

## A brief analysis of language tasks used by air traffic controllers in radiotelephony communications in Brazil

*Uma breve análise de tarefas linguísticas usadas por controladores de tráfego aéreo nas comunicações radiotelefônicas no Brasil*

Beatriz F. ARAGÃO (ICEA)<sup>1</sup>

Matilde V. R. SCARAMUCCI (UNICAMP)<sup>2</sup>

### ABSTRACT

This article reports the results of a study, conducted by the EPLIS (the SISCEAB Aeronautical English Language Proficiency Exam) development team, which consisted, among other things, of an analysis followed by discussion of the language tasks listed in Appendix B of the Manual on the Implementation of Language Proficiency Requirements (Doc 9835, ICAO, 2010). Although those language tasks supposedly represented language used by air traffic controllers, they were considered too vague to be used to improve the exam or to develop teaching and assessment materials. The study was carried out by a team of five experienced and proficient air traffic controllers from different facilities and a language expert with experience in teaching and assessing English for specific purposes using a focus group methodology. The results have shown that the most frequently used language tasks are related to traffic management, mostly covered by phraseology. On the other hand, language tasks involving explanation and clarifications, which are highly recurrent in radiotelephony communications, require the use of plain language. Additionally, the analysis has revealed that although some language tasks might not be so complex in terms of language, nor so frequently used, they play an important role in the safety of operation.

**Key words:** Aviation English, Aeronautical English, Air Traffic Controllers, EPLIS, Language Tasks.

### RESUMO

*Este artigo relata os resultados de um estudo, conduzido pela equipe de desenvolvimento do EPLIS (Exame de proficiência em Inglês Aeronáutico do SISCEAB) que consistiu, entre outros, em uma análise, seguida de discussão, das tarefas linguísticas listadas no Apêndice B do Manual de Implementação dos Requisitos de Proficiência Linguística (Doc 9835, ICAO, 2010). Embora essas tarefas supostamente representassem a linguagem usada pelos controladores de tráfego aéreo, eram consideradas muito vagas para serem usadas para aprimorar o exame ou para desenvolver materiais de ensino e de avaliação. O estudo foi conduzido por uma equipe de cinco controladores de tráfego aéreo experientes e proficientes, provenientes de diferentes órgãos operacionais, e uma especialista em línguas com experiência em ensino e avaliação para fins específicos usando uma metodologia de grupo focal. Os resultados mostraram que*

<sup>1</sup>Airspace Control Institute, São José dos Campos, São Paulo, Brazil; ORCID: <https://orcid.org/0000-0002-2805-9675>; [biaaragao@yahoo.com](mailto:biaaragao@yahoo.com)

<sup>2</sup>University of Campinas, Postgraduate Program of Applied Linguistics, Institute of Language Studies, São Paulo, Brazil; ORCID: <https://orcid.org/0000-0001-7890-7030>; [matilde@scaramucci.com.br](mailto:matilde@scaramucci.com.br).

*as tarefas linguísticas mais frequentemente utilizadas são aquelas relacionadas ao gerenciamento do tráfego aéreo que, em grande parte, são cobertas pela fraseologia. Por outro lado, as tarefas envolvendo explicação e clarificação, que são altamente recorrentes em comunicações radiofônicas, requerem o uso do inglês comum. Além disso, a análise revelou que, embora algumas tarefas não sejam tão complexas em termos linguísticos nem tampouco muito frequentemente usadas, elas possuem um papel importante na segurança das operações.*

**Palavras-chave:** *Inglês para Aviação, Inglês Aeronáutico, Controladores de Tráfego Aéreo, EPLIS, Tarefas Linguísticas.*

## 1. Introduction

According to the International Civil Aviation Organization (ICAO) language proficiency policy, applicable since March 2008, every air traffic controller and pilot providing services or engaged in international flights should be proficient in conducting and comprehending radiotelephony communications in English. In order to assist contracting States<sup>3</sup> implementing that recommendation, ICAO has published the Manual on the Implementation of Language Proficiency Requirements (Doc. 9835 AN/453) Besides highlighting the importance of language proficiency for the safety of communications between pilots and air traffic controllers, the document also proposes an analytic rating scale (Doc 9835, ICAO, 2004, reproduced in Annex II) for assessing the language proficiency of pilots and air traffic controllers and other relevant information upon which States started to develop their training programs and assessment instruments.

However important the document was, it also has brought into discussion some controversial and unclear aspects related not only to the policy itself but also to the nature of the language represented in the rating scale. As a consequence, many studies in different countries were conducted (ALDERSON, 2009; GARCIA, 2015; KIM, 2012; KNOCH, 2009; PRADO, 2015; MONTEIRO, 2009; SCARAMUCCI et al, 2010, to name a few) in a continued effort to obtain a better understanding of what has been termed aviation English, or more recently, aeronautical English.<sup>4</sup>

While some contracting States decided to develop their own instruments to assess the proficiency levels of pilots and controllers, others preferred to buy tests offered by language institutes and language

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<sup>3</sup> "Contracting State" is a legal expression to refer to a state (country) which has consented to be bound by a convention whether or not that convention has entered into force for that State (<https://www.hcch.net/en/instruments/conventions/specialised-sections/apostille/faq1>).

<sup>4</sup> In the earlier discussions of the Language Proficiency Requirements (LPRs) aviation English was the term vastly used. More recently, some authors (SILVA, 2016, LUCKS AND SILVA, 2020) among others, have been arguing for the need to make a distinction between *aviation English* and *aeronautical English*. While the former refers to the English language used by aviation professionals in general, including mechanics, engineers, the latter is restricted to the language used between pilots and controllers in radiotelephony communications, which encompasses the use of plain English and phraseology (SCARAMUCCI et al, 2018).

test industry. It is worth mentioning that all those tests were based on the analytic rating scale with 6 levels proposed by ICAO.

In Brazil, the Airspace Control Department (DECEA), a military organization responsible for providing air navigation services and for assessing the proficiency of air traffic controllers decided to develop its own test, the SISCEAB Aeronautical English Language Proficiency Exam (EPLIS). The National Civil Aviation Agency (ANAC) which is responsible for assessing the language proficiency of pilots, also developed its own exam, Santos Dumont English Assessment (SDEA).

Tests, especially the high stakes ones, work as “levers for changes” as they have the potential to exert positive or negative impacts/washback<sup>5</sup> not just on the contents of training programs and teaching materials, but also on teachers’ practices and learning strategies of those in the context where those tests have been implemented (SCARAMUCCI, 2004; SOUZA, 2018a; 2018b).

Obtaining level 4, or operational level, which is the minimum required for pilots and controllers, has become higher as airline companies worldwide started to hire only pilots who had achieved level 4 or above on proficiency tests. Therefore, those tests become high stakes, as important decisions are based on their results, increasing their potential of impact on the lives of the professionals involved. In Brazil, for instance, for controllers, level 4 started to be a prerequisite for taking important career courses and as a safety measure, for every 3 activated positions in an air traffic control facility, there must be at least one controller in the team with an operational level 4.

Considering this potential growing market and the fact that the language test industry for aviation worldwide is relatively unregulated (ICAO, 2004), different English tests, as well as training programs, have been introduced to the market. A closer look at those tests, however, show that many of them lack understanding of the nature of language used in radiotelephony communications as they either narrow or reduce the scope of the language construct or add irrelevant variance to that construct, which Messick (1996) defined as *construct under-representation* and *construct-irrelevant variance* respectively, both of which can be seen as threats to the validity<sup>6</sup> of those tests, with greater potential for negative washback on training programs and teaching materials. Therefore, if a test narrows the scope of the language by focusing, for example, only on a certain domain or requiring only the use of phraseology or, on the other hand, widens the scope by assessing general English communicative events, the perception of language used

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<sup>5</sup> We are not making a distinction between impact and washback. For a discussion of these concepts, see Scaramucci (2004), among others.

<sup>6</sup> Messick (1989, p. 13) defined validity as “an integrated evaluative judgment of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores or other modes of assessment”.

in radiotelephony and language proficiency as a safety factor becomes threatened (SCARAMUCCI, 2009; 2011).

What we are saying is that a test, in order to be valid, i.e, to present evidences to support the claims that are made from results as well as the decisions based on those results must include a good representation of what has been termed “criterion”, which is “the relevant communicative behavior in the target language situation” (MCNAMARA, 2000), in this case, the actual language produced by air traffic controllers in communicating with pilots. In other words, the complex characteristics of the target language use domain should be preserved and represented, as close as possible, not only in the declared test construct, but also in test tasks and items, scoring criteria and rating scale so that it allows for the extrapolation of the results (SCARAMUCCI, 2011; SCARAMUCCI et al, 2010).

## 2. The study purpose and methodology

In 2010, before ICAO launched its validation service, EPLIS was submitted to external validation<sup>7</sup>, coordinated by a well-known and qualified professor with expertise in the development of second language proficiency exams from a prestigious Brazilian university. As a result, the team responsible for conducting the project produced an extensive report that included many recommendations to guide EPLIS test development team in meeting the high standards involved in different stages of the test development cycle and maintenance, such as those related to the construct and nature of language assessed, test specifications, task representation, rating scale, rater training procedures, test security, among many others. Following the recommendations, many adjustments were made, which contributed to a more robust test concerning the evidences and inferences made from the results.

One of the recommendations was the need for a more explicit conceptualization of the construct assessed by EPLIS, which involved a clearer definition of the nature of the target language used in radiotelephony communications between pilots and controllers, and consequently, of the language tasks which better represented this target language use (TLU) domain.

In order to do this, a study was conducted by the EPLIS development team, which consisted of an extensive literature review of articles and documents about language and communication-related problems in aviation, accident reports involving language, analysis of pilot-controller communication in radiotelephony to better understand the impact of language and the most recurrent problems in radiotelephony communication.

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<sup>7</sup> Validation is a research project involving close analysis of test data. “The purpose of validation in language testing is to ensure the defensibility and fairness of interpretations based on test performance” (McNamara, 2000, p. 48).

This literature review was followed by on the job observations conducted in 18 different air traffic control facilities to observe the activities performed by the controllers in every shift, including the development of a questionnaire to be used in semi-structured interviews with the supervisors to help EPLIS development team set a template of the TLU characteristics.

The third part of the study, whose results are reported in this paper, consisted of an analysis followed by a focus group discussion<sup>8</sup> of the language tasks of air traffic controllers, listed in Appendix B of ICAO Manual, reproduced in Annex I. Although those language tasks supposedly represented the language used by air traffic controllers in the performance of their work, not all of them seemed to be representative of the Brazilian context neither seemed to have the same level of complexity in terms of language use. In order for them to be used effectively to improve the EPLIS test items or to write new ones, as well as to develop teaching and assessment materials, it would be necessary to gather more detailed information of their characteristics in real language use situations.

Five experienced controllers and one language expert, who was also one of the EPLIS test developers, took part in the focus group discussion. The air traffic controllers that participated in the study were very experienced, most of them were supervisors, and some of them had experience with incident and accident investigations. They came from different regions of Brazil — South, Southeast, North, Northeast and Central-Western region — each of them representing a different CINDACTA (Air Defense and Air Traffic Control Integrated Center) with working experience in the Approach control, Tower and Area center control. Some of them had operational experience in more than one facility. They were proficient speakers (level 6 on the ICAO scale) and had also worked as EPLIS examiners, raters and /or interlocutors.

The focus group discussion was initiated with an explanation of the aim of the study and the presentation of the language tasks of the ICAO document. The language expert moderated the discussion, in which every task was analyzed quantitative and qualitatively as described in the next section.

### **3. Results and discussion**

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<sup>8</sup> “A focus group discussion involves gathering people from similar backgrounds or experiences together to discuss a specific topic of interest. It is a form of qualitative research where questions are asked about their perceptions, attitudes, beliefs, opinion or ideas” (<https://herd.org.np/publications/80>).

For the purpose of the analysis, the language tasks<sup>9</sup> and subtasks (cf. Annex 1) were categorized in terms of *frequency, relevance, language function, the use of phraseology and/or plain English, skills (receptive/productive) and ATC facility (Tower-TWR, Approach Control-APP, Area Center Control-ACC)*. This list comprises 8 tasks, divided in subtasks, totaling 145, as shown in Table 1 below:

**Table 1.** Number of subtasks per task

Tasks	Number of subtasks
Manage air traffic sequences	30
Control aircraft or vehicle ground movement	11
Route or plan flights	47
Perform situation monitoring	08
Resolve aircraft conflict situations	08
Assess weather impact	15
Respond to emergencies and conduct emergency procedures	17
Manage sector or position resources	09
<b>8 tasks</b>	<b>145</b>

Source: (Doc 9835, 2010)

### 3.1 Frequency

The tasks and subtasks were classified into daily, weekly, monthly, quarterly, biannual, annual or rare in relation to their occurrence in real life. “Annual” and “rare” were considered synonymous. Initially, the group had chosen to classify the frequency of the tasks into fewer labels, but have come to the conclusion that in order to have a better representation of the real context in which they occur, it was necessary to separate them into those 5 levels.

Table 2 shows how the main tasks and subtasks were analyzed and clustered in terms of frequency. Note that subtasks 1.2 (*query pilot for reason and extent of deviation*) and 1.3 (*issue appropriate control instructions to control deviation*) may be a routine situation (daily) if its occurrence is considered in relation to the approach control or area center control, while in the tower facility its occurrence is rare.

<sup>9</sup> The language tasks listed at the ICAO document represent real life tasks performed by air traffic controllers at work and they were based on research conducted at the Federal Aviation Authority.

**Table 2.** Subtasks by frequency vs. facility

Language task		Daily	Weekly	Monthly	Quarterly or biannual	Annual or rare
<b>Manage air traffic sequences</b>	<b>Subtasks</b>	1.1;1.2(APP/ACC); 1.3(APP/ACC); 1.5; 1.7; 1.8; 1.9; 1.10; 1.11; 1.13; 1.14; 1.15; 1.16; 1.17; 1.19; 1.28	1.12; 1.18; 1.26; 1.30	1.20; 1.24; 1.25; 1.27; 1.29		1.2 (TWR); 1.3 (TWR); 1.21; 1.22
	<b>Total number</b>	16	4	5	0	4

Considering the frequency or occurrence of those tasks, it may be useful to determine the number and the relevance of those tasks in terms of representativeness of the target language use situation. For example, when scoring a practical classroom exercise or developing a test item, it is important to note that some language tasks are so commonly used in the daily life of a controller that its use may be considered, to some extent, “automatized” and, therefore, “easier”.

**Table 3.** Subtasks by frequency

Language task (Doc 9835 Appendix B)		Daily	Weekly	Monthly	Quarterly (Q) or biannual (B)	Annual or rare
<b>Manage air traffic sequences</b>	<b>Subtasks</b>	1.1; 1.2 (APP/ACC); 1.3 (APP/ACC); 1.5; 1.7; 1.8; 1.9; 1.10; 1.11; 1.13; 1.14; 1.15; 1.16; 1.17; 1.19; 1.28	1.12; 1.18; 1.26; 1.30	1.20; 1.24; 1.25; 1.27; 1.29		1.2 (TWR); 1.3 (TWR); 1.21; 1.22
	<b>Total number</b>	16	4	5	0	4
<b>Control aircraft or vehicle ground movement</b>		2.1; 2.2; 2.3; 2.5; 2.6; 2.7; 2.8; 2.9; 2.10	2.4; 2.11			
	<b>Total number</b>	9	2	0	0	0
<b>Route or plan flights</b>		3.1; 3.4; 3.13; 3.15; 3.16; 3.17; 3.18; 3.19; 3.20; 3.21; 3.23; 3.29; 3.30;	3.10; 3.14; 3.24; 3.41	3.3; 3.7; 3.25	(Q) 3.8; 3.9; 3.22; (B) 3.27; 3.28	3.5; 3.36

		3.31; 3.33; 3.35; 3.42; 3.43; 3.44; 3.45; 3.46; 3.47				
	<b>Total number</b>	22	4	3	5	2
<b>Perform situation monitoring</b>		4.5; 4.6; 4.7	4.2; 4.8			
	<b>Total number</b>	3	2	0	0	0
<b>Resolve aircraft conflict situations</b>		5.3; 5.6; 5.8	5.1; 5.2; 5.4; 5.5; 5.7			
	<b>Total number</b>	3	5	0	0	0
<b>Assess weather impact</b>		6.1; 6.2; 6.9; 6.14	6.12; 6.13	6.10	(Q) 6.8	
	<b>Total number</b>	4	2	1	1	0
<b>Respond to emergencies and conduct emergency procedures</b>		7.10	7.17		(Q) 7.2; 7.3; 7.4; 7.5; 7.6; 7.11; 7.13	7.7; 7.8; 7.12; 7.14; 7.16
	<b>Total number</b>	1	1	0	7	5
<b>Manage sector or position resources</b>		8.4	8.8			
	<b>Total number</b>	1	1	0	0	0

As mentioned before, the frequency of those tasks varies depending on the air traffic control facility they are related to. Considering the tasks common to every facility, management of air traffic sequences accounts for the majority of tasks performed by air traffic controllers. If we separate language tasks by air traffic control facility, control air traffic ground movement accounts for the majority of daily tasks, followed by route or plan flights tasks.

### 3.2 Relevance

At first, relevance was considered especially in relation to the use of plain English required to perform each task and subtask. But as the discussions progressed, the group realized that sometimes a very short, simple sentence in plain English, of no complexity in terms of language itself, was very important to the safety of operations; although the linguistic demand was low, it was of paramount importance to operational safety. In this case, relevance was also high, leading to the conclusion that the concept of “relevance” comprises not only the quantity, but also the quality and the impact of the use of



plain English of each task and subtask. Consequently, the tasks were classified both in terms of language use and impact on operations, ranging from 5 (most relevant) to 1 (least relevant). By establishing two criteria for the topic of *relevance*, one linguistic and one operational, controllers clearly featured the intrinsic relationship of language and non-linguistic factors that underlie the use of language in specific contexts.

The results of tasks per relevance can be seen in table 4 below, which shows that the most operationally demanding tasks were those regarding *conflict situations*. *Assessment of weather impact* ranked second, followed by *routing or planning flights*, *management of air traffic sequences*, *emergency procedures*, *controlling aircraft or vehicle ground movement*, *monitoring*, and *sector management*. In the second column, tasks were classified regarding its importance in terms of the use of plain English. The results showed that in terms of the most operationally demanding tasks, *resolve aircraft conflict situations* ranked first, while in terms of the use of plain English it ranked as the second most relevant task. On the other hand, *manage air traffic sequences* is considered the most linguistically relevant task, although it was ranked as the fourth most operationally demanding task. *Perform situation monitoring* and *manage sector position resources* ranked as the two least important tasks, both in terms of linguistic relevance and operational demand.

**Table 4.** Tasks by relevance

<b>Most operationally demanding tasks</b> <i>From most to least demanding</i>	<b>Most linguistically relevant tasks</b> <b>(in terms of use of plain English)</b> <i>From most to least relevant</i>
Resolve aircraft conflict situations	Manage air traffic sequences
Assess weather impact	Resolve aircraft conflict situations
Route or plan flights	Route or plan flights
Manage air traffic sequences	Respond to emergencies and conduct emergency procedures
Respond to emergencies and conduct emergency procedures	Control aircraft or vehicle ground movement
Control aircraft or vehicle ground movement	Assess weather impact
Perform situation monitoring	Perform situation monitoring
Manage sector or position resources	Manage sector or position resources

Expanding the analysis of each subtask for relevance, the participants gave many examples of the most relevant ones, which better helped to illustrate and represent the context of use. Those subtasks are listed in the following table:

**Table 5.** Task and subtask examples by relevance

<b>Main tasks</b>	<b>Subtasks</b>	<b>Facilities</b>
<b>Manage air traffic sequences</b>	manage traffic - reduce speed, negotiate with international traffic that needs authorization for diplomatic flights, hold position due to flow control, increase rate of climb/ descent/ perform the procedure, issue clearance, accept/or deny, negotiate	TWR, APP, ACC
	give orders, issue control instructions to control deviation, including parachuting over the Tower, procedural or ATS surveillance, acrobatics	TWR, APP, ACC, but mainly APP and ACC
	inform others of airspace restriction imposed/released comprehending control, information and alert services, also including fuel dumping, activation of an area for Air Defense, NOTAM for acrobatics flight, parachuting, non-invasion area, blocked runway, shooting area, inspection flight area (restricted airspace)	TWR, APP, ACC
	issue advisory (be aware of/ caution/ warning/danger) in regard to non-controlled object in airspace or movement area, advise you received information (acknowledge)	TWR, APP, ACC
	ask for information/ request response from pilot or operator of non-controlled object (Aircraft Remote Pilot/Remotely Piloted Automated System), make coordination with another sector, query about/ search for information about a traffic, positive identification of the concerned aircraft	TWR, APP, ACC
	issue instructions restricting aircraft activity in affected airspace or movement area, including balloon entering an area, engine check near the threshold, aircraft with flat tire	TWR, APP, ACC
	<b>Resolve aircraft conflict situations</b>	inform potential conflict, receive notice of potential or actual conflict, issue traffic advisory or safety alert in regard to aircraft conflict/ aircraft proximity, traffic advisory and resolution advisory (not only TCAS) including aircraft crossing on final, wake turbulence, “short” separation, runway incursion, maintenance center receiving the TCAS, situations where the aircraft cannot take off safely because of another traffic positioned a little ahead/ advanced
give warning, issue advisory or safety alert in regard to route /low altitude situations which include aircraft flying lower than the airway level, low approximation due to depressurization, antennas		TWR, APP, ACC
inform others of airspace or movement area intrusion by non-controlled object, including coordination with adjacent facilities and air defense		TWR, APP, ACC
give warning and order, issue advisory in regard to airspace/ movement area violation (aircraft entering a prohibited area)		TWR, APP, ACC
<b>Route or plan flights</b>	receive notice of pilot or aircraft having a problem, including loss of radio contact, reasons, explanations and message relay	TWR, APP, ACC

	inform pilot or vehicle operator of abnormal aircraft or vehicle condition including open fuel tank door, smoke	TWR
<b>Respond to emergencies and conduct emergency procedures</b>	give order and instructions, issue course instructions and advisories to pilot, receive pilot request for guidance to airport, provide guidance	APP, ACC

It is important to say that some tasks and subtasks from Annex I were “disregarded” by the group because they were not considered representative of the use of plain English by Brazilian air traffic controllers. In certain cases, the task/subtask is neither an air traffic procedure used in Brazil nor performed by air traffic controllers, but by other professionals, such as meteorologists. Another explanation for disregarding some tasks was the fact that in Brazil, the coordination with other facilities and professionals is done in Portuguese and not in English.

**Table 6.** Disregarded tasks

Subtask	Item label	Reason
1.6	Query others regarding deviation	Not R/T and not done by controller
1.23	Request assistance from other sources to establish contact with non-controlled object.	Not R/T Unlikely to happen in English Not representative of the Brazilian context
3.6	Conduct radio or radar search for overdue aircraft	More the case of SAR and Air Defense Does not generate plain English (Portuguese phraseology mostly)
3.11	Receive verbally forwarded flight plan	Done in Portuguese. Might happen, but it is not representative, as it depends on a system failure
3.12	Query others about flight plan or flight plan amendment	Not R/T. Done in Portuguese. Not representative
3.26	Declare emergency and invoke contingency plan	Internal. Done in Portuguese
3.32	Perceive presence of special condition or emergency by tone of voice	Perhaps a receptive subskill, but too subjective
3.34	Inform controller or requester of inability to comply with flight plan/flight plan amendment	Pilot’s task.

3.37	Receive flight plan request and information from recorded phone message	Not available in Brazil.
3.38	Verify flight plan with pilot	Already checked in other items.
3.39	Receive request to activate flight plan	Done in Portuguese.
3.40	Query pilot on flight plan closure	Not applicable. Brazilian ATCOs do not query about this.
4.1	Record airport environmental (e.g. ice on runway) or system equipment status message	Not applicable. ATIS is automated.
4.3	Inform pilot of alternate instructions necessary for flight following service	Not applicable.
4.4	Receive/deny request for flight following	Not applicable.
6.3	Formulate weather broadcast	Not applicable.
6.4	Record scheduled weather report or advisory in specified format	Meteorologist's job
6.5	Broadcast scheduled and unscheduled weather report or advisory on prescribed radio frequencies	Meteorologist's job
6.6	Receive request for pilot briefing	Meteorologist and AIS's jobs
6.7	Brief pilot on weather data in specified format	Meteorologist and AIS's jobs
6.11	Advise pilot of flight watch capability	Flight watches are not manned with ATCOs.
6.15	Maintain clear and uniform speech pattern while broadcasting	It's an attitude, tone of voice, transmission technique.
7.1	Communications	Too vague. Without communications, there is no control.
7.9	Advise to adjust gyro with magnetic compass	Not applicable. There are non-gyro vectors, but they are different.
7.15	Verify pilot is on a flight plan	Not applicable.
8.1	Forward deletion of previous substitute routing	Internal. Done in Portuguese.
8.2	Forward NAVAID status to others	

8.3	Forward notice of communication status	Internal. Done in Portuguese.
8.5	Receive notice of alternate communication path	
8.6	Issue alternate communication for air or ground transmissions	
8.7	Query whether others are receiving aircraft's transmissions	

As we can see, local contexts may have different needs and may require different approaches depending on their specificities.

### 3.3 Language function

Most of the tasks and subtasks analyzed are within a range of language functions, of which the most recurrent are: giving orders, informing something, explaining something, issuing clearance, accepting, denying, issuing instructions, warning, asking for information, giving reasons, querying the pilot, asking about possibility, asking about the nature of the emergency, requesting something, giving instructions and directions, giving options, prompting the pilot to do something and forwarding information.

Some language functions may be accompanied by some lexical-grammar discourse markers to indicate an important contextual factor. For example, “turn left”, which is a standard use of phraseology, may be followed by different discourse markers such as “now, turn left” or “could you turn left” to point out a contextual factor of urgency or possibility. Considering the language functions that require the use of plain English, *giving an explanation* may be used in a situation where the controller wants to reassure an inexperienced pilot flying in a busy airspace, to calm him down rather than to explain something to him. Those examples clearly illustrate how the use of language functions, conveyed by the phraseology or plain English, may not represent the illocutionary act itself and may be marked by different contextual factors.

The participants also pointed out that some words or expressions such as “be aware of”, “be cautious of” and “attention” are used to express different degrees of urgency, meaning “a request of avoidance”, “a warning” and “a danger”, respectively. For a lay-person, those expressions may be understood and interpreted as synonyms, but for air traffic controllers they have strict different meanings and their uses also differ.

### 3.4 Receptive or productive skills

Due to the fact that pilots and controllers have different roles, they may have different perspectives on the same situation (ARAGÃO, 2020), but for some different reasons, this aspect tends to be underestimated. Consequently, their communicative objectives are different, and the language tasks used by pilots and controllers may require different skills (productive and /or receptive skills), depending on whose perspective they are considered. In this analysis, the language tasks used by air traffic controllers were classified as requiring productive skills in eighty three (83) registers, twenty three (23) registers were classified as receptive and in 7 (seven) registers they were integrated, that is, required both receptive and productive skills. As mentioned before, we believe this information should be taken into consideration whenever planning material or developing test tasks for pilots and controllers for a closer representation of their needs in real life.

**Table 7.** Tasks and subtasks of air traffic controllers by skills

<b>Productive</b>	<b>Receptive</b>	<b>Productive and receptive</b>
1.2; 1.3; 1.4; 1.5; 1.7; 1.9; 1.10; 1.11; 1.12; 1.13; 1.15; 1.19; 1.20; 1.21; 1.24; 1.26; 1.30; 2.1; 2.2; 2.3; 2.7; 2.9; 2.10; 2.11; 3.1; 3.2; 3.3; 3.4; 3.5; 3.8; 3.9; 3.15; 3.17; 3.18; 3.19; 3.20; 3.21; 3.22; 3.23; 3.25; 3.27; 3.28; 3.29; 3.30; 3.31; 3.33; 3.35; 3.41; 3.43; 3.35; 3.46; 3.47; 4.2; 4.6; 4.7; 4.8; 5.2; 5.3; 5.4; 5.5; 5.6; 5.7; 5.8; 6.2; 6.8; 6.9; 6.10; 6.12; 6.13; 6.14; 7.3; 7.4; 7.5; 7.6; 7.7; 7.8; 7.10; 7.12; 7.13; 7.14; 7.16; 7.17; 8.4.	1.8; 1.14; 1.16; 1.17; 1.25; 1.27; 1.28; 1.29; 2.5; 2.6; 2.8; 3.10; 3.13; 3.14; 3.16; 3.24; 3.36; 3.42; 3.44; 5.1; 7.2; 7.11; 8.8	1.1; 1.18; 1.22; 2.4; 3.7; 4.5; 6.1

### 3.5 Phraseology or plain English

Communication in radiotelephony is comprised by the use of phraseology and plain language/, English. Both are necessary for conveying the range of communicative needs involved in the radiotelephony communications. Besides the fact that there might be communicative events covered by the use of phraseology only, it is essential that both phraseology and plain English are mastered by pilots and air traffic controllers. Accordingly, the language tasks were classified as follows:

**Table 8.** Tasks and subtasks by the use of phraseology and plain English

<b>Phraseology (63):</b>	<b>Plain English (25):</b>	<b>Both phraseology and plain English (24):</b>

1.3; 1.5; 1.7; 1.8; 1.9; 1.10; 1.11; 1.13; 1.14; 1.15; 1.16; 1.17; 1.18; 1.26; 1.27; 1.28; 1.29; 2.1; 2.3; 2.5; 2.6; 2.7; 2.9; 2.10; 3.1; 3.4; 3.6; 3.10; 3.13; 3.14; 3.15; 3.16; 3.17; 3.18; 3.19; 3.20; 3.21; 3.22; 3.24; 3.27; 3.29; 3.31; 3.35; 3.36; 4.2; 4.5; 4.6; 4.7; 5.3; 5.6; 5.8; 6.13; 6.14; 7.3; 7.4; 7.5; 7.7; 7.10; 7.11, 7.13; 7.14; 7.17; 8.4.	1.2; 1.4; 1.20; 1.21; 1.24; 1.25; 1.30; 2.4; 2.8; 3.2; 3.25; 3.33; 3.42; 3.5; 3.8; 3.9; 4.8; 5.1; 6.8; 6.9; 7.2; 7.6; 7.8; 7.16; 8.8.	1.1; 1.12; 1.19; 1.22; 2.2; 2.11; 3.3; 3.7; 3.23; 3.28; 3.30; 3.41; 3.43; 3.44; 3.45; 3.46; 3.47; 5.4; 5.5; 5.7; 6.1; 6.2; 6.10; 6.12.
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The number of language tasks that require the use of phraseology surpasses the amount of the language tasks that require plain English and the use of plain English combined with phraseology. Nevertheless, it has been noted that the distinction between phraseology and plain English is not always clear and obvious. The events may require a higher use of one or the other, but many times they are interchangeable and overlapping, which makes the distinction among them not an easy task.

### 3.6 Air traffic control facility (TWR, APP and ACC)

Most language tasks used by air traffic controllers are related to more than one facility, but some of them tend to have a higher use in one specific facility. Considering the aeronautical English as a subset within the broader category of aviation English, one may consider how specific a test or a course syllabus could be, for example, in the case of air traffic controllers, designing materials and test tasks specifically to one facility (TWR, APP, ACC) or in the case of pilots, to groups of pilots (commercial, military, etc.) or to different types of aircraft.

**Table 9.** Language tasks by facility

<b>Tower (TWR)</b>	<b>Approach (APP)</b>	<b>Area center (ACC)</b>
1.7; 1.8; 1.9; 1.10; 1.13; 1.14; 1.29; 2.1; 2.2; 2.3; 2.4; 2.5; 2.6; 2.7; 2.8; 2.9; 2.10; 2.11; 3.25; 3.27; 3.41; 4.6; 5.8; 8.6; 8.8	1.18	6.13

Considerations about the degree of specificity and the applicability of such specific tasks have to be balanced. However, whether the decision is to combine tasks to a broader range of facilities or deepening the scope to a specific group, the choices and decisions made have to be well informed. Recently, Knoch and McQueen (2020) have defined what they called “codes of relevance”, in an attempt

to identify groups of specific linguistic behaviors in language tests for professional purposes. As perceived in the results of this analysis, even in a very specific context, there are different subsets of language use.

As regards language tasks that occur in more than one facility, they comprise the majority of them, for example, task 3.1 “*issue clearance and instructions to pilot*” occurs in ACC, but also in APP in a lower number and even in fewer occasions in the TWR, and although the degree of its occurrence may vary, it is a language task common to every facility.

**Table 10.** Language tasks common to TWR, APP and ACC

TWR, APP, ACC
1.1; 1.2; 1.3; 1.4; 1.11; 1.12; 1.17; 1.20; 1.21; 1.22; 1.24; 1.25; 1.28; 1.30; 3.1; 3.2; 3.3; 3.4; 3.5; 3.6; 3.7; 3.8; 3.9; 3.10; 3.13; 3.15; 3.17; 3.19; 3.23; 3.24; 3.28; 3.29; 3.30; 3.33; 3.42; 3.43; 3.44; 3.45; 3.46; 3.47; 4.2; 4.5; 4.8; 5.1; 5.2; 5.3; 5.5; 5.6; 5.7; 6.1; 6.2; 6.8; 6.9; 6.12; 6.13; 6.14; 7.2; 7.3; 7.5; 7.6; 7.10; 7.13; 7.14; 8.4.

Most tasks have a similar pattern, that is, they occur in more than one facility:

**Table 11.** Language tasks by groups of facility

TWR/APP	APP/ACC
1.5; 1.15; 1.16; 1.19; 1.26; 1.27; 3.18; 4.7	3.14; 3.16; 3.20; 3.21; 3.22; 3.31; 3.35; 3.36; 5.4; 7.4; 7.7; 7.8; 7.11; 7.12; 7.16

Based on the results of this analysis, we can conclude that the relevance, frequency and communicative objectives of the language functions of air traffic controllers vary depending on the perspective, the operational facility and the context which they are used. Additionally, even though we have the specificities of the aviation context, aeronautical communications may vary depending on the operational factors and the local contexts, such as the tasks that were not applied to the Brazilian air traffic control system and context. These results stress the importance of conducting specific analysis of local needs and contexts. We cannot make inferences about pilots and controllers’ performances if we do not understand how language is used and what it means for them to know the language to communicate in radiotelephony, including their different perspectives.

The results of this study must be further explored whenever planning materials or developing test tasks by deepening the categories and analyzing them contrastively, for example, when analyzing the tasks that require the use of plain English and their frequency, or expanding the analysis to other categories that were not covered in this study.



## Final considerations

As research progresses, the knowledge of language used in radiotelephony communications improves, considering the fact that the studies point to a clearer path, when compared to the one at the beginning of the implementation of ICAO language proficiency requirements.

Although a lot has been learned through the years, there are still inconsistencies concerning the nature of the language used in radiotelephony communications and, consequently, in the policies developed for those contexts of use. Unfortunately, there are still tests which assess language as it is used in general contexts, containing more refined, elaborated and complex forms and, therefore, not adequate to represent the nature of language used in this very specific context, in which the main purpose of language proficiency requirements is to ensure safety. Therefore, we hope that results of this study can inform constructs of language tests to be more representative of the language tasks performed by controllers in their daily work to potentialize the chances of more positive impacts of those tests on the teaching and learning of aeronautical English. We understand the materials provided on Annex I (reproduced from Appendix B of ICAO), consisting of a list of language tasks, events and domains, language functions, glossary of basic and complex structures need to be informed and validated by air traffic controllers (subject matter experts) so that they can be meaningful to the reality of their working environment.

By acquiring a better understanding of the language used in radiotelephony communications, we hope not only to be able to construct more valid tests but also to provide better teaching practices and teaching materials that may contribute effectively to the improvement of the language proficiency of pilots and controllers and enhance the safety of operations *de facto*. More than a policy, ICAO language proficiency requirements should be seen as a resource to help pilots and controllers in communicating and performing their work safely. From the needs analysis to the test specifications, we have to bear in mind that the aviation context entails serious consequences to the test takers, the passengers, the aviation industry, the States and the society.

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**ANNEX I**  
**LANGUAGE TASKS OF AIR TRAFFIC CONTROLLERS**

1. MANAGE AIR TRAFFIC SEQUENCES

- 1.1 Discuss traffic management action with pilot.
- 1.2 Query pilot for reason and extent of deviation.
- 1.3 Issue appropriate control instructions to control deviation.
- 1.4 Inform others of airspace restriction imposed/released.
- 1.5 Sequence departures into existing traffic.
- 1.6 Query others regarding deviation.
- 1.7 Issue instructions to recover from ground traffic deviation.
- 1.8 Receive pilot request for take-off.
- 1.9 Issue appropriate departure information.
- 1.10 Issue instructions to pilot to taxi into position and hold.
- 1.11 Issue amended clearance.
- 1.12 Issue supplementary information concerning airport operations (e.g., runway conditions, RVR).
- 1.13 Issue take-off clearance/cancellation.
- 1.14 Receive pilot request for landing instructions.
- 1.15 Issue clearance for aircraft to land or clearance for option.
- 1.16 Receive notice of aircraft executing landing/option.
- 1.17 Receive initial radio communication from pilot.
- 1.18 Issue/verify pilot has current arrival information.
- 1.19 Issue arrival/departure instructions.
- 1.20 Issue advisory in regard to non-controlled object in airspace or movement area.
- 1.21 Inform others of airspace or movement area intrusion by non-controlled object.
- 1.22 Request response from pilot or operator of non-controlled object.
- 1.23 Request assistance from other sources to establish contact with non-controlled object.
- 1.24 Issue instructions restricting aircraft activity in affected airspace or movement area.
- 1.25 Receive request for temporary use of airspace or movement area.
- 1.26 Issue go-around.
- 1.27 Receive notice of missed approach/go-around/touch-and-go/stop-and-go.
- 1.28 Receive acknowledgment of take-off.
- 1.29 Receive pilot notification of aborted take-off.

1.30 Inform others of airspace status change.

## 2. CONTROL AIRCRAFT OR VEHICLE GROUND MOVEMENT

2.1 Issue instructions to hold at gate.

2.2 Advise pilot of ground delay.

2.3 Inform pilot of estimated departure clearance time.

2.4 Receive and disseminate cancellation of traffic management restrictions(s).

2.5 Receive pilot request for pushback/powerback instructions.

2.6 Receive pilot request for taxi instructions.

2.7 Issue airport condition information.

2.8 Receive pilot or vehicle operator request for movement in or through movement area.

2.9 Issue instructions to hold short of taxiway/runway.

2.10 Deny ground movement request.

2.11 Issue instructions to divert traffic around closed movement area.

## 3. ROUTE OR PLAN FLIGHTS

3.1 Issue clearance and instructions to pilot.

3.2 Query pilot regarding compliance or conformance with clearance.

3.3 Issue clearance through other for relay to pilot.

3.4 Approve or deny clearance request.

3.5 Detect a pilot or aircraft problem (e.g. hypoxia).

3.6 Conduct radio or radar search for overdue aircraft.

3.7 Receive pilot notice of declared emergency and determine assistance needed.

3.8 Receive notice of pilot or aircraft having a problem (e.g. overdue, loss of radio contact).

3.9 Forward contingency/emergency/special condition information to others.

3.10 Receive flight plan from pilot.

3.11 Receive verbally forwarded flight plan.

3.12 Query others about flight plan or flight plan amendment.

3.13 Receive requested flight plan changes.

3.14 Receive request to cancel IFR.

3.15 Terminate radio communication with aircraft.

3.16 Receive arrival message.

3.17 Issue change of frequency to pilot.

- 3.18 Issue altimeter setting on initial contact as appropriate.
- 3.19 Verify aircraft altitude with pilot.
- 3.20 Inform pilot that radar contact is lost or established.
- 3.21 Terminate radar service.
- 3.22 Assign beacon code.
- 3.23 Request necessary flight plan information from pilot.
- 3.24 Receive notice of special condition or emergency.
- 3.25 Inform pilot or vehicle operator of abnormal aircraft or vehicle condition.
- 3.26 Declare emergency and invoke contingency plan.
- 3.27 Issue taxi instructions to special condition or emergency aircraft.
- 3.28 Inform others of special operation.
- 3.29 Issue change to SSR beacon code assignment.
- 3.30 Suggest clearance alternatives to pilot.
- 3.31 Issue instructions to pilot for identification turn or transponder response.
- 3.32 Perceive presence of special condition or emergency by tone of voice.
- 3.33 Discuss flight plan/flight plan amendment.
- 3.34 Inform controller or requester of inability to comply with flight plan/flight plan amendment.
- 3.35 Inform pilot of radar position.
- 3.36 Receive request to file flight plan from in-flight pilot.
- 3.37 Receive flight plan request and information from recorded phone message.
- 3.38 Verify flight plan with pilot.
- 3.39 Receive request to activate flight plan.
- 3.40 Query pilot on flight plan closure.
- 3.41 Advise pilot of clearance status.
- 3.42 Receive acknowledgment or rejection of clearance from pilot.
- 3.43 Evaluate and inform pilot of alternate routes on the basis of weather, aeronautical information, pilot preference and pilot/aircraft limitations.
- 3.44 Receive pilot requests for airport advisories.
- 3.45 Relay requested advisories to pilot.
- 3.46 Relay airport status to pilot.
- 3.47 Relay traffic information/weather conditions to pilot.

#### 4. PERFORM SITUATION MONITORING

- 4.1 Record airport environmental (e.g. ice on runway) or system equipment status message.
- 4.2 Request pilot report on NAVAID status.
- 4.3 Inform pilot of alternate instructions necessary for flight following service.
- 4.4 Receive/deny request for flight following.
- 4.5 Receive/request pilot or operator position report.
- 4.6 Search for and verify aircraft or vehicle location.
- 4.7 Verify pilot has current ATIS or inform pilot of current ATIS.
- 4.8 Inform/request pilot to file/refile flight plan.

## 5. RESOLVE AIRCRAFT CONFLICT SITUATIONS

- 5.1 Receive notice of potential or actual conflict.
- 5.2 Issue traffic advisory or safety alert in regard to aircraft conflict/aircraft proximity.
- 5.3 Inform pilot or operator when clear of traffic or non-controlled object.
- 5.4 Issue advisory in regard to restricted airspace proximity.
- 5.5 Issue advisory or safety alert in regard to route/low altitude situation.
- 5.6 Request/receive pilot notice of traffic in sight.
- 5.7 Issue advisory in regard to airspace/movement area violation.
- 5.8 Issue approval or instructions for ground movement.

## 6. ASSESS WEATHER IMPACT

- 6.1 Receive/request weather information from others.
- 6.2 Issue weather advisory or update to others.
- 6.3 Formulate weather broadcast.
- 6.4 Record scheduled weather report or advisory in specified format.
- 6.5 Broadcast scheduled and unscheduled weather report or advisory on prescribed radio frequencies.
- 6.6 Receive request for pilot briefing.
- 6.7 Brief pilot on weather data in specified format.
- 6.8 Inform/verify pilot has received information on hazardous weather.
- 6.9 Provide pilot with other requested information.
- 6.10 Notify pilot VFR not recommended if conditions warrant.
- 6.11 Advise pilot of flight watch capability.
- 6.12 Advise pilot of ATC delays.
- 6.13 Inform pilot of frequency and station for filing pilot weather report.

6.14 Prompt pilot for additional data.

6.15 Maintain clear and uniform speech pattern while broadcasting

## 7. RESPOND TO EMERGENCIES AND CONDUCT EMERGENCY PROCEDURES

7.1 Communications.

7.2 Receive pilot request for emergency services.

7.3 Request information from pilot on nature of emergency situation.

7.4 Inform pilot to squawk 7700 if emergency declared.

7.5 Request aircraft contact appropriate ATC unit and inform pilot to return to frequency if unable to contact ATC unit.

7.6 Take appropriate action to resolve emergency situation.

7.7 Request aircraft information to determine altitude, heading and airspeed of lost aircraft.

7.8 Advise if altitude or heading change is needed and maintain VFR.

7.9 Advise to adjust gyro with magnetic compass.

7.10 Inform pilot of aircraft position.

7.11 Receive pilot request for guidance to airport.

7.12 Issue course instructions and advisories to pilot.

7.13 Advise pilot of airport information.

7.14 Prompt pilot for in-flight information.

7.15 Verify pilot is on a flight plan.

7.16 Advise pilot of minimum flight altitude.

7.17 Inform pilot of lost communications procedures.

## 8. MANAGE SECTOR OR POSITION RESOURCES

8.1 Forward deletion of previous substitute routing.

8.2 Forward NAVAID status to others.

8.3 Forward notice of communication status.

8.4 Forward new frequency assignment to pilot or another controller.

8.5 Receive notice of alternate communication path.

8.6 Issue alternate communication for air or ground transmissions.

8.7 Query whether others are receiving aircraft's transmissions.

8.8 Receive request to manipulate airport or taxiway lighting system.

8.9 Deny request to manipulate airport lighting system.

## ANNEX II

## ICAO LANGUAGE PROFICIENCY RATING SCALE

LEVEL	PRONUNCIATION <i>Assumes a dialect and/or accent intelligible to the aeronautical community.</i>	STRUCTURE <i>Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task.</i>	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
Expert 6	Pronunciation, stress, rhythm, and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.	Both basic and complex grammatical structures and sentence patterns are consistently well controlled.	Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register.	Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, e.g. to emphasize a point. Uses appropriate discourse markers and connectors spontaneously.	Comprehension is consistently accurate in nearly all contexts and includes comprehension of linguistic and cultural subtleties.	Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues and responds to them appropriately.
Extended 5	Pronunciation, stress, rhythm, and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding.	Basic grammatical structures and sentence patterns are consistently well controlled. Complex structures are attempted but with errors which sometimes interfere with meaning.	Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work-related topics. Paraphrases consistently and successfully. Vocabulary is sometimes idiomatic.	Able to speak at length with relative ease on familiar topics but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.	Comprehension is accurate on common, concrete, and work-related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and/or accent) or registers.	Responses are immediate, appropriate, and informative. Manages the speaker/ listener relationship effectively.
Operational 4	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding.	Basic grammatical structures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particularly in unusual or unexpected circumstances, but rarely interfere with meaning.	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances.	Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to Spontaneous interaction, but this does not prevent effective communication. Can make limited use of discourse markers or connectors. Fillers are not distracting.	Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be clarification strategies.	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming, or clarifying.
<i>Levels 1, 2 and 3 are on subsequent page.</i>						



LEVEL	PRONUNCIATION Assumes a dialect and/or accent intelligible to the aeronautical community.	STRUCTURE Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task.	VOCABULARY	FLUENCY	COMPREHENSION	INTERACTIONS
<i>Levels 4, 5 and 6 are on preceding page.</i>						
Pre-operational 3	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation and frequently interfere with ease of understanding.	Basic grammatical structures and sentence patterns associated with predictable situations are not always well controlled. Errors frequently interfere with meaning.	Vocabulary range and accuracy are often sufficient to communicate on common, concrete, or work-related topics, but range is limited and the word choice often inappropriate. Is often unable to paraphrase successfully when lacking vocabulary.	Produces stretches of language, but phrasing and pausing are often inappropriate. Hesitations or slowness in language processing may prevent effective communication. Fillers are sometimes distracting.	Comprehension is often accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. May fail to understand a linguistic or situational complication or an unexpected turn of events.	Responses are sometimes immediate, appropriate, and informative. Can initiate and maintain exchanges with reasonable ease on familiar topics and in predictable situations. Generally inadequate when dealing with an unexpected turn of events.
Elementary 2	Pronunciation, stress, rhythm, and intonation are heavily influenced by the first language or regional variation and usually interfere with ease of understanding.	Shows only limited control of a few simple memorized grammatical structures and sentence patterns.	Limited vocabulary range consisting only of isolated words and memorized phrases.	Can produce very short, isolated, memorized utterances with frequent pausing and a distracting use of fillers to search for expressions and to articulate less familiar words.	Comprehension is limited to isolated, memorized phrases when they are carefully and slowly articulated.	Response time is slow and often inappropriate. Interaction is limited to simple routine exchanges.
Pre-elementary 1	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.

**Beatriz Faria Aragão** has a degree in Language Studies, a B.A. in Translation (Portuguese and English), both by Ibero Americana College, and a M.A in Applied Linguistics by the University of Campinas. She has been working at the Airspace Control Institute (ICEA) since 2005 and she is currently responsible for the Aeronautical English Sector at ICEA. She is an examiner of EPLIS and has experience in teaching and assessing English for specific purposes. Main research interests: language assessment in the aviation context. Email address: [biaaragao@yahoo.com](mailto:biaaragao@yahoo.com)

**Matilde V. R. Scaramucci**, Full Professor, Department of Applied Linguistics (1982-2018); Volunteer Researcher, Postgraduate Program of Applied Linguistics (2018 -- present); Dean of the Institute of Language Studies (2011-2014); Editor-in-chief of *Trabalhos em Linguística Aplicada* (2006-2014), University of Campinas, SP, Brazil; member of the team in charge of developing the Certificate of Proficiency in Portuguese as a Foreign Language (Celpe-Bras, Brazilian Ministry of Education); responsible for the EPLIS initial validation study; co-editor of *Português para Falantes de Espanhol* (2008), *Pesquisas sobre Vocabulário em Língua Estrangeira* (2008), *Pesquisas em Inglês Aeronáutico no Brasil* (2018) and *Formação Inicial e Continuada de Professores de Português Língua Estrangeira/Segunda Língua no Brasil* (2020). Main research interests: assessment of integrated tasks, validity and washback. Email address: [matilde@scaramucci.com.br](mailto:matilde@scaramucci.com.br)

