony and Ledet, 92. For more information on medical aviation in Thailand in the 1920s, see Edward M. Young, *Aerial Nationalism: A History of Aviation in Thailand* (Washington: Smithsonian Institution Press, 1995), 26, 33.

³⁶² ANOM, GGI 66499, “Note sur l’Aviation,” n.d.

appropriate air force official on October 14. An additional delay resulted from the fact that a dispatch still needed to be sent to the Resident of Xieng Khouang regarding the condition of the local airfield. The memo's author commented that while this particular example was not an urgent mission, "there is no doubt that in the event of illnesses or serious injuries the patient would have plenty of time to die before the airplane could rescue him."³⁶³ Indeed, as depicted in the publication from the 1931 exposition, the system for requesting an air ambulance in Indochina certainly appears as a complex, step-laden procedure.³⁶⁴

Into the early 1930s, discussions continued about how to increase both the efficiency of medical aviation and the frequency with which aeromedical transports were utilized. In March 1930 the Governor General distributed a circular that aimed to regulate aerial evacuations in the colony. For de Prémorel though, this circular had not given medical aviation "the scope that one would hope to see it have." Consequently, de Prémorel requested that Major General Gaston Billotte, the Commandant Superior, organize a panel to investigate how to make the aeromedical service "function regularly and be ready in case of conflict." In particular, de Prémorel proposed that the commission examine eight questions relating to this service's operation. Prominent among the issues

³⁶³ ANOM, GGI 66499, "Note sur l'Aviation," n.d.

³⁶⁴ While perhaps necessary to ensure the safe delivery of a patient, this process does not seem conducive to swiftly providing the type of aid that an emergency situation required. To begin with, the rules differentiated between civilian and military usage of air ambulances. For civilians, the Chef de Province informed the local Chef d'Administration, who then telegraphed in the request. For military personnel, the Commandant d'Armes notified the Commandant du groupe de subdivisions, who then wired in the demand. The recipient of these telegraphed requests was the appropriate of two authorities with the power to authorize the transport: the Commandant Superior, whose jurisdiction was Tonkin, Laos, and northern Annam; and the Général Commandant la Division de Cochinchine-Cambodge, responsible for southern Annam, Cambodia, and Cochinchina. Of course, any request also needed to be delivered to the air force official so that the flight could actually be carried out. Exposition Coloniale Internationale, *Les services militaires en Indochine*, 98-99.

to be studied were: the aforementioned circular; the needs and materials used for medical transport and how these were allocated; the “medical organization of aviation centers”; and the maintenance required to keep airfields prepared for “immediate use.”³⁶⁵

In a subsequent letter to the Governor General, the Commandant Superior endorsed de Prémoré's recommendation for the panel. In addition, Billotte, like other officials, observed that the colony's air ambulances had not rendered the type of assistance that was reasonable to expect from an aeromedical service. As he remarked in late October 1930, “one is astonished to see that in a colony such as Indochina, for more than seven months, this mode of transport has not been utilized a single time”; in fact, Manchon points out that the calendar year of 1930 would see only three medical missions carried out in the colony.³⁶⁶

By the latter part of November 1930, the Governor General also had expressed approval of the commission, which was scheduled to meet at the start of 1931. Yet he was hesitant to support the entirety of de Prémoré's suggestions. In particular, the Governor General believed it premature to devote too much attention to developing the aeromedical network while remote areas of the colony remained without “decent airfields.” Without large-scale improvements to the infrastructure, Secretary General Graffeuil wrote on November 7, medical aviation would “barely have the chance to develop.” He contended that the aeromedical service “will truly expand only on the day that this [infrastructure] program will have been realized.” In Graffeuil's opinion, any

³⁶⁵ ANOM, GGI 66499, “Le Lieutenant-Colonel de Prémoré, Commandant l'Aéronautique d'Indochine à Monsieur le Général Commandant Supérieur des Troupes du Groupe de l'Indochine,” October 8, 1930.

³⁶⁶ ANOM, GGI 66499, “Le Général de Division Billotte, Commandant Supérieur des Troupes du Groupe de l'Indochine à Monsieur le Gouverneur Général de l'Indochine,” October 27, 1930; Manchon, 418.

new regulations for medical aviation would succeed in making aerial evacuations “within everyone’s reach” only if the colony’s hubs were served by nearby airfields that could be easily accessed. Likewise, Inspector General Gaide—Gaide was part of Indochina’s medical administration—agreed that improving the aviation infrastructure would lead to improvements for the aeromedical service. He stated that the proposed commission could not make any useful contribution to the development of medical aviation as long as the colony lacked a network of landing sites that could be utilized throughout the year. Gaide thus considered the panel’s object of study—“the medical organization of the aviation centers”—to be of tertiary importance, behind upgrading both the aerial infrastructure and the air force fleet.³⁶⁷

Gaide’s assessment appears as a reasonably accurate forecast for the trajectory of medical aviation within Indochina over the course of the 1930s. Work on the colony’s air network would of course continue through the end of the decade, but, as Cony and Ledet observe, aeromedical transports became more frequent with the arrival of first batch of Potez 29 aircraft at the beginning of 1933.³⁶⁸ For the period between late February 1931 and the first weeks of March 1940, Cony and Ledet identify at least twenty-six aviation missions that involved medical objectives.³⁶⁹

Even so, certain of the difficulties that hindered the expansion of medical aviation in the 1920s and early 1930s—namely, infrequent use, a lack of suitable aircraft, and the

³⁶⁷ ANOM, GGI 66499, “Le Gouverneur Général de l’Indochine [à] Monsieur le Général, Commandant Supérieur des Troupes du Groupe de l’Indochine,” November 19, 1930; ANOM, GGI 66499, “Le Gouverneur Général de l’Indochine [à] Monsieur l’Inspecteur Général des Services Sanitaires et Médicaux,” November 7, 1930. ANOM, GGI 66499, “Le Médecin Général Inspecteur Gaide Inspecteur Général des Services Sanitaires et Médicaux de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” November 10, 1930.

³⁶⁸ Cony and Ledet, 165.

³⁶⁹ This figure of twenty-six missions is from my own count; thus, there is no specific page citation from Cony and Ledet’s book.

local climate—remained problematic as the decade came to a close. Despite the progress made in the realm of aeromedical transport, certain officials remained unsatisfied with the extent to which medical aviation was utilized in the colony. While noting in January 1935 that the aeromedical service “operates normally” with “numerous” transports being carried out, Captain Puypérour nevertheless opined that this service “is not requested as much as it should and, more often than not, [is sought] too late.”³⁷⁰ As this comment implies, the timely use of air ambulances—and, more simply, the frequency with which medical aircraft were employed—was still an area of concern even after the colony’s squadrons were outfitted with better aircraft. In addition, the continued availability of the Potez 29 was becoming an issue in the late 1930s. An interdepartmental note from May 1938 stated that due to the low number of available Potez 29 aircraft in France, colonial squadrons soon would no longer receive with this type of airplane; consequently, a comparable substitute was needed.³⁷¹ The unfavorable climate in Indochina only exacerbated the problem of a dwindling supply of aeronautics resources in the metropole and, eventually, the impossibility of sending new aviation materials to Southeast Asia.³⁷² For instance, on February 13, 1940, the two-person crew of a Potez 29 fatally crashed in rough weather as they flew from the Tong airfield to Mon Cay to retrieve a patient who required surgery.³⁷³

³⁷⁰ SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935. Perhaps seeking to remedy this situation, he proposed equipping the Potez 29 with a reserve fuel tank so that the plane could more easily reach the remotest areas of the colony.

³⁷¹ SHAA, 2B31/D1, “Note pour le 3ème Bureau de l’Etat-Major de l’Armée de l’Air,” May 6, 1938.

³⁷² See chapter seven of this dissertation for a more detailed analysis of the challenges of furnishing Indochina with aeronautics materials.

³⁷³ Cony and Ledet, 305.

Conclusion

Beginning in the early 1920s, the aeromedical service in Indochina was utilized not only for a variety of medical purposes but also as a symbol of French power and civilizing benevolence. Proponents of medical aviation declared that aircraft possessed certain attributes—speed, comfort, and safety—that were particularly advantageous for improving medical care and asserting French authority within and across vast expanses of inhospitable colonial terrain. However, as was the case with other types of aviation in Indochina during this period, the hopes and the realities of medical aviation diverged. In addition to the shortcomings of the aerial infrastructure and the lack of suitable aircraft, Indochina's unpredictable and uncooperative weather kept air ambulances on the ground in a manner that noticeably frustrated its advocates. Two other issues that were more unique to medical aviation also impeded its use in the colony. First, requesting an air ambulance at times appeared as an extremely cumbersome process, which was especially troubling when saving time meant saving lives. Second, most areas of the colony simply did not need an aeromedical service. This fact alone surely limited the extent to which aerial evacuations could become a regular option for medical transport.

To a large extent, the trajectory of Indochina's aeromedical service mirrored the path of medical aviation elsewhere in the French empire. Manchon argues that on the cusp of the Second World War, medical aviation was firmly established in the empire and had shown itself to be a service that was both useful and an "essential" component of French colonial propaganda. But, he adds, the hopes of the early 1930s about the degree to which this service would be utilized in the colonies were disappointed. Apart from Madagascar, medical missions "never represented more than a very small part" of the

activity of a given territory's air force. In the second half of the 1930s, the number of aerial evacuations did increase in the empire, but this type of work remained ancillary for aircrews. "To a great extent," Manchon concludes, medical aviation "remained dependent on local demands," which varied greatly from one region to the next and from year to year. He stresses, though, that maintaining an aeromedical service was important for the French because it helped to convey an "image of security and civilization in the eyes of the [local] populations."³⁷⁴

The first part of this dissertation has analyzed how aircraft were utilized to deliver passengers, mail, medical supplies, and patients to, within, and through French Indochina. Simultaneously, these different aerial missions were intended to function as an instrument of French colonial propaganda and a representation of French colonial authority. As the second part of this dissertation will show, the purposes for which the French envisioned using flight technology—and, indeed, the ways that planes were actually employed—went beyond transportation and communication. Part two thus examines the use of aviation—as well as the impediments to this use—as a tool of colonial development, internal policing and control, and external defense.

³⁷⁴ Manchon, 424.

CHAPTER FIVE: PHOTOGRAPHING AND RECONNOITERING THE COLONIAL LANDSCAPE

In a speech given in 1920, Alfred Guyomar touted the benefits of colonial aviation within Indochina. His remarks included a discussion of how aerial photography and reconnaissance could assist with a variety of tasks in the service of colonial development. Aerial photos would not only act as “a valued and devoted colleague of Indochinese surveyors” conducting cadastral work but also aid in the drawing up of more precise maps for the public, the military, and geographers. Moreover, aerial photography and reconnaissance would provide an efficient means of scouting future sites for highways and railroads.³⁷⁵

Guyomar’s statement highlights some of the ways that the French conceived of using aviation—military aviation in particular—for economic purposes in the interwar period. His comments also suggest that airplanes and seaplanes provided the viewer with a unique perspective of an object or place of interest below. During the two decades that followed his speech, aircraft were used in Indochina for creating cadastral registers, completing public works projects, drawing up maps, assisting scientific research, aiding local businesses, and helping to package the colony for public consumption.³⁷⁶ The specifics of these assignments may have differed, but the common goal of these missions

³⁷⁵ Capitaine Guyomar, “L’Aviation en Indochine: Ses moyens, ses buts, ses besoins,” brochure éditée et offerte aux amis, défenseurs et protecteurs de l’aviation française aux colonies par le journal *Le Temps d’Asie*, à Saigon (Saigon: Imprimerie Moderne L. Héloury and S. Montégout, 1920), 20-21.

³⁷⁶ The first aerial photography assignment in the colony—this work consisted of photographing Saigon—took place on January 26, 1920. The first aerial photography mission in Tonkin was carried out shortly thereafter, as aviators were tasked with photographing Hanoi on February 7. Christophe Cony and Michel Ledet, *L’Aviation française en Indochine: Des origines à 1945* (Ostreau: Lela Presse, 2012), 40; Jean-Baptiste Manchon, *L’aéronautique militaire française outre-mer, 1911-1939* (Paris: Presses de l’université Paris-Sorbonne, 2013), 387.

was to “capture” the colonial landscape both in terms of control and imaging. In doing so, the French sought to develop, understand, and promote the parts of Indochina that were photographed or reconnoitered from the air.

By the later 1930s, proponents of aviation could indeed boast that aerial photography and reconnaissance had rendered “inestimable services” for colonial efforts in science, industry, and commerce.³⁷⁷ Yet, as was the case with air transport and medical aviation, the French encountered various obstacles as they sought to deploy aerial photography and reconnaissance in Indochina. Unsurprisingly, many of these impediments were familiar to military and colonial authorities: organizational difficulties; a lack of funding; the challenges of the physical environment; and the limitations of the era’s technology. Another issue was that, for certain aviation enthusiasts, government officials were not providing enough support for aerial photography and reconnaissance work in the empire. Overall, these hindrances both handicapped the effective utilization of the aerial perspective and stripped aeronautics technology of some of its luster as an all-purpose tool to be utilized in the service of developing, studying, and promoting Indochina.

The Aerial Perspective and Aviation

The successful employment of aerial photography and reconnaissance during the First World War was crucial for the postwar application of aviation in urban planning and

³⁷⁷ Marcel Griaule, “L’Emploi de la photographie aérienne et la recherche scientifique,” *L’Anthropologie* 47, no. 1-2 (1937): 469.

the social sciences.³⁷⁸ Jeanne Haffner discusses the wide-ranging influence of these wartime uses in the decades that followed the conflict:

Considering the contribution—both real and perceived—of aerial photography to military triumph in World War I, it is no wonder that the airplane became central to so many developments in art, science, and social sciences in the 1920s and 1930s. The literal ability of the airplane to provide a distant, holistic outsider’s perspective—not only a new visual angle but also a novel outlook on the world—inspired a wider variety of intellectual and political movements throughout Europe.³⁷⁹

Furthermore, the aerial perspective seemed to offer an objective, scientific tool for studying populations—within the French empire at first but eventually within France too—and how they related to the surroundings in which they lived. According to Haffner, aerial photographs of colonial peoples were a means of obtaining “unparalleled access into the inner workings of these societies, overcoming numerous linguistic and cultural boundaries.”³⁸⁰ French anthropologist and pilot Marcel Griaule provides an instructive explanation of how the aerial perspective allowed the observer to overcome the limitations of ground-based reconnaissance. In a text on his fieldwork in Chad in 1943, Griaule recounted the way in which this vantage point clarified the obscurities and unmasked the secrets of the landscape below:

Seen high in the air, a district holds few secrets. Property is delineated as if in India ink; paths converge in critical points; interior courtyards yield themselves

³⁷⁸ Jeanne Haffner, *The View from Above: The Science of Social Space* (Cambridge, MA: MIT Press, 2013), 7-8. Haffner notes that interest in the aerial perspective stretched back hundreds of years before the twentieth century, and observation via hot-air balloon was used for military reconnaissance beginning in the late eighteenth century during the French Revolutionary Wars. From the mid-nineteenth century, individuals such as Nadar promoted the employment of the new technology of photography for capturing aerial images of the landscape.

³⁷⁹ Haffner, 14.

³⁸⁰ Haffner, 17. Again, the employment of aviation during the First World War was crucial for fostering this belief in the potential of the aerial perspective and aerial images. “If reading landscape forms with the assistance of aerial photography had provided insight into the minds of German enemies,” Haffner contends, “in the interwar period it offered a means of grasping the ‘mentality’ of colonial areas.”

up; the inhabited jumble comes clear. With an aerial photograph the components of institutions fall into place as a series of things disassembled, and yielding. Man is silly: he suspects his neighbor, never the sky; inside the four walls, palisades, fences, or hedges of an enclosed space he thinks all is permitted. But all his great and small intentions, his sanctuaries, his garbage, his careless repairs, his ambitions for growth appear on an aerial photograph.³⁸¹

Griaule also emphasized the practical utility of aerial photographs. Planes could photograph larger areas in less time than traditional, ground-based methods of documentation. In addition, aerial images provided scientists and researchers with an effective means of tracking changes over time in the societies and environment below.³⁸²

Martin Thomas concisely summarizes how aeronautics and photographic technology worked together in the interwar years to furnish imperial powers with new ways of viewing and governing colonial spaces. Aerial photography and reconnaissance influenced the development of policy in the British and French empires partly because these techniques “intersected the ongoing work of colonial mapmakers, geologists, and archaeologists.” By the 1920s, Thomas explains, aerial surveys and photographs “had revolutionized the working practices of military staffs and civilian specialists whose decisions demanded accurate information about topography and climate, agriculture and water distribution, or sites of archaeological interest.”³⁸³

³⁸¹ Marcel Griaule, *Les Saô légendaires* (Paris: Gallimard, 1943), 61-62; quoted in James Clifford, “Power and Dialogue in Ethnography: Marcel Griaule’s Initiation,” in *The Predicament of Culture: Twentieth-Century Ethnography, Literature, and Art* (Cambridge, MA: Harvard University Press), 68.

³⁸² Haffner, 33.

³⁸³ Martin Thomas, *Empires of Intelligence: Security Services and Colonial Disorder after 1914* (Berkeley: University of California Press, 2008), 24.

Aviation and Cadastres in Indochina

Jean-Baptiste Manchon states that proponents of colonial aviation emphasized how aircraft would provide extremely valuable assistance in the task of drawing up cadastres, official registers of real estate created for tax purposes. By utilizing aviation in this manner, aeronautics technology would contribute to a mapping effort that not only was fiscally advantageous for France but also helped consolidate French colonial control.³⁸⁴ Yet in the mid-1920s the idea of using aircraft for cadastral work remained “an entirely new subject” that was “still far from being up and running” in France. Within Indochina though, the flatness of certain parts of the landscape—especially along the coast, in Cambodia, and around the delta regions of the Mekong and Red Rivers—offered a particularly promising setting for undertaking these aerial surveys.³⁸⁵ Thus it is perhaps unsurprising that the colonial administration employed aviation for this purpose from a comparatively early date in the interwar years. Indeed, Indochina, along with Algeria and Tunisia, was one of the areas of overseas France in which planes assisted early and frequently with creating cadastres. The colony, moreover, long remained the primary testing ground for developing and refining the techniques for using aviation to prepare these real-estate registers.³⁸⁶

³⁸⁴ Manchon, 393. Manchon notes that accurate cadastres could also help guarantee “equitable justice” in property disputes between neighbors. Manchon, 394.

³⁸⁵ This information is from a printed report located in the papers of Pierre-Etienne Flandin in the archives and manuscripts division of the Bibliothèque Nationale de France, NAF 28201, Box 21/D8. The publication facts are as follows: “Notice: Sur les Conditions d’Emploi de l’Aéronautique Militaire d’Indochine dans des Buts Politiques et Economiques” (Hanoi: G. Taupin, October 1924), 34 [hereafter “Notice”].

³⁸⁶ Manchon, 393.

As early as the spring of 1920, officials in Indochina were examining the possibility of employing aircraft to assist in drawing up cadastres.³⁸⁷ Requests for this type of support often emphasized how aerial reconnaissance yielded precise data. On June 4, 1920, for instance, the Resident Superior of Cambodia proposed having aircraft deployed to aid the territory's cadastral work. Citing a group of villages near the airfield at Phnom Penh, the Resident suggested that aviation be utilized to "inspect [both] the exact surface area of a defined region under cultivation and the nature of the crops." With this information, the local government could calculate property taxes in order to provide "an indisputable base" for both the administration and the taxpayer.³⁸⁸ Importantly, the use of aviation to help resolve property disputes was envisioned as applying to all landowners and not just the French. As one French Deputy wrote, aerial photographs "can in many cases serve as extremely precise documentary evidence for resolving disputes, and property owners, indigenous or European, have not taken long to realize this and appreciate them."³⁸⁹

As the previous examples suggest, French officials were aware that the clarity of the aerial perspective helped sort out confusion on the ground below. Other requests for cadastral assistance followed this line of thinking. For instance, the local administrator of Hai Duong sought to have aircraft assist with drafting a map of the provincial capital,

³⁸⁷ For the most part, military planes were used for economic missions in the colony. However, there was occasional discussion of having local aviation companies assist with these tasks. See, for example, ANOM, GGI 66492, "Le Ministre des Colonies à Monsieur le Gouverneur Général de l'Indochine," June 20, 1922, and ANOM, GGI 66529, "[letter to the Governor General]," July 31, 1928.

³⁸⁸ ANOM, GGI 66492, "Le Résident Supérieur au Cambodge à Monsieur le Gouverneur Général de l'Indochine," June 4, 1920.

³⁸⁹ ANOM, GGI 66499, "Extrait du Rapport, fait au nom de la Commission des Finances chargée d'examiner le projet de Lois portant fixation du Budget Général de l'Exercice 1926 (Ministère des Colonies et Budgets Locaux des Colonies) par M. Léon Archimbaud, Député," [July 12, 1925; February 4, 1926]. [Hereafter Extrait du Rapport].

asserting that “this work is absolutely essential if we want to get out of the anarchy in which we are stuck.” In a letter from late November 1923, he noted that aviation would allow for the required tasks of inspecting claims made by various parties and conducting on-site surveys of land plots and rice fields to be carried out with ease and efficiency. With this information collected, this official reasoned, the local administration would be in a position to precisely calculate the taxes to be levied.³⁹⁰

Into the 1930s, colonial officials requested that aerial photography be used for cadastral purposes. The French thus continued to prize the aerial perspective for its perceived ability to provide accurate information swiftly and efficiently. As the head of the cadastre service wrote in June 1930, aerial photographs supplied colonial authorities with “more exact maps than those resulting from communal surveying.” Likewise, French engineer A. Michel commented in November 1936 that aircraft would offer a quick remedy for a lingering fiscal problem in Tonkin. Pointing to a pair of immense valleys that remained un-surveyed—and whose populations had, consequently, remained un-taxed—Michel remarked that “the topographic study of these sites would be carried out quite rapidly and in favorable terms by the use of aerial photography.”³⁹¹

Aerial Photography and Reconnaissance for Development Projects

In addition to assisting with real-estate surveys, aviation was charged with various other tasks in the service of modernizing and exploiting the landscape of Indochina.

Public works officials, for instance, aimed to utilize airplanes and seaplanes as a cost-

³⁹⁰ ANOM, GGI 66492, “L’Administrateur de 2e classe A. Bouchet, Résident de France à Hai Duong à Monsieur le Résident Supérieur au Tonkin,” November 28, 1923.

³⁹¹ ANOM, RSTNF 2730, “Le Chef du Service du Cadastre à Monsieur le Résident Supérieur au Tonkin,” May 28, 1930; ANOM, RSTNF 2733, “Le Chef du Service du Cadastre à Monsieur le Résident Supérieur au Tonkin,” November 19, 1936.

efficient, safe, and swift means of gaining an unimpeded perspective of an area of interest below. According to a contemporary publication, these officials “frequently request aircraft collaboration for survey of a route or study of an area in which they have decided, for example, to carry out irrigation work or put in a railroad line.”³⁹² In a specific example from May 1920, the Governor of Cochinchina inquired about having military planes conduct reconnaissance and photography flights as a means of researching an alternative route between the coast of Annam and Cochinchina. The existing path ran along the coast while the proposed road would cross the Central Highlands; this route project was the type of infrastructural program for which Minister of the Colonies Albert Sarraut and his ilk campaigned as part of the empire-wide *mise en valeur* of the 1920s.³⁹³

Several years later, Deputy Archimbaud reported on the success of an aircraft mission that was deployed to reconnoiter a direct route from Hue to Saigon. While serving as a preferable alternative to the coastal route, the envisioned road would also make Kontum—“an important center of colonialism”—more accessible and allow for the “peaceful penetration” of a region that remained “difficult and rebellious.” Archimbaud stated that the three aircraft deployed for the operation, which took place intermittently between late January and early April 1925, logged 135 hours of flight time and returned with over 500 pictures.³⁹⁴ Elsewhere in Indochina, the Resident Superior of Laos wrote to

³⁹² Exposition Coloniale Internationale, *Indochine Française. Section générale. Troupes du groupe de l'Indochine. Les services militaires en Indochine* (Hanoi: Imprimerie d'Extrême-Orient, 1931), 119 [hereafter Exposition Coloniale Internationale, *Les services militaires en Indochine*].

³⁹³ ANOM, GGI 66492, “Le Gouverneur de la Cochinchine à Monsieur le Gouverneur Général de l'Indochine,” May 14, 1920.

³⁹⁴ ANOM, GGI 66499, “Extrait du Rapport.” The duration for this mission is found in Cony and Ledet, 106-109. It is unclear if this mission is the same operation as the dual-purpose flight involving Colonial Route 14 that is discussed in the following chapter. In addition, this same fuzziness applies to the relationship between the reconnaissance mission of 1925 and the

the Governor General in 1929, outlining a project for employing aircraft to survey a region through which the extension of Colonial Route 8 was planned to pass.³⁹⁵

Into the mid-1930s, aviation continued to aid the work of expanding the road network. For instance, air force officer Captain Marcel Puypéroux recalled being asked by a Monsieur Pierrot, the French Resident in Dong-Hoi, to reconnoiter an expanse of mountains in the area in order to determine a suitable terrestrial route for penetrating this “especially inaccessible” location. In March 1935 an aerial survey and photography mission revealed “the existence of an entry valley until then unknown.” With future tasks in mind, Puypéroux asserted that aircraft would be particularly useful for helping with road-building efforts in certain areas of Annam.³⁹⁶

Aerial photography and reconnaissance were also utilized in railroad construction projects. From late December 1921 until early February 1922, for instance, aircraft were deployed to take photos of a sixty-kilometer stretch of land that was part of a planned rail link between Saigon and Phnom Penh. Similarly, from March 10 to the beginning of May 1922, aerial photography was used in Cambodia for studying a rail line connecting Pursat to Sisophon.³⁹⁷ Lastly, planes were charged with surveying a portion of the Transinochinese Railroad’s itinerary in the mid-1930s; this Hanoi-to-Saigon link was a

aforementioned request from May 1920. In any case, the key point remains that aviation was charged with a variety of tasks—sometimes during the same mission—that involved the economic development of Indochina as well as the maintenance and extension of French colonial authority.

³⁹⁵ ANOM, GGI 66545, “Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l’Indochine,” October 23, 1929.

³⁹⁶ SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935. Compared to the 1920s, there is a reduction in the frequency of such requests by the middle of the next decade. This observation seems to confirm Manchon’s conclusion for the usage of military aviation for development projects in the French empire. He indicates that aircraft were employed with success for these myriad tasks into the first half of the 1930s. Manchon, 383.

³⁹⁷ These railroad examples are from “Notice,” 16-18.

massive public works project that was launched in 1898 and not completed until late September 1936.³⁹⁸

In some cases, colonial officials sought to employ aviation to help preserve the landscape and its resources for the benefit of the local populations. Of course, the purpose and manner of these efforts was primarily dictated by French concerns. In one specific instance, Yves Henry, the Inspector General of Agriculture, Farms, and Forests, wrote to the Governor General about a protected region of mangrove forests in southern Cochinchina. Henry's letter indicated that tanneries in Cholon as well as charcoal manufacturers looking to sell their product internationally were removing large numbers of the area's trees in a way that wasted much of the wood. Unregulated and occurring throughout the mangrove forests, this harvesting was leading to "the complete ruin of the populations" due to the loss of a source of fuel. The solution, as proposed by the Inspector of the Forestry Service, included using aerial photography—a "rapid and economical method"—to draw up a precise map of the forests so that a concentrated, regulated system of timber harvesting could be implemented.³⁹⁹

The use of aviation for public works projects was not limited to land-based tasks. Indeed, aircraft served as a useful tool for studying and resolving issues involving water as well. In November 1922 a French engineer working as part of a hydrography project

³⁹⁸ Manchon, 428; David W. Del Testa, "'Imperial Corridor': Association, Transportation and Power in French Colonial Indochina." *Science, Technology, and Society* 4, no. 2 (1999): 331. Manchon does not indicate specifically when or in what capacity aerial reconnaissance was used for this railroad project. His citation for this information—8Fi422 in the ANOM—concerns, according to the website for the Archives nationales d'outre mer, the Tourane—Nha Trang sector of the Transindochinese Railroad and the dates of 1933 and 1938.

³⁹⁹ ANOM, GGI 66541, "L'Inspecteur Général de l'Agriculture, de l'Élevage et des Forêts à Monsieur le Gouverneur Général de l'Indochine," December 17, 1926. The plan was approved the following month, with payment to be made by the local budget of Cochinchina. ANOM, GGI 66541, "Ordre de Mission," January 1, 1927.

sought to utilize aerial photography for a topographic survey of two ports in the Ha Long Bay region of Tonkin. Previous surveys in the area, he explained, had required work that was “extremely long and often presented real dangers.” The engineer reasoned that the study could be completed faster and with fewer missions if seaplanes were employed to take photographs of several islets in the region. This writer added that the aerial photos thus obtained could be useful for identifying certain as-yet undiscerned shoals. Engineers from the hydrography project requested aviation assistance for similar tasks at least two more times during the first half of the 1920s.⁴⁰⁰ Aircraft also helped with tasks involving urban water management. In the first months of 1924, public works officials aimed to deploy photography and reconnaissance flights in the area surrounding the Bé River. This information would be utilized for a canal-building project intended to alleviate the water shortages that Saigon and neighboring Cholon had been struggling with for several years. Once again, aviation was presented as a more efficient and economical means of completing the work than ground-based methods alone.⁴⁰¹

The view that aviation could assist in “taming” the colony’s waterscape applied to situations in which the problem was too much water as opposed to a shortage. Given the geography and weather of certain parts of Indochina, it is perhaps unsurprising that the

⁴⁰⁰ ANOM, GGI 66492, “L’Ingénieur Hydrographe Principal Pelissier, Directeur des Travaux de la Mission hydrographique d’Indochine à Monsieur le Gouverneur Général de l’Indochine,” November 6, 1922; ANOM, GGI 66502, “L’Ingénieur Hydrographe Principal Villain, Directeur des Travaux de la Mission hydrographique d’Indochine à Monsieur le Gouverneur Général de l’Indochine,” September 19, 1924. In an example from the interior of the colony, the Inspector General of Public Works, informed the Governor General of a rock-strewn portion of the Mekong River between Kratié and Sambor that was causing navigational difficulties. This stretch could not be cleared of the impediments without an accurate map of the area, and, therefore, this official hoped that aircraft could supply photographs for precisely charting the riverbed. ANOM, GGI 66502, “L’Inspecteur Général des Travaux Publics à Monsieur le Gouverneur Général de l’Indochine,” March 22, 1926.

⁴⁰¹ “Notice,” 11-13. For this particular task, a public works engineer and two pilots completed the mission over a four-week period in which 101 photos were snapped. ANOM, GGI 66499, “Extrait du Rapport.”

colony was the area of the French empire in which aircraft played the most significant role in surveying and photographing during periods of flooding. In January 1935, Puypéroux discussed some of the benefits of employing planes to survey flood zones. He stated that aerial reconnaissance of the colony's flood-prone rivers during critical periods could help spot not only the inflow of floodwaters but also threats of embankment rupture or the actual breach of a dike. With these observations in hand, authorities could then warn any threatened populations in advance.⁴⁰² In addition, aerial observation and photography of inundated areas provided engineers with key data regarding flooding patterns. For instance, following a period of heavy floods along the Red River in August and September 1923, the public works department requested that aircraft be dispatched to Hanoi to determine precisely which parts of a tract of low-lying, embanked land—known as a polder or *casier*—were submerged. The air force, a French official noted, was the “only service capable of furnishing this information before the waters receded.” When the Red River flooded anew in 1925 and 1926, aircraft again were used to survey the inundated areas.⁴⁰³

Mapping the Landscape in Indochina

Sources also attested to the valuable contribution that aviation could bring to the cartographic project across the French empire. Deputy Archimbaud, for example, underscored the benefit of aerial photography, remarking that this technology “finds in the colonies a particularly successful application in the execution of topographic surveys

⁴⁰² Manchon, 430; SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935.

⁴⁰³ ANOM, GGI 66499, “Extrait du Rapport”; SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935.

undertaken by different services.” This aerial support was particularly important during the interwar years because, in general, there remained a lack of accurate maps for large swaths of the French empire. Manchon points out that by the time that aviation was being installed across the empire, sufficiently detailed maps of the colonies had been created only for Algeria and Tunisia.⁴⁰⁴

Moreover, colonial organizations such as the Service Géographique complained of having to rely on undependable data when undertaking the study of a poorly known area. As a publication from 1931 explained, this organization often had to deal with error-riddled maps or questionable plans based on information collected from local inhabitants. The authors contended that aviation offered a remedy to this problem: the airplane “makes it possible to determine with exactitude the distances from different points [and] their positions, and provides a view of the region that is sufficiently accurate for creating a map.” Likewise, another source asserted that aircraft allowed for easier, more rapid penetration of otherwise inaccessible areas, and aerial photography permitted “the resolution of difficulties that hold back or stop the reconnaissance made on the ground.” Additionally, with the broad, unobstructed view from an airplane, an observer could work economically and efficiently in the task of correcting errors on existing maps.⁴⁰⁵

Within Indochina, the Service Géographique sought to have aerial photography and reconnaissance help with various jobs throughout the colony. These calls included a 1921 request involving northern Cochinchina and another for work in the South Central Coast region of Annam during the summer of 1924. Elsewhere in Annam, two aircraft

⁴⁰⁴ ANOM, GGI 66499, “Extrait du Rapport”; Manchon, 384.

⁴⁰⁵ Exposition Coloniale Internationale, *Les services militaires en Indochine*, 118; ANOM, GGI 66492, “Aéronautique d’Indochine. Compte-rendu des missions d’aviation. 1. du Haut Laos 2. du voyage Hanoi—Saigon,” n.d.

completed an aerial photography mission in the Pleiku-Kontum area of the Central Highlands in February 1926. As a final example, planes were deployed during the course of 1929 in the North Central Coast region of Annam and the northeast of Tonkin. The purpose, Manchon indicates, was to take photographs that were to be used for drafting a series of maps.⁴⁰⁶

Into the late 1930s, aviation continued to assist with filling in the empire's cartographic gaps.⁴⁰⁷ For Indochina, this mapping effort remained unfinished by the middle of the decade. As Puypérourx reported in January 1935, the colony "still has numerous regions that are poorly known or unexplored." In particular, he identified certain areas within Cambodia and northern Laos that could be "usefully explored" with aircraft. Indeed, officials requested aerial photography and reconnaissance help until the end of the 1930s. Christophe Cony and Michel Ledet cite several aerial photography assignments that were carried out between March and May 1939 and included work in Annam, Laos, and Tonkin.⁴⁰⁸

Aerial Photography and Reconnaissance for Scientific Research

Scientific organizations and social scientists throughout the French empire also took advantage of aeronautics technology. While a handful of Europeans employed planes for scientific study abroad prior to the end of the First World War, this usage

⁴⁰⁶ ANOM, GGI 66492, "Directeur des Services Economiques de l'Indochine à Monsieur le Gouverneur Général de l'Indochine," November 8, 1921; ANOM, GGI 66492, "Ordre de Mission," November 14, 1921; Exposition Coloniale Internationale, *Les services militaires en Indochine*, 122, 118; The references to the missions of 1924 and 1929 are found in Manchon, 392.

⁴⁰⁷ Manchon, 392.

⁴⁰⁸ SHAA, 2B33/D6, "Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine," January 31, 1935; Cony and Ledet, 268-269.

significantly increased during the two decades that followed the conflict.⁴⁰⁹ In 1939, pilot-archaeologist J.Y. Claeys stated that for Indochina as well as the Levant, military aviation “provides efficient and valuable assistance to scientific research.” He remarked that this aid was especially important in regions like Indochina that contained areas of undulating terrain that were difficult to access. In addition, Claeys described how aircraft not only furnished researchers with an unimpeded perspective of the landscape but also revealed the layout of ancient ruins. The configuration of such sites, concealed by time and the growth of vegetation, was not evident when investigating the areas on foot. However, the aerial perspective penetrated this obscurity with ease. As Claeys explained, “lost citadels, razed and invisible on the ground..., appear clearly to the aerial observer.”⁴¹⁰

Among the notable social-science patrons of aviation in Indochina was the *Ecole française d’Extrême-Orient*. Beginning in the early 1920s, members of this organization sought this assistance for tasks throughout the colony. In 1921, for instance, the group submitted a request for aerial photographs of several ancient monuments located in the insalubrious marshes of the *Plaine des Jones* in Cochinchina.⁴¹¹ Similarly, in 1923 the organization’s director approached a military official about having aircraft deployed to take pictures of five royal tombs situated in the Thanh Hoa province of northern Annam; these images were to be used to draw up a map of the burial site. “These tombs are scattered around a dense forest, which makes the work very difficult,” the director observed. Yet the project supervisor was confident that aviation offered a means of

⁴⁰⁹ Manchon, 439-440.

⁴¹⁰ J.Y. Claeys, “L’Aviation Militaire d’Indochine et les recherches scientifiques,” *Revue de l’Armée de l’Air*, no. 118 (September-October 1939): 529, 533-534, 536, 542.

⁴¹¹ Claeys, 531-532.

completing the required work in an efficient manner. He wrote, “we would save a lot of time if we were able to rely on photographs taken from an airplane.”⁴¹² French researchers were subsequently able to identify other ancient monuments and sites in Tonkin and Annam by utilizing aerial photography. In Cambodia as well, Claeys argued, aerial photography and reconnaissance had proven “especially fruitful” tools for social scientists. In addition to providing images of the well-known temple complex at Angkor Wat, aviation had aided in the “rediscovery”—from the French perspective at least—of myriad other features of the ancient Khmer civilization. With the help of aircraft, Claeys proclaimed, researchers had drastically improved their knowledge of the former civilization. He pointed out that aerial reconnaissance had revealed connections among a given site’s scattered monuments and buildings.⁴¹³

Social scientists utilized aeronautics technology to capture and categorize the colonial landscape not only in terms of natural and built environments but also in terms of contemporary indigenous societies. For Pierre Gourou, whose study of the rural peoples of the Tonkin Delta was published in 1936, aerial photography was an important tool for analyzing the socio-spatial relations of the Tonkinese populations. In the abstracted forms of the villages and surrounding landscape captured in aerial photographs, he saw a type of unity between local groups and the natural environment. Gourou concluded that this seamless blending of the two fostered politico-economic balance and social happiness among the peoples he studied. For Gourou, then, aerial photographs showed a perspective of the Tonkin Delta that revealed a unity and structure

⁴¹² ANOM, GGI 66492, “Le Directeur de l’Ecole Française d’Extrême-Orient à Monsieur le Général Commandant supérieur des troupes de l’Indochine,” May 30, 1923.

⁴¹³ Claeys, 532-533, 538.

that was otherwise unapparent in the seeming disorder of daily life in these rural communities.⁴¹⁴

In addition, Gourou combined aerial photography with scientific study in the Mekong River Delta during the 1930s, a decade that witnessed a socio-political crisis compounded by economic and ecological problems in the region. Gourou was among a growing cadre of French and Vietnamese social scientists who, equipped with new theories for understanding socio-spatial relationships, put forth schemes for land reform and redevelopment in the Delta. In this manner, researchers hoped to utilize aviation to help resolve present-day challenges involving the colonial landscape. According to David Biggs, “new technologies available in this period, especially aerial photography, became key to this shifting colonial discourse on development and the rural landscape.” Images snapped from above, he explains, “shifted the colonial gaze from horizontal views, where interior spaces of villages and homes were hidden to surveyors..., to vertical views ‘peering over the village hedge’ to show vibrant mosaics of fields, dikes, and villages.” Based on this information, Gourou and thinkers of his ilk presented new schemes for reordering the space of the Delta.⁴¹⁵

Aerial Photographs of Indochina for the Public

Aside from being applied to colonial development projects and scientific studies, aerial photographs were placed in public exhibitions and printed material on Indochina

⁴¹⁴ Haffner, 19-20; Biggs, 104-105.

⁴¹⁵ David Biggs, *Quagmire: Nation-Building and Nature in the Mekong Delta* (Seattle: University of Washington Press, 2010), 94, 104-107. The most notable of these reorganization plans involved replacing the large, centrally managed “water grid” with self-contained *casiers*.

during the interwar years.⁴¹⁶ These images provided the average European viewer with unique vistas of what likely would have been an unfamiliar place. The use of aerial photographs for this purpose not only demonstrated the progress of photographic and flight technologies but also served to publicize and promote Indochina—and the positive results that the colonial project had produced therein—during a period in which the French invested heavily in the production of such propaganda. For the empire as a whole, the basic intent was to more closely link the colonies to French national identity.⁴¹⁷

Beginning in the early 1920s, aerial photographs were used in a variety of public venues and printed material to uniquely display and promote Indochina. For instance, with the December 1922 opening of the eighth Salon de l'Aéronautique—a popular aerospace exposition that France had hosted since 1909—rapidly approaching, the Minister of the Colonies solicited the loan of a variety of Indochina-related objects from the 1922 Exposition Nationale Coloniale de Marseille. In addition to twenty photo plates of sites from around the colony, the Minister's request included eight aerial photographs and maps showing broad perspectives of Saigon-Cholon, Hanoi, Vinh, and several provinces in the northern part of Annam. Several years later, more aerial photographs were sought for Indochina's exhibit at the Paris Exposition Coloniale of 1931. In

⁴¹⁶ Of course, the variety of French journals dedicated to aeronautics included aerial photographs, some of which showed sites and scenes from Indochina. See, for instance, the June 1925 issue of the monthly *L'Aéronautique* and Manchon's reference to articles in the *Bulletin techniques des aéroplanes Henry Potez*. Henri Bouché, "Deux jours à l'escadrille de Bien-Hoa: Un exemple de travail de l'aviation coloniale en Indo-Chine," *L'Aéronautique* 7, no. 73 (June 1925): 203-207; Manchon, 440.

⁴¹⁷ In pursuit of this aim, the government and proponents of empire worked to do the following: cultivate among the French public a greater knowledge of the mutually beneficial relationship between overseas France and the metropole; commodify the sites and cultures of the empire; and reinforce a sense of French superiority over colonized peoples. Ellen Furlough, "Une leçon des choses: Tourism, Empire, and the Nation in Interwar France," *French Historical Studies* 25, no. 3 (Summer 2002): 472.

December 1929 a Monsieur Eckert, an official for the fair, presented to Lieutenant-Colonel de Prémorél, the chief of the colony's air force, an extensive list of aerial images; these photos, collected from the five constituent parts of Indochina, were intended to function as an overview of life throughout the colony. Additionally, a publication for the 1931 event contained aerial photographs of the residence of the Governor of Cochinchina as well as an aerial image of Hanoi.⁴¹⁸

Moreover, journals and guidebooks incorporated aerial photographs in an effort to increase viewers' knowledge, understanding, and appreciation of French Indochina. For example, the well-circulated *L'Illustration*—this journal published an issue dedicated to aviation on a biennial basis from 1924 through the 1930s—printed aerial images such as “Terrestrial Mosaic.” According to the caption, this photograph of a rice field in Vinh Province “provides, in the decorative form of a geometric ‘cloisonné,’ an accurate idea of the Indochinese lowlands.”⁴¹⁹ Aerial photographs also appeared in the *Bulletin de l'Agence Economique de l'Indochine*. Articles from early 1930 contained an aerial photograph for a cadastral map as well as aerial images of Saigon's port, Angkor Wat, Nha Trang, and a Tonkin airfield.⁴²⁰

⁴¹⁸ ANOM, GGI 66492, “Le Ministre des Colonies à M. Le Résident Supérieur Commissaire Général de l'Indochine à l'Exposition Coloniale de Marseille,” November 24, 1922; ANOM, GGI 66545, “Délégué Général [à] Monsieur le Commandant de l'Aéronautique,” December 13, 1929; Exposition Coloniale Internationale de Paris: Commissariat Général, *Indochine*, vol. 2, *Documents officiels* (Paris: Société d'Éditions Géographiques, Maritimes et Coloniales, 1931), plates I and II.

⁴¹⁹ “Mosaïque terrestre: La rizière indochinoise dans la province de Vinh,” *L'Illustration*, July 7, 1928.

⁴²⁰ The pictures of Saigon and Angkor Wat are found in “L'Indochine et l'aéronautique,” *Bulletin de l'Agence Economique de l'Indochine* (January 1930): 7, 9, 12. The cadastre and airfield images and the photograph of Nha Trang are in “L'Indochine et l'aéronautique,” *Bulletin de l'Agence Economique de l'Indochine* (February 1930): 39, 41, 44.

Similarly, Indochina's Bureau of Tourism utilized aerial photographs to promote airplane tours between Saigon and Angkor Wat. In May 1929 this organization printed a guide that included photographs snapped by the Compagnie Aérienne Française. Among this material were images of Saigon, Phnom Penh, and the Angkor Wat complex.⁴²¹ While implying that the round-trip flight was a simple and delightful journey, these photographs—along with the publication's commentary—aimed to persuade the reader that “there is perhaps nothing more splendid than being able, from above, to embrace the whole of this ensemble [of Angkor Wat] at a glance.”⁴²² Viewers could also consult aerial photographs in French-authored guidebooks for Indochina. One such guidebook from 1931 contained images of the Royal Palace of Phnom Penh and Angkor Wat while another, also printed in 1931, incorporated a larger variety of aerial images.⁴²³

Aerial Photography and Reconnaissance for Companies and Individuals in Indochina

This chapter has thus far analyzed how aerial reconnaissance and photography aided the work of the colonial administration, scientists and scientific organizations, and promoters of the empire. Aviation was also called on to assist small businesses, industries, and individuals throughout Indochina. It should be pointed out that non-French individuals and businesses could and did submit requests for aerial photography

⁴²¹ A copy of this guidebook is located in ANOM, B.12156. The publication information is as follows: Henry Bontoux, *L'Inauguration du Tourisme aérien en Indochine: De la rivière de Saigon aux douves d'Angkor-Vat. Extrait d'“Extrême-Asie,” Revue Indochinoise Illustrée. Organe officiel de Bureau du Tourisme en Indochine* (May 1929).

⁴²² Bontoux, 11.

⁴²³ Henri Gourdon, *L'Indochine* (Paris: Larousse, 1931), 56, 199; René Théry, *L'Indochine française: Ouvrage illustré de 32 hors-texte avec trois cartes* (Paris: Les Editions Pittoresques, 1931), plates XXVIII, XXIV, XXVI, XXII, and XXXII. Among the pictures in René Théry's publication were views of Saigon and Cholon and the cities and ports of Haiphong and Faï-Fo as well as images of a distillery facility in Hanoi and a rice field in Tonkin.

and reconnaissance. While noteworthy in terms of revealing a glimpse of the day-to-day interactions between colonizer and colonized, requests from the native populations can be understood as falling within the bounds of a colonial system to which the French regulated access.

A publication from the colonial exposition of 1931 observed that “private individuals, service managers, concessionaires, or even manufacturers often request the assistance of military aviation.” The writer stated that aerial photographs allowed persons to know their property “down to the very last detail.” Armed with this data, individuals would be better informed about any improvements, modifications, or repairs that their businesses or land required.⁴²⁴ For example, military planes undertook numerous photography missions involving distilleries and tobacco factories in Cochinchina and the Red River Delta between September 1921 and March 1922.⁴²⁵ In another instance, pilots completed a photographic survey of several stretches of land in Cochinchina.⁴²⁶ Elsewhere in the colony, a mission order from mid-March 1924 authorized a proposal submitted by the Compagnie Minière et Métallurgique de l’Indochine; the firm had inquired about aerial photographs of a mining site in the mountains of Tonkin.⁴²⁷

Vietnamese business owners also sought the aid of aerial photography and reconnaissance. The archival record suggests that colonial and military officials treated

⁴²⁴ Exposition Coloniale Internationale, *Les services militaires en Indochine*, 119.

⁴²⁵ “Notice,” 14-15.

⁴²⁶ Exposition Coloniale Internationale, *Les services militaires en Indochine*, 126. This assignment, requested by a Monsieur Malandin of Saigon, was carried out on three different days from late November to mid-December 1927.

⁴²⁷ ANOM, GGI 66502, “Ordre de Mission,” March 17, 1924; ANOM, GGI 66502, “[letter to] Monsieur le Gouverneur Général de l’Indochine,” March 3, 1924. According to François Glaize, the original request from the mining company was made on February 14, 1924. ANOM, GGI 55502, “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine à Monsieur le Directeur Général de la Cie Minière et Métallurgique de l’Indochine,” February 22, 1924.

requests made by members of the indigenous populations no differently than if the requester was French. For example, a mission order from February 1925 approved a request made by M. Bach-Thai-Buoi, a Haiphong-based shipowner, for an aerial photography survey. Likewise, in August of the following year, authorities authorized a request submitted by M. Nguyen-Viet-Vang, a shopkeeper in Hanoi; in this case, the task consisted of deploying aircraft to photograph a section of rice fields.⁴²⁸

Limitations and Impediments to Aerial Photography and Reconnaissance in Indochina

Explaining why planes were viewed as a valuable tool for public works projects in Indochina, Manchon notes that “from the moment one moved away from large cities this means of reconnaissance appeared incomparably more rapid, precise and economical than any ground survey.”⁴²⁹ Similarly, in the mid-1920s, air force commandant Francois Glaize highlighted the benefits of employing aviation for different economic tasks in the colony. In addition to the “good quality of work” provided by aerial reconnaissance and photography, aircraft offered the advantages of speed and low cost.⁴³⁰

Ideally—and at times actually—statements such as Manchon’s and Glaize’s were accurate. Yet French officials did voice concerns about the use of aviation for reconnaissance and photography purposes. These concerns typically related to the following issues: mission organization and costs; the amount of preparatory work; and

⁴²⁸ ANOM, GGI 66502, “Ordre de Mission,” February 5, 1926; ANOM, GGI 66502, “Le Gouverneur Général de l’Indochine à Monsieur le Lieutenant-Colonel, Commandant l’Aéronautique d’Indochine,” August 21, 1926; “Ordre de Mission,” August 21, 1926.

⁴²⁹ Manchon, 428.

⁴³⁰ ANOM, RSTNF 4280, “Note sur l’Aviation,” n.d. [the content of this report includes information that places the document date to around 1926]. An additional copy of this report, located in ANOM GGI 66499, has annotations by Lieutenant-Colonel Leblanc, the Chef du Service de l’Aéronautique.

the limitations imposed by weather and the existing technology.⁴³¹ Moreover, certain observers even lamented the lack of progress made in utilizing aviation for colonial development projects. In this case, the complaints tended to focus on how metropolitan and colonial authorities not only provided the air force with inadequate resources but also remained hesitant to deploy aircraft as a tool of economic improvement and scientific understanding in the empire.

From the start of the 1920s, officials grappled with the basic issue of how to organize and pay for aerial photography and reconnaissance assignments. In the summer of 1920, the head of Indochina's air force presented the Governor General with information regarding reimbursements for aviation missions in general and aerial photography tasks in particular. This clarification was needed, this officer explained, because there was no standard process for repaying mission costs. The creation of some type of reimbursement strategy was further warranted due to both the increase in the number of requests for aviation and the inability of the air force budget to support repayment on its own. In an effort to sort out this problem, the air force chief suggested that the requester be presented with a precise estimate of the costs of the desired work.⁴³²

⁴³¹ These hindrances at times worked in tandem. For example, weather problems could lead to delays in the deployment of a mission, which in turn increased the cost of the aviation assignment. Similarly, financial and infrastructural obstacles tended to foster a situation in which aviation technology was available but not able to be used because the ground facilities lagged behind.

⁴³² This quote would include payment for fuel and aircraft usage, construction of any necessary ground installations and living quarters, preparation of any auxiliary airstrips, and transport of material and personnel. Aerial photography missions required a more detailed quote due to the additional equipment and time that the work necessitated. Also, for missions being paid for by either the colony's general budget or one of the local colonial budgets, reimbursement was needed for aircraft and fuel usage only when the annual fuel allotment for the air force was exhausted. ANOM, GGI 66492, "Le Commandant de l'Aéronautique de l'Indochine à Monsieur le Gouverneur Général de l'Indochine," July 27, 1920. This heading appears on a cover sheet that itself precedes two documents titled "Note sur le remboursement des frais de missions" and "Tableau de remboursement des missions photographiques."

When aircraft assisted with real-estate surveys, the operation's costs were split between the general and local budgets in Indochina.⁴³³ Aside from establishing rules related to funding, officials drew up regulations pertaining to aircrew safety and mission execution during aerial photography operations.⁴³⁴

While signaling that progress was being made toward establishing a comprehensible system for launching aviation missions for economic tasks, these measures do not seem to have immediately clarified this process. As late as the fall of 1924, French officials still sought a more coherent approach to deploying aircraft for cadastral work. As noted in a report from October, the problem appears to have stemmed from a lack of organization on the part of the colonial administration. "Even today," this document stated, "the administration has still not formulated a very clear program of what it requires concerning cadastre." An additional difficulty resulted from that fact that administrative needs varied across the different jurisdictions in Indochina.⁴³⁵ In other words, at this point there was not yet a consensus among the different cadastre services in

⁴³³ For these assignments, the general budget typically was responsible for paying the personnel and covering the costs for fuel, oil, aircraft, and photography material. The appropriate local budget was charged with funding the construction of any airfields or hangers in the region to be surveyed, paying for the workers' travel expenses and for the post-flight transfer of photos to the photography division in either Saigon or Hanoi, and covering "minimal expenditures of material or personnel required by the mission." ANOM, GGI 66492, "Le Chef de Bataillon Glaize, Commandant l'Aéronautique d'Indochine, à Monsieur le Gouverneur Général de l'Indochine," May 3, 1920.

⁴³⁴ First, two aircrews were to be assigned to each mission, no matter the importance of the task. Second, the area to be photographed was never to be more than twenty-five kilometers from an emergency-landing site. If the targeted region was more than eighty kilometers from one of the colony's aviation centers—likely a reference to the bases near Hanoi and Saigon—the auxiliary airfield was to be furnished with enough materials to allow the relevant aircrews to remain at the site instead of making the return journey. ANOM, GGI 66492, "Le Commandant de l'Aéronautique de l'Indochine à Monsieur le Gouverneur Général de l'Indochine," July 27, 1920.

⁴³⁵ "Notice," 34.

the colony with regard to the way in which aviation should be utilized for drawing up these surveys.⁴³⁶

A workable approach to ordering and carrying out aerial photography and reconnaissance missions had been developed by 1930. According to this arrangement, colonial administrators would submit requests to the head of the air force. Each request needed to include a detailed list about the areas to be photographed, the scale of the photos, the optimal period of time to carry out the task, and the urgency of the job. Upon reception of an appropriately detailed submission, this air force official would draft a mission order that the original requester would then forward to the Governor General for authorization.⁴³⁷ Yet despite the progress implied by the creation and functioning of this system, problems appear to have lingered into the late 1930s. In June 1938 air force commandant Devèze complained to Governor General Jules Brévié about the difficulties that his service was encountering in undertaking photography missions on behalf of the government general. Devèze identified those seeking aviation assistance as the source of the trouble, stating that requests tended to either lack any indication of the work's urgency or were submitted at the last minute.⁴³⁸

More generally, the costs of installing and maintaining an aviation presence in Indochina hindered the deployment of aircraft. As this dissertation has emphasized,

⁴³⁶ Manchon, 395.

⁴³⁷ ANOM, RSTNF 2730, "Le Lieutenant-Colonel de Prémoré, Commandant l'Aéronautique d'Indochine à Monsieur le Résident Supérieur au Tonkin," May 21, 1930.

⁴³⁸ ANOM, RSTNF 2733, "Le Colonel Devèze, Commandant de l'Air en Indochine à Monsieur le Gouverneur Général," June 25, 1938. This grievance seems to have stemmed in part from the Governor General's previous correspondence with Devèze. Brévié had provided him with a general description of the order in which aerial photography requests for the Service Géographique, the cadastre service, and the Ecole française should be carried out. ANOM, RSTNF 2733, "Le Gouverneur Général de l'Indochine à Monsieur le Commandant de l'Air en Indochine," April 12, 1938. However, the Governor General, according to Devèze, had failed to indicate the specific parameters of these different missions.

French officials were aware of the expenses and construction required to make an air service function as expected. Already in the early 1920s, the French were cognizant of how these financial issues were handicapping the utilization of aerial photography and reconnaissance. In June 1920 the Chief Engineer of Public Works determined that aircraft would have no more than an auxiliary role in the task of drawing up real-estate registers in the colony and recommended that planes be used for this work only in specific instances. This official, a Monsieur Lefèvre, explained his reasoning primarily in terms of the costs and infrastructure involved with aviation. As he bluntly stated, “airplanes cost much, by themselves, by their personnel, by the installations that they require..., which, for cadastre, will be numerous.”⁴³⁹

Lefèvre also pointed out that an extensive ground-based effort was still needed when aircraft helped with cadastral tasks. In his opinion, the assistance provided by aviation did not greatly reduce the overall workload that creating a cadastre normally involved. Lefèvre even went so far as to assert that employing aircraft for these surveys would actually be a hindrance to the regular cadastre service. He judged that this service would be saddled with additional tasks that related to arranging any required aviation

⁴³⁹ ANOM, GGI 66492, “Note pour Monsieur le Résident Supérieur en Annam,” June 4, 1920. As an example of when aircraft could be utilized for cadastral work, Lefèvre cited drawing up registers for an expanse of partitioned rice fields. Yet there were constraints to employing aviation for even this type of task. The reason was that there was a limited window of time in which aerial photography could be effectively used. As Cony and Ledet note, “each photographic proof presents a cadastral value only if it clearly indicates the embankments, the real boundaries of each rice field.” However, these small levees (*diguettes*) were visible on aerial photographs only when the rice had recently been cut or planted. As a result, the favorable time for deploying aircraft for cadastral missions was limited to two periods of the year, namely, December to January and June to July. Cony and Ledet, 59.

infrastructure. As a result, the cadastre service “will be unable to work regularly, as it would do if it was on its own.”⁴⁴⁰

Several days after Lefèvre drafted this correspondence, the Resident Superior of Annam wrote to the Governor General with regard to how this assessment applied to the Resident’s own outlook for conducting real-estate surveys within his jurisdiction. He remarked, “cadastre by aircraft will require numerous preparatory works on the ground, [which are] expensive installations [on their own], and will then be able to yield useful results only after a series of difficult operations involving the use of specialized personnel.” Elaborating, the Resident highlighted the different actions needed in terms of both infrastructure and human expertise. “The preparatory works on ground require, by their importance and their special nature, the existence of a cadastre service that Annam does not have,” he explained. He further indicated that “the utilization of components furnished by photography will necessitate the employment of specific officials, draftsmen, photographers.”⁴⁴¹

Administrators and public works officials were not alone in noting the financial and technical drawbacks of putting aerial photography and reconnaissance to use for colonial development projects.⁴⁴² Pilot and journalist Henri Bouché described the burden

⁴⁴⁰ ANOM, GGI 66492, “Note pour Monsieur le Résident Supérieur en Annam,” June 4, 1920.

⁴⁴¹ ANOM, GGI 66492, “Le Résident Supérieur en Annam à Monsieur le Gouverneur Général de l’Indochine,” June 12, 1920. When aircraft did assist with cadastral work, drawing up these surveys still was a multi-step process. This process included measuring and demarcating of the area to be appraised, taking the aerial photographs, resizing and developing the photos, interpreting and editing the images to highlight certain terrestrial features, and issuing blueprints to then be used for cadastral purposes. ANOM, GGI 66492, “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine, à Monsieur le Gouverneur Général de l’Indochine,” May 3, 1920.

⁴⁴² Other local administrators worried about the costs of aerial photography and reconnaissance tasks, approaching the government general for aid. For instance, in October 1929 Jules Bosc, the Resident Superior of Laos, expressed his hope that Indochina’s general budget

of constructing auxiliary airfields and aeronautics facilities for a given mission. “The installation of these auxiliary terrains is itself extremely expensive,” he observed, adding that “very often...they [the future sites] are occupied by extensive rice fields that must be expropriated at a high price.” Of course, the acquired land still needed assorted construction and upkeep, which only increased the total cost. Even with the investment already made in readying and maintaining these auxiliary terrains, Bouché found that such sites were “only rarely usable.” To further complicate matters, he reported, repairs and development work were required after each rainy season.⁴⁴³

Indochina’s weather and climate also restricted the use of aircraft for economic and scientific work. The success of these missions often hinged on having favorable flying conditions and visibility, neither of which could be guaranteed for lengthy periods in the colony. As Lieutenant Colonel Henri Leblanc stated, the start and end of a given aviation operation were “strictly dependent on more or less capricious atmospheric conditions [that are] impossible to predict with certainty.” Bouché attested to this reality while visiting an airfield outside Saigon in March 1925, noting that “the days where photography work is possible are, indeed, very rare.” He estimated that in Cochinchina—and perhaps in the entirety of Indochina as well—only one out of every ten days had weather that was favorable for aerial photography.⁴⁴⁴ Leblanc’s and Bouché’s remarks demonstrate how the clarity of the aerial perspective—so prized by proponents of aerial

would cover the expenses of two aerial photography assignments within the protectorate. According to Bosc, the local budget lacked the six thousand piasters that the operations would likely cost. ANOM, GGI 66545, “Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l’Indochine,” October 23, 1929. A mission order subsequently authorized the Resident’s request. ANOM, GGI 66545, “Ordre de Mission,” February 17, 1930.

⁴⁴³ Bouché, 206.

⁴⁴⁴ ANOM, GGI 66545, “Le Lieutenant-Colonel Leblanc, Commandant l’Aéronautique d’Indochine à Monsieur le Général de Division, Commandant Supérieur des troupes de l’Indochine,” November 9, 1928; Bouché, 205-206.

photography and reconnaissance—could be negated rather easily by clouds, rain, and other atmospheric disruptions.

In an attempt to deal with challenges of the local weather and climate, officials aimed to be pragmatic about the amount of time needed to complete photography and reconnaissance missions. In February 1924, for example, Glaize indicated that an assignment requested by a mining company in Tonkin would require three days of work in good weather. However, he pointed out that it was unlikely that this timeframe could be adhered to because, in northern Tonkin, “the bad days, where we cannot take photographs, are unfortunately much more frequent than the favorable days.”⁴⁴⁵ In another instance, unfavorable weather combined with mechanical problems to severely limit the number of days on which aircraft were able to carry out photography work for a proposed railroad in Cambodia.⁴⁴⁶ Likewise, Monsieur Le Fol, the Resident Superior of Cambodia, wrote to the Governor General in December 1927 with regard to completing an unfinished aerial photography operation in Prey-Veng Province. In the initial attempt, the pilots undertook only two flights in the region—one in February 1927, the other in March—due to atmospheric conditions.⁴⁴⁷

Despite officials’ efforts, the fact remained that the exact costs of an aerial assignment could not be determined until the job was finished. This situation could potentially complicate the general process of organizing, planning, and financing aviation missions in Indochina. Additionally, lengthy delays between the submission of a request

⁴⁴⁵ ANOM, GGI 55502, “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine à Monsieur le Directeur Général de la Cie Minière et Métallurgique de l’Indochine,” February 22, 1924.

⁴⁴⁶ While the Cambodian mission lasted fifty-two days, only eight days were favorable to aerial photography. “Notice,” 17-18.

⁴⁴⁷ ANOM, GGI 66541, “Le Résident Supérieur au Cambodge à Monsieur le Gouverneur Général de l’Indochine,” December 5, 1927.

and the deployment of aircraft affected the cost of the work. This was especially true if the area of interest was distant from a primary airfield; in this case, the personnel and aircraft needed sufficient materials and supplies to be stationed at an auxiliary landing site for an extended period.⁴⁴⁸

Furthermore, even with advances in photography and aeronautics during the 1930s, these technologies were still vulnerable to the tropical climate of Southeast Asia. In his 1939 article, Claeys discussed the value that certain technological developments would have for the future of aerial observation, but he cautioned his readers about the adverse effects that the climate could have on photographic equipment. Claeys noted that Indochina's heat and humidity necessitated that certain measures be taken to protect these materials. Problematically though, such precautions often were not possible for assignments that required rather lengthy amounts of time.⁴⁴⁹

Consideration of the colony's unfavorable climate aside, aeronautics technology could not singlehandedly complete the work of photographing, surveying, and reconnoitering Indochina. Put otherwise, despite the various capabilities of aircraft and the public perception of flight, there were limits to the usage of aviation as a tool for developing, studying, and promoting the colonial landscape. French officials were keenly aware of these technological limitations. During the 1937 Exposition Internationale de Paris, Monsieur F. Blondel, the Chief Engineer for Mines, assessed the practical applications of aviation for mining and geological research in the empire. Discussing the utilization of planes for preparing topographical maps, Blondel commented that aerial

⁴⁴⁸ ANOM, GGI 66545, "Le Lieutenant-Colonel Leblanc, Commandant l'Aéronautique d'Indochine à Monsieur le Général de Division, Commandant Supérieur des troupes de l'Indochine," November 9, 1928; Bouché, 206.

⁴⁴⁹ Claeys, 542.

exploration “must be accompanied by an effort on the ground.” He further judged that the costs of employing aircraft for this purpose remained “rather high.” Moreover, Blondel reported that the current state of aeronautics and photographic technology allowed, for the most part, only large-scale maps to be drawn up from the data collected from the air.⁴⁵⁰ As a final point, he stressed that aerial reconnaissance should never be seen as a substitute for work on the ground: “it is essential...to thoroughly underscore that no one has ever claimed that aerial exploration will entirely replace conventional exploration on the ground.”⁴⁵¹

The fact that Blondel felt it necessary to emphasize this point suggests that exactly such a belief existed in some capacity, likely among a public for whom aviation was still a spectacular and marvelous technology. Indeed, French officials noted the prevalence of this perception. For instance, in a summary article from 1932, Lieutenant Colonel Edouard de Martonne identified what he felt was a misguided and widely held view: “aerial photography is considered today as a universal panacea.” He also contended that many people mistakenly believed that the development of this technology made the task of mapping the entirety of the French empire “no more than child’s play.” Similarly, “ill-informed public opinion” was inclined to think that improvements in aerial photography allowed for small-scale maps to be created with a minimal amount of effort. Yet as de Martonne explained, an assemblage of photographs snapped from above was not tantamount to a map, especially as these aerial images had distortions and errors that required correction via more precise means of analysis. Like Blondel, he emphasized that

⁴⁵⁰ F. Blondel, “L’emploi de l’avion pour l’exploration géologique et minière des pays neufs,” *Congrès de l’Outillage Public et Privé de la France d’Outre-Mer* (Paris: 1938), 544. Blondel was confident that with improved photography technology, maps of a smaller scale could soon be created.

⁴⁵¹ Blondel, 545.

while aviation was valuable for aiding the work occurring on the ground, aircraft should not be expected to replace this terrestrial effort.⁴⁵²

Finally, even though aviation was being utilized for a variety of colonial development projects, certain observers maintained that flight technology should be used more extensively in the empire. In seeking to account for why aviation was not fully being taken advantage of, contemporaries typically cited either government hesitation to employ aircraft for economic purposes or officials' reluctance to provide adequate materials to the colonial squadrons. For example, the author of a 1924 report on the use of aircraft for creating cadastres asserted that this technique was "slowly but surely making strides." However, aerial cadastral work was apparently being held back by a skeptical colonial administration. Since 1920, the study pointed out, cadastre by plane had "encountered numerous obstacles, various objections—justified or not—the principal of which was general and arose from the Administration's fear of embarking on an adventure whose outcome, in the current state, appeared dubious." This writer was optimistic about the future though, foreseeing a closer and more regular collaboration between aviation and government and scientific organizations. According to the report, "the day does not seem far when Aeronautics will be asked to work regularly with cadastre and not in fits and starts."⁴⁵³

Glaize described a different way in which government was hindering the usage of aircraft for economic missions in Indochina. In a memorandum from February 1924, he noted that military aviation received only a meager allotment of resources from France. Additionally, Glaize outlined several measures for improving the colony's air force; this

⁴⁵² Lieutenant-Colonel Edouard de Martonne, "Le congrès d'aéronautique coloniale," *Annales de Géographie* 41, no. 229 (1932): 78-79.

⁴⁵³ "Notice," 34.

list included a point about bolstering this service's materials and personnel. He reasoned that these reinforcements were critical to ensuring that military aviation was capable of "execut[ing] the more and more economic missions that are entrusted to it." Without additional resources, Glaize remarked, the air force soon would be unable to carry out these assignments.⁴⁵⁴

In 1926 Glaize pleaded anew for more materials, again contending that "the demand increases, and military aviation remains the same." In his view, the problem was that the metropolitan government was providing the air force with resources that were both inadequate and unsuited to assisting with colonial development projects. Glaize elaborated on this situation and how it was negatively impacting this service's operation. First, the current financial crisis had caused "certain restrictions...to the application of the decree of January 19, 1920"⁴⁵⁵; according to a military official quoted by Glaize, these restrictions were "doubtless going to require aviation to limit the missions of an economic nature that ordinarily are entrusted to it by the local Governments." Second, aeronautics materials designed for military use were poorly adapted to the various economic tasks that were increasingly being requested in Indochina. Stating that the squadrons needed new types of specialized aircraft, Glaize pointed out that the model of airplane in use—the Breguet 14—was "suitable for many civil missions, but in no way adapted to any one in particular." An upgrade to the colony's flight technology was

⁴⁵⁴ ANOM, GGI 66499, "Note sur l'Aviation en Indochine. Demandée par le Gouvernement Général," [February 3, 1924].

⁴⁵⁵ As mentioned in this dissertation's introduction, the ministerial decree of January 19, 1920, indicated that aside from undertaking military tasks, the squadrons in Indochina should contribute to the "*political and economic* development of the colony [*italics original*]." Exposition Coloniale Internationale, *Les services militaires en Indochine*, 114. See footnote number thirty-four of this dissertation's introduction for additional information about the decree of January 19, 1920.

warranted because, simply put, “the possibilities of aviation in 1926 are no longer what they were in 1919.”⁴⁵⁶

Into the later 1930s, certain observers echoed the previous decade’s complaints about a lack of aeronautics materials for the colonies. For instance, in April 1937 Marcel Griaule described with frustration how researchers in the empire were utilizing aerial photography only haphazardly: “until now...aerial photography is scarcely used but in case of immediate necessity and depending on the chance circumstance of the work or the state of mind of those concerned.” He added that the scientists who employed aerial photography tended to be those who had worked with this technology while serving in some capacity with the air force. Most other researchers were not familiar, or even aware, of the advantages of aerial images.⁴⁵⁷

Reflecting on the problem in its entirety, Griaule noted a disconnect between the public authorities who had “powerful aeronautics resources” at their disposal and the scientific community. As the former were not always well informed about the work of the latter, the public powers tended to view scientific research—and presumably the usage of aerial photography therein—in terms of “speculations with distant returns.” To rectify this situation, he called both for improved coherence and coordination of aerial photography services and for authorities to provide scientists with easier access to this technology. Griaule concluded by arguing for a better understanding of the importance of aerial photography on the part of researchers and the public powers: while scientists needed to request this technology more frequently, government organs needed to readily provide the means for using this valuable tool of study. With this renewed effort, aviation

⁴⁵⁶ ANOM, RSTNF 4280, “Note sur l’Aviation,” [1926].

⁴⁵⁷ Griaule, 470.

would contribute more significantly to “the inventory of our colonial riches in land, plants, and human institutions.”⁴⁵⁸

Conclusion

During the interwar years, aviation was charged with a variety of photography and reconnaissance missions throughout Indochina. While differing in their specifics, the common purpose of these missions was to gain control over the colonial landscape—whether natural, constructed, or human. In doing so, the French hoped to develop, understand, and promote Indochina. From a broader perspective, the utilization of aircraft for economic and scientific tasks demonstrates how aviation technology enabled the French to imagine that they could exercise full control throughout the colony despite the small number of settlers and administrators on the ground.

The employment of aviation for this work did furnish tangible results for the colonial project, as evidenced by the assorted cadastres, land surveys, scientific articles, and photography collections that were produced with the help of aircraft. In the longer term, Biggs, in his analysis of “nation-building” in the Mekong River Delta in the nineteenth and twentieth centuries, states that aerial photography and remote sensing “changed the way that most nation builders and those who read their studies understood and represented the delta.”⁴⁵⁹

As this chapter has shown though, aerial photography and reconnaissance encountered various impediments that literally and metaphorically grounded these services. Once again, the hopes and the realities of aviation diverged. The program of

⁴⁵⁸ Griaule, 469-470, 474.

⁴⁵⁹ Biggs, 12.

employing photography and reconnaissance to develop and understand the colonial landscape—as well as rejuvenate the colonial economy and public interest in Indochina—remained incomplete as France entered the Second World War. Moreover, even as he notes the aforementioned changes in perception and representation, Biggs is careful to point out that the aerial vista and aerial photographs tended to obscure the complexities of the natural and human landscape below, thus limiting the effectiveness of schemes for increased control and better management therein.⁴⁶⁰

The French imagined that aviation, as a multi-purpose tool of empire, was capable of controlling the colonial landscape in Indochina in ways that went beyond reconnaissance and photography. As the following chapter demonstrates, officials viewed aircraft as a powerful and efficient means of asserting French colonial authority.

⁴⁶⁰ Biggs, 109, 124. He describes how this situation unfolded in the Mekong River Delta. “By flattening the landscape into a two-dimensional plane,” Biggs explains, the aerial perspective “may have overemphasized the fractal-like repetition of human life in [Tonkin’s] ‘infinity of *casiers*,’ leading officials...to believe that such designs should be propagated across the Mekong region.” Biggs concludes that “such artificial landscapes failed to halt the delta’s ecological and social unravelings” in this area of the colony.

CHAPTER SIX: DEFENDING INDOCHINA AGAINST INTERNAL THREATS

In 1911 France's General Henri-Nicolas Frey summarized the potential advantages of airpower for European nations seeking to suppress rebellions and control dissent within their empires. Aviation, Frey declared, would provide colonial administrations with "easy, rapid, and continuous police surveillance on barbarian nomadic tribes and on numerous and civilized populations that are, by nature, suspicious, hostile, and quick to revolt." Planes also would permit authorities to intervene "with the speed of a bird of prey" in "threatened or troubled places." If necessary, aircraft—"formidable engines of destruction"—would handily overcome the "imperfect weapons, the cunning, and the ingenious tricks" of the "the so-called 'inferior' races."⁴⁶¹ Regarding Indochina specifically, in 1920 Alfred Guyomar explained how aircraft could function as an effective tool for both quickly putting down revolts and deterring the indigenous populations from carrying out further rebellions in the future. He confidently stated, "the airplane's speed and ease of travel over regions lacking communication, the...moral effect it will have on the indigenous populations, make it an especially powerful weapon in this country."⁴⁶²

Frey's prediction and Guyomar's assertion demonstrate how proponents of empire viewed aviation as a potent and efficient means of quelling anti-colonial activity and bringing about submission. Indeed, throughout the French empire, airpower was used

⁴⁶¹ Henri-Nicolas Frey, *L'Aviation aux armées et aux colonies et autres questions militaires actuelles* (Paris: Berger-Levrault, 1911), 85-86; quoted in Daniel R. Headrick, *Power over Peoples: Technology, Environments, and Western Imperialism, 1400 to the Present* (Princeton, NJ: Princeton University Press, 2010), 302-303.

⁴⁶² Capitaine [Alfred] Guyomar, "L'Aviation en Indochine: Ses moyens, ses buts, ses besoins," brochure éditée et offerte aux amis, défenseurs et protecteurs de l'aviation française aux colonies par le journal *Le Temps d'Asie*, à Saigon (Saigon: Imprimerie Moderne L. Héloury and S. Montégout, 1920), 23.

to bomb and strafe dissident groups, to astonish and coerce the native peoples, and even to reaffirm to the colonized that the French were their benevolent guardians. In this capacity, aviation was intended to function as a symbol of power and an efficient means of asserting colonial authority.⁴⁶³

When utilized in this manner—in other words, to protect Indochina against what this chapter refers to as “internal threats” to colonial rule and stability—airpower was most often sent to rural areas, Laos and the Central Highlands of Annam in particular. This focus on rural areas is perhaps unsurprising, as these regions were judged to be the most troublesome parts of the colony. Of course, colonial authorities also had a larger presence—and thus more resources immediately available—in urban areas.⁴⁶⁴

Furthermore, missions against internal threats involved symbolic displays of power more often than actual deployments of violence. These aerial demonstrations, the majority of which took place in Laos, could include other objectives as well, but the importance that officials placed on the symbolic role of the flights is clear.

Despite the seeming omnipotence and omniscience of aviation—and despite French confidence in the potential of airpower—many of the same problems that encumbered other uses of aircraft also hindered plans for utilizing planes against internal threats. Prominent among these recurrent problems were the challenges of the local

⁴⁶³ This chapter seeks to maintain a distinction between aerial operations that included specific political and propaganda goals and other missions that appear to have resulted from more ad-hoc requests for startling or impressing a local population; this chapter’s focus is on the former type of assignment.

⁴⁶⁴ The military and successive colonial governments had never been able to completely pacify the countryside of Indochina, especially in Tonkin, and had periodically grappled with rural revolts since the beginning of French rule in the second half of the nineteenth century. Michael G. Vann, “Fear and Loathing in French Hanoi: Colonial White Images and Imaginings of ‘Native Violence,’” in *The French Colonial Mind: Violence, Military Encounters, and Colonialism*, vol. 2, ed. Martin Thomas (Lincoln: University of Nebraska Press, 2011), 54-55.

weather and geography, the limits of the era's technology, and a lack of infrastructure. Another concern was competition with Thailand and this country's air service; Thailand also emerged as a significant impediment for the French in matters of civil aviation and, as the next chapter shows, colonial air defense. A final problem—and one that was very troubling for the French if they wanted to appear as powerful colonizers whose position demanded obedience—was that planes did not always seem to have the coercive effect that the French imagined they would. Taken together, these different issues effectively limited the extent to which aviation could take flight as a tool of colonial control.

Airpower as a Means of Colonial Control

In the late nineteenth century, new technologies in the fields of medicine, transportation, and armaments provided European imperialists with a safer and cheaper means of establishing profitable colonial holdings.⁴⁶⁵ However, as the century came to a close, indigenous populations began to gain access to certain of these technologies, especially weapons, and utilized them to resist colonial authority. Accordingly, colonizers sought to develop new technologies in order to remain in a dominant position. While colonial territories had served as laboratories for testing and refining new methods of organized violence even before the First World War, this practice only intensified in the interwar years as wartime advances in weapons technology were put to lethal use overseas. In addition, European nations employed new weaponry to police their empires partly because the colonial landscape—distant from Europe and subject to fewer national

⁴⁶⁵ Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (New York: Oxford University Press, 1981).

and international regulations—was considered to be a more acceptable setting than the European continent for experimentation.⁴⁶⁶

Daniel R. Headrick contends that the “most striking” of the technological innovations for maintaining control within European empires was the airplane, which “promised to give [colonizers] back the advantage they were losing on the ground.” Aviation allowed colonial powers to maintain authority at minimal cost, the “maximum projection of and minimum actual use of force,” according to historian Priya Satia.⁴⁶⁷ Martin Thomas likewise argues that aircraft—the arch example of colonial powers seeking to effectively and cheaply maintain their authority—radically altered the political, military, and cultural significance of the colonial airspace.⁴⁶⁸

Regarding France and its colonies, Jean-Baptiste Manchon observes that the French expected that aircraft would greatly benefit the empire in terms of “prestige, force, and development.” Initially, colonial aviation often was linked to local military operations, but, by the mid-1930s, the “political usage” of aviation had both intensified

⁴⁶⁶ Headrick, *Power over Peoples*, 9, 302; Martin Thomas, “Introduction: Mapping Violence onto French Colonial Minds,” in *The French Colonial Mind: Violence, Military Encounters, and Colonialism*, vol. 2, ed. Martin Thomas (Lincoln: University of Nebraska Press, 2011), xxii-xxiv; Emmanuel Chadeau, *Le Rêve et la Puissance : L'Avion et son Siècle* (Paris : Fayard, 1996), 155. As Martin Thomas points out, “it was no coincidence that imperial conflicts of the 1920s became at once the preferred sites of experimentation for new weapons of war...and the dumping ground for surplus military hardware left over from the years 1914-1918.” Thomas, “Introduction: Mapping Violence onto French Colonial Minds,” xxiv.

⁴⁶⁷ Headrick, *Power over Peoples*, 5, 9; Priya Satia, “The Defense of Inhumanity: Air Control and the British Idea of Arabia,” *The American Historical Review* 111, no. 1 (February 2006): 30.

⁴⁶⁸ Thomas, “Introduction: Mapping Violence onto French Colonial Minds,” xxiv. “Politically,” Thomas explains, “mastery of the air emphasized the apparent superiority of Western industrial modernism, underscoring the right to rule of imperial nations.” From a military perspective, aircraft, as a vehicle for projecting force and inflicting damage, provided a new means of gaining strategic advantage. Lastly, aviation created a new type of cultural space that “transcended the temporal divide between initial imposition of colonial authority through the threat, or use, of indiscriminate violence and the subsequent maintenance of imperial power through more selective violence targeted against dissident populations, whether as an end in itself or as an instrument of broader deterrence.”

and diversified across the empire.⁴⁶⁹ This progression was evident in Indochina as well, although the use of aircraft for multipurpose missions was already occurring in the early 1920s. For the next two decades, the belief persisted that aviation could serve as a “multipurpose tool” within Indochina in “all conceivable eventualities,” able to intervene swiftly and across vast distances to provide aid to French forces.⁴⁷⁰

Deploying Airpower in Bombing and Strafing Missions in Indochina

By the mid-1920s, French officials were requesting that military planes be put to use in policing operations to stamp out anti-colonial activity in Indochina. There does not appear to be a scholarly consensus regarding exactly when aircraft were first charged with these missions, but the earliest instance likely occurred in the Central Highlands of Annam in the spring of 1924. This region had been causing the French difficulties earlier in the year, but the use of violent force was not authorized until the spring.⁴⁷¹ By this point in the year, a group of “Moï” people in and around the village of Konkroi had made it known to the local administration that they vehemently opposed the planned construction of a road through their territory.⁴⁷² After ground troops proved unable to

⁴⁶⁹ Jean-Baptiste Manchon, *L’aéronautique militaire française outre-mer, 1911-1939* (Paris: Presses de l’université Paris-Sorbonne, 2013), 369.

⁴⁷⁰ SHAA, 2B33/D1, “Le Ministre des Colonies à Monsieur le Ministre de l’Air,” November 27, 1934.

⁴⁷¹ In January 1924 the Resident Superior of Annam sought to use aviation for a dual-purpose mission. First, the air force was tasked with conducting a survey and taking photographs of the proposed layout of Colonial Route 14 from the Central Highlands to the coast of Annam and south toward Cochinchina. Second, aircraft were to conduct several bombing exercises, which had “no other goal than to intimidate the populations of certain regions where our authority still remains contested.” ANOM, GGI 66502, “Le Résident Supérieur en Annam à Monsieur le Gouverneur Général de l’Indochine,” January 14, 1924. While the Governor General approved the aerial photography mission, he wrote that he could not authorize the bombing exercises. ANOM, GGI 66502, “Ordre de Service,” January 29, 1924.

⁴⁷² “Moï” translates to “slave” or “savage” in Vietnamese. Pierre Brocheux and Daniel Hémery, *Indochina: An Ambiguous Colonization, 1858-1954*, trans. Ly Lan Dill Klein, with Eric

quell the protests, the Resident Superior requested that two aircraft be sent to bomb Konkroi as a demonstration of French power and colonial authority. In an attempt to limit the loss of life, the colonial administration warned the local population that Konkroi was to be bombed on April 11. The bombardment that followed destroyed between seventy and eighty huts but failed to stop the rebellion. After a group of Mois subsequently invaded a neighboring village that was supposedly under French protection, another air strike was ordered on Konkroi for April 18. This second bombing, which came without advanced notice, succeeded where the prior operation had failed. The following day, troops entered the village unimpeded.⁴⁷³

For the rest of the decade, the Central Highlands remained an area of concern for authorities. Most notably, in March 1929 an air strike that targeted several villages was ordered in response to the local population's ongoing hostility to French efforts to develop transportation networks and profitable coffee, tea, and rubber plantations in the region.⁴⁷⁴ This particular mission was one of the few instances during the interwar years in which French military and colonial officials were candid about deploying aircraft specifically to attack Indochina's native populations. Between March 19 and March 26, aircraft dropped thirty-two bombs on villages in the regions of Ankhé and Dak To as part of a joint operation with French forces on the ground. During these raids, the aircrews

Jennings, Nora Taylor, and Noémi Tousignant (Berkeley: University of California Press, 2009), 285.

⁴⁷³ Manchon, 372-373; Christophe Cony and Michel Ledet, *L'Aviation française en Indochine: Des origines à 1945* (Outreau: Lela Presse, 2012), 95-97.

⁴⁷⁴ Geoffrey C. Gunn, *Rebellion in Laos: Peasants and Politics in a Colonial Backwater* (Bangkok: White Lotus Press and École française d'Extrême-Orient, 2003), 127; Gerald Cannon Hickey, *Sons of the Mountains: Ethnohistory of the Vietnamese Central Highlands to 1954* (New Haven, CT: Yale University Press, 1982), 319-321.

supposedly were careful to avoid hitting those peoples who were considered to not be associated with the rebellious elements of the population.⁴⁷⁵

From the French perspective, this mission was judged to have been a complete success. An undated, unsigned report confidently stated that “without a doubt the moral effect was considerable, especially because of the speed with which the repression took place.”⁴⁷⁶ Other reports echoed this conclusion. In a letter composed in April 1929, the Resident Superior of Annam wrote that the airplanes provided “very effective assistance” to the local colonial militia. “These [flying] machines,” he noted, “have shown themselves to be the most powerful auxiliary of a vigorous repression.” The Resident emphasized how quickly the dissidents submitted when faced with a combination of air and land forces. He observed that various groups that in the past had staunchly opposed the French presence in the region capitulated “almost immediately” in the wake of the March 1929 mission.⁴⁷⁷

Into the next decade, the French continued to rely on bombing and strafing operations as a purportedly efficient and swift method of dealing with anti-colonial activity within Indochina. According to one scholar, aircraft “played a very important role in the repression of the numerous rebellions of the 1930s.”⁴⁷⁸ Perhaps most notably, the air force launched reprisals following the Yen Bay uprising of 1930. The military was able to rapidly suppress a mutiny by Vietnamese infantrymen stationed at the Yen Bay

⁴⁷⁵ ANOM, GGI 66545, “Télégramme Officiel. Gougal à Secregal,” March 15, 1929; ANOM, GGI 66545, “Mission aéronautique du Kontum,” March 29, 1929.

⁴⁷⁶ This document is found in a folder labeled “Gouvernement Général de l’Indochine. Missions d’aviation: Années 1928-1929” in ANOM, GGI 66545.

⁴⁷⁷ ANOM, GGI 66545, “Le Résident Supérieur en Annam à Monsieur le Gouverneur Général de l’Indochine,” April 22, 1929.

⁴⁷⁸ Truong Buu Lâm, *Colonialism Experienced: Vietnamese Writings on Colonialism, 1900-1931* (Ann Arbor: University of Michigan Press, 2000), 20.

garrison on February 10, 1930. However, this initial effort failed to stop the insurgent activity, and the colonial administration faced additional anti-colonial manifestations. On February 16, French aircraft attacked the Tonkinese village of Co Am, considered to be a rebel refuge, dropping fifty-seven bombs and strafing the villagers; the 420 kilograms of explosives that peppered this site completely destroyed the village.⁴⁷⁹ Then, during the spring, bombers and army patrols were dispatched to deliver reprisals on other villages suspected of supporting insurgent activities. A cycle of indigenous protests and police retribution continued into the fall of 1930. By September the colonial administration determined that the provinces of Nghe An and Ha Tinh were ungovernable. This judgment was followed by the implementation of a program of focused, systematic reprisals that included bombing villages in these neighboring provinces and strafing peasant demonstrators and rebel units in the region.⁴⁸⁰

In a more specific instance that autumn, a column of between four thousand and six thousand villagers marched to Vinh to protest excessive taxes. On September 1 the Resident Superior of Annam requested that military planes be deployed to the city to assist with handling the demonstration. Sent to Vinh on September 12, these aircraft subsequently bombed the protestors; though unsure if the group was armed, local administrators were certain that the crowd was not responding to officials' orders to halt the march. To warn the demonstrators, the airplanes first dropped projectiles in front of the column. Having failed to dissuade the protestors from further activity, the aircraft then launched a bombardment that killed 157 people and caused the remaining

⁴⁷⁹ Lâm, 36, n.32; Manchon, 374

⁴⁸⁰ Martin Thomas, *The French Empire between the Wars: Imperialism, Politics and Society* (Manchester: Manchester University Press, 2005), 229; Brocheux and Hémery, 318. During September, aircraft assisted the ground forces in other military tasks as well, including reconnaissance, courier, and resupply missions. Manchon, 374.

demonstrators to scatter. When villagers returned to the site in the evening to bury the dead, the French mistook the action for another demonstration and ordered a second bombing mission that killed approximately fifteen people.⁴⁸¹

Airpower was utilized in a similar capacity outside of Annam and Tonkin, but such operations were much less frequent. On June 6, 1931, for instance, three planes were dispatched to Cambodia to bomb several Mois villages and strafe a local trail leading toward Annam. This action was intended as a reprisal for the late-May murder of a local French official by an armed group of tribesmen.⁴⁸²

The examples from this section illustrate how aviation was put to use in Indochina as a tool of suppressing what the French interpreted as insurgent activity. Aircraft were utilized for this purpose to a greater extent elsewhere in the French empire, namely, Morocco and the French mandate in Syria.⁴⁸³ Ultimately though, French officials determined that a strategy of colonial policing that involved the systematic usage of aircraft, such as that of Great Britain in Iraq,⁴⁸⁴ was impractical and unnecessary, with the

⁴⁸¹ Martin Bernal, "The Nghe-Tinh Soviet Movement 1930-1931," *Past & Present*, no. 92 (August 1981): 152; Michèle Kahn, *La Tragédie de l'Émeraude* (Monaco: Éditions du Rocher, 2007), 193; Manchon, 374. Manchon places the number of protestors at four thousand while Kahn states that the group was larger, providing the figure of five thousand to six thousand. Likewise, Martin Bernal reports a lower number of demonstrators killed, citing a figure of approximately 140 people.

⁴⁸² Cony and Ledet, 213; Gunn, 121. This mission quieted the region only temporarily, as the area's dissident groups would cause the colonial administration problems on several other occasions. Cony and Ledet, 213.

⁴⁸³ In Morocco's Rif region, France had been drawn into the ongoing clash between Spanish and Berber forces by the summer of 1925. Joining in Spain's efforts to quell the revolt, the French military favored the usage of ground forces, with bombers playing a supporting role. In the Levant, when a rebellion erupted in Syria in July 1925, the military deployed aircraft to support the land army. Amidst this unrest, the air force bombed and strafed dissident populations—at times indiscriminately and without warning—in order to suppress the possibility of further insurgency. David E. Omissi, *Air Power and Colonial Control: The Royal Air Force, 1919-1939* (Manchester: Manchester University Press, 1990), 186, 191-195.

⁴⁸⁴ During the interwar years, the British air force (R.A.F.) was given the task of policing the territory of this recently acquired mandate. The R.A.F. thus established a network of military

possible exception of the Levant. Manchon identifies several reasons for why French colonial authorities never implemented such a strategy on a large scale: an inadequate supply of aeronautics materials; the immense size and purported impenetrability of the regions that would require aerial surveillance; and the perceived docility of the local peoples. Thus aircraft primarily played a supporting role for ground forces during colonial policing missions. Moreover, David E. Omissi notes that this reliance on ground forces for regular policing duties was partly a result of the fact that France lacked an independent air force in name until April 1933 and in actuality—proper organization and a defined role—until the following July.⁴⁸⁵

Deploying Airpower as a Symbol of Colonial Authority in Indochina

Emmanuel Chadeau points out that between 1919 and the early 1930s, military aviation was most often employed in the French empire as a tool of propaganda and as a symbol of the power and the reach of colonial authority.⁴⁸⁶ As the French believed that aviation represented their control and technological prowess in Indochina, officials utilized aircraft to coerce and astonish the indigenous peoples.⁴⁸⁷ Aviation was frequently

bases and patrolled the desert terrain, bombarding local villages and tribes as needed in order to quell unrest and subversive actions. Satia, 16.

⁴⁸⁵ Manchon, 382-383, 370; Omissi, 187. Omissi explains that as the French air force remained a branch of the army up to this point in the 1930s, its officers generally had less influence among military strategists than was the case for officers in the R.A.F., which was established as an independent service arm in 1918.

⁴⁸⁶ Chadeau, 157.

⁴⁸⁷ The French had in fact used a similar tactic in Southeast Asia in the late eighteenth century. In January 1791 amidst an ongoing, bloody territorial dispute in Vietnam, Catholic missionary Pigneau de Béhaine tasked a group of Frenchmen in Saigon with launching a Montgolfier hot-air balloon over the city; Pigneau de Béhaine had come to align himself in the late 1770s with Nguyen Anh, the lone surviving member of the massacred Nguyen dynasty of southern Vietnam. This aerial demonstration was intended both to impress the local population and spread terror among the Tay-Son rebels who had been active in Vietnam since 1770. General L.-M. Chassin, "Débuts de l'Aviation en Indochine," *Forces aériennes françaises* 110 (December

used for this purpose in Laos or in the Central Highlands of Annam, regions where the French acutely felt the need to remind dissident groups that colonial power radiated far beyond the colony's political and commercial centers.

It is worth noting that airplane sightings had an effect on the Europeans in the colony as well. This point serves as a reminder that in the 1920s and 1930s, aviation was still a technology with which most people did not regularly have direct contact. Thus it was not uncommon for the appearance of an aircraft to spark public interest and even to amaze onlookers. For example, the French Resident in the Cambodian city of Battambang described a mid-June 1920 landing at the local airfield. This official, a Monsieur Lambert, observed that the city's European and indigenous populations gathered *en masse* around the airfield to welcome the two-person crew. The following day, a crowd of several thousand people convened to watch the plane's departure. "Soon the aircraft disappeared in the clouds," Lambert recounted, "leaving each person with the memory of an unforgettable and unprecedented spectacle."⁴⁸⁸

From the early 1920s, French officials attested to the value of aviation as a potent source of French prestige and colonial authority. For instance, Battalion Chief Roux remarked in January 1923 that airplanes were an "excellent and productive manifestation of our superiority." Three years later Jules Bosc, the Resident Superior of Laos, referred to aircraft as an "admirable instrument of propaganda" that produced both awe and submission among Indochina's native populations. He wrote of "the considerable and

1955), 1004; Cony and Ledet, 8-9, 12. Additionally, the following year French engineer Victor Olivier de Puymanel, working in the service of Nguyen Anh, suggested to the royal that a balloon could be used to drop incendiary materials on the besieged rebel city of Qui Nhon. Nguyen Anh dismissed this idea, however, believing that such an operation would essentially result in a massacre of the city's population. Cony and Ledet, 12.

⁴⁸⁸ ANOM, GGI 66499, "L'Administrateur des Services Civils, Résident de Battambang à Monsieur le Résident Supérieur au Cambodge," June 18, 1920.

occasionally prodigious effect” of aviation on the “mind of the various races of the country, those who live in the valleys as well as the semi-independent—and at times dissident and rebellious—groups who remain in the upper mountainous region.” Bosc subsequently reiterated this opinion, praising flight technology for making a significant contribution to the “growth of our authority and our prestige among the indigenous populations that inhabit the most remote parts of French Asia.” He went so far as to describe aviation as the embodiment of the colonizers’ self-appointed position of civilizing protector: aircraft brought to the native populations “a concrete vision of the powerful guardianship that assures their security and protects them from the dangers that once threatened their lives and their homes.” Finally, at the end of January 1935, Captain Marcel Puypéroux stated that the act of traveling by air was itself a tool of colonial propaganda. As Puypéroux explained, air transport of influential French and indigenous passengers had “a considerable effect on the Annamite as well as Laotian or Montagnard populations.”⁴⁸⁹

Aviation was employed for these symbolic purposes as early as the spring of 1920.⁴⁹⁰ In general, the colonial administration judged these operations to be an effective means of asserting their authority. For instance, on December 22, 1923, Resident Superior Bosc wrote that the French needed to “once again to display our flag” in a region of Upper Laos that bordered Burma. With an interest in “show[ing] our air force to

⁴⁸⁹ ANOM, RSL J/2, “Le Chef de Bataillon Roux, Commandant le 5ème Territoire Militaire à Monsieur le Résident Supérieur au Laos,” January 10, 1923; ANOM, GGI 66541, “Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l’Indochine,” October 21, 1926; ANOM, GGI 66545, “Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l’Indochine,” December 25, 1930; SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935.

⁴⁹⁰ Christophe Cony and Michel Ledet reference missions from April and May 1920 in which aircraft were utilized to demonstrate the power of French colonial authority. Cony and Ledet, 41.

the populations who still are ignorant of it,” Bosc cited the symbolic power of aviation: “these peaceful demonstrations of the genius and strength of France grab the attention of the indigenous populations and have a lasting impact on their state of mind and on the political situation of the country.”⁴⁹¹ Carried out in early 1924, this mission had purportedly left “a profound impression” throughout Laos and had demonstrated the “excellent qualities and mastery of...military aviation.”⁴⁹² In December 1924 the French Resident in Kontum described the native peoples’ response to the sight of an aircraft in a similar manner. He noted that the appearance of airplanes in the southern region of Kontum had made “a substantial impression on the rebellious villages.” The Resident added that no further action was needed “to overcome the last hesitations of some of them and bring about their submission.”⁴⁹³

Into the 1930s, the French continued to praise aviation as a valuable tool of colonial propaganda and coercion. For example, Louis Ménès declared that his January 1930 seaplane voyage to Laos had amazed the indigenous populations situated along the entirety of his route. Recounting this round-trip journey from Saigon to Luang Prabang, he claimed that local peoples were both stupefied and dazzled by the sight of his aircraft and the machine’s ability to land on water. Furthermore, local officials professed that French prestige among the Laotians would be “considerably enhanced if similar

⁴⁹¹ ANOM, GGI 66492, “[Le Résident Supérieur au Laos à] Monsieur le Gouverneur Général de l’Indochine,” December 22, 1923.

⁴⁹² ANOM, GGI 66499, “Extrait du Rapport, fait au nom de la Commission des Finances chargée d’examiner le projet de Lois portant fixation du Budget Général de l’Exercice 1926 (Ministère des Colonies et Budgets Locaux des Colonies) par M. Léon Archimbaud, Député,” [July 12, 1925; February 4, 1926].

⁴⁹³ ANOM, GGI 66502, “Note Postale: Le Résident Supérieur à Kontum à Monsieur le Résident Supérieur en Annam,” December 24, 1924. This document may in fact have been referencing the bombing mission from the spring of 1924 in the Kontum region of the Central Highlands. The operation cited by the Resident occurred in an area south of Ankhé, which was the same general location as the village of Konkroi.

demonstrations occurred more frequently.”⁴⁹⁴ In another instance, Ménès described a June 1930 aerial mission in which he dropped ten thousand leaflets on a sizeable group that was protesting against the colonial administration in Cochinchina. The circular—which apparently was effective in intimidating the demonstrators—contained the following message: “Today I throw paper, tomorrow I will drop bombs if you are not well-behaved!”⁴⁹⁵ Elsewhere in the colony, Captain Puypéroux, while in Vinh in 1933 as part of a joint operation between air and ground forces, spoke with the province’s Resident about how low-flying aircraft could be used to deter insurgents from further disrupting the work of the local administration. Later, Puypéroux dispatched three airplanes to fly over the region. “The result was, so to speak, immediate,” he stated. “Certain excited minds calmed down and...taxes came in more easily.”⁴⁹⁶

Multi-Purpose Aviation Missions in Indochina

Finally, aviation missions did at times have more than one goal and, therefore, were not solely about coercing, intimidating, or dumfounding the native populations. Such multi-purpose flights typically included either photography work for colonial development programs or policing-related surveillance and reconnaissance of the colonized peoples.⁴⁹⁷ Aside from Laos, the area in which this type of mission occurred

⁴⁹⁴ SHAA, 2B33/D7, “Le Lieutenant de Vaisseau Ménès en mission en Indochine à Monsieur le Lieutenant-Colonel, Commandant l’Aéronautique d’Indochine,” February 2, 1930”

⁴⁹⁵ Capitaine de Vaisseau Louis Ménès, *Sous l’aile du calao* (Paris: Association pour la Recherche de Documentation sur l’Histoire de l’Aéronautique Navale, 1997), 125.

⁴⁹⁶ SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935.

⁴⁹⁷ According to Thomas, this collecting of “image intelligence” was a technique developed prior to 1914 and employed most effectively in rural areas of the British and French empires in the Middle East and North Africa during the interwar period. In addition to the “essential intelligence” provided by aerial photographs of hostile forces located in otherwise

most frequently was the Central Highlands. Between 1923 and 1927, aircraft were deployed to this region of Annam to assist with mapping and photographing for colonial road projects. In addition to providing Public Works engineers with key information, these missions included low-altitude flyovers that were intended to astonish the people below.⁴⁹⁸ In May 1925, for instance, Governor General Monguillot informed the Minister of the Colonies of the success of a recent aerial operation in the Kontum region of Annam. Initially tasked with reconnaissance of the planned layout of Colonial Route 14, the aircrews were also instructed to conduct a flyover above several dissident Mois villages. While local administrators had made progress in civilizing the area's indigenous populations, certain groups persisted in demonstrating a "fierce independence" that colonial authorities found unacceptable. The Governor General wrote that aircraft were ordered to this area to "inspire a salutary fear and bring about their submission."⁴⁹⁹ This comment reflects how the French tended to see the modern technology of flight as being able to accomplish in the empire certain goals that otherwise and hitherto remained

inaccessible terrain, reconnaissance aircraft delivered "valuable evidence" regarding the movements of people and animals, the location of water sources, and locust infestations. Summarizing the benefits that aircraft intelligence brought to colonial security forces in the British and French empires, Thomas explains that this technology "extended the range of situational intelligence gathering, literally providing a view of events in the rural interior sometimes simultaneously, or even in advance, of intelligence information relayed at ground level by telegraph, land line, or courier by district officers, Arab affairs specialists, or police outposts." Martin Thomas, *Empires of Intelligence: Security Services and Colonial Disorder after 1914* (Berkeley: University of California Press, 2008), 23-24.

⁴⁹⁸ SHAA, 2B33/D6, "Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine," January 31, 1935.

⁴⁹⁹ ANOM, GGI 66502, "Le Gouverneur Général à Monsieur le Ministre des Colonies," May 28, 1925. In another example from the Central Highlands during this part of the 1920s, the Resident Superior in Annam sought authorization for an aerial survey of the Ankhé plateau in October 1927. This mission was charged with the additional task of helping to pacify several dissident villages that posed security concerns for communications between the towns of Ankhé and Pleiku. ANOM, GGI 66541, "Le Résident Supérieur en Annam à Monsieur le Gouverneur Général de l'Indochine," October 22, 1927.

unachievable; in this particular case, the goal was bringing a particular group of insurgent villagers to heel.

Multi-purpose missions were carried out in this section of Indochina into the mid-1930s. In June and August of 1934, for example, Puypéroux took part in what he later referred to as “economic and political missions” along the border between the Central Highlands and South Central Coast regions of Annam. At the request of Quang-Ngai province’s Resident, three airplanes were sent to a forward post that had recently been attacked by a group of Moïs peoples. This aerial mission and an ensuing air-and-land operation—each of which the French proclaimed to be a resounding success—furnished officials with information regarding the most practical path for a future route between this post and a neighboring position. In addition, the aircraft “made an immeasurable impact among the hostile Moïs populations,” as local villages subsequently appeared much less antagonistic to colonial authorities.⁵⁰⁰

Aside from their utilization in the Central Highlands, military aircraft were deployed for multi-purpose assignments throughout Laos during the 1920s and early 1930s. In fact, Laos appears to have been the area of Indochina in which aviation was called on most frequently for these missions. This observation is perhaps unsurprising when considering the geographical and administrative challenges that the French faced in establishing and maintaining a protectorate in this part of Indochina. Indeed, this expansive territory consisted of large portions of heavily forested, mountainous terrain. Moreover, the region’s historical capital of Luang Prabang was distant from both Hanoi and Saigon, and the number of French in Laos was miniscule compared to their presence

⁵⁰⁰ SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935.

elsewhere in Indochina.⁵⁰¹ The reality of this situation hints at why officials saw in aviation an efficient tool of colonial control that could be frequently used for, and extremely beneficial to, French efforts in Laos.

Not long after a viable aviation presence had been established in Indochina, officials were requesting that aircraft be deployed to Laos for multi-purpose missions. The first such operation was ordered in the fall of 1920 and took place in January 1921; this mission was scheduled to coincide with the Hanoi-to-Saigon aerial tour analyzed in chapter two of this dissertation. According to a mission order of November 6, 1920, this operation involved reconnoitering several airfields in Upper Laos and “exercis[ing]...a moral action on the [local] méos populations.”⁵⁰² Following the mission’s completion in January, various officials remarked that the aircraft had both astonished and dazzled the native peoples. A telegram stated that the airplanes’ mid-January landing on the Plain of Jars outside Xieng Khouang had caused an “admiring and fearful stupor” to spread among the crowd of indigenous onlookers. Over the next few days, interim Governor General Maurice Le Gallen observed, Méo delegations flocked to Xieng Khouang to affirm their loyalty and declare their absolute submission.⁵⁰³ Similarly, Commissioner Barthélémy, the French administrator in Xieng Khouang, reported to Resident Superior Bosc that the arrival of the planes had had “a profound impression and moral impact of

⁵⁰¹ For instance, in 1921 there were just 360 French in Laos, a much lower figure than in the four parts of Indochina: 11,429 in Cochinchina, 9,643 in Tonkin, 2,125 in Annam, and 1,515 in Cambodia. Brocheux and Hémery, 86, 183.

⁵⁰² ANOM 66492, “Ordre de Mission,” November 6, 1920. This document is found in an undated folder, “Aéronautique d’Indochine. Compte-rendu des missions d’aviation. 1. du Haut Laos 2. du voyage Hanoi—Saigon,” that contains different documents recapping both the Upper Laos mission and the aerial tour from Hanoi to Saigon. The term “Méo” refers to the Hmong peoples of the mountainous areas of Laos. The term “Méo” refers to the Hmong peoples of the mountainous areas of Laos.

⁵⁰³ ANOM, GGI 66492, “Télégramme Officiel. Gouverneur Général à Colonies,” January 17, 1921; ANOM, GGI 66492, “Saigon [à] Colonies, Paris,” January 27, 1921.

considerable significance” on the area’s inhabitants. Barthélémy also judged that, in terms of French influence in the region, this mission had been able to achieve in several days what the local administration had needed twenty years to accomplish.⁵⁰⁴

Considering the political unrest in this part of Indochina, this assessment may not have been much of an exaggeration.⁵⁰⁵

Along the Laos-Tonkin border as well, aircraft were utilized for multi-purpose missions in the early 1920s. In particular, François Glaize, the head of the air force, sought to have aircraft deployed to this region in December 1922 to inspect the airfields at Sonla and Dien Bien Phu. While stating that the primary goal related to developing air travel to this part of Indochina, Glaize pointed out that sending planes to the Laos-Tonkin border would also be beneficial for the colonial administration in their efforts to deal with local dissident groups.⁵⁰⁶

The French would indeed take advantage of this opportunity to use aviation as a vehicle for demonstrating the superiority of the colonizers and their technology.

Recounting this operation, Battalion Chief Roux reported that a trio of planes had arrived at the Dien Bien Phu airfield on December 26, and the aircrews spent the next few days

⁵⁰⁴ ANOM, GGI 66492, “Télégramme Officiel. Résident Supérieur au Laos à Gouverneur Général,” January 25, 1921; ANOM, GGI 66492, “Aéronautique d’Indochine. Compte-rendu des missions d’aviation. 1. du Haut Laos 2. du voyage Hanoi—Saigon,” n.d.

⁵⁰⁵ Bosc wrote that this region had a history of political instability and violent disturbances. A two-year long insurrection erupted in 1919, and order was restored only after a series of lengthy, costly military operations. ANOM, GGI 66502, “Rapport à Monsieur le Gouverneur Général de l’Indochine,” March 4, 1925. This insurrection was likely a product of—directly related to—the Méo revolt that began in Chinese Yunnan in January 1918 and spread to Indochina in June. By the end of October 1919, a widespread rebellion under the leadership of a shaman named Batchai had broken out. The French succeeded in capturing and executing the shaman in 1922. Brocheux and Hémery, 284-285.

⁵⁰⁶ ANOM, GGI 66492, “Le Chef de Bataillon Glaize, Commandant l’Aéronautique d’Indochine à Monsieur le Général de Division, Commandant Supérieur des Troupes du Groupe de l’Indochine,” November 29, 1922.

carrying out several tasks.⁵⁰⁷ These jobs included giving airplane rides on request—Europeans first, then indigenes—and conducting an aerial survey for a future landing field. Roux described how the native inhabitants were stupefied by the aircraft, by the speed and apparent omnipotence of a device that they did not understand. The local peoples, he explained, were convinced that the airplane could travel wherever it chose in an “unimaginably short amount of time” and that “nothing would be able to escape its watchful eye and its blows.” Roux added that the propaganda effect of this operation was “even better than anything it had been possible to imagine.” He explained that “the ease, the sureness with which the takeoffs and the landings took place, the steadiness with which the airplanes came to align...one near the other a few meters from the spectators, gave the natives the impression that these enormous machines were completely subservient to us in every situation.”⁵⁰⁸ Of course, Roux’s appraisal was the opinion of an enthusiastic French observer. Accordingly, this commentary reveals more about what the French imagined that aviation was doing as a tool of colonial authority than what planes were actually achieving in this role.

As a final point of praise, Roux indicated that this operation was able to coerce the Méo peoples into respecting and accepting the authority of the French. On the request of an administrative official in Luang Prabang, one of the airplanes carried out a low-altitude flyover above three dissident villages on December 29, 1922. According to Roux,

⁵⁰⁷ In discussing what appears to be this same mission, Cony and Ledet note that the operation began with a departure from Hanoi on December 24 and lasted until the return flight from Dien Bien Phu on January 2, 1923. Cony and Ledet, 77.

⁵⁰⁸ ANOM, RSL J/2, “Le Chef de Bataillon Roux, Commandant le 5ème Territoire Militaire à Monsieur le Résident Supérieur au Laos,” January 10, 1923.

this action succeeded in getting the attention of the Méo villagers; the flight was followed by a display of submission on the part of these previously disobedient groups.⁵⁰⁹

Multi-purpose aviation missions continued to be deployed in Laos as the 1920s progressed. The tasks of one such operation from late January 1925 included aerial demonstrations “of a political interest” above an area whose population was being harassed by groups of malefactors who had entered the protectorate from China.⁵¹⁰ “The more or less complete absence of any effective authority,” Resident Superior Bosc explained, “offers these opium smugglers and brush pirates a place of refuge of which they never fail to take full advantage.”⁵¹¹ Bosc believed that a symbolic display of French airpower would reassure the native peoples in the area that the colonial administration was fully capable of keeping them safe from foreign threats.⁵¹² The Resident was thus pleased to report the mission’s success in this regard, writing that the aircraft had “a profound impact” everywhere that the aircrews traveled. He avowed that every population encountered was “joyful, eager to gaze at the great birds in the sky or on the ground...that materialized for our distant protégés, in a form that was all the more striking because its existence was shown to them for the first time.” As a manifestation of “the force, the power, and the genius of the grand protector Nation,” aviation had yet again

⁵⁰⁹ ANOM, RSL J/2, “Le Chef de Bataillon Roux, Commandant le 5ème Territoire Militaire à Monsieur le Résident Supérieur au Laos,” January 10, 1923.

⁵¹⁰ The two aircraft that took part in this mission were also charged with transporting Bosc from Vientiane to “the extreme confines of the Colony” and with collecting specific geographic and topographic data.

⁵¹¹ ANOM, GGI 66502, “Rapport à Monsieur le Gouverneur Général de l’Indochine,” March 4, 1925.

⁵¹² Captain Puypéroux would later recount that between 1921 and 1929, aircraft had on numerous occasions been deployed along the Sino-Indochinese frontier as an effective means of dissuading bands of Chinese marauders from making raids into French territory. SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935.

provided “the most favorable results for the influence and prestige of the French authority.”⁵¹³

Resident Bosc requested another mission in October of the following year. Specifically, he aimed to have military planes provide assistance in the Bolovens Plateau area of southern Laos. According to Bosc, aircraft were needed to examine—and possibly to deal with—an ongoing situation in which a rebel named Komadam was attempting to stir up further anti-colonial sentiment among several dissident tribes.⁵¹⁴ For the sake of efficiency, Governor General Varenne planned for two aircraft that were scheduled to photograph of the region’s rapids between January and February 1927 to survey the disturbances in the Bolovens Plateau after completing this photography work.⁵¹⁵

This whole operation came to be postponed, though. With the administration still concerned about the political troubles in this area, in September 1927 Bosc again sought authorization for what was envisioned as a similar type of dual-purpose mission. According to telegrams exchanged in February 1928, this operation, too, was temporarily shelved. While it was realized that equipment problems would make the aerial photography work impossible, weather reports indicated that local conditions would restrict visibility in the area inhabited by the dissident groups.⁵¹⁶

⁵¹³ ANOM, GGI 66502, “Rapport à Monsieur le Gouverneur Général de l’Indochine,” March 4, 1925.

⁵¹⁴ ANOM, GGI 66541, “Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l’Indochine,” October 21, 1926. A telegram from the Resident Superior to the Governor General mentioned that the assignment was at first intended to be a topographic study of the dissident region, but the mission took on a “political character” as well. ANOM, GGI 66541, “Télégramme Officiel. Résuper à Gougal,” January 20, 1927.

⁵¹⁵ ANOM, “Le Gouverneur Général de l’Indochine à Monsieur le Résident Supérieur au Laos,” January 13, 1927.

⁵¹⁶ ANOM, GGI 66541, “Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l’Indochine,” September 24, 1927; ANOM, GGI 66541, “Télégramme Officiel. Gougal à Résuper,” February 3, 1928; ANOM, GGI 66541, “Télégramme Officiel. Résuper à Gougal,” February 6, 1928.

The Limitations of Airpower as a Tool of Colonial Control in Indochina

The problems encountered in organizing the mission to the Bolovens Plateau serve as a reminder that the actualities of aviation at times failed to match the theoretical omnipotence of airpower. In addition, because the colonial administration occasionally found itself repeatedly requesting that aircraft be sent to certain areas, it is clear that aviation failed to achieve in a single blow what the French believed it would, whether in a symbolic manner or in an actual deployment of airpower.

Furthermore, officials were aware that mission delays, cancellations, and failures had the potential to damage French prestige and authority in the eyes of the native peoples. Speaking to this matter, Commandant Superior Richard Puypéroux offered comments that underscore not only the contrast between the supposed power of aviation and the reality of aeronautics technology but also the colonizers' reluctant acknowledgement of the tenuousness of their control in the empire. "At the risk of compromising the moral benefit that we...expect from this new instrument of domination," Puypéroux asserted in January 1921, "every demonstration must be assured of success in advance." He explained that due to the publicity that was often given to aerial operations, peoples harboring anti-colonial sentiments would take advantage of any mission setbacks. Puypéroux's assessment suggests that the French believed that the cancellation or postponement of an announced flight revealed the limits and weakness of their colonial authority, particularly when the flight was scheduled to be carried out in a region in which insurgency was a problem. Battalion Chief Roux made a similar argument. While declaring that aircraft were for the French a tool of prestige that "for a long time will remain unmatched," he emphasized the need to take "all the necessary

precautions in order to avoid a failure.” Roux contended that nonsuccess would have the immediate effect of “markedly diminish[ing] the very great fear of aircraft that...all the natives have who have seen them and those who have heard of them.”⁵¹⁷

Of course, despite the care taken in organizing aviation missions, certain issues—namely, unfavorable weather, equipment problems, and infrastructural deficiencies—impeded the deployment of aircraft. As noted at the end of the previous section, poor visibility disrupted the plans for sending airplanes to the Bolovens Plateau in February 1928. Likewise, the January 1921 operation to Upper Laos was originally scheduled to begin at the end of November 1920, but “exceptionally unfavorable atmospheric conditions” and problems with the aircraft delayed the departure.⁵¹⁸ At the start of the next decade, Resident Bosc remarked that a multi-purpose mission to this region of the protectorate required great piloting skill due to the inadequacies of the aviation infrastructure throughout the area’s mountainous terrain. As a final example, even the widely praised Central Highlands bombing raid of 1929 encountered difficulties because of flight conditions and airfield issues.⁵¹⁹

⁵¹⁷ ANOM, GGI 66492, “Le Général de Division Puypéroux, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” January 4, 1921; ANOM, RSL J/2, “Le Chef de Bataillon Roux, Commandant le 5ème Territoire Militaire à Monsieur le Résident Supérieur au Laos,” January 10, 1923.

⁵¹⁸ ANOM, 66492, “Ordre de Mission,” November 6, 1920. A typed note that is attached to this mission order—this attachment also provides the explanation for the delay—stated that officials eventually determined that the mission should be rescheduled to coincide with the Hanoi—Saigon aerial tour that was slated for January 1921. According to Puypéroux, this operation to Upper Laos had in fact been postponed at least one other time during the previous year, in May 1920. ANOM, GGI 66492, “Le Général de Division Puypéroux, Commandant Supérieur des Troupes du Groupe de l’Indochine à Monsieur le Gouverneur Général de l’Indochine,” January 4, 1921.

⁵¹⁹ ANOM, GGI 66545, “Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l’Indochine,” December 25, 1930; ANOM, GGI 66545, “Mission aéronautique du Kontum,” March 29, 1929. Captain Tapie, the mission chief for the March 1929 operation, characterized the site at Ankhé as “a very poor terrain”; this airfield was in fact preferable to the landing strip located at Qui Nhon, described simply as “dangerous.” The airfield at Dak To also

Another significant limitation to the use of aviation as a tool of colonial control was that airpower was not as coercive and astonishing as French authorities imagined it to be. In short, aircraft were not always able to stupefy colonized peoples or to swiftly alter the mindset of recalcitrant natives, which was a fact that officials acknowledged. For example, Roux held that utilizing airpower against dissident groups—or threatening to do so—was doubtless an effective method of control, but only when flights were deployed regularly to areas of concern.⁵²⁰ Roux’s point was indeed valid; as this chapter has shown, aircraft were ordered to the Kontum region of the Central Highlands on several occasions during the 1920s. Yet even after the bombing raid of 1929, officials were not convinced that this problematic area would remain pacified and, consequently, did not rule out the possibility of additional aerial operations.⁵²¹

Furthermore, as previous chapters have indicated, French aviation did not have exclusive possession of the skies above Indochina. Indeed, the French at times felt that they were locked in an aerial propaganda battle with Thailand. This battle was especially intense in Laos, where the French found themselves fighting off Thai attempts to gain influence over the local peoples through symbolic displays of airpower. As one official remarked, “it is important to show the Laotian population that France in Indochina also

was cause for concern. Tapie failed to take adequate account of this runway’s slope, and the plane he was piloting overran the landing strip and crashed into a stump. Regarding the weather difficulties, low visibility delayed the bombing and reconnaissance flights for several days.

⁵²⁰ ANOM, RSL J/2, “Le Chef de Bataillon Roux, Commandant le 5ème Territoire Militaire à Monsieur le Résident Supérieur au Laos,” January 10, 1923.

⁵²¹ The Resident Superior of Annam expressed his support for an April 1929 proposal for establishing munitions depots at Tourane and Nha Trang as a means of simplifying the armament of aircraft in the event of future bombing raids in the Central Highlands. ANOM, GGI 66545, “Le Résident Supérieur en Annam à Monsieur le Gouverneur Général de l’Indochine,” April 22, 1929.

possesses an aerial force that is every bit as good as that of Siam.”⁵²² This struggle between Thailand and French Indochina in the realm of aviation fits into a longer history of a difficult relationship between these neighboring territories. In general, the Thai and the French had had a rather strained relationship from the moment that France became involved in Southeast Asia in the second half of the nineteenth century. Additionally, it is worth reemphasizing that the Thai had been forced to cede to France a large portion of territory—from which was established the French protectorate in Laos—in 1893.

Colonial officials were aware of the presence of Thai aircraft over Indochina from the early 1920s and sought to respond accordingly. In the spring of 1921, three seaplanes were deployed up the Mekong River on a round-trip journey from Saigon to Luang Prabang as a means of “affirming our prestige on our frontier.”⁵²³ For the rest of the decade, officials remained anxious that Thailand, with its burgeoning air service and distinctly non-European aircrews, would win influence over the native populations and, as a result, damage French colonial authority. For instance, when Resident Bosc originally requested an aerial mission to Upper Laos in the fall of 1924, he described the goal of the operation as “counterbalance[ing] the effect on the populations residing along the Mekong that frequent Siamese airplane flights produce.” Previous aviation missions in the region were of a similar nature, with one such flight having been carried out in February 1924.⁵²⁴

⁵²² ANOM, GGI 66492, “[Le Résident Supérieur au Laos à] Monsieur le Gouverneur Général de l’Indochine,” December 22, 1923. This quote is from a comment, dated December 27, 1923, that is typed on a cover sheet for this letter from the Resident Superior.

⁵²³ ANOM, GGI 66492, “[Le Résident Supérieur au Laos à] Monsieur le Gouverneur Général de l’Indochine,” December 22, 1923; Cony and Ledet, 55.

⁵²⁴ ANOM, GGI 66501, “Du Cabinet Militaire,” November 7, 1924; ANOM, GGI 66502, “Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l’Indochine,” September 21, 1924. Bosc reported that just eight days after the February mission was completed,

Several years later, the French were still grappling with the issue of Thai aircraft in the vicinity of the Laos-Thailand border. Thus Bosc's October 1926 request to travel by air from Vientiane across Laos and on to Hanoi was in part a propaganda move intended as a response to Thai aerial activity in the area.⁵²⁵ In September of the following year, Bosc used similar reasoning when he requested an aerial tour along the Mekong River.⁵²⁶ Perhaps unsurprisingly, he later argued in October 1929 that the French needed to continue launching aircraft to the parts of Laos to which Thailand was still sending their own airplanes with some regularity. For France, Resident Bosc explained, such flights were "essential for the safeguard of our prestige and our influence in the eyes of our populations bordering the Mekong."⁵²⁷

Officials elsewhere in Indochina also expressed concerns about Thai aerial activity. For instance, Resident Lambert of Battambang asserted that the arrival of a French plane in June 1920 had boosted the prestige of the colonial authority among Cambodia's natives. Indicating that this landing was especially important because the local peoples had watched a Thai airplane touch down in the region several months prior,

Thailand—in what Bosc interpreted as a reply to the French flight—deployed a plane over the same area.

⁵²⁵ ANOM, GGI 66541, "Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l'Indochine," October 21, 1926.

⁵²⁶ ANOM, GGI 66541, "Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l'Indochine," September 24, 1927. The Commandant Superior subsequently noted, however, that the Mekong River flight would need to be postponed because the fuel depots at Vientiane and Luang Prabang were empty and could not be refilled for at least a month. ANOM, 66541, "Le Général de Division Andlauer, Commandant Supérieur des Troupes du Groupe de l'Indochine à M. le Gouverneur Général de l'Indochine," October 15, 1927.

⁵²⁷ ANOM, GGI 66545, "Le Résident Supérieur au Laos à Monsieur le Gouverneur Général de l'Indochine," October 23, 1929.

Lambert pointed out that the French flight was “indispensable” for counteracting the “enormous effect produced on them by the Siamese airplane.”⁵²⁸

In any case, by the mid-1930s, officials were submitting fewer requests for symbolic displays of airpower.⁵²⁹ In his report from January 1935, Captain Puypéroux wrote of a recent decrease in the number of military flyovers above dissident regions. He identified two primary reasons for this decline: the continued use of aircraft that were outdated and unreliable; and budgetary constraints that had forced reductions both in fuel allowances and the number of joint missions with the other armed services.⁵³⁰ While these very straightforward causes were certainly evident—the economic crisis that plagued France during the 1930s hindered aviation efforts in the empire—the drop in the number of these missions could also have related to a pair of other, more indirect causes. First, it is possible that the French simply realized by this point that aircraft were becoming less effective as a way to coerce and astonish the colonized populations. Second, as they were faced with foreign competition in the skies above Indochina, the colonial administrators could not hope to utilize aviation as a marker of prestige and power to which only the French themselves had—or provided—access.

⁵²⁸ ANOM, GGI 66499, “L’Administrateur des Services Civils, Résident de Battambang à Monsieur le Résident Supérieur au Cambodge,” June 18, 1920.

⁵²⁹ More generally, as French colonial administrations throughout the empire expanded their reach and consolidated control, the local air forces undertook fewer operations. Manchon, 351.

⁵³⁰ Manchon, 351; SHAA, 2B33/D6, “Missions aériennes, politiques et économiques, liaisons postales et évacuations sanitaires en Indochine,” January 31, 1935. According to Manchon, aircraft continued to be used as a tool of colonial authority and coercion in Indochina until the end of the 1930s. Manchon, 381. However, sources tend to make far fewer references to such flights after the mid-1930s.

Conclusion

From the first decade of the twentieth century, the French had envisioned using airplanes and seaplanes in the empire as a powerful instrument of authority, technological prowess, and coercion. Like the colonial officials of other European nations, the French aimed to utilize airpower “to lay the most solid foundation for their domination of [native] tribes and races,” in the words of General Frey.⁵³¹ Within Indochina from the 1920s to the mid-1930s, aircraft deployed for this purpose conducted policing operations as well as flights—some of which included additional aviation work—in which the use of airpower was symbolic. While the specific tasks of these missions differed—and whether or not these operations involved the use of weapons—the common goal was to assert the power of the colonial authority and bring about the submission of the native peoples below.

Despite officials’ confidence that aviation would function as the preeminent means of defeating supposed internal threats, this use of aircraft was hindered by a host of issues. Chief among these were unfavorable weather, unreliable flight technology, and an inadequate aerial infrastructure. Additional problems were caused by aeronautics competition from Thailand and a fundamental misconception of how colonized peoples would react to the sight of aircraft—not to mention a lack of consideration of how these reactions could change over time. Yet as the following chapter demonstrates, the sky-high expectations that the colonizers had for utilizing aviation to maintain control and assert authority within Indochina carried over into the realm of colonial defense. Indeed, the French sought to integrate airpower into schemes for protecting the colony against external threats as well.

⁵³¹ Headrick, *Power over Peoples*, 303.

CHAPTER SEVEN: DEFENDING INDOCHINA AGAINST EXTERNAL THREATS

“The situation in the Far East indeed demands all of our vigilance because of the conflicts that may arise and expand in the Pacific,” Minister of the Colonies Louis Rollin observed in late November 1934, adding that turbulence within the nations that bordered Indochina could have repercussions for the colony itself. With these concerns in mind, Rollin declared that “aviation, [a] versatile arm, would be singularly invaluable...to the capacity for rapid and extensive intervention.” More than three years later—a time by which the possibility of another European war loomed large and a conflict had already erupted between China and Japan—Governor General Jules Brévié found himself pleading yet again for critically needed reinforcements for Indochina’s air force: “the defense of the countries of the Union forms a whole, and we would not be able to consider it effective while lacunae as serious as those that currently exist in the aerial realm remain.”⁵³²

Rollin’s comment highlights how aviation in Indochina was viewed as a means of protecting the colony against external threats, with this air defense typically taking the form of coordinated action with land or naval forces; the potential enemy was understood to be China, Thailand, or Japan, with these latter two taking precedence in the minds of French authorities as the 1930s progressed. Beginning in the middle of this decade, French anxiety about these external threats amplified along with corresponding calls for improvements—both quantitatively and qualitatively—to Indochina’s air force. Much more often than not though, France was unable to provide the desired aviation

⁵³² SHAA, 2B33/D1, “Le Ministre des Colonies à Monsieur le Ministre de l’Air,” November 27, 1934; SHAA, 2B33/D1, “Le Gouverneur Général de l’Indochine à Monsieur le Ministre des Colonies,” March 11, 1938.

reinforcements, a situation whose gravity is encapsulated in Brévié's appeal from mid-March 1938.

There were multiple, interconnected reasons for why the metropole was incapable of furnishing Indochina with the aeronautics materials that local authorities desperately sought. Chronic political instability, economic problems, inter-service rivalries within the armed forces, and an increasingly foreboding international climate in Europe combined with an aeronautics industry that, for most of the 1930s, was ill suited for the efficient production of modern aircraft. This chapter thus shows the extensive reach of the problems that plagued metropolitan France in the 1930s and how the lack of an adequate resolution of these issues directly handicapped not only the air force but also French military capabilities throughout the empire.

It is important to note that the specifics of the political shifts that occurred in the metropole during the 1930s appear to have had little direct effect on aviation in Indochina. Social, economic, and political turmoil in the metropole during this decade⁵³³ of course had an effect on the French empire, and the political instability and lack of coherent leadership that was a characteristic of France in this period did actively frustrate the efforts to bolster the empire's air forces. Yet, in the case of Indochina, it remains difficult to pinpoint if and how the policy shifts that accompanied the changing governments in France specifically altered the colonial and military administrations' approach to aviation. It seems, though, that the meaningful impact was limited. Even

⁵³³ The nation-wide crisis that France faced in the 1930s was itself the result multiple intertwined problems. As Eugen Weber points out, this critical situation "was as much economic as diplomatic, as much institutional as economic, as much about public morality, confidence, and self-confidence as it was about economic interests, employment, or the balance of payments." Eugen Weber, *The Hollow Years: France in the 1930s* (New York: W.W. Norton and Company, 1994), 7.

major political changes—such as that which came with the election of the left-wing Popular Front in 1936—do not seem to have directly modified the longer-term development, or lack thereof, of Indochina’s air force.⁵³⁴ This is not to say that metropole and colony operated in isolation of one another or that political developments in France had few repercussions in the empire.⁵³⁵

This chapter seeks to avoid an overly complicated account of the minutiae and shifts in the designations of squadrons and in the command structure of the air force in Indochina—indeed, a thorough understanding of the organization of the armed forces themselves requires a grasp of rather esoteric details.⁵³⁶ The focal points, therefore, are

⁵³⁴ Analyzing colonial policy during the Popular Front’s tenure, Amanda Sackur and Tony Chafer observe that this coalition was “simply another example of well-intentioned colonial reform that promised much but, in the end, yielded little.” Importantly though, this bloc’s failures sowed seeds of disillusionment among colonial populations bitterly disappointed by the lack of meaningful reform; thereafter, these groups would adamantly pursue change—and independence—via avenues outside the framework of a colonial regime that was apparently uninterested in any significant reform. Chafer and Sackur argue that the two-year period of the Popular Front was thus a watershed for French colonial history because this government initiated, albeit in an unintentional manner, “an irreversible process of reform that was ultimately to lead to decolonisation.” Tony Chafer and Amanda Sackur, “Introduction,” Chafer, Tony, and Amanda Sackur, “Introduction,” In *French Colonial Empire and the Popular Front: Hope and Disillusion*, ed. Tony Chafer and Amanda Sackur (New York: St. Martin’s Press, 1999), 3, 6.

⁵³⁵ Indeed, Jean-Baptiste Manchon contends that colonial aviation influenced, to a small extent, the metropolitan discussions about how an independent air force in France should function. Specifically, he notes that overseas aviation “indirectly played a role in the doctrinal debates that affected the Air Force from its creation until the Second World War.” This observation, though, mostly deals with the use of airpower during the French military operations in the Maghreb and the Levant. Jean-Baptiste Manchon, *L’aéronautique militaire française outre-mer, 1911-1939* (Paris: Presses de l’université Paris-Sorbonne, 2013), 651.

⁵³⁶ For instance, the general structure of Indochina’s air force remained unchanged for years, but, starting in 1938, officials began crafting plans for reorganizing and re-designating the squadrons; these proposals were developed even though new aircraft and personnel for these squadrons—or for future units—were not arriving in the colony as quickly as hoped. Christophe Cony and Michel Ledet acknowledge the confusing nature of these organizational diagrams, wittily observing that “from time immemorial our bureaucrats have often drawn up plans and other charts [that have led], in many cases, the best linguist to be confused.” Manchon provides a broader example of one of these structural shifts in his discussion of a decree of February 16, 1929, which dealt with transferring administrative authority for aviation from the War Ministry and the Ministry of the Colonies to the newly created Air Ministry. This directive “definitively connected” colonial aviation to the aviation service in the metropole and, as a result, left open the

the general framework for military aviation in the colony, how officials worked to make this air force capable of defending Indochina against external threats, and why many of these attempts ultimately fell short. The most realistic option for bolstering Indochina's air force was to have the metropole outfit the colony with a capable fleet of aircraft. Two alternatives were also examined in the mid-to-late 1930s, although neither proposal was ultimately deemed practical: planes could be sent from France as a means of directly assisting Indochina in the event of an attack; and local resources could be gathered to strengthen the colony's air force. Overall, the failure to establish the type of modern, powerful air force that was envisioned for Indochina illustrates another way in which the realities of colonial aviation fell short of the hopes. In fact, the gap between hopes and realities perhaps yawned widest in the case of aircraft functioning as a key component of colonial defense strategies.

French Views of External Threats to Indochina and the French Air Response

The diplomatic climate in Southeast Asia at the beginning of the 1920s presented a reality in which, Christophe Cony and Michel Ledet observe, "it [was] inconceivable that a neighboring nation [would] attack a French colony."⁵³⁷ The atmosphere was relatively calm in East Asia as well, which was at least partly due to three agreements concluded among six Western European nations, the United States, China, and Japan between late 1921 and the end of 1922.⁵³⁸

possibility of repatriating the overseas squadrons if required. Christophe Cony and Michel Ledet, *L'Aviation française en Indochine: Des origines à 1945* (Outreau: Lela Presse, 2012), 246; Manchon, 262.

⁵³⁷ Cony and Ledet, 233.

⁵³⁸ Drawn up during the Washington Naval Conference from November 1921 to December 1922, these accords appeared to have laid the groundwork for more stability in East

Circumstances both within East Asia and on a broader scale caused this relatively firm foundation to begin to deteriorate as the 1920s came to a close. John F. Laffey pinpoints the contributing factors and describes how the overall situation proved increasingly troubling for French Indochina:

The nominal unification of China, as well as the onset of the Depression, began to pose new problems. Shortly thereafter, Japanese aggression, [starting in the fall of 1931 with the invasion of Manchuria], not only overturned any semblance of an East Asian *status quo*, but began to interact with developments in Europe in a fashion which threatened the entire treaty structure upon which French security rested..... [T]he French position in the Far East steadily eroded during the 1930s.⁵³⁹

With the danger that Japan posed to French Indochina was apparent and the status of China a lingering problem, Thailand represented “an even more pressing, if less intimidating” menace. By the late 1930s the specter of an increasingly powerful Thailand caused particular alarm. Edward M. Young points out that while the actual threat of a Thai attack on the Indochina was essentially non-existent prior to the mid-1930s, “the energy and effort that the Siamese devoted to expanding aviation aroused the keen interest, and at times the concern, of the British and French authorities” in Burma and Indochina.⁵⁴⁰

The validity of Young’s observation—as well as French officials’ awareness of the reality of the Thai threat—is shown in an April 1938 report written by Lieutenant

Asia. John F. Laffey, “French Far Eastern Policy in the 1930s.” *Modern Asian Studies* 23, no.1 (1989): 118.

⁵³⁹ Laffey, 118. Summarizing France’s fruitless approach to diplomatic matters in East Asia from the Manchurian Crisis to the eve of the Second World War, Laffey writes that “the active appeasement of Japan had come to eclipse the more passive appeasement characteristic of French Far Eastern policy during the earlier years of the 1930s.” Laffey, 149.

⁵⁴⁰ Martin Thomas, “At the Heart of Things?: French Imperial Defense Planning in the Late 1930s,” *French Historical Studies* 21, no. 2 (Spring 1998), 353; Edward M. Young, *Aerial Nationalism: A History of Aviation in Thailand* (Washington: Smithsonian Institution Press, 1995), 19.

Colonel F. Pichon. Following a recent visit to Bangkok to view a series of aerial demonstrations, Pichon remarked that he was particularly caught off guard by the unveiling of at least fifty-one locally built aircraft. The reason for his surprise was that this spectacle indicated that Thailand possessed more sophisticated facilities for assembling aircraft than the French had previously envisioned. “On the whole,” Pichon stated, “Siam is already in a situation clearly more favorable than that of...Indochina.” He explained that the colony was at present “incapable of building aviation equipment of any kind on site” and, consequently, would have to rely on the metropole for all aeronautics resources in the event of a conflict. Taking account of Thai military aviation in its entirety—including production capabilities, infrastructure, and resources—Pichon asserted that the potential of Thailand’s air force placed it in a position that was “dangerously superior” to the air force in Indochina. He added that Indochina presently could not close the quantitative and qualitative gap between its air force and the Thai air force.⁵⁴¹

Not only was the growth of Thai military aviation rather unexpected, but it also made more likely a scenario in which the French armed forces would be placed in the unenviable position of having to simultaneously defend a terrestrial western front against Thailand and two thousand kilometers of coastline against Japan.⁵⁴² Air force officials in

⁵⁴¹ SHAA, 2B33/D1, “Le Lieutenant-Colonel F. Pichon, Attaché Militaire, Naval et de l’Air au Siam à M. le Ministre de la Défense et de la Guerre,” April 8, 1938. Although Thailand still did not have the capability to build aircraft engines, it was likely that these could be, or had been already, purchased from the United States. In addition, Thomas notes that French military intelligence from February 1940 reported Thailand’s current push to increase the strength of its armed forces included the recent acquisition of 120 modern aircraft from the United States. Thomas, “At the Heart of Things,” 353.

⁵⁴² SHAA, 2B33/D1, “Le Colonel Augereau à Monsieur le Président du Conseil de Défense du Groupe de l’Indochine,” November 23, 1936. The burden of this already daunting responsibility was not eased with reports that, as Governor General Brévié observed in March

Indochina thus foresaw a situation in which Thailand, emboldened by a successful Japanese penetration via the colonial coast, would then aggressively push into Cambodia.⁵⁴³

In his November 1936 report to Indochina's Council of Defense, Colonel Raoul Augereau captured the totality of the threats that faced the colony during this time. Specifically, he described two emerging developments in Southeast Asia that merited the careful attention of colonial military officials. First, he cited the Chinese army's "methodical and continuous reorganization" as well as the modernization of its military materials and aircraft. Second, Augereau noted that recent years had witnessed the "increasing influence of Japan on Siam[,] with all the political, economic, and military consequences that may result."⁵⁴⁴

In the event of an attack on Indochina, the air force would be charged with a variety of duties. Moreover, due to the limited capabilities of the colony's naval forces, the role of military aviation would be even more important. Augereau listed the wartime obligations of the local air arm: determine the adversary's strategic plans; cooperate with army and navy forces in colonial defense operations; attack weak points in the enemy's

1938, the colony's anti-aircraft defenses only assured meager security against enemy airplanes for a few "sensitive" areas of the territory, leaving the majority of Indochina vulnerable to an air attack. SHAA, 2B33/D1, "Le Gouverneur Général d'Indochine à Monsieur le Ministre des Colonies," March 11, 1938.

⁵⁴³ Accordingly, a series of mobilization exercises in 1937 and 1938—these appear to have taken place at intervals from the spring of 1937 to early 1938—were based on this possibility SHAA, 2B33/D6, "Exercices de Cadres et Manœuvres avec Troupes du Programme d'Ensemble: Années 1937-1938. Rapport du Commandant de l'Air en Indochine," n.d. [hereafter SHAA, 2B33/D6, "Exercices de Cadres et Manœuvres"].

⁵⁴⁴ SHAA, 2B33/D1, "Le Colonel Augereau à Monsieur le Président du Conseil de Défense du Groupe de l'Indochine," November 23, 1936. In his account of the March 1937 meeting of the Council of Defense, General Jules-Antoine Bühner reiterated these concerns in pointing to the efforts made by Japan, China, and Thailand to strengthen their aviation services. SHAA, 2B33/D1, "Conseil de Défense, de l'Indochine. Session de Mars 1937. Rapport de Présentation," March 12, 1937. The Council of Defense's recommendations for strengthening the air force were likely based in part on Augereau's conclusions from November 1936.

position; resupply isolated posts; and provide transport for military personnel and sick or wounded patients. Overall, then, the daunting situation that the air force could potentially confront was having to grapple with the challenges of defending an immense territory against China, Japan, and Thailand, each of which were determined to possess, in Verdier's estimation, "far from negligible" aviation capabilities.⁵⁴⁵

The French faced this forbidding scenario even though metropolitan and colonial officials had for years toiled to transform the air service into a robust defensive force that could assist in launching a response to attacks from without. In fact, as the following sections demonstrate, the effort to provide Indochina with a strong air force began during the First World War.

Indochina's Air Force (1917 to 1929)

Jean-Baptiste Manchon notes that officials in the metropole decided on the establishment of a military aviation service for Indochina at the start of 1917. This decision had been motivated by recent concerns about the stability of the Chinese provinces that bordered Indochina as well as worries about Chinese pirates making raids into parts of Tonkin and Laos.⁵⁴⁶ Cony and Ledet state that the first unit was created as a "trial squadron" (*escadrille d'études*) on July 13, 1917; this group became Squadron One on April 6, 1918, the same day that a second squadron was established.⁵⁴⁷

⁵⁴⁵ SHAA, 2B33/D6, "Exercices de Cadres et Manœuvres; SHAA, 2B33/D1, "Le Colonel Augereau à Monsieur le Président du Conseil de Défense du Groupe de l'Indochine," November 23, 1936; SHAA, 2B33/D1, "Le Général de Division Verdier à Monsieur le Ministre des Colonies," October 25, 1934.

⁵⁴⁶ Manchon, 193.

⁵⁴⁷ Manchon, 193; Cony and Ledet, 628-629.

By the mid-1920s, French authorities were both highlighting how aviation would be a key contributor to the defense of the colony and expressing doubt about the defensive capabilities of the local air force. “In the event of a conflict,” air force commandant François Glaize argued in February 1924, “it is unquestionable that military aviation would have a very important role to play in Indochina. Unfortunately, the quality of its personnel [and] the value of its materials would not compensate for the inadequacy of its size.” He stated that officials should consider if the air force could hold out for long with its twenty pilots facing the “scores of crews that certain of our neighbors could put into service.” Three years later, Major General Andlauer forwarded to the Governor General a program for the development of the colonial air network and the enhancement the air force’s defensive capabilities. While not fundamentally different from previous plans, this project had become necessary in part due to the “the increased threat of a conflict with Chinese units in possession of modern matériel.” The third squadron was subsequently formed on October 1, 1927, and the fourth was established exactly one year later. The fifth unit—a seaplane squadron—was created three years later on October 1, 1930.⁵⁴⁸

Indochina’s Air Force (1930 to 1934)

In terms of qualitative and quantitative improvements for Indochina’s air force, the 1930s proved to be a frustrating decade. As will be shown, requests for aviation reinforcements and replacements often encountered critical delays, inadequate

⁵⁴⁸ ANOM, GGI 66499, “Note sur l’Aviation en Indochine. Demandée par le Gouvernement Général,” [February 3, 1924]; ANOM, GGI 66503, “Le Général de Division Andlauer, Commandant Supérieur des Troupes du Groupe de l’Indochine à M. le Gouverneur Général de l’Indochine,” February 7, 1927; Cony and Ledet, 629-630.

substitutes, and flat-out refusals from the metropole during this period. Yet the responses from France were not a result of stubbornness, stinginess, or ignorance. Rather, metropolitan officials—consistently and for most of the 1930s—were grappling with various industrial, economic, and diplomatic problems of greater immediate significance.

By mid-1933, government and military authorities were considering establishing a sixth squadron in the colony. By this time, a five-year project for the gradual improvement of the colonial air forces had been drafted with goals that included the renovation of the existing materials throughout the empire and the formation of a sixth squadron in Indochina. While agreeing to this plan in principle, the Air Minister advised that due to program's high cost, the creation of new air force units in the colonies could be carried out only after the work required for the existing squadrons was completed.⁵⁴⁹

Discussions over the creation of a sixth unit continued the following year. On January 13, 1934, the head military official in Indochina judged that the growth of aviation in Southeast Asia, especially in China, should be countered by an increase in the colony's air force. To address this need, this official suggested that a sixth squadron be established in Tonkin between 1935 and 1936. Yet the Ministry of the Colonies doubted the feasibility of this plan in the format that it was presented due to this department's concerns about location and costs.⁵⁵⁰ In the fall of 1934, the creation of the sixth squadron was again considered and again stalled due to budget limitations as well as the need to first upgrade the existing aviation units and facilities.⁵⁵¹ The lack of financial

⁵⁴⁹ SHAA, 2B31/D1, "Le Ministre de l'Air à Monsieur le Ministre de la Défense Nationale et de la Guerre, Conseil Supérieur de la Défense Nationale," December 8, 1937.

⁵⁵⁰ SHAA, 2B33/D1, "Le Ministre de la France d'Outre-Mer à Monsieur le Ministre de l'Air," February 3, 1934.

⁵⁵¹ Responding to a portion of a late-November letter from Minister of the Colonies Rollin, Air Minister Denain, citing these concerns about credits and the required upgrades to the

support for the renovation of the Indochina squadrons remained an issue the following autumn, but metropolitan aviation requirements proved a more urgent matter. By this point in the 1930s though, the available funds were meager even for the aeronautics demands of the metropole.⁵⁵²

By the spring of 1934, Cony and Ledet remark, more than three years had passed since Indochina's air force had received newer models of aircraft. In late October, the Governor General made clear that with the political environment in Southeast Asia becoming increasingly unstable, Indochina was in danger of being left to appear as the neglected relative of a distant France. The Governor General thus pressed for the expedited delivery of a number of tri-motor planes, advocating for the shipment to be sent at the beginning of 1935 instead of the end. The recipient of the Governor General's plea was Minister of the Colonies Rollin, who himself hoped that these aircraft would be transported to Indochina with enough time for the planes to be put into service toward March or April 1935. A decision on the expedited delivery of the aircraft was reached by mid-December, as Air Minister Victor Denain informed the Minister of the Colonies that he had resolved to submit an order for a number of Bloch 120 planes to be shipped to Indochina. Ultimately though, this plan was discarded by the end of 1935 due to both the

existing squadrons, stated that the plan for a sixth unit would need to be delayed until at least 1936. SHAA, 2B33/D1, "Le Ministre des Colonies à Monsieur le Ministre de l'Air," November 27, 1934; SHAA, 2B33/D1, "Le Ministre de l'Air à Monsieur le Ministre des Colonies," December 11, 1934.

⁵⁵² As a memorandum from the air force Deputy Chief of Staff explained, "the moment does not appear opportune to devote important sums to the renovation of the colonial squadrons, given that the credits available to the Department...are barely sufficient to assure the renovation of the metropolitan air forces in reasonable amounts of time." However, this note recommended that "it would be good policy to give satisfaction, at least partially" to the requests from the Ministry of the Colonies for aviation reinforcements for Indochina. Consequently, the General Staff proposed sending between three and six multi-motor aircraft to Southeast Asia the following year. SHAA, 2B33/D1, "Note pour le Ministre (Etat-Major Particulier)," October 2, 1935.

priority of stationing these aircraft elsewhere and the eventual decision to provide Indochina with a different type of multi-engine plane.⁵⁵³

Indochina's Air Force (1935 to 1940)

Cony and Ledet note the rather stagnant state of the colony's air force between 1935 to 1938, describing how the status of this service would "but for minor details remain unchanged" for nearly three years despite the efforts of military and government authorities. The sluggish—or even non-existent—pace of improvements witnessed in Indochina was reflected elsewhere in the empire during this time. Concerning metropolitan plans for reinforcing the colonial squadrons in the period lasting from 1935 to 1939, Cony and Ledet observe that "multiple projects [were] drawn up, all [were] doomed to fail because of a chronic shortage of money." Moreover, these authors indicate that Indochina would receive almost no modern aircraft during between 1935 and 1939. Until 1939, the colony received from around fifty "so-called modern aircraft" from the metropole; these planes served as reinforcements—but not replacements—for an existing fleet composed of flying machines that were mostly outmoded.⁵⁵⁴

As the previous statement implies, officials in Indochina were forced to deal with the problem of the quality of the aircraft currently in use. Concern about the existing planes had been voiced throughout the 1930s, but this worry grew more pronounced as

⁵⁵³ Cony and Ledet, 234-235; SHAA, 2B33/D1, "Le Gouverneur Général à Monsieur le Ministre des Colonies," October 29, 1934; SHAA, 2B33/D1, "Le Ministre des Colonies à Monsieur le Ministre de l'Air," November 27, 1934; SHAA, 2B33/D1, "Le Ministre de l'Air à Monsieur le Ministre des Colonies," December 11, 1934. The sixth and seventh squadrons were set up on October 1, 1939, and February 15, 1939, respectively. The final two, which brought the total number of air force units in the colony to nine, were both created on October 10, 1940. Cony and Ledet, 631.

⁵⁵⁴ Cony and Ledet, 233, 230.

the 1930s progressed. In short, newer models were needed to replace the colony's airplanes and seaplanes, many of which were either outdated or poorly suited for the local climate and terrain. For instance, air force commandant Augereau highlighted the military's concerns about the quality of the aircraft in his report from November 1936.⁵⁵⁵ "From the viewpoint of aviation," Augereau asserted, "Indochina is practically disarmed if we consider the progress and achievements of modern technology." He concluded that both the renovation of existing units and the establishment of supplementary squadrons were "an absolute necessity."⁵⁵⁶

The problem of needing more and better aircraft would not be immediately remedied despite the continued efforts of colonial officials. At the end of December 1937—over a year after Augereau drafted his report—Governor General Brévié discussed the minimum program to undertake so that the colony's air force could mount an effective defense against an aerial attack. The features of this project—which was a summary of a plan authored by air force commandant Devèze that the Governor General had dispatched to the Minister of the Colonies on October 4, 1937—included, broadly:

⁵⁵⁵ Augereau outlined the underwhelming characteristics of the airplanes in each of the four land-based squadrons: "poor speed, insufficient armament, very limited bombing power." He described the seaplane squadron in similar terms. While the unit's listless CAMS 37 were even more mediocre than the airplanes, the CAMS 55 planes were an obsolete design whose wood-and-canvas construction greatly hindered their usage in reconnaissance missions due to water-related durability issues. Augereau was certainly not alone in his critiques. Brévié observed at the end of June 1937 that the CAMS 55, while usable for coastal surveillance and long-distance exploration, "would make easy targets for enemy fighter planes" because of their slow speed and limited armaments. SHAA, 2B33/D1, "Le Colonel Augereau, Commandant de l'Air en Indochine, Membre du Conseil de Défense à Monsieur le Président du Conseil de Défense du Groupe de l'Indochine," November 23, 1936; SHAA, 2B33/D1, "Le Gouverneur Général de l'Indochine à Monsieur le Ministre des Colonies," June 29, 1937.

⁵⁵⁶ SHAA, 2B33/D1, "Le Colonel Augereau à Monsieur le Président du Conseil de Défense du Groupe de l'Indochine," November 23, 1936.

equipping the colony with newer, more powerful aircraft; reworking parts of how the air force was organized; and establishing an additional squadron.⁵⁵⁷

In this same correspondence from December, Brévié implored Minister of the Colonies Marius Moutet—he was repeating an entreaty from mid-November—to press the Air Minister to address the fact that Indochina’s air force possessed no fighter planes. Brévié pointed out that gathered intelligence indicated that Japanese forces would launch an attack into the southern provinces of China in the near future, thus extending the Sino-Japanese conflict to the doorstep of Indochina. “Therefore,” he reasoned, “it would be advisable to no longer postpone the sending of these aircraft.”⁵⁵⁸ That Indochina lacked fighter aircraft at this point, Cony and Ledet remark, was in part a result of the way in which French officials anticipated utilizing the nation’s colonial squadrons in a military capacity. From the moment that air units were first established in the empire, the squadrons’ military tasks were generally understood to be policing missions focused on maintaining order within a given territory. For Indochina specifically, there had been little interest in having fighter squadrons prior to 1935 because of the nature of the air force’s coordinated land-and-air policing tasks. After mid-decade though, the colonial administration watched with alarm as Thailand boosted its military capabilities and relations between China and Japan further deteriorated; calls for fighter aircraft consequently grew louder.⁵⁵⁹ Stated otherwise, fighter planes were not needed as long as the air force was considered a means of controlling the native populations. Only when the

⁵⁵⁷ SHAA, 2B33/D1, “Le Gouverneur Général de l’Indochine à Monsieur le Ministre des Colonies,” December 31, 1937.

⁵⁵⁸ SHAA, 2B33/D1, “Le Gouverneur Général de l’Indochine à Monsieur le Ministre des Colonies,” December 31, 1937. Brévié requested that Indochina be provided with a squadron of Potez 63 fighter planes; he proposed that these aircraft could even be used on loan until the colony was in possession of its own, more permanent means of air defense.

⁵⁵⁹ Cony and Ledet, 233, 243.

French contemplated that they would be on the receiving end of an air attack did they think about the need for this type of combat aircraft.

Notwithstanding Brévié's plea for fighter planes, metropolitan officials had been working to provide aviation assistance to Indochina. According to a December 1937 letter from Air Minister Pierre Cot, the renovation of the aircraft in the colonies "has been undertaken inasmuch as possible." With regard to Indochina, Cot reported not only that four bi-motor Potez 542 planes were in the process of being shipped to Southeast Asia but also that the most significant components of the sixth squadron had just been set up in the colony. The Air Minister explained that several tasks still needed to be finished before the five-year plan's goals were fully realized.⁵⁶⁰ "With an eye to the full execution of this program in 1938," Cot asserted, "every measure is being taken by my Department." He specified that Indochina's sixth unit would have all its required materials from the beginning of 1938 (*dès le début de l'année prochaine*).⁵⁶¹

The improvement of Indochina's air force did not progress as swiftly as planned though. On January 25, 1938, Brévié was informed that the Air Minister was not able to fill the Governor General's late-December request for fighter aircraft. Indeed, on January 4, 1938, a note for the air force Chief of Staff estimated that the modern light aircraft that the colonial administration was hoping for during the current year would likely remain in France due to metropolitan needs.⁵⁶² In a letter of March 11, 1938, Brévié admitted that

⁵⁶⁰ In addition to completing Indochina's sixth squadron, the remaining objectives included the establishment of a fourth squadron in French West Africa and the putting into service of the multi-engine aircraft needed to convert several colonial squadrons into units consisting of both single-engine and multi-motor planes.

⁵⁶¹ SHAA, 2B31/D1, "Le Ministre de l'Air à Monsieur le Ministre de la Défense Nationale et de la Guerre, Conseil Supérieur de la Défense Nationale," December 8, 1937.

⁵⁶² SHAA, 2B33/D1, "Le Gouverneur Général de l'Indochine à Monsieur le Ministre des Colonies," March 11, 1938; SHAA, 2B33/D3, "Note pour le Général Chef d'Etat-Major Général

he was surprised to have learned that there was as yet no commitment from France that could lead him to anticipate additional materials. He expressed his astonishment as he referred to several pieces of correspondence exchanged between metropole and colony in the second half of 1937 that seemed to indicate that the process of reinforcing Indochina's air force had been initiated. "Although I had never received formal assurances," Brévié contended, "I had a right to expect supplementary air resources, light defensive aircraft included. This way of seeing things, perhaps a little optimistic, found itself justified."⁵⁶³

Brévié forecasted that the issue of sufficiently bolstering Indochina's air force would remain unresolved in the immediate future. Furthermore, the Governor General judged that it was advisable to move away from the current method of augmenting Indochina's air force, which consisted of having France send small shipments (*par petits paquets*) of planes that were poorly suited to conditions in the colony. In fact, the Governor General theorized that the utilization of dated equipment in the sweltering humidity of Indochina was not even beneficial from a financial standpoint. Operating in this climate, an older model of aircraft—likely to have already been in service for an atypically long duration due to the lack of a replacement—required repairs and expensive new parts more frequently than its newer metropolitan counterpart. As he succinctly stated, "an outdated aviation is...a costly aviation as well." Brévié judged that the

de l'Armée de l'Air," January 4, 1938. This memorandum proposed what was, frankly, an unhelpful solution of possibly allocating a few older-model light aircraft to the colonies at the end of the 1938.

⁵⁶³ SHAA, 2B33/D1, "Le Gouverneur Général de l'Indochine à Monsieur le Ministre des Colonies," March 11, 1938. As a source of this justification, he cited the decision of October 12, 1937, to dispatch a number of Loire 130 and Farman 221 aircraft to Indochina as well as the Minister of the Colonies' "consistent support" for his prior proposals.

colony's air force remained both "ill suited to wartime missions" and expensive to maintain.⁵⁶⁴

Additionally, Brévié called attention to how delays in the delivery of new aircraft put the air force in the predicament of receiving planes that were already outmoded by the time they arrived in Southeast Asia. In frustration, he professed that the failure to provide Indochina with new aircraft in a reasonable amount of time left the colony with "material that, perfectly adequate to the period envisioned for its usage, becomes obsolete at the date of its delivery."⁵⁶⁵ Brévié wrote about this particular dilemma because, by mid-March 1938, an announcement had been made for a delivery of four Potez 542 airplanes and several Loire 130 seaplanes would be transported to Indochina; these reinforcements, the Governor General remarked, had actually been anticipated two years earlier. Brévié worried that the aforementioned situation regarding extended delays and the resulting problems could be repeated with the Potez 542 delivery if these planes were slow to reach the colony.⁵⁶⁶ He also lamented that even with the fulfillment of this pledge

⁵⁶⁴ SHAA, 2B33/D1, "Le Gouverneur Général de l'Indochine à Monsieur le Ministre des Colonies," March 11, 1938. He characterized the material in the land-based units as inapt for fighter, bombing, and reconnaissance missions; to exacerbate this troubling situation, the airplanes had recently been having mechanical issues. Likewise, he seriously doubted the extent to which the seaplanes—which also had been experiencing in-flight problems—would be useful in a wartime scenario due in part to the fact that a few recent peacetime operations had exhausted the capabilities of the squadron. As a final setback, the air force's two Farman 221 planes—"the only relatively modern aircraft that we have"—required repairs and could not be fixed completely due to the lack of a specific piece of equipment. These two Farman airplanes arrived in the colony during an overseas military-aviation exercise that began in the fall of 1937; the circumstances in which these aircraft were flown to Indochina are discussed later in this chapter as part of the section on metropolitan reinforcements.

⁵⁶⁵ As examples of this problem, he cited the shipment in November 1936 of the CAMS 55 seaplanes as well as the more recent delivery of the Farman 221 aircraft.

⁵⁶⁶ With regard to exactly when this set of Potez 542 planes were dispatched to Indochina, there appears to be either confusion in certain of the secondary material or a lack of precision on Brévié's part. While the Governor General made the referenced remarks in his letter of March 11, Cony and Ledet estimate that the four Potez 542 planes arrived in Indochina the previous month, February 1938. Cony and Ledet, 242. This chapter's account suggests that Cony and Ledet's

of additional aircraft, Indochina would still have an aviation fleet “whose efficacy will remain quite problematic.”⁵⁶⁷

Apparently, only three days after Brévié drafted his lengthy letter of March 11, Air Minister Guy La Chambre had submitted a plan for military aviation in the empire for 1938; La Chambre noted that the main components of this program had been provided in prior communications from October, December, and January. Among the project’s aims for Indochina were the creation of the long-anticipated sixth unit and the upgrading and restructuring of the colony’s other squadrons. In the second half of April, air force Deputy Chief of Staff Tarnier stated that the process of improving Indochina’s aircraft fleet was being followed “as fast as resources allow.” These renovations included the delivery of two Farman 221 airplanes, four Potez 542s and five Loire 130s. As of April 21, the Potez planes “currently reach” the colony while the Farman planes were designated as having been “recently assigned.” The Loire seaplanes were scheduled to be transported beginning in June.⁵⁶⁸ The effort to move forward with the measures outlined by La Chambre continued over the following months and until the end of the year.⁵⁶⁹

information is incorrect. In any case, what remains clear is that colonial officials were obviously dissatisfied with the sluggish pace of what were perceived to be desperately needed reinforcements for the air force.

⁵⁶⁷ SHAA, 2B33/D1, “Le Gouverneur Général d’Indochine à Monsieur le Ministre des Colonies,” March 11, 1938.

⁵⁶⁸ SHAA, 2B33/D1, “Le Ministre de l’Air à Monsieur le Ministre des Colonies,” March 14, 1938; SHAA, 2B31/D3, “Plan de Défense de l’Indochine. Note concernant les moyens nécessaires à la défense de l’Indochine,” [n.d.]. This document is attached to SHAA, 2B31/D3, “Le Colonel Tarnier, Sous-Chef de l’Etat-Major de l’Armée de l’Air à Monsieur le Général de Division Bühner, Inspecteur Général des Troupes Coloniales, Président du Comité Consultatif de Défense des Colonies,” April 21, 1938.

⁵⁶⁹ On September 6 the Air Minister wrote that he had authorized the creation of the sixth unit via a letter dated July 22. The two Farman 221 airplanes were to be sent to Indochina by the end of the year. Moreover, five Loire 130 seaplanes were soon to depart for Indochina, and seven more Loire 130 aircraft were slated for delivery in July 1939 or even earlier in the year. According to Cony and Ledet, two of this initial batch of seaplanes were sent by ship from France in late September 1938 and probably reached the colony in November for reassembly; the

In another attempt to equip the colony with modern fighter aircraft, a mid-November letter to the Minister of the Colonies stated that the empire's fighter-plane squadrons would be provided with two models of Dewoitine aircraft between July 1, 1939, and the end of the year; this objective was to be accomplished by deducting planes from the metropolitan units, which is a solution that appears quite unrealistic considering that the squadrons in France were chronically in need of materials in the second half of the decade.⁵⁷⁰ Unsurprisingly, Indochina never received this particular shipment of planes. In at least three other instances between the fall of 1938 and the following summer, officials labored with little success to find a way to allocate a sufficient number of fighter aircraft to the colony without diverting critically needed resources from France.⁵⁷¹

remaining three aircraft left the metropole on October 15. They also note that the other seven Loire planes did in fact arrive in Saigon in July 1939 to be reassembled. As 1938 came to a close, metropolitan air force officials sought to outfit Indochina with further reinforcements. On December 12 the Chief of Staff wrote that additional Potez 542 planes were currently in the process of being delivered to Southeast Asia. Several days later the Air Ministry indicated that only three of these aircraft would be dispatched to the colony in January 1939; Cony and Ledet deduce that these airplanes likely arrived between April and May. SHAA, 2B31/D1, "Le Ministre de l'Air à Monsieur le Ministre des Colonies," September 6, 1938; Cony and Ledet, 291-293, 295; SHAA, 2B31/D3, "Le Général Chef de l'Etat-Major de l'Armée de l'Air à Monsieur le Ministre de l'Air," December 12, 1938. SHAA, 2B33/D3, "Le Ministre de l'Air à Monsieur le Commandant de l'Air en Indochine," December 21, 1938.

⁵⁷⁰ SHAA, 2B31/D1, "Note pour l'Etat-Major de l'Armée de l'Air," December 12, 1938. Earlier in 1938, a decision had been made to send, as and when metropolitan aeronautics needs allowed, a total of fifty-two Dewoitine 510 airplanes to Indochina. Cony and Ledet, 244.

⁵⁷¹ In the first attempt, in mid-October 1938, La Chambre referenced a request from the Minister of the Colonies for the delivery to Indochina of enough weapons and munitions to outfit eleven Dewoitine 510 planes, which the Governor General had planned to incorporate into the air force; these aircraft, currently stripped of their armaments and had originally been destined for sale to China, were presently in transit in Indochina. The affair was resolved the following month, as the Air Minister wrote on November 21 that the planes were to be moved to China as originally planned. SHAA, 2B31/D1, "Le Ministre de l'Air à Monsieur le Ministre des Colonies," October 14, 1938; SHAA, 2B31/D1, "Le Ministre de l'Air à Monsieur le Ministre des Colonies," November 21, 1938. Then, in January or February of 1939, France requested about fifty Dutch-made Koolhoven fighter planes, earmarking these aircraft for Indochina. In the end though, these airplanes remained in the metropole, as production delays were followed by the outbreak of war in Europe. Cony and Ledet, 251; Manchon, 638. The third effort occurred several months after

In December 1938, metropolitan officials also delineated long-term plans for reorganizing and repurposing the empire's air forces. Writing to the Air Minister on December 12, the air force Chief of Staff provided a detailed note concerning a two-year project for the air defense of the colonies. Following the recommendations put forth during a key meeting of the Superior Air Council that took place on July 26, 1938, this program was adopted on September 14 and included refurbishing and expanding the air forces throughout overseas France.⁵⁷² More specifically, the plan entailed the following measures, which were to be achieved by 1941: renovating the aircraft that were in currently in service; establishing an air unit "specially prepared for the defense of the overseas territories"—Manchon refers to this as the "Imperial Division" (*Division impériale*)⁵⁷³; and, in total, twelve more squadrons to the colonies.⁵⁷⁴ According to this

the Dutch order was placed. At this time, officials in Indochina again tried to secure several fighter aircraft that were originally intended for China; a total of three of these planes, disassembled and missing certain parts, had arrived in Haiphong in the summer of 1939 for eventual delivery to China. As a result of Devèze's insistence, the colony's air force would eventually gain a single, fully equipped Potez 63 after a back-and-forth discussion that extended to the summer of 1940. For further details, see Cony and Ledet, 302.

⁵⁷² SHAA, 2B31/D3, "Le Général Chef de l'Etat-Major de l'Armée de l'Air à Monsieur le Ministre de l'Air," December 12, 1938; Manchon 635. Manchon explains the significance of the late-July meeting, asserting that this gathering was critical for defining the imperial policy that the Air Ministry would pursue until the outbreak of war the following year. More generally, he argues that by this point there was evidence of the definitive transition toward an "imperial concept of aviation in the colonies." Instead of creating squadrons focused on policing within a given territory, it was determined that the colonial air forces needed to be transformed from "a simple aviation of domination" into a multi-purpose strike force; these squadrons thus needed to be able to provide assistance elsewhere in the empire. In other words, officials henceforth viewed colonial airpower as more of a unified force, the constituent parts of which could be shifted as required. Manchon, 634-635.

⁵⁷³ The Imperial Division was to be based in North Africa and equipped with long-range multi-motor aircraft. Manchon notes that this unit represented an attempt to shift the responsibility for protecting the empire from metropolitan squadrons to what he describes as "a reserve air force capable of acting exclusively for the benefit of the Empire"; if required, the Imperial Division could be utilized to assist with the defense of the metropole. Manchon adds that this imperial strike force was "the archetype of what would have been *imperial aviation*." SHAA, 2B31/D3, "Le Général Chef de l'Etat-Major de l'Armée de l'Air à Monsieur le Ministre de l'Air," December 12, 1938; Manchon, 649-650, 645-646.

plan, Indochina's own air force was to be augmented from five to twelve squadrons: three fighter units, three observation units, two seaplane units, and four bomber units.

It was calculated that the colony would possess this projected number by the end of 1940.⁵⁷⁵

An Air Ministry letter of February 10, 1939, elaborated on the establishment of Indochina's fighter squadrons. This document indicated that these units would be created on October 1, with one each to be stationed at the Bach Mai, Tourane, and Bien Hoa airfields. The Chief of Staff anticipated that these squadrons would be progressively built up so that they would be fully in place at the beginning of 1940.⁵⁷⁶ However, a fundamental problem was that when this letter was composed—and, indeed, until a fortuitous but accidental delivery of Morane-Saulnier aircraft in the fall of that year—Indochina possessed no fighter planes.⁵⁷⁷

More generally, even officials like Joseph Vuillemin—then serving as air force Chief of Staff—believed that the two-year plan for the empire's air forces would still leave Indochina in a position that would “definitely be insufficient against a powerful

⁵⁷⁴ In this instance, the category of “Colonies” referred to Indochina, French West Africa, French Equatorial Africa, Madagascar, and French Somaliland.

⁵⁷⁵ SHAA, 2B31/D3, “Le Général Chef de l'Etat-Major de l'Armée de l'Air à Monsieur le Ministre de l'Air,” December 12, 1938.

⁵⁷⁶ SHAA, 2B31/D1, “Le Ministre de l'Air à MM. le Commandant de l'Air en Indochine, le Commandant de l'Air en Afrique Occidentale Française,” February 10, 1939.

⁵⁷⁷ Cony and Ledet, 297. Explaining this windfall, a letter of from early May 1940 recounted, “as a result of an error in the shipment of Morane 406 aircraft, 20 of these planes arrived in Indochina, and the 1st fighter squadron was established.” SHAA, 2B33/D2, “Note pour le Cabinet Militaire,” May 3, 1940. Another issue, which was perhaps less obvious, was that Indochina's air force lacked personnel who were capable of flying these modern aircraft. To address this lacuna and allow the fighter squadron to be in place by the October 1 deadline, three planes earmarked to serve as training aircraft were shipped to Indochina in the spring of 1939. Then, at the beginning of August, the fighter-plane training section was created at Bach Mai. Cony and Ledet, 299.

enemy.”⁵⁷⁸ The colony’s squadrons were not alone in suffering from a lack of adequate defensive means; indeed, Indochina’s armed forces as a whole as well as the air forces elsewhere in the empire were plagued by this issue.⁵⁷⁹ This point underscores how scarcity of material and monetary resources was a widespread problem that the metropolitan government was simply unable to address without taking away from France’s ability to defend itself as war threatened in the later 1930s.

While the outbreak of war in Europe at the beginning of September 1939 did not significantly alter life within Indochina, this event extinguished the hopes that the colony’s air force would receive major material assistance from France. Moreover, in Cony and Ledet’s estimation, even the Potez 542 and Farman 221 planes—these were certainly some of the “newer” types of military aircraft in Indochina at the time—“already seem[ed] out of another age” in the fall of 1939.⁵⁸⁰ By the spring of 1940—and with war underway in Europe—the colony’s air force amounted to sixty-one total airplanes and seaplanes in service and fifty-four additional aircraft of varying quality and

⁵⁷⁸ SHAA, 2B31/D3, “Le Général Vuillemin, Chef de l’Etat-Major Général de l’Armée de l’Air à Monsieur le Général Gamelin, Chef d’Etat-Major Général de la Défense Nationale,” November 8, 1938.

⁵⁷⁹ For instance, a report likely composed in the latter part of the summer of 1939 plainly stated that the military resources presently available in Indochina would be “clearly inadequate” at mobilization. This document acknowledged, though, that the budgetary situation did not allow for a marked increase to the current peacetime means. Also, in February 1938 Tarnier judged that “it is unlikely that the air forces anticipated for the Far East and Black Africa can insure an effective air defense of these territories.” SHAA, 2B31/D3, “Défense des colonies: Plan d’ensemble de défense des Colonies. Annexe no. 1: Théâtre d’opérations de l’Afrique Noire 2. Théâtre d’opérations de l’Indochine 3. Théâtre d’opérations de l’Océan Indien 4. Théâtre d’opérations des Antilles et de l’Atlantique Occidentale 5. Défense de nos concessions en Chine,” [August 11, 1939]. This lengthy title is found on the folder within which the report is contained; the document itself is found in proximity to two archival pieces dated August 11, 1939, that are likely related to this report. SHAA, 2B31/D4, “Le Colonel Tarnier, 1er S/Chef de l’Etat-Major de l’Armée de l’Air à Monsieur le Général Billotte, Membre du Conseil Supérieur de la Guerre, Gouverneur Militaire de Paris, Président du Comité Consultatif de Défense des Colonies,” February 14, 1938.

⁵⁸⁰ Cony and Ledet, 296, 300.

type in reserve.⁵⁸¹ Even at this point, Minister of the Colonies Mandel continued to request renovations to the content and structure of Indochina's air force.⁵⁸²

While France was clearly incapable of furnishing Indochina's air force with adequate aeronautics reinforcements, two other options were examined for improving the colony's air defenses. Yet these alternatives—arranging for metropolitan aircraft to directly assist with protecting Indochina and marshaling local aviation resources within the colony—each proved as unrealistic as Mandel's hopes that the French government would send reinforcements to help in Southeast Asia in the spring of 1940.

Direct Metropolitan Assistance for Indochina

In an account submitted to the Governor General on December 17, 1937, air force commandant Devèze recounted that several Farman 221 and Farman 222 aircraft had arrived in the colony in late November.⁵⁸³ This delivery was part of a more extensive military exercise that had commenced earlier in the fall. Regarding the background of this air force maneuver, on December 22, 1936, Air Minister Pierre Cot and the air force

⁵⁸¹ SHAA, 2B33/D2, "Note pour le Cabinet Militaire," May 3, 1940.

⁵⁸² Air force Chief of Staff Picard determined that Mandel's requests—these were put forth in a letter of April 22, 1940—were impractical. Picard explained that these various renovations, should they be put in place, would be detrimental to the existing air force units, especially those in the France. SHAA, 2B33/D2, "Note pour le Cabinet Militaire," May 3, 1940. The Minister of the Colonies and the Air Ministry also continued to push for major renovations to Indochina's air infrastructure in the first months of 1940. In late March 1940, these two departments provided the Governor General with information regarding the construction of a large aero-naval base on the coast of Annam at Cam Ranh Bay; the air force Chief of Staff urged that the required funding be provided so that the facility could be completed as soon as possible, ideally in October 1940. SHAA, 2B33/D4, "Note pour la Direction des Travaux et Installations," March 23, 1940.

⁵⁸³ A total of four aircraft—two Farman 222s and two Farman 221s—completed the journey to Indochina, arriving in Hanoi on November 22 before proceeding to Saigon on November 26. The pair of Farman 221 planes remained in the colony and was transferred to the Tong airbase on December 4, three days after the other aircraft had departed for the return trip to France. Cony and Ledet, 240.

Chief of Staff had signed an act for the establishment of an air formation—the “Air Guard Division” (*Division de la Garde aérienne*)—on the first day of the upcoming year. The goal of this unit was to enhance the capacity of the air force to respond swiftly to a sudden attack, whether within the empire or against France. The overseas maneuvers in the fall of 1937 included the initial trial use of the Air Guard Division beyond the metropole.⁵⁸⁴ The formation of this unit—and the undertaking of the air convoy to Southeast Asia—indicates that French officials were investigating possibilities for defending Indochina that did not rely solely on an air force contingent that was permanently stationed in the colony.

Like other French observers, Governor General Brévié praised this voyage and the efforts of the aircrews; Brévié noted with satisfaction how the operation, which was directed by a General Pastier, had left a “profound impression” on the European and indigenous populations. The Governor General explained that this mission had demonstrated “France’s interest in its far-off possession in Asia...[at a time when] the Sino-Japanese conflict leaves a shadow hanging over the destiny of this region.” Yet Brévié cautioned against becoming overly optimistic about the ability of metropolitan forces to come to the defense of Indochina in a timely manner. He estimated that with the probable scenario of the hoped-for material assistance arriving too late, Indochina would be required to face an initial hostile incursion with only the colony’s own resources. However dazzling were the possibilities that Pastier’s mission had appeared to open up, the Governor General concluded, “the air defense of Indochina can and must rest only on

⁵⁸⁴ Manchon, 618-619.

a complete organization [that is] installed on its soil and that allows it, while waiting for assistance from the metropole, to face outside air attacks forthwith.”⁵⁸⁵

Similarly, Devèze wondered if, in the event of a generalized conflict, the colony could actually count on aviation reinforcements from France. He pondered this question while taking into account not only the possibility that aircraft resources could be considered more crucial to the European theater but also the prospect that difficulties would arise in the lengthy journey from France to Southeast Asia. Devèze wrote that with the present capabilities of aeronautics technology, this metropolitan aid would probably consist of only heavy, long-range aircraft. With this point in mind, he made three observations. First, the successful utilization of such planes would be determined by the conditions of the local infrastructure.⁵⁸⁶ Second, Indochina would not be able to expect a contribution from lighter aircraft beyond those with which the colony’s air force should have already been provided; dispatching faster fighter planes from France did not appear as a viable option, Manchon notes, because these planes lacked the required long-range capabilities. Third, barring a preemptive declaration of war, metropolitan reinforcements would be unable to provide immediate aid to Indochina in the event of a sudden attack.⁵⁸⁷

⁵⁸⁵ SHAA, 2B33/D1, “Le Gouverneur Général de l’Indochine à Monsieur le Ministre des Colonies,” December 31, 1937. Brévié added that, because the first objectives of an enemy operation would likely involve targeting Indochina’s air force facilities, the capacity for action of any metropolitan aviation reinforcements would be seriously compromised upon arriving in the colony.

⁵⁸⁶ The infrastructure did not appear to Devèze to be particularly well suited to receiving long-range planes such as the Farman aircraft. “Currently and in dry periods,” he remarked, only four of the local airstrips were able to accommodate these heavy airplanes without risk of incident; to this list of four airfields—Gia Lâm, Tong, Vientiane, and Tan Son Nhut—he cautiously added the runways at Tourane and Hué. Later in his report, Devèze indicated his preference for aircraft that were not only lighter than the Farman planes but also better adapted to the infrastructure’s “still rather rudimentary” condition.

⁵⁸⁷ SHAA, 2B33/D1, “Compte rendu sur le passage en Indochine des avions Farman 221 et 222 ayant effectué les manœuvres aériennes d’Outre-Mer,” [December 17, 1937]; Manchon, 625. The date of Devèze’s report is found in Cony and Ledet, 241.

Air force Deputy Chief of Staff Tarnier confirmed Brévié and Devèze's verdict two months later. For the metropole to intervene in the defense of the empire, Tarnier explained, there needed to be not only a suitable local air network but also military planes available to assist. The fundamental problem of a lack of sufficient resources remained though, which was an issue that French officials both reluctantly acknowledged and desperately attempted to address. Tarnier himself observed, "in the event of even a localized colonial conflict, it does not seem that the European situation, in the *present* state of our air forces, makes it possible to divert units to reinforce the defense of our overseas possessions [*italics original*]." ⁵⁸⁸

While the overseas maneuvers were successful in both meeting the stated objectives without major incident and positioning the French empire's air defense at the center of strategic debates. Even so, these exercises had also revealed the Air Guard Division's ineffectiveness as an option for defending the empire. In analyzing the shortcomings of this group, Manchon contends that it was situated too far away, would take too long to put into operation, and had too few "means of action" (*moyens d'actions*). Consequently, shortly after he was named air force Chief of Staff on March 8, 1938, General Vuillemin determined that this aviation unit would be discarded, effective April 1. ⁵⁸⁹

⁵⁸⁸ SHAA, 2B31/D4, "Le Colonel Tarnier, 1er S/Chef de l'Etat-Major de l'Armée de l'Air à Monsieur le Général Billotte, Membre du Conseil Supérieur de la Guerre, Gouverneur Militaire de Paris, Président du Comité Consultatif de Défense des Colonies," February 14, 1938.

⁵⁸⁹ Manchon, 625-626.

Local Aeronautics Production in Indochina

Along with considering options that involved having the metropole either provide planes to colonial squadrons or directly assist in the defense of overseas France, officials examined the prospect of having individual colonies produce some of their own war equipment. Yet a key problem was that, from the 1920s, little effort had been made to develop raw material industries within the empire. For Indochina in particular though, it was recognized that the colony faced the realistic possibility of being cut off from the metropole for an extended period; this eventuality led the Advisory Committee for the Defense of the Colonies (*Comité consultatif de défense des colonies*) to determine in late December 1936 that Indochina was the only area of the empire in which the establishment of a local war industry was an option worth investigating. The Committee's judgment was reflected in the attempts in the second half of the 1930s to utilize local materials and personnel for building up the colony's air force.⁵⁹⁰

By the fall of 1938, metropolitan officials were studying the possibility of developing an aeronautics production center in Indochina. In late October, Minister of the Colonies Mandel requested that the Air Ministry provide feedback on a recent study concerning the local construction of wooden aircraft frames; such a facility would make the colony less dependent on France for aviation materials. On November 15 and without waiting for the Air Ministry's response, Mandel approved a plan for building an

⁵⁹⁰ Thomas, "At the Heart of Things," 345-346. Even as military aviation was being organized in the early 1920s, officials aimed to incorporate locally sourced materials into the processes of assembling and repairing aircraft in Indochina. Yet this interest was, in general, not reflective of the larger scope of the efforts discussed below. And, of course, the need for planes—both quantitatively and qualitatively—had reached a critical point the following decade.

aeronautics factory in Indochina—at a cost of 100 million francs—that would be able to produce 150 airframes and 400 motors in a year or less.⁵⁹¹

Several months later, Air Minister La Chambre expressed his dissatisfaction with this project, highlighting that the plan was premature and failed to properly take account of certain regulations concerning the role of the Air Ministry. Furthermore, he believed that this proposal was, in fact, beneficial neither to France nor Indochina. Elaborating, La Chambre explained that the project would only allow for the production of a single type of airplane and that Indochina would still need to rely on the metropole for aircraft materials, which would ultimately divert precious resources away from France. The Air Minister concluded that the project would neither “provide the colony with the sought-after autonomy” nor “lead to any savings.” La Chambre, Thomas frankly states, felt that “it was nonsense to believe that a solitary assembly plant could produce enough fighters to alter the strategic planning of the Japanese military.”⁵⁹²

In any case, the plan developed by the Minister of the Colonies would not have been able to immediately enhance the colony’s air force. At a meeting held at the Air Ministry on May 10, 1939, it was noted that the proposed facilities would begin producing airframes—and these would still require engines from France—toward the start of 1941. The gathered commission, whose purpose was to determine which aircraft

⁵⁹¹ SHAA, Z12946/D1, “Note sur la fabrication d’avions en Indochine,” February 8, 1939. Proposals were also examined for the local production of aircraft munitions, bombs in particular. See, for instance, SHAA, 2B33/D4, “Note pour la Direction du Matériel Aérien Militaire,” April 5, 1938, and SHAA, 2B33/D4, “L’État-Major de l’Armée de l’Air à la Direction du Contrôle, du Budget et du Contentieux,” May 14, 1938.

⁵⁹² SHAA, Z12946/D1, “Note sur la fabrication d’avions en Indochine,” February 8, 1939; Thomas, “At the Heart of Things,” 352. Thomas makes the more general point that projects for the establishment of parallel industries—colonial and metropolitan—remained hotly disputed in France. The reasoning was that fostering industrial development in the empire would create unnecessary competition and divert resources from the metropole.

model was best for Indochina, preferred that any manufacturing center should initially focus on the assembly of planes using only materials sent from France. For his part, La Chambre preferred to maintain the status quo while also endorsing the idea of providing the colony with enough aeronautics supplies to sustain the air force for several months of war.⁵⁹³

The commission's report seems to indicate that the Ministry of the Colonies' proposition was still being considered in the late spring of 1939 despite La Chambre's objection several months prior. By the date of this meeting, the plan had progressed to the point of a contract for the facilities and equipment being concluded with the Breguet aeronautics firm. Furthermore, this account noted that the "production surplus" of the locally re-assembled planes could be exported toward French territories around the Indian Ocean as well as "neighboring countries," which were presumably not hostile to the French. Manchon notes that the effort to establish a local site for building planes and munitions continued even with the outbreak of war in September 1939. What remained appealing about this type of facility, he explains, was that it not only allowed Indochina to address part of its aviation needs but also reduced the empire's dependence on metropolitan aeronautics materials. Manchon adds that the availability of local resources could prove crucial if the communication lines with the metropole were severed. The manufacturing center was being erected at the Tong base by the end of the year, but this still-disputed project was ultimately abandoned the following summer. After his

⁵⁹³ SHAA, 2B33/D3, "Compte-rendu de la Commission chargée de déterminer le type d'avion devant équiper les formations aériennes d'Indochine," [May 20, 1939]; SHAA, Z12946/D1, "Note sur la fabrication d'avions en Indochine," February 8, 1939. La Chambre did endorse, and had perhaps even suggested, the proposal for an assembly factory and repair workshop that would initially rely on parts sent from the metropole; these facilities would utilize more and more local resources as they were gradually expanded into a full-scale aeronautics industry.

appointment as Governor General in July 1940, Admiral Jean Decoux ended the program due to rising costs and interminable delays.⁵⁹⁴

Aside from establishing an aeronautics facility in the colony, other locally based solutions were offered to address the issue of improving Indochina's air force. Most of these proposals involved utilizing the colony's existing manpower and machines. For example, in 1935 a General Armengaud conducted a two-week tour of Indochina's airfields and aero clubs, taking time to encourage local Frenchmen to train as pilots. Armengaud envisioned the formation of a reserve air force consisting of aero-club members from around the empire. Despite enthusiastic responses from the settler populations, this idea was unrealistic given that France already was failing to meet metropolitan demands for military aircraft and thus could not be expected to supply the empire with additional materials. As further evidence of this plan's impracticality, Thomas' cleverly observes that "a host of trained settler pilots was no more feasible than divisions of Mois tribesmen halting a Japanese advance." As a more reasonable option for employing aero-club resources, Devèze proposed using the groups' equipment and personnel for transporting military orders and General Staff officers.⁵⁹⁵

Separately, Devèze suggested that the air force could requisition the crewmembers and aircraft that Air France was using on its recently opened route between Hanoi and Saigon. By early 1938, air force commandants throughout the empire were granted the power to requisition civilian aircraft, crew, and any infrastructural materials

⁵⁹⁴ SHAA, 2B33/D3, "Compte-rendu de la Commission chargée de déterminer le type d'avion devant équiper les formations aériennes d'Indochine," [May 20, 1939]; Manchon, 641.

⁵⁹⁵ Martin Thomas, "Economic Conditions and the Limits to Mobilization in the French Empire, 1936-1939," *The Historical Journal* 48, no. 2 (June 2005): 495; SHAA, 2B33/D6, "Exercices de Cadres et Manœuvres"; Thomas notes that Governor General Alexandre Varenne had in fact made this proposal for utilizing the Mois as a colonial defense force.

in the event of mobilization for war. Responding to an inquiry about the application of this statute to Air France's line to Indochina, Minister of the Colonies Théodore Steeg wrote that the personnel and materials used on the route east of Karachi would be withdrawn to Saigon; the six aircraft that traversed this section would then be repurposed as a section of cargo planes. As a means of further compensating for the air force's shortages, Steeg also pointed out that the Air Minister had determined that private tourism aircraft could be requisitioned.⁵⁹⁶

Reflecting on options for putting civilian aviation resources at the disposal of the air force, certain officials were unconvinced about the military value of Indochina's non-military personnel and aircraft. Augereau, for instance, voiced skepticism regarding the advantage of employing commercial and tourism planes. In late November 1936, he expressed serious doubts about the extent to which such additions would improve the capabilities of the military squadrons. Even prior to the mid-1930s, officials had appeared unwilling to entrust parts of the civilian workforce with the task of making a productive contribution to the air force. Glaize opined in February 1924 that the only way to overcome the weak position of the colony's air service was to mobilize reserve personnel and use local facilities to meet some of the requirements for aeronautics supplies. "Without mentioning it for now," Glaize added, "we can also avoid the assistance of personnel and material from civil aviation companies that could come to be set up in

⁵⁹⁶ SHAA, 2B33/D1, "Compte rendu sur le passage en Indochine des avions Farman 221 et 222 ayant effectué les manœuvres aériennes d'Outre-Mer," [December 17, 1937]; SHAA, 2B33/D1, "Le Ministre des Colonies à Monsieur le Gouverneur Général de l'Indochine," March 9, 1938. Steeg's letter stated that officials anticipated that service on Air France's route beyond Syria would be discontinued in the event of a conflict.

Indochina.”⁵⁹⁷ Yet the fact that French officials had to seriously consider pressing civilian resources into the service of the air force underscores the increasingly desperate situation that French Indochina faced by the later 1930s.

The French Air Force, the Aeronautics Industry, and the Economy

By the mid-1930s the external threats to Indochina were evident, as were different options for how to deal with these menaces. Yet the efforts to quantitatively and qualitatively improve the colony’s air force were mired in a morass of economic, inter-service, and industrial challenges that originated in a France that was scrambling to address the looming danger of a second European conflict. As the effects of these problems radiated from metropole to colony, they essentially stymied the development of a military aviation presence that was capable of providing an air defense for Indochina.

John E. Dreifort observes that military officials in France firmly believed that the majority of the nation’s defensive capabilities would be needed to stave off Germany in the event of war. Consequently and even without considering the additional blows that the economic crisis dealt to Indochina, France’s military forces in Southeast Asia would be “woefully inadequate” to take the lead in containing Japanese expansion efforts.⁵⁹⁸ As Dreifort’s comment implies in referencing the need to focus on the defense of France, Indochina’s military deficiencies were not singular. Simply put, the French government prioritized the defense of the metropole over protecting the empire. “Reduced to essence,” Thomas states, “empire defense was an unaffordable luxury to a France

⁵⁹⁷ SHAA, 2B33/D1, “Le Colonel Augereau à Monsieur le Président du Conseil de Défense du Groupe de l’Indochine,” November 23, 1936; ANOM, GGI 66499, “Note sur l’Aviation en Indochine. Demandée par le Gouvernement Général,” [February 3, 1924].

⁵⁹⁸ John E. Dreifort, *Myopic Grandeur: The Ambivalence of French Foreign Policy toward the Far East, 1919-1945* (Kent, OH: The Kent State University Press, 1991), xi.

struggling to meet the threat of German invasion.”⁵⁹⁹ Additionally, France lacked a coherent program for defending the entire empire. The expectation was that imperial resources would be used in some capacity to support the French war effort in Europe. By the mid-1930s the defense plan was, in Thomas’ estimation, a “confusing and ad hoc system” that failed to reconcile the fact the colonial forces would not only have to ensure security in the empire but would also likely have to serve in France. In fact, Thomas argues that Indochina’s situation in the 1930s highlighted, more than anywhere else in the empire, the contradiction between the expectations for colonial assistance and the reality of local external threats.⁶⁰⁰ Dreifort summarizes the dilemma that France faced in attempting to deal with rising tensions both in Europe and in Southeast Asia:

If the resources of the empire were concentrated for the defense of French interests in China, Indochina, and the Pacific, Germany might seize the opportunity to attack in Europe. On the other hand, by focusing its attention and resources in Europe, France ran the risk of providing Japan with an opportunity to expand in the Far East at French expense.⁶⁰¹

Like the majority of Western nations, France faced the challenges of the Great Depression. The French economy began to feel the effects of the crisis in early 1931. France reached an economic nadir by mid-1935 and only began to recover at the end of

⁵⁹⁹ Martin Thomas, *The French Empire between the Wars: Imperialism, Politics and Society* (Manchester: Manchester University Press, 2005), 317. Outside of French North Africa—Algeria, Morocco, and Tunisia—the empire did not receive much funding or materials for defense; indeed, the Maghreb remained the only area of overseas France in which plans were implemented for the integration of the air force into the defense system. Even in North Africa though, France could not provide enough military resources to ensure the security of its possessions. Martin Thomas, *The French Empire at War, 1940-1945* (Manchester: Manchester University Press, 1998), 27-28; Thomas, “At the Heart of Things,” 341, 345.

⁶⁰⁰ Thomas, “At the Heart of Things,” 335, 354. Thomas sums up the idealism of the concept that the empire’s contribution to the future war effort would “save” France: “the anticipation of colonial sacrifice seemed immune to consideration of practical impediments to it, such as inadequate transport, colonial recruitment and training difficulties, and pressing manpower requirements within the colonies themselves.” Thomas, “At the Heart of Things,” 339.

⁶⁰¹ Dreifort, xi.

the decade.⁶⁰² Of course, the problems experienced in the metropole certainly had repercussions throughout the empire. Thomas points out that the negative consequences of the difficult period from 1931 to 1935 were worse in the colonial setting than in France, and, as a result, the imperial economies required more time to stabilize than did their metropolitan counterpart.⁶⁰³ In fact, even when supposedly at its pinnacle in the 1920s, French Indochina was already beginning to suffer from “symptoms of dysfunction,” as economic and political problems started to arise.⁶⁰⁴ The economies throughout the empire showed signs of recovery between 1936 and 1939. However, as the political situation in Europe concurrently began to deteriorate, France began pressing the colonies for wartime resources, and these demands threatened to sink the empire back into a depression.⁶⁰⁵

The challenges that the air force General Staff and the Air Ministry faced in trying to establish a viable metropolitan air force also contributed to the struggles encountered by the aviation service in Indochina. Robert J. Young writes that by 1936 the air force was both “tactically and strategically deficient.” This situation was the consequence of not only the economic crisis but also a “clash of theories, neither of which was characterized by a broad vision” and an “inter-service credit distribution which gave aviation a low priority.” While military expenses began increasing after 1934, Eugen Weber adds, the combination of “military conservatism and financial orthodoxy” resulted

⁶⁰² Julian Jackson, *The Popular Front in France: Defending Democracy, 1934-38* (Cambridge: Cambridge University Press, 1988), 20.

⁶⁰³ Thomas, “Economic Conditions and the Limits to Mobilization in the French Empire, 1936-1939,” 498.

⁶⁰⁴ Pierre Brocheux, “The State and the 1930s Depression in French Indochina,” in *Weathering the Storm: The Economies of Southeast Asia in the 1930s Depression*, ed. Peter Boomgaard and Ian Brown (Singapore: Institute of Southeast Asian Studies, 2000), 268.

⁶⁰⁵ Thomas, “Economic Conditions and the Limits to Mobilization in the French Empire,” 498.

in the air force receiving a meager portion of funds. Aviation historian Patrick Facon explains that the army and navy had vehemently opposed the development of an independent air force because those who endorsed an autonomous air arm sought to overturn traditional war strategies that favored sea power and land forces.⁶⁰⁶

The impediments to rearmament in mid-to-late 1930s France were not limited to disagreements about military doctrine or rivalries among the armed services. In fact, for most of the interwar years, the structure of France's aeronautics industry was itself an impediment to the mass production of aircraft. "The aeronautical industry was a shambles," Weber contends, describing this sector as "a congeries of small firms incapable of facing the world of modern productivity and unwilling to test its waters." This situation appeared as somewhat of a reversal of the position that the country's aeronautics firms had occupied prior to the 1920s.⁶⁰⁷ Herrick Chapman indicates that as early as 1928, "nearly everyone connected with French aviation recognized that French manufacturers were slipping behind."⁶⁰⁸

Thus in the early 1930s, France was faced with the daunting task of reviving its aeronautics industry in the face of both advances in aviation technology and the impending threat of German rearmament. In short, a comprehensive restructuring,

⁶⁰⁶ Robert J. Young, "The Strategic Dream: French Air Doctrine in the Inter-War Period, 1919-1939," *Journal of Contemporary History* 9, no. 4 (October 1974): 68; Eugen Weber, *The Hollow Years: France in the 1930s* (New York: W.W. Norton and Company, 1994), 254; Patrick Facon, "Politics and French Aviators: A Prism on the International European Crises of the 1930s," in *The Influence of Airpower upon History: Statesmanship, Diplomacy, and Foreign Policy since 1903*, ed. Robin Higham and Mark Parillo (Lexington: The University Press of Kentucky, 2013), 64.

⁶⁰⁷ Weber, 254. Bolstered by a variety of small aircraft-manufacturers and a reputation for producing innovative aviation designs, France gained a reputation as "the world leader in aviation" by the start of the First World War. During the conflict, the French aircraft industry produced the most material of any of the warring nations. This industry lost its premier status in the postwar years though. Herrick Chapman, *State Capitalism and Working-Class Radicalism in the French Aircraft Industry* (Berkeley: University of California Press, 1991), 17.

⁶⁰⁸ Chapman, 17.

expansion, and modernization of the French aircraft industry sector was needed.

However, as Chapman points out, “change of this sort did not come easily in France, where mass production and industrial concentration were much less advanced than in Germany.... Most of the major aircraft manufacturers evaded rationalization in the early 1930s.” He concludes that by 1932 the aeronautics industry remained “as fragmented, as ill equipped for mass production, and as poorly prepared to compete with foreign rivals as it had been in in the late 1920s.”⁶⁰⁹ Of course, the dizzying variety of aircraft models considered for Indochina’s air force during the mid-to-late 1930s highlights this industry’s disarray.

By the later 1930s the qualitative and quantitative deficiencies that resulted from France’s floundering effort to mass-produce aircraft were evident.⁶¹⁰ Alarmed by the aggressive actions of Nazi Germany in 1938 and 1939, the French government began a feverish rearmament plan in an attempt to deliver the modern aircraft that the air force had needed since the middle of the decade.⁶¹¹ Yet, even prior to Hitler’s annexation of Austria in March 1938, the French government was aware of how severely unprepared the nation’s air force was for war in Europe. Chapman observes that a “sense of urgency actually became pervasive at the highest levels of government” in mid-January 1938 following Vuillemin’s report that in the event of a conflict, the German air force would handily defeat its French counterpart in only a few days. In the wake of this admission,

⁶⁰⁹ Chapman, 15, 29.

⁶¹⁰ Between June 1937 and January 1938, for example, France delivered seventy-one combat-ready aircraft. This figure paled in comparison to the 4342 produced in Germany, the 2335 from Great Britain, and even the 293 built in the United States. Christopher Anthony Cain, “L’Armée de l’Air, 1933-1940: Drifting toward Defeat,” in *Why Air Forces Fail: The Anatomy of Defeat*, ed. Robin Higham and Stephen J. Harris (Lexington: The University Press of Kentucky, 2006), 58.

⁶¹¹ Chapman, 153.

La Chambre, who had recently replaced Cot as Air Minister, was able to gain approval for a revised plan for aircraft production.⁶¹² The actualization of a new program proved difficult though. “Making aircraft production a priority of the government was only a beginning,” Chapman explains, “the real challenge was to find a way to apply the financial resources of the state to enable the industry to do what it had not done since the First World War—mass-produce airplanes.”⁶¹³

A major three-year rearmament scheme—Plan V—was approved by the Superior Air Council on March 15, 1938, and this year itself marked a turning point for the aviation industry.⁶¹⁴ For the first time since the 1920s, the annual aircraft output saw a substantial increase. While manufacturers produced 833 aircraft in 1937, the number for 1938 was 1477 airplanes of varying quality.⁶¹⁵ With the guidance of the Air Ministry, the French aeronautics industry was able to improve the monthly output of aircraft in the two years leading up to the Nazi invasion of France.⁶¹⁶ Between September 1939 and May 1940, manufacturers were able to drastically increase production. In fact, France produced more airplanes during this period than either Great Britain or Germany.⁶¹⁷

Overall, the rearmament effort occurred too late though, as a wide gap—in terms of both quantity and quality—still separated French airpower from the superior German

⁶¹² Chapman, 144, 153. Cot’s nationalization of the aeronautics industry in 1936 had initiated, albeit not without political disputes and factory unrest, a process for reorienting aircraft production toward rearmament. Chapman, 153.

⁶¹³ Chapman, 153.

⁶¹⁴ Chapman, 156. This program identified production targets of 2617 frontline and 2122 reserve aircraft by 1939.

⁶¹⁵ Emmanuel Chadeau, *De Blériot à Dassault: Histoire de l’Industrie Aéronautique en France, 1900-1950* (Paris: Fayard, 1987), 307.

⁶¹⁶ In November 1938, for instance, French manufacturers were producing forty-one machines per month, but, in May 1939, this figure had increased to 176 aircraft per month. Chapman, 165.

⁶¹⁷ Chapman, 223.

air service when France and Germany faced each other in the spring of 1940. When Nazi forces invaded France in May, the German air service counted more than three times as many aircraft as the French air force. Furthermore, the aircraft that France deployed were, on the whole, of an inferior quality compared to the German machines: many of the French planes were “unfit for combat,” lacking cockpit instruments, certain equipment, or armaments.⁶¹⁸

Conclusion

While Indochina’s military aviation service was called on to play a role in defending the colony against external threats—Japan and Thailand were identified as the most likely adversaries—government and military officials recognized that the air force would be unfit for this task without major renovations to the local fleet. This issue of equipping the colony with sufficient aerial reinforcements became more pressing as the 1930s progressed. However, during this same period, the work of providing Indochina with aircraft that were more powerful and of a newer design than the outdated and overworked planes currently in use also became more difficult. Moreover, officials came to realize that Indochina could neither realistically expect timely air assistance from France in the event of an external attack nor employ local resources to bolster its air force.

The consequences of numerous problems within France radiated toward Southeast Asia, leaving Indochina’s air force plainly incapable of carrying out the defensive tasks that were optimistically expected of it. Within France, inter-service rivalries among the armed forces, an economic crisis, and socio-political strife combined with an aeronautics

⁶¹⁸ Cain, 58; Chadeau, *De Blériot à Dassault*, 308.

industry that remained ill suited for the mass production of aircraft for most of the interwar years and a worsening international climate. As war threatened Europe in the later 1930s, the already limited aviation resources needed to be funneled toward the defense of the metropole instead of being spread toward the outer reaches of the empire. As Manchon points out, military aviation in the empire “did not exist in a vacuum.” Decisions made in France about the structure and financing of the air force, the capabilities of the metropolitan aeronautics industry, the requirements of the metropolitan squadrons, and, above all, the need to protect France itself, dictated how—and with what—the empire’s air services would be equipped.⁶¹⁹ This situation proved especially true for Indochina, both the most remote and most threatened part of overseas France. “Like the other European countries that had an empire in the Pacific, [namely,] Great Britain and the Netherlands,” Cony and Ledet observe, “the forces in the Colony were feebly armed and too few in number to withstand the armed forces of a nation like Japan. Unfortunately, the air force units were the clearest reflection of the deficiencies in personnel and material.”⁶²⁰

When France found itself facing another global conflict less than two decades after the prolonged slaughter of the First World War, neither the French air force, nor Indochina—or the French empire as a whole—appeared as assets to be defended at all costs. In short, France lacked the resources to defend its extensive empire, a fact that the French were never willing to openly face. In theory, the empire was supposed to furnish the resources that justified France’s claim to be a major world power, but, in practice, the

⁶¹⁹ Manchon, 654.

⁶²⁰ Cony and Ledet, 425.

empire did not figure into serious French thinking about a major war, which centered on protecting the metropole from a German invasion.

CONCLUSION: AVIATION AND INDOCHINA AFTER THE INTERWAR YEARS

While traveling on a French plane during his pedagogic tour of Indochina, Jean Marquet's young Annamese protégé declared, "I thought I was dreaming: I had just traveled almost two thousand kilometers, crossed ten rivers, and a thousand mountains...thanks to a flying machine that passed over all of Indochina in a few hours." Elsewhere in this fictional travelogue from 1928, Marquet's narrator proclaimed, "You can tell everyone that the French have conquered, by their science and their audacity, even the sprits of the air." Elsewhere, in the middle of the following decade, French Air Minister Victor Denain praised aviation in the French empire as a "perfect tool of authority and leadership."⁶²¹

Whether discussed in works of fiction or as part of the everyday activity of government, aircraft were for many interwar observers the embodiment of power, speed, technological prowess, and—in the empire—colonial authority. My dissertation has argued that the French, armed with this belief in aviation, employed aircraft as a vehicle for extending, consolidating, developing, and protecting French interests both within Indochina and throughout Southeast and East Asia. Indeed, an assortment of people and entities—government and military officials, scientists, commercial airlines, and local businesses—sought to put airplanes and seaplanes to use for a variety of tasks. The diverse work with which aviation was charged in Indochina included the following: mail and passenger deliveries; medical transports; photography and reconnaissance; coercion,

⁶²¹ Jean Marquet, *Les cinq fleurs: L'Indochine expliquée* (Hanoi: Direction de l'instruction publique en Indochine, 1928), 155, 153; ANOM, FM, 3 ECOL/22, d.2/année 1935/1936, "André (élève administrateur), *Mémoire sur l'aviation*"; quoted in Jean-Baptiste Manchon, *L'aéronautique militaire française outre-mer, 1911-1939* (Paris: Presses de l'université Paris-Sorbonne, 2013), 652. For more detail on Marquet's text, see David W. Del Testa, "Paint the Trains Red: Labor, Nationalism, and the Railroads in French Colonial Indochina, 1898-1945 (PhD Diss., University of California, Davis, 2001), 133-138.

for those natives who refused colonial authority, and astonishment, as a more general reminder of French control; and protecting the colony against external attacks. In short, aviation was viewed and utilized in Indochina as a multi-purpose tool of empire.

However, the hopes for aircraft were not matched by the realities of flight in the 1920s and 1930s. Aviation failed to get off the ground to the extent that its proponents imagined for several interconnected reasons. Problems with ensuring adequate financial and material resources—these shortages became much more dire as the 1930s progressed—combined with challenges of weather and geography that the French never fully overcame. These supply problems and the difficulties of the local environment in this part of the world—not to mention the distance between Europe and Southeast Asia—only further burdened the era’s relatively fragile flying machines. In turn, the limitations of contemporary aircraft were concerning to military and government officials laboring to install an infrastructure that would allow planes to safely travel in the colony. French military aviation and civil aviation were also challenged, both implicitly and explicitly, by nations in Europe, East and Southeast Asia, and the United States. These challenges to French aerial supremacy were present within the colony itself, although in a more indirect manner, through the ways that the colonized responded, or failed to respond, to French aviation.

This stark contrast between hopes and realities extended across the entire spectrum of how aircraft were utilized in the context of Indochina. Even in cases that the French could cite as aerial achievements, the realities of aviation tended to fall short of the hopes according to some metric—whether cost, usage, practicality, effectiveness, or speed of development. Moreover, this contrast between what the French believed aircraft

could achieve and what planes actually achieved—and the reasons for this gap as well—reveal much about the experience of French colonialism in Indochina. Thus my study encapsulates not only the highest hopes of the French imperialists but also the weaknesses and the limits of French control and technological prowess in the empire. Ultimately, in disappointment of the lofty expectations that the French had for powered flight and their faith in the seemingly unlimited potential of this technology, aviation failed to maintain, rejuvenate, and strengthen French colonial rule in Indochina. French power and colonial authority—even in the form of a modern, multi-purpose device like the airplane—were not omnipotent.

For all intents and purposes, the end of the interwar period marked the end of aviation as a multi-purpose tool of empire in Indochina. Yet the history of French aviation in Indochina extends into the mid-1950s. The question arises, then, of the links between the utilization of aircraft in French Indochina during the heyday of colonial aviation and the usage of planes during the difficult years that stretched from the Second World War until the end of the First Indochina War in 1954. The extent of the turmoil during this period marked a distinct break with the prior decades of colonial history. While aviation was used in the 1940s and 1950s, the context mainly related to wartime necessities involving transportation and military operations. Stated otherwise, airplanes and seaplanes were not employed in exactly the same way in these two periods; indeed, the scope of how aircraft were employed in Indochina was sharply narrowed in the years that followed the French defeat in June 1940. While the previous point may seem obvious, what is less evident is that aviation, both military and civil, did play a key role in the victories and the defeats of these wartime years.

Moreover, many of the same problems that impeded aviation in the 1920s and 1930s also hindered the deployment of aircraft in France's short conflict with Thailand that started in late 1940 and, more consequentially, during the protracted war with the Vietminh that broke out in 1946. Mirroring what was plainly evident during the interwar era, French aviation was never able to fully overcome the hurdles of Indochina's geography and weather. In addition, the lack of modern aircraft and an inadequate number of personnel again proved problematic, as did the inability to find suitable aeronautics resources either locally or via the metropole. Furthermore, Indochina did not have an aviation infrastructure suited to the needs of the moment; while these needs related to wartime requirements in a way that was obviously not present during the interwar years, the fact remains that aircraft could not operate effectively without certain basic elements in place on the ground.

A final, major concern—and one that certainly was not apparent in the 1920s and 1930s—was a local population that was vehemently opposed to returning to colonial rule as it had existed prior to the Second World War. Of course, as my dissertation has shown, there was insurgent activity and growing anti-colonial sentiment in Indochina during the interwar period, but the specific circumstances in which these manifestations occurred were quite different than what emerged after the Second World War. Yet in both environments, the French wholeheartedly believed in the efficacy of airpower as a means of putting down rebellion and asserting—or reestablishing—control. In fact, the use of airpower against insurgency in Southeast Asia only increased after the bombing and strafing missions of the early 1930s. In the decades that followed, historian Alexander B. Woodside states, the French military—and later the American forces—relied upon

“increasingly destructive doses of air power...in a desperate attempt to stop revolution.”⁶²² For France as well as the United States, Daniel R. Headrick contends, the firm conviction that possessing superior airpower would guarantee victory proved to be a “disastrous illusion.”⁶²³

For the French, the experiences in Indochina during the 1940s and 1950s magnify not only many of the challenges they had encountered in getting aviation off the ground in the interwar years but also the disastrous results of not adequately dealing with these issues. A measure of longer-term success did occur for civil aviation in Indochina during these years, though this success was not primarily about the French. Specifically, the period of the First Indochina War led to the eventual establishment of locally operated, non-French airlines. As French colonialism made its exit from Southeast Asia in the 1950s, Vietnam, Laos, and Cambodia each were able to launch their own air services.

The Franco-Thai Conflict and the Second World War

The fall of France to Nazi Germany in June 1940 initiated a sequence of events that ultimately led Indochina into a relatively short conflict with Thailand.⁶²⁴ Around the time France surrendered, the colony was defended, Bernard F. Fall estimates, by a force

⁶²² Alexander B. Woodside, *Community and Revolution in Modern Vietnam* (Boston: Houghton Mifflin, 1976), 175-176.

⁶²³ Daniel R. Headrick, *Power over Peoples: Technology, Environments, and Western Imperialism, 1400 to the Present* (Princeton, NJ: Princeton University Press, 2010), 328.

⁶²⁴ Just before war broke out in Europe in September 1939, the French had sought to conclude a non-aggression pact with Thailand. The Thai government was willing to accept such an accord on the condition that the Mekong River serve as the new Thai-Indochina frontier. French representatives agreed to this proposal in principle, and the pact was signed on June 12, 1940. However, France was defeated by the Nazis before the treaty could be ratified, and the Vichy government was only willing to move forward with a treaty that did not entail redrawing the border. Edward M. Young, *Aerial Nationalism: A History of Aviation in Thailand* (Washington: Smithsonian Institution Press, 1995), 148.

composed of “about 70,000 French troops equipped with completely obsolete material—there were 15 modern fighter planes and one operational tank company in the whole country.” Furthermore, Indochina was facing “the territorial appetites of both Japan and her sole ally and satellite in Asia, Thailand.”⁶²⁵

The scenario that unfolded to bring Thailand and Indochina to war appeared to confirm French military thinking regarding this nation’s irredentist intentions. Emboldened both by the French defeat in Europe and by the appearance of an Indochina whose leaders were essentially powerless against Japanese demands, Thailand moved to reacquire its lost territories. The conflict that broke out, which lasted from late November 1940 until late January 1941, included various encounters between the opposing air forces. According to the peace treaty—a settlement that Japan mediated—Thailand regained most of its ceded territories, and the French in Indochina received six million piasters in reparations. While not a decisive victory for Thailand, the Franco-Thai War was nonetheless tremendously important for the nation; the conflict represented the first time that Thailand had won concessions from a European power.⁶²⁶

Assessing the job of the French air force during this war, Edward M. Young comments that this service “fought commendably with the material it had available.” Likewise, Christophe Cony and Michel Ledet judge that French military aviation performed respectably in a conflict that pitted it against an air force that was numerically superior and outfitted with more modern flying machines. The French air force had sustained significant damage though: about thirty percent of the local contingent was

⁶²⁵ Bernard B. Fall, *Street Without Joy: The French Debacle in Indochina* (Mechanicsburg, PA: Stackpole Books, 1994), 22. Originally published in 1961 by Stackpole Books.

⁶²⁶ Young, *Aerial Nationalism*, 148, 168, 170.

unserviceable by the time the fighting ceased.⁶²⁷ Of course, considering the decrepit status of the air force at the end of the interwar period, these losses—or any losses for that matter—would be all the more significant in later years.

Meanwhile, Pierre Brocheux and Daniel Hémery observe that “the war in Europe, France’s surrender to Germany in June 1940, and the refusal of the British and Americans to commit to eventual cooperation with the French colonial enterprise made Indochina an easy target for the Japanese.” The Vichy government signed an accord with Japan, which gave the French the “illusion of a durable sovereignty” in Indochina. This illusion was shattered on March 9, 1945, when Japan initiated a complete administrative takeover of Indochina.⁶²⁸ Despite the damage sustained to its fleet since 1940 and a shortage of spare parts, until 1945 the air force remained “militarily operational.” In this capacity, the majority of the air force’s duties involved flying support missions to assist the land army. Cony and Ledet add that these assignments were carried out even though, in the event of war, the effectiveness of the service’s completely obsolete Potez 25 planes was doubtful.⁶²⁹

⁶²⁷ Young, *Aerial Nationalism*, 172; Cony Christophe Cony and Michel Ledet, *L’Aviation française en Indochine: Des origines à 1945* (Outreau: Lela Presse, 2012), 357. Thailand’s air force claimed to have brought down five French planes and destroyed seventeen others that were on the ground while counting a total loss of between eight and thirteen of its aircraft to French attacks. French reports offered slightly different figures; such accounts indicate that four Thai aircraft were shot down, with fifteen more destroyed on the ground. The French conceded that three planes had been lost, but, as Young notes, “in reality [the] losses were greater.” Young, *Aerial Nationalism*, 171-172.

⁶²⁸ Pierre Brocheux and Daniel Hémery, *Indochina: An Ambiguous Colonization, 1858-1954*, trans. Ly Lan Dill Klein, with Eric Jennings, Nora Taylor, and Noémi Tousignant (Berkeley: University of California Press, 2009), 336, 348. Following Japan’s surrender in August 1945, “disarray and then anarchy took hold” in the colony. Having waited for an advantageous time to act, local political movements and parties seized the opportunity that this confusion provided. Brocheux and Hémery, 349.

⁶²⁹ Cony and Ledet, 425; Philippe Gras, *L’armée de l’air en Indochine (1945-1954): L’impossible mission* (Paris: L’Harmattan, 2001), 28.

Military Aviation and the First Indochina War

Predictably, and as the previous paragraph suggests, the air force still suffered from material deficiencies by the time France became embroiled in the First Indochina War near the end of 1946.⁶³⁰ As my dissertation has demonstrated, France clearly lacked a modern, powerful air force to challenge Nazi Germany both leading up to and during the Second World War. Modernizing the French air force was obviously an unrealistic option during the subsequent years of Nazi occupation and collaboration; as Cony and Ledet note, the French defeat in June 1940 “plunge[d] Indochina into an isolation that became total in the fall of 1941.”⁶³¹

François Le Roy describes the “tragic state of disrepair” of French aviation at the end of the Second World War. He observes the damaging consequences of various issues stretching from the 1930s until the liberation of France in the summer of 1944: “the adversities of war, combined with the errors of France’s air policy in the 1930s, had caused its ruin. The Vichy regime’s misguided actions, the occupiers’ exactions, the Allies’ raids, and the Resistance’s sabotages had left the aircraft industry in shambles.” The air force itself, Le Roy points out, at this time consisted of a “disparate and

⁶³⁰ In March 1945, General Charles de Gaulle’s government issued a declaration stating that the Indochinese Federation was to replace the Indochinese Union as the French regime in Indochina. This newer entity was composed of the same five colonies of the prewar era: Cochinchina, Tonkin, Annam, Laos, and Cambodia. The Indochinese Federation was to be integrated into the French Union, the postwar designation for metropolitan France and its overseas territories. Then, in 1949, Vietnam, Cambodia, and Laos became components of the Associated States of Indochina; these states became part of the French Union. The French government, Brocheux and Hémery observe, was “pretend[ing] that the French possessions in Asia were not beginning to disintegrate. French policy reflected the will to restore France’s status as a world power.” Eventually, “the reality of independence prevailed over the fiction of a restored empire” in Southeast Asia. Brocheux and Hémery, 355, 337.

⁶³¹ Cony and Ledet, 296.

unimpressive collection of French, American, British, Soviet, and Japanese battle-worn aircraft.”⁶³²

French military aviation thus entered the First Indochina War as a depleted service arm. Philippe Gras frankly concludes that the French air force was nonexistent in Indochina in 1945. For France to expect to deploy airpower effectively against a resilient enemy, the air force would have to be laboriously rebuilt. In fact, the air force truly started being reinforced only in 1949, nearly three years after the conflict had commenced. “In the end,” Gras writes, “only the transport planes, and, beginning in 1951, [certain] bomber aircraft, will really be suited for the war. The others, particularly the fighter planes, [were] designed for air combat or for theaters of operation less subject to climatic contingencies.” Yet there was no other option for what could be sent from France to bolster the air service. While the Second World War had of course left France with few spare aircraft, the French aeronautics industry was handicapped by misguided leadership as the nation emerged from the conflict.⁶³³

⁶³² François Le Roy, “The Elusive Pursuit of *Grandeur* and Independence: Mirage Diplomacy, French Foreign Policy, and International Affairs, 1958-1970,” (PhD Diss., University of Kentucky, 1997), 7-8.

⁶³³ Le Roy writes that in the years immediately after the Second World War, the French government’s overly ambitious plans for the aviation industry simply promoted a “wasteful policy of prototypes” and “counterproductive competition.” The government was not the only reason for the postwar industry’s disorganization and inefficiency, though. France possessed neither the human nor the economic resources to manage the “strategic obligations” of the Cold War and decolonization eras. The French aeronautics industry as a whole, and French military aviation in particular, did finally rebound. Detailing how the 1950s unfolded for French aviation, Le Roy writes that the French government finally “pulled itself together,” providing the nation’s aeronautics industry with the guidance that this foundering sector sorely needed. The air force was also able to recover, benefiting from both increased direction from the state and integration into NATO’s defense structure. Yet despite the progress that had been made, “not all was well” with the nation’s aeronautics industry from the mid-1950s. Budgetary limitations—long a major problem for French aviation—consistently posed a hurdle to recovery and growth for both the industry and the air force; these fiscal constraints were only worsened by the wars of decolonization in Indochina and Algeria. Le Roy judges that by 1958 “the French aeronautics

The material situation that the French squadrons faced—being outfitted with flying machines that generally were worn out, required constant maintenance in the humidity and heat of Southeast Asia, and were a poor fit for guerrilla warfare—proved to be a major problem that was never fully solved despite the arrival of newer American aircraft in 1950.⁶³⁴ Indeed, these deficiencies in suitable planes, spare parts, and munitions plagued the air force for the duration of the First Indochina War.⁶³⁵ In addition to quantitative and qualitative deficiencies in aircraft and aeronautics materials, the air force had to deal with a personnel shortage, which of course placed enormous strain on those who were serving.⁶³⁶

The entirety of these material problems was compounded by the fact that pilots were operating in a hostile country that lacked a suitable highway network. Aircraft offered the only rapid means for delivering supplies to military posts and for rescuing those in need. Deficiencies in other means of transport only increased what was already to be a heavy reliance on aviation. “Within Indochina itself,” Dominique Legarde observes, “the transportation routes—roads, rail lines, waterways—were blocked, and the

industry could proudly celebrate its achievements.” He concludes, “the position of France among air powers had dramatically improved between 1950 and 1958.” Le Roy, 9-10, 14-15, 22-23, 27.

⁶³⁴ The United States started providing aid to the French and Bao Dai’s French-backed government in the State of Vietnam in an effort to stop the spread of Communism in Southeast Asia. North Vietnam began receiving military assistance from Communist China in the same year as American help arrived. The French had also received aircraft from Great Britain, but these fighter planes were better suited for air combat against an opposing air force than for a war carried out in dense jungles and mountainous highlands. Mark Philip Bradley, “Making Sense of the French War: The Postcolonial Moment and the First Vietnam War, 1945-1954,” in *The First Vietnam War: Colonial Conflict and Cold War Crisis* (Cambridge, MA: Harvard University Press, 2007), 18-19; Gras, 19-20.

⁶³⁵ Philippe Gras, “L’adaptation tactique de l’armée de l’air et la guerre d’Indochine (1945-1954),” *Matériaux pour l’histoire de notre temps* 29 (1992): 22-23; Headrick, *Power over Peoples*, 335-336.

⁶³⁶ As there were no reserve flight teams in Indochina, aircrews carried out missions on what was essentially a non-stop schedule. Gras, 17.

maritime links with France were lacking.”⁶³⁷ Regarding the damage that anti-colonial forces had caused to the railroad network in particular, David W. Del Testa writes that between 1944 and 1954, “large sections of the railroads...became unusable due to Viet Minh sabotage.” In doing so, the Viet Minh “deprived the French of a major mode of heavy transport in areas under French control.” However, to address the military’s burgeoning transportation needs, the French could not simply lean more heavily on a functioning local air network that had been installed during the interwar years because no such network existed. Indeed, Legarde states that the current aerial infrastructure was composed of airstrips that were “all in a pitiful state” (*en piteux état*) in 1946 and needed to be adapted to a traffic that would ceaselessly intensify as the conflict evolved.⁶³⁸

Headrick offers the reminder that “environments can help or hinder conquerors,” and this latter scenario certainly was evident for the French air force as it struggled with problems of weather and geography during the First Indochina War.⁶³⁹ While the

⁶³⁷ The expectations that were heaped upon the air force were due in no small part to the fact only 150,000 troops—composed entirely of volunteers and Legionnaires—could be sent to Indochina; the relatively small size of this ground force was a result of it being “politically impossible to send draftees to reconquer a distant colony.” Headrick, *Power over Peoples*, 335.

⁶³⁸ Gras, 17; Dominique Legarde, *Aviateurs d'Empire: L'épopée de l'Aviation Commerciale dans la France d'Outre-Mer* (Chanac: La Régordane, 1993), 87; Del Testa, “Paint the Trains Red,” 308.

⁶³⁹ Headrick, *Power over Peoples*, 370. Gras emphasizes that the region’s heat and humidity caused malfunctions in aeronautics equipment and made working conditions for pilots and ground personnel very challenging, even dangerous. Moreover, the rainy season turned certain airfields into what were essentially “huge swamps.” Some of the larger bases remained fully operational throughout the year. Other airfields, however, had to limit the types of aircraft that could land at specific times of the year, and certain sites were simply unusable during the wettest months. More generally, few of the French airstrips were concreted. The French also grappled with foggy and hazy conditions, particularly in the more mountainous areas of Indochina—my dissertation has of course emphasized the problems that these climatic and geographical conditions caused for French aircraft in the 1920s and 1930s. The environment proved an at-times insurmountable challenge to the French land forces as well. “One of the reasons the French had lost their war was because the environment of Indochina was so hostile to conventional forces,” Headrick states. “There were few roads or open ground for tanks and trucks. Wetlands, rice paddies, and steep mountains impeded the movement of soldiers. And the

environment greatly handicapped the French, the Vietminh utilized local conditions to their advantage. Their ground forces not only “readily melted into the rural population” but also exploited a familiar landscape that was “the ideal terrain for ambushes and guerrilla tactics.” Moreover, Gras points out that aerial photography often was unable to spot the Vietminh’s mobile and well-camouflaged workshops and depots.⁶⁴⁰ This point provides a striking example of how the all-seeing, omniscient capabilities of the aerial perspective touted by the French in the interwar years could be enfeebled by a purportedly inferior enemy.

Commercial Aviation and the First Indochina War

Though increasingly restricted by a dwindling supply of materials and the damage inflicted by Allied bombings, civil air transport continued within Indochina during most of the Second World War; conversely, flights between France and the colony had ceased.⁶⁴¹ Yet in the First Indochina War, civil aviation played a major role in transporting people within Indochina and between France and Southeast Asia. Of course, the context for these non-military flights had shifted from the interwar years. As Legarde rhetorically asks, “did anyone really have the desire to travel to Tonkin during this period if they were not expressly obligated to do so?”⁶⁴²

forest cover made it impossible for aircraft to see the enemy.” Gras, 17; Headrick, *Power over Peoples*, 343.

⁶⁴⁰ Headrick, *Power over Peoples*, 335; Gras, 18.

⁶⁴¹ Cony and Ledet, 533-534. For more information on French civil and military aviation in Indochina during the period of the Second World War, see the relevant chapter in Cony and Ledet’s book. For the topic of civil aviation in particular during this time, see André Evrard, “La situation de la compagnie Air France en Indochine au cours des années 1939/1940,” *Icare* no.163 (1997): 82-97.

⁶⁴² Legarde, 88.

Resuming postal and commercial service to Southeast Asia in June 1946, Air France would be one of several French airlines that provided transport during this conflict. Indeed, a host of other aviation companies created in the late 1940s and early 1950s offered flights to, within, and through the colony during this time.⁶⁴³ It should be noted that many of these airlines were relatively small firms that had rather short-lived existences. These flights, moreover, should not suggest that there existed a flurry of “regular” commercial traffic but rather a traffic that was primarily motivated by the necessities of the wartime moment. Such necessities—which only increased as the conflict wore on—entailed not only passenger and mail deliveries but also ambulance service.⁶⁴⁴

According to Legarde, the French airlines in Indochina signed a joint declaration on June 17, 1950, that asserted that Air Viet-Nam (or Air Vietnam) would be “one of the first national firms created at the request of the Vietnamese Government following the

⁶⁴³ Legarde, 87. The airlines that participated in some capacity with air transport—either within Indochina, within Southeast and East Asia or from Saigon to France—included the following: Air France; Aigle-Azur, which assisted with medical missions starting in 1949 and opened a route to Saigon and Hanoi at the start of 1952; La Société des Avions-Taxis d’Indochine (SATI), which was founded in February 1947; La Société indochinoise des Transports Aériens (SITA), established in November 1947; La Société Transatlantique Aérienne en Extrême-Orient (STAEO), founded in 1948 by Le Comptoir saïgonnais de ravitaillement (Cosara; this was the name under which air service was carried out); Autrex; Air Outre-Mer; La Compagnie de Transports Aériens Intercontinentaux (TAI), created on June 1, 1946; and Union Aéromaritime de Transport (UAT). Finally, La Société Auxiliaire de Gérance et de Transports Aériens (SARL SAGETA, more commonly SAGETA) was formed in December 1953 to undertake flights between France and Indochina; R.E.G. Davies notes that as a result of the transport needs of the First Indochina War, “all the airlines of France together with SNCASE, the Armagnac manufacturers, formed...SAGETA and kept a regular supply line in operation from France to Saigon and Hanoi.” Legarde, 88-93, 97; R.E.G. Davies, *A History of the World’s Airlines* (London: Oxford University Press, 1964), 276-277. Davies provides certain information that differs from what is given by Legarde. Davies states that the Société des Transports Aériens de l’Extrême Orient was the name of COSARA; he indicates that this firm had commenced operations in October 1947 and offered regular service on a network “from Saigon to all parts of Indo-China.” Davies, *A History of the World’s Airlines*, 409.

⁶⁴⁴ These medical evacuations repatriated around fifteen thousand individuals. Legarde, 89.

Pau Accords.” This company was to have an “exclusive monopoly on the interior air routes coming under the territorial jurisdiction of this State.” The Pau Accords were concluded at the end of November.⁶⁴⁵

A progression toward the development of local, non-French aviation was soon apparent, and this occurred even with the conflict continuing to rage in Indochina.⁶⁴⁶ At the beginning of October 1951, Air Vietnam was formed through a collaborative effort between French and Vietnamese interests. The Vietnamese government owned half of this company’s shares, and the French government—represented by several French firms, most of which were airlines—was in possession of the other half. After its creation, Air Vietnam assumed the responsibilities for “local domestic and regional” flights while French companies continued to provide air service between Paris and Saigon. With an agreement concluded in 1952 for Air Vietnam to provide transports to, within, and through Cambodia, the principal destinations to which this company offered service from its headquarters were as follows: Bangkok, Phnom Penh, Vientiane, Hanoi, Dalat, and Hong Kong.⁶⁴⁷ As 1952 came to a close, Laos also became directly involved in

⁶⁴⁵ Legarde, 93. Martin Thomas observes that these agreements were “intended to place the individual Indochinese territories on an independent economic footing.” In reality though, the Pau Accords “were as much about what they symbolized as what they said. These conventions were...the diplomatic contribution to a propaganda war in which the French refuted the accusation of imperialism.” Martin Thomas, *Fight or Flight: Britain, France, and their Roads from Empire* (Oxford: Oxford University Press, 2014), 148-149.

⁶⁴⁶ Thomas writes that the Pau Accords were concluded at a time in which “a vicious campaign in northern Vietnam recently expanded thanks to fresh injections of Chinese advice and support to the DRV army.” Thomas, *Fight or Flight*, 149.

⁶⁴⁷ Legarde, 93-94; R.E.G. Davies, *Airlines of the Jet Age: A History* (Washington: Smithsonian Institution Scholarly Press, 2011), 277. Davies states that Air Vietnam was formed on October 1, but Legarde indicates that the firm was created two days later. For more information on commercial aviation in Vietnam since the end of the First Indochina War, see Davies, Davies, *Airlines of the Jet Age: A History*, 277-278.

commercial aviation. Air Laos, a Franco-Laotian firm created earlier in the year, launched service on December 20, 1952.⁶⁴⁸

Aviation at Dien Bien Phu and after

The French surrender that followed the siege of the Dien Bien Phu base signaled the end of French colonialism in Southeast Asia. This battle also witnessed the desperation, the weakness, and, ultimately, the failure of French aviation in Indochina.

In November 1953 General Henri Navarre determined that the French needed to build a base in the mountains of Tonkin at Dien Bien Phu in order to cut off the route through which the Chinese Communists were providing materials to the Vietminh. The following March the Vietminh launched a siege on this fortification, which was supplied entirely by air. While their artillery quickly rendered the airfield unusable, anti-aircraft fire—combined with the drizzly and foggy conditions in this region—made flying dangerous and airdrops ineffective or at times impossible.⁶⁴⁹ During this battle, aviation

⁶⁴⁸ Legarde, 95-96; Davies, *A History of the World's Airlines*, 409; Davies, *Airlines of the Jet Age: A History*, 279. This airline operated out of Vientiane and provided service both within and to Laos, including flights to cities around Indochina and as far away as Hong Kong. Air Laos was funded through a fifty-percent contribution by Laotian interests, a thirty-percent contribution from Air France, and a twenty-percent contribution from Aigle-Azur. Legarde, 96; Davies, *A History of the World's Airlines*, 409; Davies, *Airlines of the Jet Age: A History*, 279. For more information on commercial aviation in Laos until the early twenty-first century, see Davies, *Airlines of the Jet Age: A History*, 279-280.

⁶⁴⁹ Fall notes that a key pair of hilltop positions—the French had established these to prevent the Vietminh from firing directly on the airstrip below—were overcome by enemy forces within twenty-four hours of the start of the engagement. “The airfield (upon whose continuous use the success of the battle hinged) became useless within a few days,” he reports. Fall, 317. The other information in this paragraph is from Headrick, *Power over Peoples*, 337; Gras, 17; and Fredrik Logevall, *Embers of War: The Fall of an Empire and the Making of America's Vietnam* (New York: Random House, 2012), 544.

companies also assisted in the dangerous work of delivering men and materials to the besieged base.⁶⁵⁰

As part of his assessment of the French defeat at Dien Bien Phu, Fredrik Logevall states that the French military “committed the common error of overestimating the strategic capabilities of airpower.” General Lionel-Max Chassin, the head of the French air force in Indochina from 1951 until 1953, described how this siege “cost aviation in Indochina dearly.” Chassin reported that 62 planes were lost—48 were shot down, and 14 were destroyed on the ground. He noted that over 10,000 sorties were flown, of which 6700 were transport missions; certain pilots even logged nearly 150 combat flight-hours in April 1954 alone. Chassin’s comments highlight the limits to which military aviation—flying machines as well as personnel—were pushed during this particular battle. Yet his remarks, and Logevall’s appraisal as well, also are representative of this service arm’s experience throughout the First Indochina War. “For the French air force,” James S. Corum and Wray R. Johnson conclude, “it was a war with too many missions, too much territory to cover, and far too few airplanes and personnel to carry out the mission.”⁶⁵¹

⁶⁵⁰ Legarde, 88. Before the end of the siege, according to Legarde, a company named Aigle-Azur Indochine was undertaking air transports in the region. This airline continued to offer transports to Laos after this battle and until 1963. Legarde’s reference to Aigle-Azur Indochine is somewhat confusing though. Earlier in his text, he references another airline, Aigle-Azur Extrême-Orient (AAEO), which of course has a name that is very similar to Aigle-Azur Indochine. Formed as a subsidiary of Aigle-Azur in 1949 or soon thereafter, Saigon-based AAEO was one of the airlines that participated with the transport duties required by the French forces during the First Indochina War. Overall, then, it is unclear if AAEO was the same company as Aigle-Azur Indochine or if these were two different entities. Legarde, 89-91.

⁶⁵¹ Logevall, 544; Chassin’s quote is from Legarde, 98 [Legarde provides no further information for this source]; James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence: University of Kansas Press, 2003), 160.

The signing of the Geneva Accords on July 20, 1954, put a stop to hostilities in the First Indochina War. With regard to aviation in Southeast Asia, the end of this conflict was followed by the launching of local, independent airlines. “As has been the custom since the air age began,” R.E.G. Davies observes, “the immediate adoption of a national flag was followed by the creation of a national airline.” He asserts that “there is no better way of displaying the national flag than on the nose, wings and fins of a modern airliner.” The reason, Davies explains, related to the symbolic weight of aviation and air travel: “the airline has become a status symbol. No independent country can afford to be without one.”⁶⁵²

Indeed, shortly after the war, Air Laos reached an agreement with the Laotian government for the company to be granted the status of a national airline. Also in 1954, Air Vietnam concluded an agreement with Aigle-Azur, the terms of which allowed for weekly air service between Paris, Saigon, and Hong Kong.⁶⁵³ Having gained independence in 1953, Cambodia formed a national aviation firm at the beginning of November 1956, according to Legarde. This company, Royal Air Cambodge (RAC), undertook flights within Cambodian territory. Davies elaborates on the establishment of RAC, providing certain information that differs from Legarde’s data. Davies notes that RAC was created on June 15, 1956, with ownership shared among the Cambodian government, Air France, and private investors. On October 20 this firm commenced

⁶⁵² Davies, *Airlines of the Jet Age: A History*, 277; Davies, *A History of the World’s Airlines*, 398.

⁶⁵³ Legarde, 98.

operations with a route that connected Phnom Penh and Siem Reap to Bangkok; service to Hong Kong was launched in early July of the following year.⁶⁵⁴

Conclusion

As Gordon Pirie contends in discussing civil aviation in the British Empire—and as my dissertation has argued for aviation as a whole in French Indochina—“the gap between rhetoric and reality of Empire aviation was a marked one.”⁶⁵⁵ The French—dazzled by the myriad possibilities of aviation as a tool of empire—found their hopes for what aircraft would accomplish in the service of empire dashed by the realities of developing and utilizing aviation. Aviation was not, as the interwar public was inclined to believe according to French Deputy Léon Archimbaud, “a panacea, capable of fulfilling all the missions in the blink of an eye.”⁶⁵⁶ Stated otherwise, aviation failed to provide metropolitan officials and colonial and military authorities with a definitive means of managing and solving the problems that existed on the ground in Indochina.

⁶⁵⁴ Legarde, 98-99; Davies, *Airlines of the Jet Age: A History*, 278. The percentages for this ownership were the following: thirty-eight percent for Cambodian government; thirty-four percent for Air France; and twenty-eight percent for the private investors. For additional information on the evolution of commercial aviation in Cambodia for the period stretching from the 1960s until the start of twenty first century, see Davies, *Airlines of the Jet Age: A History*, 278-279.

⁶⁵⁵ Gordon Pirie, *Air Empire: British Imperial Civil Aviation, 1919-39* (Manchester: Manchester University Press, 2009), 236.

⁶⁵⁶ Archimbaud’s remark related to the use of military planes in the empire, but these also applicable to colonial aviation as a whole. His specific point was that a few squadrons could not be expected to replace French ground forces in the empire. ANOM, GGI 66499, “Extrait du Rapport, fait au nom de la Commission des Finances chargée d’examiner le projet de Lois portant fixation du Budget Général de l’Exercice 1926 (Ministère des Colonies et Budgets Locaux des Colonies) par M. Léon Archimbaud, Député,” [July 12, 1925; February 4, 1926.].

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130AP: Fonds Jacques-Louis Dumesnil
AN 19830162/1, AN 19830162/2: Materials relating to Air France
- ANOM: Archives nationales d'outre mer (Aix-en-Provence)
GGI: Fonds du Gouvernement Général d'Indochine
RSL: Fonds de la Résidence Supérieure au Laos
RSTNF: Fonds de la Résidence Supérieure au Tonkin, Nouveau fonds
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Grants and Awards

John Scholes Transport History Research Essay Prize	2016
UK History Department Albisetti Dissertation Research Fellowship	Spring 2014
UK Graduate School Dissertation Enhancement Award	Summer 2013
UK History Department Mary Wilma Hargreaves Memorial Fellowship	Spring 2013
UNCW Ralph Brauer Graduate Student Fellowship Award	2008-2009
UNCW History Department New Scholar Award	2008-2009
UNCW History Department New Scholar Award	2007-2008