

## Editorial - Volume 1

### New routes in the study of Aviation and Aeronautical English

*"The atmosphere is our ocean and we have ports everywhere."*

*Alberto Santos Dumont*

We begin this editorial inspired by the words of Santos Dumont, the Brazilian most illustrious aviator, "a flying poet, a dreaming and persevering designer, who through his creations made a difference to history, and who is therefore able to teach us lessons even today" (BORGES, 2016, p. 01). Indeed, this project of an Aviation English<sup>1</sup> special edition began as a dream and took us a dose of perseverance to be accomplished. The idea was sparked two years ago, when we were launching the book of our research group GEIA<sup>2</sup>, entitled *Pesquisas sobre Inglês Aeronáutico no Brasil* (SCARAMUCCI, TOSQUI-LUCKS, DAMIÃO, 2018), during the 5th GEIA Seminar, in Salvador, Bahia, Brazil. At that moment, we wanted to gather research results from the dissertations and theses of GEIA<sup>3</sup> members, most of them written in Portuguese, since it is a policy of most Brazilian Federal and State Universities, at least in the area of Linguistics and Applied Linguistics, that they are written in our national language. We felt fulfilled to share our findings with the aviation English community in Brazil, but it was about time to dream bigger and share our research results with the international community.

As a coincidence, or a stroke of luck, the Editor-in-Chief of the *Especialist* journal, Prof. Adolfo Tanzi Neto, was the invited plenary speaker of the conference. The introductions were made. We had the chance to learn from him and he had the chance to learn more about this not so traditional or famous area of ESP (English for Specific Purposes) called "Aviation English". We realize that some of the

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<sup>1</sup> Some authors use Aviation English and Aeronautical English with capital letters, while others prefer aviation English and aeronautical English. We consider it just a stylistic choice.

<sup>2</sup> GEIA stands for Grupo de Estudos em Inglês Aeronáutico (Aeronautical English Research Group), located at the Airspace Control Institute (ICEA), in Brazil, and validated by the National Council for Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico -CNPq) since 2013.

<sup>3</sup> The publications of group members are constantly updated on our website: <https://geia.icea.gov.br/geia/papers.php>

readers of the *Especialist* may also be curious about what exactly Aviation English is, but we ask for a little bit of your patience - we will get back to it soon.

Time went by and the idea of an international publication started to take shape. But it was only one year later, during the 4th GEIA Seminar, at ICEA<sup>4</sup>, in São José dos Campos, São Paulo, that we proposed this challenge to GEIA researchers: editing an online journal, in English. An advantage was that most Brazilian peer-reviewed journals have this policy: no charges for author submission and open access to the academic community. The idea was promptly accepted with great enthusiasm, giving us the strength to take a step forward and invite fellow researchers of another group we are members of since its creation in 2017 - the ICAEA-RG<sup>5</sup>. To our most satisfaction, many researchers immediately agreed to send us a paper proposal. We then made the formal project of this edition to The *Especialist* Committee and the final result could not make us prouder.

But what is Aviation English and why is it important? Let's start from the beginning. English is considered the "language of the skies", that is, the lingua franca of Aviation, a global industry. Many professionals use English to communicate, such as pilots, air traffic controllers (ATCOs), mechanics, flight attendants, meteorologists, etc. Among these professionals, pilots and ATCOs must communicate in English through radiotelephony in all international flights, for safety reasons. The International Civil Aviation Organization (ICAO) developed the Language Proficiency Requirements (LPRs) for pilots and ATCOs, in 2003, upon recognizing that lack of English language proficiency was the contributory cause of air crashes resulting in more than a thousand fatalities (ICAO, 2004, p. xx). The LPRs are a set of parameters to guide aviation English requirements mainly towards ATCOs and pilots, who have to be licensed for international operations (cf. Annex 1 Personnel Licensing). Responsible for establishing best practices to aviation worldwide, ICAO does not have the power to impose these new parameters; such duty belongs to national aviation authorities. The LPRs were published in a document referred to as Manual of Implementation of the Language Proficiency Requirements, or Doc 9835, in 2004, reviewed in 2010. It presents the ICAO Rating Scale, an analytical description of language proficiency in six linguistic areas: pronunciation, structure, vocabulary, fluency, comprehension and interaction, distributed across levels 1 to 6. To be granted the English proficiency license, a pilot or ATCO must reach at least level 4 in all linguistic areas.

The main objective of the LPRs is the assessment of the language produced on the radio between pilots and controllers, specifically the scope known as *plain English*. To situate our reader, we quote

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<sup>4</sup> The Airspace Control Institute, a military organization responsible for teaching and assessment of Brazilian in-service air traffic controllers.

<sup>5</sup> International Civil Aviation English Association Research Group. <https://www.icaea.aero/about/icaea-research-group/>

one of the papers that compose this special volume regarding the umbrella term Aviation English and a narrower segment, Aeronautical English (TOSQUI-LUCKS; SILVA, this volume). Aviation English consists of the language used by all professionals in the aviation industry, such as mechanics, meteorologists, pilots and controllers, as mentioned above. Aeronautical English regards the language used between pilots and ATCOs over the radio, and is two-fold: a more routine, documented scope is the Standard Phraseology, which is prescribed through manuals and made official by national aviation agencies. A more spontaneous use of language, to be employed solely when Standard Phraseology does not suffice, that is, in abnormal situation, is the plain English in which the LPRs are interested.

This is not the first initiative to compile papers written in English under the theme of Aviation English. The first compilation we are aware of was the **Australian Review of Applied Linguistics** - Volume 32, Issue 3, in 2009, edited by John Read and Ute Knoch, with 07 papers that "shed light on this area from various national and analytic perspectives, and also deal with assessment and its significant political implications." (ROEVER, 2009, p. 01). The Brazilian journal **Aviation in Focus**, edited by the Pontifical Catholic University (PUC-RS) from 2010 to 2017<sup>6</sup>, published some papers about Linguistics and Aviation but, unfortunately, never a thematic issue. It is important to mention two books published in the format of proceedings of events. **Aviation Communication: Between Theory and Practice**, edited by Silvia Hansen-Schirra and Karin Maksymski, in 2013, has 12 papers and was a result of the conference "Language and cultures above the clouds - International English between standardization and everyday aviation communication" held in Germersheim, Germany, in 2011, within the project "Interferences, conflicts and challenges in high risk communication - an empirical study of international aviation communication" (HANSEN-SCHIRRA; MAKSYMYSKI, 2013, p. 07). The free e-book **Changing perspectives on Aviation English training**, edited by Anna Borowska and Adrian Enright, in 2016, collects 11 papers presented at the ICAEA Conference in Warsaw, Poland, in June 2015. The proceedings of other three ICAEA Conferences were made available on-line at the Embry-Riddle Aeronautical University (ERAU) Scholarly Commons website: 2017 ICAEA Conference<sup>7</sup> entitled "10 years of the LPRs - pleasure or pain?" held in Dubrovnik, Croatia, with abstracts, papers and slide presentations; 2018 ICAEA Workshop<sup>8</sup>, "Building on the ICAO LPRs – Communication as a Human

<sup>6</sup> The journal is discontinued, but some information can be found at:  
<http://revistaseletronicas.pucrs.br/ojs/index.php/aviation>; <https://pt.booksc.org/journal/33907>;  
<https://www.sumarios.org/revista/aviation-focus>

<sup>7</sup> <https://commons.erau.edu/icaea-workshop/2017/monday/>  
<https://commons.erau.edu/icaea-workshop/2017/tuesday/>

<sup>8</sup> <https://commons.erau.edu/icaea-workshop/2018/proceedings/1/>

Factor” held in Daytona Beach, in the USA, with 09 papers and 2019 ICAEA Workshop<sup>9</sup> “Exploring the Aviation English Training Needs of: Ab-Initio Pilots and Air Traffic Controllers, and Aircraft Maintenance Personnel” held in Tokyo, Japan, with 08 papers.

In 2020, the Brazilian Journal **CBTecLE**<sup>10</sup> published an Aviation English issue, edited by Daniela Terenzi, with 16 papers, most of them in Portuguese, two in English. It is worth mentioning that the papers cover diverse areas in Aviation English, mainly related to Aircraft Maintenance, but also Meteorology, pilot-controller communication, washback effect, Aviation and Aeronautical English teaching, technologies for Education, Translation, Terminology, among others.

We are honored to contribute to the field by delivering 17 papers organized in two volumes of this Aviation English special edition, whose authors come from many different parts of the world. Most of them are from Brazil and did their research in Brazilian Universities, but there are papers from researchers in Australia, Canada, China, Hong Kong, England, Germany, New Zealand, Poland and the United States of America. This Editorial is split into two parts. Here, we will present the first volume, composed by the following papers:

In the first paper, **Patrícia Tosqui-Lucks** and **Ana Lígia Barbosa de Carvalho e Silva** propose a reflection about the nature of the language referred to by the terms *aviation English* (an umbrella term) and *aeronautical English* (specific for pilot-controller communication) and demonstrates how their definitions can influence the language teaching and assessment for aeronautical communications, seeking better and safer international aeronautical communications. The authors also bring up topics that are still underrepresented or taken for granted when considering pilot-controller communications in various international contexts, such as the need of more emphasis on the teaching and assessment of standard phraseology.

The second paper addresses the cultural connotations that communication in any foreign language entails. According to **Anna Paulina Borowska**, reactions caused by perceived potential misconceptions of one’s cultural or ethnic identity are context-dependent. Moreover, it has been observed that the operational interlocutors cannot efficiently escape from their own cultural backgrounds when communicating in both routine and non-routine situations. Therefore, some differences in cultural perception of conversation partners exist and influence aeronautical communication. Her article describes the current situation and presents common culture indicators in a selected context.

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<sup>9</sup> <https://commons.erau.edu/icaea-workshop/2019/proceedings/1/>

<sup>10</sup> Revista Ensino de Línguas na Formação Técnica e Tecnológica. In: <https://revista.cbtecle.com.br/index.php/CBTecLE/issue/view/v.2%2Cn.1>

The third paper, by **Ana Lúcia Tavares Monteiro** and **Neil Vernon Bullock**, uses research data from two studies involving nearly 200 aviation English professionals to explore the perceptions of a group of pilots and ATCOs on the multiple factors that may impact communication in this professional context, followed by an application of this emerging list of factors in the analysis of a non-routine scenario of pilot/ATCO interaction. The authors present an integration of findings that confirms the many complex features that form the communicative exchanges in this highly technical domain and the range of competencies required for effective and safe outcomes with implications for teaching and high-stakes testing.

**Dominique Estival** and **Brett Molesworth**'s paper present results from a study combining human factors and linguistics, in which pilots were recorded in flight simulator experiments probing communication accuracy under diverse conditions. An analysis of the audio recordings in terms of whether errors were omissions or mistakes, whether they occurred with words or numerals, and which types of aviation information were affected, revealed complex interactions between language background, pilot qualification, workload and ATC speech rate. The authors conclude that the differences between native English speakers (NES) and non-native English speakers (NNES) are complex and more nuanced than might be expected, which has consequences for teaching.

Considering specifically a language descriptor assessed on the ICAO Rating Scale, **Aline Pacheco** and **Angela Carolina Moraes Garcia** address the most common language problems of Brazilian pilots regarding structure, collected from the aeronautical English test applied by the national aviation authority in Brazil. Their study aims to provide researchers with more tools to focus on pilot performance, as well as to contribute to better curriculum design and improvements in assessment practices.

**Paula Ribeiro e Souza** investigates the washback effect of the Aeronautical English Language Proficiency Exam for the Brazilian Airspace Control System (EPLIS) on teachers' perceptions and actions in an Air Traffic Control Initial Training Program. Results show that the decision to introduce EPLIS in that educational context increased its impact. On the other hand, some teachers' deficiencies in understanding the exam and its demands, along with an underrepresentation of air traffic control tasks in the test, compromised to some extent the intended effects. **Marcia Costa Chini** and **Silvia Matravolgyi Damião**, on their turn, emphasize the importance of English teacher education in order to bring their expertise up to the level of the demands of aeronautical English. The authors set forth considerations about the presence of ESP in the area of aviation in general, and, more specifically, in air traffic control instruction in Vale do Paraiba, a hub of technological-industrial development in Brazil and the birthplace of the Brazilian aeronautical industry.

Although most papers refer to pilot-controller communications and peculiarities in teaching and assessment of these two professionals, there are other areas related to aviation English that deserve attention too. **Daniela Terenzi** and **Maria Claudia Bontempi Pizzi** teach aircraft mechanics and, based on theoretical references and examples from the practice of researching and teaching English for these professionals, encourage the teamwork of the language teacher and the professional of aircraft maintenance in the production of reference materials, such as technical glossaries, concluding that this partnership has benefits for both of them. Concerning the area of Meteorology Terminology, **Rafaela Rigaud Peixoto** explains the decisions taken during the development of a glossary for the Aeronautical Meteorology subfield, in English and in Portuguese, for the ANACpedia<sup>11</sup> database. The author analyzes procedures for the extraction of definitions and the organization of ANACpedia structural classes, and discusses the termbase macro-organization and definitional categories used.

This is the end of the first Editorial. The Editorial of Volume 2 introduces the other papers, presents namely the reviewers of both volumes and includes our acknowledgements.

Enjoy your reading.

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<sup>11</sup> <https://www2.anac.gov.br/anacpedia/indexEnglish.html>

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