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The Evolution of Teaching and Testing Aviation English for Brazilian Air Traffic Controllers

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The evolution of teaching and testing Aviation English for Brazilian air traffic controllers

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Abstract

In 2017, we celebrated 10 years of Aviation English Proficiency Requirements in Brazil. This paper will outline some interesting facts and information about a decade of air traffic controllers' training and testing in Brazil, concerning courses offered, people trained on the job, test development and test applications. There will be some information about methodology used in the courses and the Blended Learning Training Program, as well as the creation of a research group to support the practices. It will be possible to see the evolution of the processes through time. The numbers are impressive and reflect a country with the size of a continent.

Introduction

English is the 'lingua franca' of airspace and is indispensable for the provision of an effectively safe air traffic control service. There are rare cases of serious accidents caused by deficiencies in aviation English, but in the list of disasters that had language as a contributing factor, lies the most deadly one in the history of world aviation (583 deaths) - the collision of two Boeing 747 in 1977, in Tenerife, Canary Islands.

Communication is the basis of air traffic control. Any misunderstanding during pilot-controller communication, pilot-pilot or even controller-controller can have terrible consequences for aviation safety. Air traffic controllers (ATCOs) and pilots should speak "the same language". The concept of communication establishes a medium, a transmitter and a receiver, but the effectiveness of this process depends on the correct understanding of what one intends to communicate. In the field of aviation, investing in proficiency, that is, in the field of language, is investing in safety and optimization of air traffic control.

The International Civil Aviation Organization (ICAO) recommends the use of standard international phraseology in English. This level of proficiency stipulated by ICAO allows the professional to go beyond the situations provided by the phraseology in English, that is, to go beyond the expressions and set of pre-established mandatory phrases in international air traffic, which allow the exchange of information clear, concise and safe in normal flight situations.

However, given the dynamics and complexity of aviation, it is impracticable that standard phraseology encompasses all atypical situations, such as situations involving medical problems with passengers or a bird strike, for example. In such cases, it is necessary to use plain language, defined by ICAO as "the

spontaneous, creative and uncoded use of a particular language, although limited by functions and topics proper to aeronautical communication." Inadequate use of plain English and low language proficiency lead to communication failure and jeopardize airspace safety, especially in non-routine and emergency situations.

In 2004, aiming at improving safety in air navigation, ICAO stipulated in Document 9835, entitled Manual on the Implementation of ICAO - Language Proficiency Requirements, a minimum proficiency in English for pilots, ATCO and aeronautical station operators of the agency's contracting states.

By establishing a minimum proficiency parameter, ICAO has also developed a six-level proficiency grade in aeronautical English, which serves as a basis for assessment in this context. Level 4 is the minimum operational level.

There are two institutions responsible for implementing language proficiency requirements in Brazil: the National Civil Aviation Agency (ANAC) regulates actions related to pilots, and the Airspace Control Department (DECEA) is responsible for ATCO and Aeronautical Stations operators. In this paper we will focus on air traffic control training and testing measures.

DECEA's first actions

There are around 4,000 civilian and military ATCOs operating all over Brazil, working in 5 ACC, 47 APP and 59 TWRs - not to mention many minor aeronautical station facilities. Brazil's airspace has 22 million square kilometers, considering the country territory and the maritime airspace.

In order to comply with ICAO's determination, DECEA's Air Traffic Management Division, in partnership with the Air Space Control Institute (ICEA) and the Center for Specialized Aeronautical Training (CIEAR), developed in the end of 2005, an ATCO proficiency assessment for all personnel that provided international air traffic services, in order to identify and document the situation at that time.

The controllers who obtained the best performance in this evaluation were invited to join a 'working group' responsible for carrying out training and evaluation actions, coordinated by ICEA language experts.

In 2006, ICEA began the process of training aviation English instructors, with the creation of the course "Preparation of English Instructors for Air Traffic Control (CTP009)". The students graduated in CTP009 began to teach English classes in several ATC facilities of the country, in a specific course called "Aviation English Intensive Course (CTP010)".

In that same year, DECEA published the 'Level Up Program in the English Language'. In addition to contracting general English courses and providing CTP009 and CTP010, DECEA established that all those who received any training provided in this program would undergo a proficiency examination by the end of 2007.

The development of an aviation English test

In 2007, ANAC and ICEA applied, for the first time, proficiency tests to assess the English level of Brazilian pilots and controllers.

ICEA played a leading role in the development and implementation of the first Aeronautical English Proficiency Examination of the Brazilian Airspace Control System (EPLIS). This exam, designed to evaluate the English speaking and listening skills of Brazilian ATC context, was developed by highly qualified professionals, following the international requirements for language proficiency of ICAO.

Initially, EPLIS included air traffic controllers and aeronautical station operators. Three years later, in 2010, DECEA extended the application of the test to professionals directly linked to the activities of Aeronautical Information Services (AIS) and Search and Rescue (SAR), since clear communication with these operators is also fundamental for the safety of operations. Currently, only air traffic controllers and aeronautical station operators that are effectively acting with the provision of international air navigation service are evaluated.

In 2008, the course CTP009 was restructured and received more aviation English specific content. A new course was born: "Pedagogical Practice for Aviation English Instructors" (CTP011), focusing on pedagogical skills for Communicative Language Teaching, classroom management and language proficiency. Also in that year, there was the first edition of the Plan for the Implementation of Proficiency Requirements in Aeronautical English, a document issued by Brazilian Air Force making these training and testing measures mandatory all over Brazil ATC facilities.

The technology available at that time and the characteristics of Brazil, a country of continental dimensions, with a non-native population in the English language and a systemic contingent with more than three thousand controllers distributed throughout the national territory, made difficult the qualification in the operational level 4 of all the air traffic control (ATC) personnel who receive international traffic.

Other countries were in a similar situation, including those with native English speakers, since aviation English has very specific vocabulary and different from the usual English. Therefore, the Council of the General Assembly of ICAO approved Resolution A36-11, authorized countries with difficulties in implementing language proficiency requirements to take mitigating measures, but with a commitment to constantly update and disseminate on their website those plans implementation.

ICEA's English Language Division has always been committed to ensuring the continuous improvement of the exam, meeting the stringent international quality standards listed by ICAO and the International Language Testing Association (ILTA).

To this end, a validation process was initiated in 2009, conducted by a team specialized in language assessment, under the coordination of Professor Dr. Matilde Scaramucci, a post-doctoral specialist in Language Testing from the University of Campinas (Unicamp), Brazil. This process is maintained today by ICEA's English Language Division, whose task is the continuous search for the reliability and validity of the EPLIS, as well as the investigation of the effects of the exam in the teaching-learning process and its impact on professionals, in the system and in society in general.

Connecting the whole country through Distance Learning

If in 2007 there were only 275 professionals with operational or higher level 4, in 2010 this number had already reached the mark of 1,545 professionals with the linguistic proficiency required by ICAO. This was the result of a joint effort by DECEA with the various regional bodies that complemented the training in aviation English provided by ICEA, through workshops, conversation classes, courses etc., all over the country.

Meanwhile, in 2013, ICEA English teachers, committed to continuous improvement, created the "Aviation English Research Group" (GEIA)¹, registered in the National Council of Scientific and Technological Development (CNPq). Since its inception in 2013, the group has sought to gather research that aims to study different aspects of aeronautical English in the Brazilian context, as well as its relationships with teaching and learning and evaluation.

In 2015, ICEA implemented three distance courses for ATCO in order to expand the scope of aviation English training throughout the national territory: a specific course for ACC controllers (CTP016); another for APP (CTP017); and one for TWR (CTP018). The objective is not to replace the face-to-face course (CTP010) - which has proved to be very beneficial due to its face-to-face nature, but to complement the training, taking advantage of the technological resources available to develop and practice oral comprehension skills as well as vocabulary, structure and pronunciation, as recommended by Circular 323 (ICAO). Thus, the face-to-face course can devote more time to the development of fluency and interaction. This blended-learning program is called "Go4it".

Brazil: host of major sports events

The eyes of the world have turned to Rio de Janeiro in 2012. Heads of State and Government of the contracting states of the United Nations gathered for the United Nations Conference on Sustainable Development, Rio + 20. The event tested ATCO's English-language knowledge of the operational professionals involved, as there was a significant increase in the number of flights and non-routine situations. The result was extremely positive and served as a model for major upcoming events, such as the World Youth Day, the FIFA World Cup and the Olympic and Paralympic Games.

¹ More information in: <http://pesquisa.icea.gov.br/geia/home.php>

Another event also held in 2012 was the forum "Training and Testing: The Same Aim" conducted by the International Civil Aviation English Association (ICEA) in partnership with ANAC, in Brasilia. On that occasion, Language professionals from ICEA presented to the international aeronautical English community the process of implementing the aviation English proficiency requirements in Brazil, the measures adopted and the main challenges faced at that time.

Also in 2013, the FAB made an even greater planning in order to attend two other major events hosted by Brazil - the World Youth Day and the FIFA Confederations Cup 2013. To do so, there was a lot of training and effort in favor of the full capacity of professionals involved in air traffic activities. Analogous planning was created to meet the demands of the 2014 FIFA World Cup.

After the World Cup, EPLIS was applied for the first time to students of the last series of Air Traffic Control Course (BCT) at the Air Force Specialist School (EEAR). The exam was developed taking into account the students' lack of experience in air traffic control and addressing the vocabulary and situations concerning both the Aerodrome Control Tower (TWR) and Approach Control (APP) and also to the Area Control Center (ACC) - the three areas of operation of an ATCO once formed. It's the *ab initio* version of the test, which has been applied since then, with increasing good results. This implementation has provided some chances in *ab initio* teaching too, which is much more ATC content-based nowadays.

The last major events hosted by Brazil took place in 2016. The Rio 2016 Olympic and Paralympic Games significantly increased aerial movements. In the period from August 4 to September 19, 2016, the main Brazilian airports registered about 150 thousand aerial movements.

Once again, unusual aviation situations that required good English proficiency of the ATCOs emerged, which again demonstrated the excellent training provided to them.

Aviation English events

Since 2014, ICEA hosts GEIA's annual event. It's a one or two-day seminar when aviation English researchers present their results and exchange ideas and experiences to an audience of around 100 people. There are always invited speakers, renowned professors from Brazilian Universities who have talked about ESP, Language Testing, Gamification, Technology and other inspiring topics.

To mark the ten successful years, in October 2017, ICEA and ANAC held the "ANAC-ICEA Commemorative Symposium: 10 years of Aviation English Proficiency Requirements in Brazil". The event took place at ICEA and was attended by 130 participants among agency and institute staff, language proficiency examiners, air traffic controllers, pilots, aviation English teachers,

airline managers and directors, and administrative personnel of accredited entities for the application of proficiency tests.

During the event, the Fourth Aviation English Studies Group Seminar (GEIA) was also held, which promoted presentations on aviation English from an academic perspective – such as the development of a glossary for radiotelephony communications and reflections on pronunciation activities in aviation English textbooks, considering the speakers of Brazilian Portuguese. Another engaging activity was the adaptation of three workshops delivered at the ICAEA 2017 in Dubrovnik, when delegates had an opportunity to share experiences. At the event, participants were also able to get to know some ICEA facilities, visit the simulation labs and 3D Tower and learn more about how air traffic controllers are trained.

GEIA and ICEA members also usually attend ICAEA Forums and Events, as well as Applied Linguistics events relevant for their area of work and research, such as: LTRC, AILA, AACL, TALC, and TESOL conferences, among others.

Future actions

Recently, ICEA has begun the development of a virtual learning environment, called ATC English Portal. Still under development, the portal has areas focused on the continuous training of instructors and students. It aims to be another resource that allows real-time communication with students and teachers.

The use of forums, chats, and individual messages is also being developed using apps and mobile phones, in an attempt of virtual approach that surpasses the physical distances and allows to reach more students at the same time, in an individualized and personalized way.

In 2018, GEIA will publish its first book: "Aviation English Research in Brazil", with the results of 12 Master's Degrees theses conducted by the members of the group, with topics including the use of Corpus Linguistics for language data analysis; Aviation English course book evaluation; needs analysis for Brazilian pilots and controllers; Washback effect; Studies about the language testing and the ICAO rating scale; a Taxonomy of language-related Accidents and Incidents among others. The book will also have a Glossary with definitions and translations of the most important aviation language terms.

This paper presented the main actions taken in the last 10 years of aviation English teaching and testing for Brazilian ATCOs. Even though there's still much to be done, the increase of professionals with proficiency level 04 and above from 5% in 2007 to 50% in 2017 assures that the measures are effective. The good performance and the absence of accidents during periods of massive international air traffic also allow us to say that is it safe to fly over Brazilian skies.

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