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Adrian Enright
(eds.)

Changing Perspectives on Aviation English Training

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Preface

Aviation English is a relatively new area of language training specialization where the overriding outcome is for coherent communication between pilots and air traffic controllers to international standards. Proficient aeronautical communication is a prime factor in ensuring aviation safety.

This book contains articles by the main conference speakers supporting their theoretical and/or practical presentations (in the form of workshops) to Changing Perspectives on Aviation English Training.

The International Civil Aviation English Association (ICAEA)[1] was invited by Dr. Anna Borowska[2] of the Aviation Communication Research Centre (ACRC)[3] of the University of Warsaw to organize a conference and workshop event in Warsaw. ICAEA accepted this offer, so Adrian Enright[4] (ICAEA Vice-President) and Anna Borowska worked together to organize an international conference entitled "Changing Perspectives on Aviation English Training" that took place on 25th and 26th June 2015 at the Faculty of Applied Linguistics, Institute of Specialized and Intercultural Communication of the University of Warsaw. Although registrations were not as many as anticipated these did come from 19 countries from across the globe, from New Zealand to Poland to Brazil. The speakers are all experts in their fields of aviation English training.

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[1] The International Civil Aviation English Association (ICAEA) is a non-profit, non-partisan association created to promote the development and understanding of the use and effective application of English in aviation. ICAEA raises the awareness of the role of English in aviation safety, service quality and efficiency by providing a forum for an exchange of ideas and discussion. ICAEA links the operational and professional training, assessment and linguistic communities to enhance understanding and adoption of best practice in training and assessment. (www.icaea-aero.org)

[2] Dr. Anna Borowska is an assistant professor at the Institute of Specialized and Intercultural Communication, University of Warsaw. She received her Ph.D. in languages for specific purposes from the University of Warsaw in 2008. Currently, she is head of the Aviation Communication Research Centre. Her research focuses on linguistic problems of aviation communication. She has been also given a position of a seconded national expert at the European Commission in Luxembourg.

[3] Aviation Communication Research Centre (ACRC) was established in 2013 in the Institute for Specialized and Intercultural Communication of the University of Warsaw in order to meet the increasing demand for research in the field of aviation communication - specifically to prevent misunderstandings in international aeronautical communication.

[4] Adrian Enright trained as an air traffic controller in the United Kingdom with experience in all aspects of ATC before joining Eurocontrol at the Maastricht Upper Area Control Centre. Adrian is a Vice-President of ICAEA and runs his own consultancy service for aeronautical and maritime communications, LPRAssist (http://www.lprassist.com). Adrian was project leader for the development of EUROCONTROL's PELA and ELPAC language proficiency tests for air traffic controllers. He is also a founder member of ICAO's PRICE Study group that established Standards and Recommended Practices (SARPs) for aeronautical communication.

The objective of the conference was to promote discussion among researchers and language trainers on new perspectives in training pointing at the well-known possibilities as well as modern ways of teaching, including modern technologies, in the field.

The two-day proceedings consisted of morning presentations and discussions followed by afternoon interactive workshop sessions, for groups of about 20 aviation English trainers, moderated by the speakers who had presented the more theoretical aspects of their subject in the morning. This format encouraged lively debate and allowed participants, through exercises in the afternoon workshop sessions, to experience some of the aviation English training techniques introduced by the speakers.

This collection of articles has been divided into a theoretical part and a practical part. Within the first one we can follow the presentation of core elements in the field of Aviation English teaching that starts with Henry Emery's discussion of ICAO Language Proficiency Requirements role and an analysis of the language needs of entrants to aviation training. Neil Bullock focuses on the approach to methodology of Aviation English Teaching, Colin Davis points at the role of the trainer in the teaching process and Peggy Wegler notices that pilots need to improve general English skills. Anna Borowska focuses on the expert speakers' improvement of their linguistic behaviour and Olena Petrashchuk defines the competency qualification of Aviation English instructor. Finally, Marcin Łączek and Paweł Szerszeń suggest that all of the teaching process can be reinforced by modern media used for the purposes of specialized language teaching.

The contents of the practical part suggest Aviation English training content design and training delivery including all elements of the process: a student, a trainer and a syllabus followed by suggestions of interactive methods for maximum stimulation motivation and language acquisition.

This publication is highly recommended to anyone interested in Aviation English training.

The Editors
Luxembourg, 7th December 2015

Part I.

Aviation English Training Theoretical Issues

Aviation English for the Next Generation

HENRY EMERY[5]
Latitude AES, United Kingdom

Abstract
The aviation industry is forecast to grow at a stratospheric rate in the next 20 years. This growth results in an increasing number of students entering flight and Air Traffic Control (ATC) training. Flight and ATC training is often conducted in the medium of English and yet the vast majority of entrants do not have English as a first language. The International Civil Aviation Organisation (ICAO) Language Proficiency Requirements (LPRs) have become an established standard for language proficiency in the aviation industry. This paper begins by arguing that the ICAO LPRs are not a suitable target for entrants to flight and ATC training due to the fact that students neither have a need for the target language addressed by the ICAO LPRs nor possess the background knowledge of aviation required to engage in the professional language use addressed by the ICAO LPRs. The paper then turns to a broad analysis of the language needs of entrants to aviation training and suggests that language training and assessment for student pilots and ATC officers shares much in common with English for Academic Purposes. Finally, the paper presents research into flight and ATC instructors' perceptions of the needs of their students, the results of which suggest that B2 on the Common European Framework of Reference is a suitable entry level for English-medium aviation training.

Introduction

To meet the increasing demand for global air travel, the civil aviation industry is set to grow at a stratospheric rate over the next 20 years. With this growth comes a requirement for a huge number of new personnel to fly an expanding global aircraft fleet and to control a rapidly increasing volume of air traffic. In 2010, the International Civil Aviation Organisation (ICAO) predicted that the world's population of pilots and Air Traffic Control Officers (ATCOs) would more than double by 2030 (ICAO, 2010a). In 2013, Boeing forecasted a requirement for 498,000 new commercial airline pilots by 2032 (Boeing, 2013). In 2015, Airbus predicted that air traffic will double by 2030 with 32,600 new airliners entering service, the majority of which will be delivered in the Asia Pacific region (Airbus, 2015). An increasing number of experienced pilots and ATCOs approaching retirement age further compounds the challenge of personnel shortage. Some have also suggested that the personnel shortage is a threat to aviation safety (IATA, 2015). Indeed, the problem has become so acute in recent years that there has been a major industry-wide drive to attract young people to a career in

[5] Henry Emery has worked in the area of aviation English education and assessment for 13 years. He is co-author of the British Council award winning Aviation English (2008) followed by Check Your Aviation English (2010). Henry has a particular interest in language testing. He led the development of the English Test for Aviation, the first test to receive a conditional endorsement from ICAO and more recently, Checkpoint, a computer based test for ab-initio pilots and ATCs. Henry was also project manager of the ICAO-ICAEA rated speech samples training aid. Henry is Managing Director of Latitude Aviation English Services (UK).

aviation and to identify and address barriers to entry[6]. According to current predictions, many thousands of young people will need to be trained in order to meet the strong demand for personnel in the years to come.

English has long been the lingua franca in civil aviation, and the vast majority of today's licensed pilots and ATCOs do not have English as a first language. With the predictions for growth in the industry, it is clear to see that the proportion of the world's future pilots and ATCOs who do not have English as a first language will grow. This is particularly true when considering that the strongest demand for personnel is in regions of the world where English is not a first language, for example in Asia and the Middle East.

Today, much of the world's ab-initio flight and air traffic control training capacity is in the English speaking world, in countries such as the USA, Canada, South Africa, Australia and the UK. Aviation Training Organisations (ATOs) in such countries are experiencing a high demand from international students enrolling on flight and ATCO training courses. Furthermore, of the aviation training which is conducted in the non-English speaking world, much is conducted in the medium of English. It is becoming increasingly common to find ATOs in France, Georgia, Germany, Hungary, India, Norway, Oman, Russia, Sweden, Taiwan, Thailand and Turkey providing some, if not all, of their ab-initio training programmes in English. Not only is English the lingua franca of flight operations, but it is fast becoming the lingua franca of ab-initio aviation training.

To continue to grow and to do so safely, the aviation industry needs to attract young people and to train them from zero knowledge and experience to the cockpit of a jet airliner or the ATC position as quickly and as efficiently as possible. In service of the industry, of ATOs, of flight and ATC instructors and of the students and their sponsors, English language practitioners play an increasingly important role in helping the industry meet the requirement for new personnel.

1. The ICAO Language Proficiency Requirements

In 2003, ICAO introduced a standard for English language proficiency in a laudable effort to improve aviation safety worldwide. Under the Language Proficiency Requirements (LPRs), all pilots operating on international flights and all ATCOs controlling international air traffic must demonstrate a minimum level of English language proficiency defined by ICAO as Operational Level 4. In the years since the introduction of the LPRs, an enormous amount of language education and assessment activity has taken place. National Aviation Authorities have incorporated the LPRs into their regulatory frameworks, course designers and materials writers have developed language learning content to help pilots and ATCOs reach, maintain and

[6] For example, ICAO's Next Generation of Aviation Professionals (NGAP) initiatives were launched to ensure that enough qualified and competent aviation professionals are available to operate, manage and maintain the future international air transport system. The IATA Training and Qualification Initiative (ITQI) was created to develop existing and future generations of aviation professionals to meet the demands of an evolving industry.

improve upon ICAO level 4. Language testers have sought to develop instruments to measure the language proficiency of operations personnel and researchers in applied linguistics, language teaching and testing, and organisations advocating aviation safety have continued to explore language proficiency in the context of the LPRs and to promote standards for aviation language training, assessment and use. Though there is much yet to be done, the LPRs have had an important impact and have quickly become the established standard for English language proficiency across the aviation industry. It is not surprising that today it is quite common in many parts of the world to find ICAO level 4 as an entry requirement to ab-initio aviation training. Indeed, it has been argued that 'It is beneficial for airlines and their flight training providers to ensure that a standard protocol is in place for their flight students to receive valid and reliable language assessments in accordance with these new ICAO language proficiency requirements prior to commencing flight training' (Albritton, 2007:20). Considering the responsibility that aviation English practitioners carry in equipping students with the language they need for successful aviation training, we might reflect on the suitability of the LPRs in general, and ICAO level 4 in particular, as a target for entry to aviation training programmes. To do so, we will look at the purpose of the LPRs and the language use that they are designed to address against the backdrop of initial aviation training.

1.1. Language for professionals

The ICAO LPRs were developed in response to a series of fatal aircraft accidents in which insufficient English language proficiency was found to be a contributory factor leading to the accident. In Document 9835 *Manual on the Implementation of the Language Proficiency Requirements*, ICAO states that:

> The sole object of ICAO language proficiency requirements is aeronautical radiotelephony communications, a specialized subcategory of aviation language corresponding to a limited portion of the language uses of only two aviation professions — ATCOs and flight crews. It includes ICAO standardized phraseology and the use of plain language (ICAO, 2010b, section 3.2.7)

During routine, predictable flight operations, pilots and ATCOs adhere to standardized phraseology which ICAO defines as 'the formulaic code made up of specific words that in the context of aviation operations have a precise and singular operational significance' (ICAO 2010b, Section 6.2.8.4). As routine aircraft movements occur according to a set of strictly defined procedures, standard phraseology covers routine pilot-ATC communications and is designed to be readily understood by both parties in order to make standard communications both safe and efficient. However, as Davies notes, where language 'is formulaic (for example, the English of air traffic control), it must depend on a broader proficiency in order to deal with emergencies which no ritualised code can encompass' (Davies, 2001: 138). In aviation, when something unusual happens and operations depart from the routine, phraseologies alone may not always be sufficient to cover the communicative needs. In non-routine and emergency situations, pilots and ATCOs may need to use 'plain

language' which ICAO defines as 'the spontaneous, creative and non-coded use of a given natural language' (ICAO, 2010b, Section 6.2.8.4). ICAO states:

> Standardized phraseology should therefore provide the tools for communication in most of the situations encountered in the daily practice of ATC and flight. However, sometimes the unexpected happens. For example an inexperienced pilot gets lost, a technical problem develops on the aircraft, a passenger falls sick, someone provokes a bomb alert, ATC equipment fails or the truly unexpected arises. In these cases, where phraseology provides no ready-made form for communication, pilots and ATCOs must resort to plain language. (ICAO, 2010b, section 3.3.13)

The effective transition between standard phraseology and plain language is referred to by ICAO as 'code-switching'(ICAO, 2010b, section 3.3.21) and is a critical component of the ICAO LPRs.

The LPRs strengthened provisions for language proficiency in the Standards and Recommended Practices (SARPs) of the Annexes 1, 6, 10 and 11 to the Chicago Convention on Civil Aviation, Annex 1 of which stipulates the ability to speak and understand the language used for radiotelephony communications as a prerequisite for personnel licensing. In practical terms, this means that existing pilot and ATC licence holders have to not only adhere to standardised phraseology, but they also need to regularly demonstrate proficiency in plain language in order to retain their licences. In addition, those concluding flight or air traffic control training and applying for an initial pilot or ATC licence have to demonstrate proficiency in plain language at the point of licence issue. As ICAO states, 'If the aeronautical community is considered as one to which an applicant gains admission through the demonstration of any number of competencies determined to be important to the community, then language proficiency is simply another competency' (ICAO, 2010b, section 4.5.4).

Of those intended to be addressed by the ICAO LPRS, some may be private pilot licence holders who fly for recreational purposes and some may be students who are completing their training and about to embark on a career as a professional pilot or ATCO. However, at any given time, the vast majority are experienced professionals who already earn a living from flying aircraft or controlling air traffic. Regardless of professional activity and type of licence held, a characteristic that all licence holders share in common, is, one on hand, that they have received formal training in standard phraseology and use of the radiotelephone and, on the other, a knowledge of radiotelephony communications and the operational procedures they represent. This knowledge is borne out of flying and ATC experience during which pilots and ATCOs routinely use the radiotelephone as members of the international aeronautical community. The fact that entrants to aviation training have yet to receive training in radiotelephony communications, do not have knowledge of or experience with aviation operations nor belong to the professional community raises serious questions as to the suitability of the ICAO LPRs as a target for entry into initial aviation training. To take this further, let's look at the ICAO rating scale at level 4 in more detail.

1.2. The ICAO Rating Scale

In order to 'ensure, as far as possible, that all speakers have sufficient language proficiency to handle non-routine situations' (ICAO, 2010b, section 4.2.2), ICAO developed an analytical rating scale and a set of holistic descriptors to make explicit the level of language proficiency required by pilots and ATCOs. The Rating Scale addresses speaking and listening skills described across six criteria (Pronunciation, Structure, Vocabulary, Fluency, Comprehension and Interactions) and six language levels where a minimum of level 4 in each of the six criteria is required for personnel licensing. A brief analysis of five of the six descriptors of the rating scale for level 4 (table 1) reveals how the rating scale was designed to capture the requirement for pilots and air traffic ATCOs to handle non-routine communications.

The *Structure* and *Vocabulary* descriptors refer to 'unusual or unexpected circumstances' while *Comprehension* and *Interactions* descriptors refer to an 'unexpected turns of events'. In the context of radiotelephony communications, these descriptors can be interpreted as situations which deviate from planned, routine and predictable aircraft operations. The situations may not have an immediate impact on the safety of the flight, for example, an ATCO advising a pilot that a taxiway is closed due to an aircraft with mechanical failure. On the other hand, the situation may be more urgent, for example, a flight crew experiencing problems with aircraft flight systems whilst in-flight. In all cases, regardless of urgency, the situations are not predictable and are likely to trigger the use of plain language where phraseologies do not suffice. As both pilots and ATCOs are conditioned by what they expect to hear[7], plain language communications in non-routine situations often contain an element of surprise. As Mell notes, 'the first obvious quality of emergency calls by pilots via radiotelephony is that they come to the ATCO - literally and metaphorically - "out of the blue"' (Mell, ND). Such messages may give rise to the 'linguistic complications' included in the descriptor for *Comprehension* as both parties involved in communication work towards mutual understanding of a situation which is out of the ordinary and which requires more complex language use. To cater for the management of this switch from standard phraseology to plain language, the *Fluency* descriptor refers to the 'transition from rehearsed or formulaic speech to spontaneous interaction[8]'. Finally, though not linked necessarily to radiotelephony communications *per se*, both the *Vocabulary* and *Comprehension* descriptors refer to a test taker's ability to talk about and understand 'work-related topics' which can be interpreted as any topic connected to the professional lives and activities of pilots and ATCOs, including communications on the radiotelephone.

[7] A phenomenon known as 'expectancy'. See Orlady / Orlady (1999).

[8] ICAO defines 'formulaic speech' as a 'restricted or coded use of language comprising fixed standard phrases or lexical and syntactical routines, developed either by consensus for highly repetitive communications (e.g. everyday exchanges of greetings) or formally prescribed for special or professional purposes' and gives ICAO standardized phraseology as an example of the latter (ICAO, 2010:ix).

Structure	Vocabulary	Fluency	Comprehension	Interactions
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 slower or require 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.

Table 1. Selected descriptors from the ICAO Rating Scale at level 4 [author's emphasis]

Today, it is widely accepted that specific-purpose language tests are designed to engage subject-matter knowledge alongside language knowledge as a test taker interacts with test tasks. As Douglas notes, 'the [LSP] construct contains, by definition, subject-matter knowledge' (Douglas, 2000:39). ICAO states that 'Because of the high stakes involved, pilots and air traffic ATCOs deserve to be tested in a context similar to that in which they work. Test content should, therefore, be relevant to their work roles' (ICAO, 2010b, Section 6.2.8.3). Furthermore, ICAO developed the rating scale to explicitly address the construct of radiotelephony communications:

> The ICAO Rating Scale has a distinct aeronautical radiotelephony focus; it addresses the use of language in a work-related aviation context, voice-only communications, using strategic competences for safe communications in case of complications or unexpected turn of events (ICAO, 2010b, section 4.5.5)

Performing at ICAO level 4 in a test designed to measure language proficiency in this context requires the test-taker to have knowledge of and experience with using standard phraseology and the full range of operational procedures that phraseology represents. It also demands that the test taker knows what constitutes a non-routine situation in aviation operations, and has the strategic competence to code-switch between standard phraseology and plain language in such a situation. If we are to

'make generalisations about the [test takers'] ability to use language in future real-life situations' (ICAO, 2010b, Section 6.2.8.3), is entirely appropriate, desirable, even, that tests designed for this specific purpose tap into such field-specific subject-matter knowledge given that the stated audience - licensed pilots and ATCOs - are experts in their field.

Subject-matter knowledge is inseparable from language use, even more so in language for specific purposes. Therefore, we cannot expect entrants to aviation training to be able to speak 'ICAO aviation English' knowing that they do not have the associated subject-matter knowledge. Therefore, using tests designed to meet the ICAO LPRs for entrants to aviation training is highly problematic due to 'the lack of knowledge: a specific test might well assume or presuppose subject knowledge that the testees do not have' (Alderson, 1981: 127) and would constitute test misuse. In a well-constructed, field-specific test of radiotelephony communications, a test-takers' known lack of knowledge would impede performance which would not only be unfair to the test-taker but it would also lead to inevitable problems in the validity of inferences made on the basis of test scores. As I have argued elsewhere, 'performance in a test of LSP for pilots is thoroughly dependent on subject-matter knowledge. To turn the question on its head, if a test-taker did not possess any such knowledge, they would be as unable to perform in such test tasks as they would be unable to fly an aircraft' (Emery, 2014:208). This is almost certainly the case with entrants to aviation training. Following the same logic, we might suggest that if entrants to aviation training with no subject-matter knowledge *are* able to perform at ICAO level 4 or above in tests purporting to measure language proficiency for the ICAO LPRs, the tests themselves are fundamentally flawed in that their tasks do not adequately trigger 'an interaction between the test taker's language ability and specific purpose content knowledge, on one hand, and test tasks, on the other'. (Douglas, 2000:40). That there are tests in use around the world that that claim to produce valid measures of language proficiency for both licensed professionals and entrants to aviation training may go some way towards explaining why Alderson concluded that "we can have little confidence in the meaningfulness, reliability, and validity of several of the aviation language tests currently available for licensure" (Alderson, 2011: 1).

1.3. Training for the ICAO LPRs

The purpose of English for Specific Purpose (ESP) is 'to enable learners to function adequately in a target situation, that is, the situation in which the learners will use the language they are learning' (Hutchinson / Waters, 1989:12). Chapple & Curtis identify the core characteristics of ESP courses as, amongst other things, being customized to meet foreign language learners' specific needs and being closely related to professional knowledge (Chapple & Curtis, 2000). Given the highly-specialised nature of language in the context of the ICAO LPRs, the focus for ESP syllabus designers and materials writers has naturally been helping licensed pilots and ATCOs develop the plain language proficiency required to communicate effectively in the context of radiotelephony communications. Indeed, in *Circular 323 Guidelines for Aviation English Training Programmes*, ICAO gives the following guidance:

> By incorporating the topics, operational situations and communicative functions which make up the substance of pilot-ATCO radiotelephony communications into their courseware, training providers are preparing their students most effectively for using English in their real-life working environment (ICAO, 2009, section 1.3.6).

We can see this translated in the introductions of three well known ESP coursebooks written to address the ICAO language proficiency requirements:

> This course does not aim to teach the phraseology that aviation professionals need but it is included to provide a context for the plain English needed for communication between pilots and air traffic controllers (Emery and Roberts, 2008).

> English for aviation has been developed specifically for people who … need to comply with the ICAO LPRs … It supports standard phraseology and builds upon it to help improve plain English in the skill areas specified by ICAO (Ellis and Gerighty, 2008:4).

> ICAO standard phraseology is the cornerstone of radiotelephony. Standard phraseology, then, is widely used in Flightpath for reasons of contextual authenticity and to allow students to practise the transition between phraseology and plain language (Shawcross, 2001:3).

While such courses contain material that those seeking to become pilots or ATCOs may find interesting and motivating, the stated objectives of such courses presupposes that learners both possess the subject-matter knowledge and professional experience necessary to engage meaningfully with the content and have a need to acquire the target language. ICAO acknowledges that such ESP material is problematic for students of aviation training due to a lack of subject-matter knowledge: 'In the case of ab-initio students, there will be a great deal of technical or operational subject-matter that cannot be taken for granted (ICAO, 2009, section 1.3.3). More importantly, such courses are not designed with students entering professional aviation training in mind. Given that 'The ICAO Rating Scale addresses only spoken language (speaking and listening); it does not address reading and writing skills' (ICAO, 2010b, section 4.5.5), courses that are oriented towards ICAO level 4 and above will fail to address the language skills that students require to function effectively at the aviation training academy, and fail to account for learner language proficiency, learning preferences and styles and the needs, expectations and desires of the academy, its instructors and students. In so many ways, the language proficiency requirements of entrants to English medium aviation training are very different from those of licensed pilots and ATCOs. Thus, if we are to successfully prepare students for English medium aviation training, aviation English practitioners must move away from the ICAO LPRs and go back to the drawing board.

2. English for academic purposes

Entrants to aviation training need language to learn, and as Hyland notes, 'Teaching those who are using English for their studies differs from teaching those who are

learning English for other purposes' (2006:4). It would seem logical, then, that attempts to address the requirements of students will draw on the principles of English for Academic Purposes (EAP), a branch of English for Specific Purposes (ESP) defined as 'the teaching of English with the specific aim of helping learners to study' (Flowerdew / Peacock, 2001:1). EAP has witnessed unprecedented growth in more recent decades alongside the rapid increase in the numbers of international students attending English-medium further and higher level education. Obviously, flight and ATC training, as vocational training, is very different to under- and post-graduate academic study. Students of aviation training do not conduct library research, write essays, give presentations and so on. At the same time, given EAP's focus on the language proficiency that students need in order to learn, EAP is particularly relevant in a consideration of English language teaching and assessment for student pilots and ATCOs.

Ryland (2006, p1) suggests that:

> Any EAP course starts with the question: 'Why are these students learning English?' It is a question which helps focus the course and make it relevant for learners by taking the world outside the language classroom into account. It means going beyond grammar and vocabulary to prepare students for their future academic experiences while, at the same time, recognizing the importance of affective, personal and social expectations of learning. (Ryland, 2006:73)

We know that students of aviation training are learning English so they can learn, in the medium of English, to be professional pilots and ATCOs. Our next questions relate to needs analysis which is seen as the 'cornerstone' of EAP since it helps determine 'the *what* and the *how* of a course' (Dudley-Evans / St John, 1998:121). Jordan proposes that needs analysis should be the "starting point for devising syllabuses courses, materials and the kind of teaching and learning that takes place (1997:22) Today there is much literature on the subject of EAP needs analysis (see Basturkmen 2010; Benesch, 1997; Brindley 1989; Dudley-Evans and St John 1998; Hamp-Lyons 2001; Hutchinson and Waters 1987; Hyland 2006; Jordan 1997; Long 2005; Richterich 1980; Robinson 1991; West 1994). For the purposes of this paper, let's begin by analysing, in broad terms, the *present situation* and *target situation* of the learners (Dudley-Evans / St John, 1998) by asking the following questions: Who are the learners? What tasks do the students need to do in English during their training? What level of language proficiency do students need to do these tasks successfully?

2.1. Student pilots and ATCOs

As Hyland notes, 'Student populations have become increasingly diverse, particularly in terms of their ethnic and linguistic backgrounds and educational experiences, and this presents significant challenges' (Hyland, 2006, p2) While recognising this diversity, we can identify some of the common and broad characteristics that students of aviation share as follows: Student pilots and ATCOs tend to be young – typically between the ages of 18 and 25 - predominantly male and generally highly motivated by the potential of an exciting career in a dynamic, technologically advanced, well-

respected and relatively well-paid industry. By and large, they are intelligent and are generally well educated, particularly in science, technology, engineering and mathematics (STEM) subjects. For the vast majority that do not have English as a first language, student English language proficiency is varied, from beginner to advanced levels, depending, naturally, on the level and quality of English language instruction they have received and their level of exposure to English. Some are aviation enthusiasts and may have read extensively about aviation, played flight or air traffic control simulators for fun or may have completed some formal aviation training. Some may even have under- and post-graduate education in STEM or aviation-related subjects. However, like many students, the majority of students of aviation begin their training with little knowledge of the domain, if any.

2.2. Admissions

The route to entry into training varies considerably from country to country, as does the depth, nature and importance assigned to the selection and admissions process. In flight training, students may enrol under self-sponsorship where the student bears the financial cost of training independently, either for a complete training programme (integrated training) or a training programme delivered in stages (modular training). Others may be sponsored directly by an airline and/or a government organisation, or training may be conducted under a model whereby successful completion of training leads to a guaranteed job within a particular airline. Here, the admission process tends to be more rigorous. Likewise, air traffic control training programmes are typically sponsored by national Air Navigation Service Providers, entry into which is usually determined by successful performance in initial assessment. Depending on the nature and depth of student assessment, students may also display a high level of cognitive skills and personality traits such as numerical reasoning, hand-eye coordination, leadership, assertiveness, and well-developed interaction and communication skills. The nature, depth, scope and importance assigned to English language assessment varies considerably, from informal impressionistic judgements about language proficiency made in a telephone interview through to the use of specific purpose, professionally produced tests of listening, reading and speaking in the context of initial aviation training.

2.3. Aviation training

As one would expect, courses for pilots and ATCOs vary. Flight and ATC training programmes vary considerably within themselves too, depending on the nature of the training programme and the type of licence the student is working towards. That said, ab-initio training for pilots and ATCOs shares much in common in terms of the environment in which training takes place, the subject-matter that students encounter, the language that is used and the skills that students need to cope with training.

In many contexts, ab-initio training requires that students attend an aviation academy or training centre. Often, residential accommodation is provided for those students who do not live locally. For international students, this requires overseas

travel and an extended period of time away from home during which they will have to adapt to life in a new language and culture. If the language of the training environment is English, then getting to grips with day-to-day life in a new environment and culture is often the first language challenge that non-English speaking students face. Where can you buy a sandwich? Where is classroom 3a? What time do classes finish? Who do I talk to if I have a problem? Getting off to a successful start in training involves speaking to and understanding training centre administrative and support staff as well as other students.

In terms of the formal training programme, and again, depending on the nature of the programme itself, the first weeks of pilot and ATC training is often spent entirely in the classroom undergoing theoretical training and preparing for civil aviation authority written examinations. This theoretical training, known as 'ground school' for pilots and 'basic training' for ATCOs, shares much in common in terms of subject matter. Both pilot and ATC training syllabi cover a wide range of subjects such as principles of flight, general and radio navigation, aircraft performance, air law, meteorology and human factors. As one well-known independent provider of ATC training states, 'A number of the course's theoretical components are similar to the requirements for pilot training because of the close inter relationship within the aviation environment.' (Entry Point North, 2015).

Theoretical training follows a programme of subject-specific classroom lectures which may be delivered by native and non-native speaking flight and ATC instructors. Classroom lectures typically involve the instructor talking to the students about the key aspects of the subject-matter with supporting visual aids such as slides, PowerPoint presentations and video. Key aspects of the subject-matter are often identified according to their importance in the Civil Aviation Authority (CAA) written examinations which students sit at the end of theoretical training. The students often have the relevant pages of the subject-specific textbook open and on the desk in front of them to which the instructor may refer, particularly to identify the salient points of the lecture. The instructor may also distribute handouts to the students.

The written discourse of textbooks is formal, sometimes highly technical in nature and like much technical discourse, is multimodal, including a range of charts, tables, illustrations and so on, all of which the student has to learn to 'read'. As one flight instructor noted, students 'must have the English language skills to understand mathematical/scientific terms' (Personal correspondence). Fortunately for the students, the content is expository and has been written with the express intent of imparting knowledge upon those new to the field. Today, to support the instructor and the textbook, aviation training is commonly augmented by e-learning which, again, often requires reading and listening skills. For example, on an integrated Airline Transport Pilot Licence programme which follows the European Aviation Safety Agency syllabus, students may spend up to eight hours in the classroom, five days a week for six months, learning the subject-matter and preparing for CAA examinations across 15 subjects, successful performance in which requires familiarity with written

multiple choice questions[9]. Many students who have English as a first language find the volume of learning challenging. As one ATC instructor commented, 'Our courses are challenging and require self-study and revision outside the classroom environment' (Personal correspondence). Achieving success when English is not your first language is a considerable achievement!

The US Federal Aviation Administration (FAA) flight training model is a little different. Classroom-based ground school is integrated more closely with practical flight training and students tend to get into the aircraft much earlier in their training programme. While this may appear to be an obvious safety issue, it is important to remember that the flight instructor handles all ATC communications and remains in command throughout the early stages of flight training. The most important thing for the student is to benefit from their time in the air which means understanding the instructor in the briefing room and in the cockpit as the student is guided through basic aircraft handling and manoeuvres. Obviously, it is crucial that students can understand the instructor's commands once inside the aircraft, though this brings with it added complications of listening in a very noisy environment and the cognitive load associated with listening to and acting on complex instructions simultaneously and understanding expository commentary from the instructor. A steep turn in a Cessna 152 is no place for a misunderstanding to occur!

Given the considerable investment of time and cost associated with aviation training, neither the student, the student's sponsor nor the ATO can afford for the student to fall behind and to bear the costs and disruption associated with repeat training or failure, or worse still, have a safety incident on account of poor English. As training begins, it's crucial that the student has the right language skills at the right level of proficiency.

We have looked briefly at who the students are and the situations that they encounter on commencing aviation training, which we can broadly summarise as follows:

1. Students selected for English medium flight training:
    a. Are young and highly motivated;
    b. Are from a wide range of nationalities and first language backgrounds;
    c. Vary in their level of English language proficiency;
    d. Have received school-level education in STEM subjects; and
    e. Know very little about aviation.
2. Students selected for English medium flight training need to:
    a. Cope with life in an English speaking environment;
    b. Cope with a new professional learning culture;
    c. Interact with staff and other students at the training centre;
    d. Listen to classroom lectures;
    e. Interact with instructors in one-to-one and small group contexts;
    f. Read multimodal technical training textbooks, articles and e-learning;

[9] For example, see the course outline for CAE-Oxford Aviation Academy's Integrated ATPL Programme (Oxford): http://www.caeoaa.com/oxford/integrated-atpl-program/course-outline/#.VkgjAXbhAdV

g. Read and listen to multimodal technical e-learning; and
h. Read multiple choice questions for national aviation authority examinations.

Dudley-Evans and St John (1998: 41) present the following as 'core' general academic language skills and study activities:

1. Listening to lectures.
2. Participating in supervisions, seminars and tutorials.
3. Reading textbooks, articles and other material.
4. Writing essays, examination answers, dissertations and reports.

Depending on the student's training programme and the stage the student has reached in the training pathway, we can see that 1, 2 and 3 above are all highly relevant in the context of initial aviation training.

One important question to ask is whether English for aviation training is English for General Academic Purposes or English for Specific Academic Purposes. In other words, is successful initial aviation training dependent upon on generic academic language knowledge and skills which are common to transferrable across disciplines and learning contexts, or is aviation training substantially different from other disciplines in terms of texts, skills and forms? An answer to this question would lead to a more robust theoretical platform from which to develop training and assessment for entrants to aviation training. Research in this area is needed.

3. Language level and the CEFR

Our final question concerns language proficiency level. If well-designed tests that meet the ICAO LPRs are inappropriate for entrants to English medium aviation training due to students' lack of subject-matter knowledge and the fact the LPRs do not address the language knowledge and skills required to learn, then what is an appropriate level of language proficiency? In order to successfully learn, what level do students need to reach before starting English medium aviation training? This is a question that the organisation for which I work needed to answer. In order to do so, we turned to the Common European Framework of Reference (CEFR), an established framework 'designed to provide a transparent, coherent and comprehensive basis for the elaboration of language syllabuses and curriculum guidelines, the design of teaching and learning materials, and the assessment of foreign language proficiency' (Council of Europe, 2015). As much language assessment for entry to academic programmes in Europe is aligned to the CEFR, my colleagues and I conducted some exploratory research to help us understand if the CEFR could offer a useful guide to the language skills required for successful aviation training. In addition, if the CEFR did prove useful, we wanted to know what an appropriate entry level of language proficiency might be as a starting point for developing specific purpose assessment criteria.

3.1. Methodology

Today, it is widely accepted that collaboration with subject-matter expert informants has an important role to play in the development of training and assessment of

language for specific purposes (Elder, 1993; Jacoby and McNamara, 1999; Dudley-Evans and St John, 1998; Douglas, 2000, 2001; Hyland, 2006; Flowerdew and Peacock, 2001). Flowerdew and Peacock advise that 'Given the technical nature of the areas of language use which EAP is concerned … there is an important role to be played by the specialist informant, a subject-matter expert which can interpret the conceptual content of the target situation on behalf of the needs analyst' (Flowerdew and Peacock, 2001:179). Furthermore, Knoch suggests that 'using subject specialists' judgments of language performance adds to the validity of the resulting assessment criteria' (Knoch, 2014, p1). Thus, we decided to gather data from subject-matter expert informants by inviting theoretical training instructors from three well known providers of English medium flight and air traffic control training[10] to participate in a 25 minute paper-based questionnaire (Appendix A). In the questionnaire, we presented 11 communicative activities from the CEFR as shown in table 2:

Communicative activities		
Reception	Spoken	Understanding interaction between native speakers
		Understanding a native speaker
		Listening as a member of a live audience
		Listening to announcements & instructions
		Listening to radio and audio recordings
	Audio-visual	Watching TV and film
Working with text	Text	Note-taking in seminars and lectures
Reception	Written	Reading correspondence
		Reading for orientation
		Reading for information & argument
		Reading instructions

Table 2. Selected CEFR communicative activities

The communicative activities were selected on the basis of the researchers' intuitive judgements about ab-initio aviation training. Of course, successful aviation training is contingent upon proficiency in a broad range of language skills, though we wanted a narrow focus for our research activity for two reasons: Firstly we wanted to understand the skills which we felt students rely upon most heavily in the early days of aviation training, those which are connected to understanding the content of technical classroom instruction. Secondly, had we broadened the scope of the research to include a full range of abilities across the skills, the questionnaire would have become much longer and may have put our participants off. Therefore, we selected a range of communicative activities from the CEFR categories of *listening comprehension*, *reading comprehension*, and *working with text* while maintaining a focus on receptive skills in the classroom.

[10] CAE-Oxford Aviation Academy (UK), National Air Traffic Services (UK) and Flight Safety International (USA).

The purpose of the questionnaire was a) to corroborate our view on the relevance of the selected communicative activities to initial aviation training and b) to find out expert judges' views as to which CEFR level of proficiency is required in each of these activities for the student to be considered ready to begin aviation training. Thus, each of the communicative activities was presented with the associated illustrative descriptors at CEFR levels A2, B1 and B2. The descriptors' CEFR levels were not revealed in the questionnaire.

The participants were asked to make two judgements: Firstly, to decide, with regard to initial aviation training, if the descriptors are a) relevant, b) partially relevant or c) irrelevant. Secondly, to decide if the descriptors apply to students who are:

a) **Ready** for English medium aviation training, i.e. the student would be unlikely to encounter language related difficulties
b) **Borderline**, i.e. the student may encounter language related difficulties
c) **Not ready**, i.e. language is likely to present an obstacle to effective training

We chose the range of A2 to B2 for three reasons. Firstly, we felt that it was evident that A1 would be insufficient for professional aviation training. Secondly, if we presented higher levels - C1, C2 - the judges would naturally have been tempted to choose them. This may have inflated the perceived minimum entry level which may have the pragmatic effect of excluding many students who possibly have adequate language proficiency. Thirdly, as B2 is used as an entry level for much graduate and post-graduate education across Europe, we felt it was reasonable to expect that B2 would be a sufficient minimum for professional aviation training.

3.2. Results and discussion

The questionnaire responses were collected and the data were analysed firstly to determine the relevance of the selected language activities to aviation training. The results of this analysis can be seen in table 3. A strong majority decided that all the activities, with the exception of 'watching TV and film', were relevant to ab-initio aviation training.

The data regarding judgements on the illustrative descriptors were subject to a Many Facet Rasch Measurement[11] in order to analyse judge consistency and to account for judge severity. The first FACETS analysis revealed that four of the 14 judges were making unpredictable judgements, for example, deciding that a CEFR A1 describes students who are 'ready' for aviation training while at the same time deciding that another CEFR B2 descriptor describes students who are 'not ready'. These judges' data were removed from the dataset and the analysis was run a second time. The judge measurement report (appendix B) showed that 9 of the 10 remaining judges were making judgements within acceptable quality control parameters with Infit and Outfit Mean Square (MNSQ) values of between 0.5 and 1.5. Only one judge (judge 6) was performing at the edge of acceptability with an outfit MNSQ value of 1.59 though the outfit Zstd was within ±2. (Green, 2014) so her judgements were included.

[11] MINIFAC, Linacre 2015

For the purposes of the analysis, judge responses were assigned a numerical value where 'not ready' was assigned a value of 1, 'borderline' a value of 2 and 'ready' a value of 3. Accordingly, fair average values of 1.00 to 1.63 were considered 'not-ready', 1.64 to 2.36 were considered 'borderline' and 2.37 to 3.00 were considered 'ready'. Where fair average values were close to these approximate band thresholds, the fair average was compared to the strength of the mode. This comparison supported a definitive judgement.

CEFR Illustrative descriptor	Relevant	Partially relevant	Irrelevant
Understanding interaction between native speakers	N=12 (85.71%)	N=2 (14.28%)	
Understanding a native speaker	N=14 (100%)		
Listening as a member of a live audience	N=14 (100%)		
Listening to announcements & instructions	N=13 (92.85%)	N=1 (7.14%)	
Listening to radio and audio recordings	N=13 (92.85%)	N=1 (7.14%)	
Watching TV and film	N=7 (50%)	N=5 (35.71%)	N=2 (14.28%)
Note-taking in seminars and lectures	N=13 (92.85%)	N=1 (7.14%)	
Reading correspondence	N=10 (71.42%)	N=4 (28.57%)	
Reading for orientation	N=13 (92.85%)	N=1 (7.14%)	
Reading for information & argument	N=12 (85.71%)	N=2 (14.28%)	
Reading instructions	N=14 (100%)		

Table 3. Judge perceptions of the relevance of selected CEFR language activities to aviation training

The results from the second FACETS analysis showed that three illustrative descriptors (4, 8 and 30) had unacceptable quality control statistics with Infit and/or Outfit MNSQ values of <0.5 and/or greater than 1.5 with accompanying Zstd values

of ±2 (Green, 2014). The data for these descriptors were removed from the dataset. The data for the remaining 50 descriptors were then analysed for the strength of correlation between judge perceptions of the readiness of students for aviation training and CEFR levels as shown in table 4.

		Judge perception		
		Not ready	Borderline	Ready
CEFR Level	A2	11	3	
	B1	3	11	5
	B2		1	16

N=50

Table 4. Correlation between judge perceptions of student readiness for aviation training and CEFR illustrative descriptors at levels A2-B2

The Spearman's rho value for the data is 0.82361 with a two-tailed P value of 0 showing a statistically significant correlation between expert judgements and CEFR levels.

3.3. Discussion

The study was limited in that the number of judges was small. Furthermore, the questionnaire didn't account for many of the language activities, strategies and competencies which are unarguably important for successful learning in the aviation academy, for example *spoken production* and *spoken interaction*, *communication strategies*, *working with text* and *communicative language competence*. Nevertheless, the study leads us to two important conclusions. Firstly, the CEFR contains descriptions of language use that aviation subject-matter expert judges consider to be relevant to ab-initio aviation training. Secondly, B2 on the CEFR can be considered a minimum entry level of language proficiency for English-medium aviation training.

Conclusion

Given the forecasts for growth in the aviation industry, many young people around the world will enter dynamic, highly skilled and exciting careers as pilots and ATCOs in the years to come. Many of the next generation of aviation professionals will not have English as a first language, and so aviation English training and assessment practitioners are charged with the responsibility to investigate the needs of students and stakeholders in aviation training, and develop language training and tests that will meet those needs. This requires a shift in the emphasis of learning, teaching and assessment away from the ICAO LPRs and towards the language skills and competence that students require to successfully cope with their future learning

context. In order to provide engaging, meaningful and relevant teaching and to make our training and assessment useful for the stakeholders in ab-initio pilot and ATCO training, full and detailed needs analysis is called for. Any pursuit of such a goal would benefit from the principles of EAP and reference to the CEFR. As much as anything else, it is the purpose of this paper to present ab-initio aviation training as an area of EAP that requires urgent attention if we are to help learners to learn, to help improve the efficiency of aviation training and to support the aviation industry as it marches forward.

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APPENDIX: Expert Judge Questionnaire

Listening Comprehension

1. UNDERSTANDING INTERACTION BETWEEN NATIVE SPEAKERS	This task is:		
	Relevant		
	Partially relevant		
	Irrelevant		
	Ready	Borderline	Not ready
1.Can keep up with an animated conversation between native speakers.			
2.Can with some effort catch much of what is said around him/her, but may find it difficult to participate effectively in discussion with several native speakers who do not modify their language in any way.			
3.Can generally follow the main points of extended discussion around him/her, provided speech is clearly articulated in standard dialect.			
4.Can generally identify the topic of discussion around him/her that is conducted slowly and clearly.			
2. UNDERSTANDING A NATIVE SPEAKER	**This task is:**		
	Relevant		
	Partially relevant		
	Irrelevant		
	Ready	**Borderline**	**Not ready**
5.Can understand in detail what is said to him/her in the standard spoken language even in a noisy environment.			
6.Can follow clearly articulated speech directed at him/her in everyday conversation, though will sometimes have to ask for repetition of particular words and phrases.			
7.Can understand enough to manage simple, routine exchanges without undue effort.			
8.Can generally understand clear, standard speech on familiar matters directed at him/her, provided he/she can ask for repetition or reformulation from time to time.			
	This task is:		

	Relevant		
	Partially relevant		
	Irrelevant		
	Ready	**Borderline**	**Not ready**
9.Can follow the essentials of lectures, talks and reports and other forms of academic/professional presentation which are propositionally and linguistically complex.			
10.Can follow a lecture or talk within his/her own field, provided the subject-matter is familiar and the presentation straightforward and clearly structured.			
11.Can follow in outline straightforward short talks on familiar topics provided these are delivered in clearly articulated standard speech.			
4.LISTENING TO ANNOUNCEMENTS & INSTRUCTIONS	**This task is:**		
	Relevant		
	Partially relevant		
	Irrelevant		
	Ready	**Borderline**	**Not ready**
12.Can understand announcements and messages on concrete and abstract topics spoken in standard dialect at normal speed.			
13.Can understand simple technical information, such as operating instructions for everyday equipment.			
14.Can follow detailed directions.			
15.Can catch the main point in short, clear, simple messages and announcements.			
16.Can understand simple directions relating to how to get from to Y, by foot or public transport.			
5. LISTENING TO RADIO AUDIO & RECORDINGS	**This task is:**		
	Relevant		
	Partially relevant		
	Irrelevant		
	Ready	**Borderline**	**Not ready**
17.Can understand recordings in standard dialect likely to be encountered in social, professional or academic life and identify speaker viewpoints and attitudes as well as the			

information content.			
18.Can understand most radio documentaries and most other recorded or broadcast audio material delivered in standard dialect and can identify the speaker's mood, tone etc.			
19.Can understand the information content of the majority of recorded or broadcast audio material on topics of personal interest delivered in clear standard speech.			
20.Can understand the main points of radio news bulletins and simpler recorded material about familiar subjects delivered relatively slowly and clearly.			
21.Can understand and extract the essential information from short recorded passages dealing with predictable everyday matters that are delivered slowly and clearly.			
6. WATCHING TV AND FILM	**This task is:**		
	Relevant		
	Partially relevant		
	Irrelevant		
	Ready	**Borderline**	**Not ready**
22.Can understand most TV news and current affairs programmes.			
23.Can understand documentaries, live interviews, talk shows, plays and the majority of films in standard dialect.			
24.Can understand a large part of many TV programmes on topics of personal interest such as interviews, short lectures, and news reports when the delivery is relatively slow and clear.			
25.Can follow many films in which visuals and action carry much of the storyline, and which are delivered clearly in straightforward language.			
26.Can catch the main points in TV programmes on familiar topics when the delivery is relatively slow and clear.			
27.Can identify the main point of TV news items reporting events, accidents etc. where the visual supports the commentary.			

28.Can follow changes of topic of factual TV news items, and form an idea of the main content.			
7. NOTE-TAKING (LECTURES, SEMINARS, ETC.)	**This task is:**		
	Relevant		
	Partially relevant		
	Irrelevant		
	Ready	**Borderline**	**Not ready**
29.Can understand a clearly structured lecture on a familiar subject, and can take notes on points which strike him/her as important, even though he/she tends to concentrate on the words themselves and therefore to miss some information.			
30.Can take notes during a lecture, which are precise enough for his/her own use at a later date, provided the topic is within his/her field of interest and the talk is clear and well structured.			
31.Can take notes as a list of key points during a straightforward lecture, provided the topic is familiar, and the talk is both formulated in simple language and delivered in clearly articulated standard speech.			

Reading Comprehension

8. READING CORRESPONDENCE	**This task is:**		
	Relevant		
	Partially relevant		
	Irrelevant		
	Ready	**Borderline**	**Not ready**
32.Can read correspondence relating to his/her field of interest and readily grasp the essential meaning.			
33.Can understand the description of events, feelings and wishes in personal letters well enough to correspond regularly with a pen friend.			
34.Can understand basic types of standard routine letters and faxes (enquiries, orders, letters of confirmation etc.) on familiar topics			

35.Can understand short simple personal letters.			
9. READING FOR ORIENTATION	**This task is:**		
	Relevant		
	Partially relevant		
	Irrelevant		
	Ready	**Borderline**	**Not ready**
36.Can scan quickly through long and complex texts, locating relevant details.			
37.Can quickly identify the content and relevance of news items, articles and reports on a wide range of professional topics, deciding whether closer study is worthwhile.			
38.Can scan longer texts in order to locate desired information, and gather information from different parts of a tet, or from different texts in order to fulfil a specific task.			
39.Can find and understand relevant information in everyday material, such as letters, brochures and short official documents.			
40.Can find specific, predictable information in simple everyday material such as advertisements, prospectuses, menus, reference lists and timetables.			
41.Can locate specific information in lists and isolate the information required (e.g. use the "Yellow Pages" to find a service or tradesman).			
42.Can understand everyday signs and notices: in public places, such as streets, restaurants, railway stations; in workplaces, such as directions, instructions, hazard warnings.			
10. READING FOR INFORMATION & ARGUMENT	**This task is:**		
	Relevant		
	Partially relevant		
	Irrelevant		
	Ready	**Borderline**	**Not ready**
43.Can obtain information, ideas and opinions from highly specialised sources within his/her field.			

44.Can understand specialised articles outside his/her field, provided he/she can use a dictionary occasionally to confirm his/her interpretation of terminology.			
45.Can understand articles and reports concerned with contemporary problems in which the writers adopt particular stances or viewpoints.			
46.Can identify the main conclusions in clearly signalled argumentative texts.			
47.Can recognise the line of argument in the treatment of the issue presented, though not necessarily in detail.			
48.Can recognise significant points in straightforward newspaper articles on familiar subjects.			
49.Can identify specific information in simpler written material he/she encounters such as letters, brochures and short newspaper articles describing events.			
11. READING INSTRUCTIONS	**This task is:**		
	Relevant		
	Partially relevant		
	Irrelevant		
	Ready	**Borderline**	**Not ready**
50.Can understand lengthy, complex instructions in his field, including details on conditions and warnings, provided he/she can reread difficult sections.			
51.Can understand clearly written, straightforward instructions for a piece of equipment.			
52.Can understand regulations, for example safety, when expressed in simple language.			
53.Can understand simple instructions on equipment encountered in everyday life - such as a public telephone.			

Other skills/tasks

Are there any other language tasks/skills which you think are essential for initial aviation training? If 'yes', please give details in the space below.

APPENDIX B: FACETS Judge Measurement Report

Total Score	Total Count	Obsvd Average	Fair(M) Average	Measure	Model S.E.	Infit MnSq	Infit ZStd	Outfit MnSq	Outfit ZStd	Estim. Discrm	Correlation PtMea	PtExp	Nu 1 Judge
136	53	2.57	2.73	2.64	.37	.91	-.3	.62	.0	1.13	.74	.73	4 4
135	53	2.55	2.70	2.50	.37	.89	-.3	.61	.0	1.14	.75	.73	5 5
133	53	2.51	2.64	2.24	.36	1.09	.4	1.16	.4	.81	.74	.75	1 1
114	53	2.15	2.07	-.02	.34	1.14	.6	1.59	1.6	.79	.83	.85	6 6
112	53	2.11	2.02	-.25	.34	.63	-1.8	.50	-1.8	1.42	.91	.86	8 8
109	53	2.06	1.95	-.60	.34	1.37	1.5	1.14	.5	.67	.83	.87	9 9
108	53	2.04	1.92	-.72	.34	.93	-.2	.82	-.5	1.09	.88	.87	14 14
105	53	1.98	1.84	-1.07	.34	.69	-1.5	.57	-1.5	1.35	.91	.87	7 7
98	53	1.85	1.63	-1.91	.35	.95	-.1	.70	-.6	1.12	.89	.87	10 10
91	53	1.72	1.40	-2.80	.37	1.20	.9	1.19	.4	.73	.84	.86	13 13
114.1	53.0	2.15	2.09	.00	.35	.98	-.1	.89	-.2		.83		Mean (Count: 10)
14.9	.0	.28	.43	1.78	.01	.21	1.0	.34	1.0		.07		S.D. (Population)
15.7	.0	.30	.46	1.88	.01	.23	1.1	.36	1.0		.07		S.D. (Sample)

Model, Populn: RMSE .35 Adj (True) S.D. 1.75 Separation 4.94 Strata 6.92 Reliability .96
Model, Sample: RMSE .35 Adj (True) S.D. 1.84 Separation 5.22 Strata 7.29 Reliability .96
Model, Fixed (all same) chi-square: 240.0 d.f.: 9 significance (probability): .00
Model, Random (normal) chi-square: 8.7 d.f.: 8 significance (probability): .37

Table 5.1.1 1 Judge Measurement Report (arranged by mN).

APPENDIX C: FACETS Descriptor Measurement Report

Total Score	Total Count	Obsvd Average	Fair(M) Average	Measure	Model S.E.	Infit MnSq	Infit ZStd	Outfit MnSq	Outfit ZStd	Estim. Discrm	Correlation PtMea	Correlation PtExp	Nu	Descriptor
30	10	3.00	2.99	(6.58	1.90)	Maximum					.00	.00	5	5
30	10	3.00	2.99	(6.58	1.90)	Maximum					.00	.00	9	9
30	10	3.00	2.99	(6.58	1.90)	Maximum					.00	.00	17	17
30	10	3.00	2.99	(6.58	1.90)	Maximum					.00	.00	36	36
30	10	3.00	2.99	(6.58	1.90)	Maximum					.00	.00	43	43
30	10	3.00	2.99	(6.58	1.90)	Maximum					.00	.00	50	50
29	10	2.90	2.96	5.16	1.14	1.52	.8	2.43	1.3	.42	.00	.37	1	1
29	10	2.90	2.96	5.16	1.14	.54	-.4	.20	.5	1.36	.52	.37	22	22
29	10	2.90	2.96	5.16	1.14	.54	-.4	.20	.5	1.36	.52	.37	23	23
29	10	2.90	2.96	5.16	1.14	.54	-.4	.20	.5	1.36	.52	.37	32	32
29	10	2.90	2.96	5.16	1.14	1.04	.3	.45	.7	1.06	.36	.37	37	37
29	10	2.90	2.96	5.16	1.14	.54	-.4	.20	.5	1.36	.52	.37	44	44
28	10	2.80	2.90	4.16	.89	.88	.0	.67	.3	1.11	.48	.48	12	12
28	10	2.80	2.90	4.16	.89	.76	-.3	.48	.2	1.27	.54	.48	29	29
28	10	2.80	2.90	4.16	.89	1.23	.5	.79	.4	.85	.37	.48	38	38
28	10	2.80	2.90	4.16	.89	.45	-1.1	.26	.0	1.55	.66	.48	51	51
27	10	2.70	2.81	3.45	.79	.92	.0	.63	.0	1.15	.55	.56	18	18
27	10	2.70	2.81	3.45	.79	.60	-.8	.43	-.1	1.48	.66	.56	33	33
27	10	2.70	2.81	3.45	.79	.60	-.8	.43	-.1	1.48	.66	.56	45	45
26	10	2.60	2.70	2.86	.74	1.88	1.8	3.29	1.8	-.36	.37	.61	30	30
25	10	2.50	2.57	2.33	.72	.67	-.7	.51	-.5	1.40	.70	.65	46	46
24	10	2.40	2.44	1.82	.71	1.92	1.6	1.54	.9	.10	.42	.69	14	14
23	10	2.30	2.31	1.33	.70	1.66	1.2	1.68	1.2	.39	.46	.71	2	2
22	10	2.20	2.19	.85	.68	1.49	1.0	1.58	1.1	.44	.05	.72	6	6
22	10	2.20	2.19	.85	.68	1.04	.2	1.00	.1	.98	.64	.72	39	39
21	10	2.10	2.09	.40	.67	.67	-.6	.68	-.6	1.36	.86	.71	19	19
21	10	2.10	2.09	.40	.67	.40	-1.6	.37	-1.6	1.67	.97	.71	47	47
20	10	2.00	1.99	-.03	.65	.79	-.4	.81	-.3	1.26	.73	.71	10	10
20	10	2.00	1.99	-.03	.65	.80	-.4	.79	-.4	1.21	.00	.71	13	13
20	10	2.00	1.99	-.03	.65	1.17	.5	1.17	.5	.72	.28	.71	24	24
20	10	2.00	1.99	-.03	.65	1.16	.5	1.19	.5	.82	.76	.71	34	34
20	10	2.00	1.99	-.03	.65	.79	-.4	.78	-.4	1.25	.52	.71	52	52
19	10	1.90	1.90	-.44	.64	.73	-.6	.70	-.7	1.41	.64	.70	31	31
18	10	1.80	1.81	-.85	.64	1.15	.5	1.31	.9	.71	.71	.69	40	40
17	10	1.70	1.71	-1.26	.65	.72	-.7	.67	-.8	1.46	.58	.69	3	3
17	10	1.70	1.71	-1.26	.65	.48	-1.7	.45	-1.6	1.82	.71	.69	25	25
17	10	1.70	1.71	-1.26	.65	.98	.0	.90	-.1	1.13	.85	.69	48	48
16	10	1.60	1.59	-1.70	.68	1.09	.3	.98	.1	.98	.86	.69	41	41
15	10	1.50	1.46	-2.19	.72	1.76	1.4	1.52	.9	.27	.52	.69	16	16
15	10	1.50	1.46	-2.19	.72	.74	-.4	.65	-.4	1.28	.68	.69	26	26
15	10	1.50	1.46	-2.19	.72	1.09	.3	2.56	1.9	.62	.39	.69	28	28
15	10	1.50	1.46	-2.19	.72	1.20	.5	1.04	.2	.88	.87	.69	42	42
14	10	1.40	1.32	-2.75	.79	.95	.0	.71	-.1	1.09	.81	.69	7	7
14	10	1.40	1.32	-2.75	.79	.55	-.7	.52	-.4	1.36	.78	.69	11	11
14	10	1.40	1.32	-2.75	.79	.57	-.6	.57	-.3	1.33	.76	.69	20	20
14	10	1.40	1.32	-2.75	.79	.57	-.6	.57	-.3	1.33	.76	.69	21	21
14	10	1.40	1.32	-2.75	.79	.41	-1.1	.33	-.8	1.49	.84	.69	35	35
13	10	1.30	1.19	-3.44	.87	3.54	2.7	2.74	1.4	-.65	.19	.67	4	4
13	10	1.30	1.19	-3.44	.87	.18	-1.8	.14	-.8	1.61	.90	.67	15	15
13	10	1.30	1.19	-3.44	.87	.18	-1.8	.14	-.8	1.61	.90	.67	49	49
13	10	1.30	1.19	-3.44	.87	.18	-1.8	.14	-.8	1.61	.90	.67	53	53
12	10	1.20	1.09	-4.26	.95	2.67	2.2	1.13	.6	-.09	.42	.59	8	8
12	10	1.20	1.09	-4.26	.95	1.61	1.1	1.35	.7	.48	.31	.59	27	27
21.5	10.0	2.15	2.15	1.07	.93	.98	-.1	.89	.1		.52		Mean (Count: 53)	
6.3	.0	.63	.68	3.46	.38	.63	1.1	.70	.8		.29		S.D. (Population)	
6.4	.0	.64	.69	3.49	.38	.64	1.1	.71	.8		.29		S.D. (Sample)	

With extremes, Model, Populn: RMSE 1.00 Adj (True) S.D. 3.31 Separation 3.31 Strata 4.75 Reliability .92
With extremes, Model, Sample: RMSE 1.00 Adj (True) S.D. 3.34 Separation 3.34 Strata 4.79 Reliability .92
Without extremes, Model, Populn: RMSE .82 Adj (True) S.D. 2.90 Separation 3.55 Strata 5.07 Reliability .93
Without extremes, Model, Sample: RMSE .82 Adj (True) S.D. 2.94 Separation 3.59 Strata 5.13 Reliability .93
With extremes, Model, Fixed (all same) chi-square: 596.9 d.f.: 52 significance (probability): .00
With extremes, Model, Random (normal) chi-square: 49.8 d.f.: 51 significance (probability): .52

Table 5.2.1 2 Descriptor Measurement Report (arranged by mN).

Defining meaningful material for the teaching of English for aeronautical communications

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Abstract
RTF, ESP or EGP? – Defining meaningful and contextually authentic material for the teaching of English for aeronautical communications.
The concept of 'plain' language is still a cause for concern for many teachers of aviation English. ICAO (2010) stipulate 'speaking, listening, and interactive skills' taught using the 'communicative approach'. The teaching of aviation English is not simply about enabling learners to absorb 'subject matter focused' material. The operational specificities of pilot/ATCO communication mean that it is not sufficient either to simply offer lists of aviation specific vocabulary to complement a learner's current language in a 'highly technical and safety specific context'.
This presentation will look at what we mean by 'plain language', as well as the relationship between how RTF and plain language in aeronautical communication is used. It will go on to look at how, with the communicative approach, teachers of aviation English can develop an awareness of the language and the communicative strategies to use that resemble real-life communication, ultimately motivating learners by helping them to operate effectively in real life communicative tasks.

Introduction

This paper will focus on teaching the skill of speaking, based on the context of my teaching English in aeronautical communications which has driven the research. The paper firstly outlines the recent change of focus in this domain of teaching and will then go on to discuss the current methodologies and techniques that I employ. Thereafter, I will analyse new techniques with reference to how they could help define meaningful material and why such techniques would also be suitable for teaching in this domain.

1. Current Teaching Methodology and Techniques

1.1. Aviation English – a Re-focussing of Teaching Practice

The past ten years has seen a growing importance of teaching English in the aviation world since the proposal, and introduction in 2008, of mandatory plain language proficiency testing for most of the world's commercial pilots and air traffic controllers

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(ATCOs)[13]. Guidelines were established by the International Civil Aviation Organisation (ICAO)[14] to set minimum standards for 'plain language' to support the 'prescribed and restricted linguistic code' of standard radiotelephony phraseology (Read & Knoch, 2009:21.2). A set of five Holistic Descriptors was identified and a rating scale of six levels and six linguistic areas was established to evaluate the minimum requirements of (Operational) Level 4[15] in all six areas (ICAO 2009: vii; Koshravany et al:2014:63).[16] Although the requirements are valid for any language, the *de facto* adoption of English as a lingua franca by the aviation world, even before the requirements were introduced (Uplinger 1997:2), has meant that the teaching of plain language English for pilots and ATCOs[17] has recently adopted a much greater significance than had previously been the case.

1.2. Towards a Communicative Approach in an ESP Context

Because spoken communications are the essential way of pilots and ATCOs exchanging information, ICAO (2009:2) explicitly states that teaching in aviation English must 'focus on speaking, listening, and interactive skills'. Although seen as an English for Specific Purposes (ESP)[18] (Wang 2008: 151), teaching aviation English is not simply a way of enabling learners to absorb 'subject matter focussed' material (Richards and Rogers 2001:25). The operational specificities of pilot/ATCO communication mean that it is not sufficient either to simply offer lists of aviation specific vocabulary to complement a learners current language (Dusenbury and Bjerke 2013:13). Furthermore, a teacher in this domain must be aware, not only of the learner's need for oral language proficiency, but the ability to produce, receive and process language in a 'highly technical and safety specific context' (Uplinger 1997:1).

To ensure therefore that these skills were targeted in the teaching of aviation English, ICAO (2009:2) mandated that a 'communicative approach' must be adopted. The idea of the *approach* is seen by Anthony (cited in Richards and Rogers 2001:19) as the 'subject matter to be taught', but such an explanation overlooks the fact that teachers of aviation English should develop 'communicative strategies that draw on a range of language resources' (Read & Knoch 2009: 21.7), whilst Hedge (2000: 261)

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[13] Air Traffic Controllers are referred to throughout this paper either simply as 'controller(s)' or by the acronym, ATCO(s).

[14] The International Civil Aviation Organisation is referred to throughout this paper by the acronym: ICAO.

[15] This equates to approximately a good B1 low level B2 on the Common European Framework of Reference (CEFR). As language levels in aviation are based on a holistic (overall) evaluation of proficiency with a minimum requirement for Level 4 in all 6 criteria, a "can do" scale, such as the CEFR, is not an appropriate tool.

[16] Levels 3 and 4 of the Rating Scale are shown in Appendix 1. Only these two levels are shown because they demonstrate typical features of English language proficiency in my students as well as their learning objectives.

[17] All references to the context of this teaching will subsequently be referred to in this paper as 'aviation English'

[18] Hereinafter English for Specific Purposes is referred to by the initialism: ESP

suggests that communicative ability means learners need to 'use (language) features in purposeful communication'. Clark et al (cited in Hedge 2000: 45) maintain that a communicative approach should offer learning that resembles 'real life communication' which would suggest enabling learners of aviation English to 'operate effectively in the real world' (Abbs and Freebairn, cited in Hedge 2000: 45). Paramasivam (2013:104) further suggests aviation English teaching adopts a *genre* based as it has to 'mirror as accurately as possible critical features of the target language situation', a theory also supported by Harmer (2007:327).

Because of the specific nature of aviation communications, it is also important to consider certain linguistic features to help a teacher of aviation English identify a suitable methodology and techniques for this approach. Pilot/ATCO communications lack the paralinguistic features of face-to-face interaction, such as body language or facial-cues, and so paraphrasing and clarification techniques are vital to effect meaning (Uplinger 1997:3). This view is broadened by Khosravany et al (2014:62) who outline that communication without visual cues is 'more challenging and requires higher levels of proficiency'. Phillips (in Breul, 2013:75) suggests that such language in aviation has a 'structural sub-grammar' giving a very specific meaning working together with 'referential values common to its domain and the speech community within' that must be understood by the communicators. This has the paradoxal cause of creating elliptical language, where it may appear more explicit meaning is necessary. When a pilot says to a controller "*ABC123, going around*", the elliptical predicator – the action *going*, does not need the finite '*am*' – and lexical reference here is sufficient for the controller to know that the pilot has decided to i) cancel his landing, ii) fly over the runway, and iii) will shortly give further information. Both pilot and controller should understand the communication with no need for further explanation.

Knowing the functions of communication in aviation English can further help the teacher identify linguistic components useful when deciding which techniques will support the chosen methodology. Harmer (2007:343) characterises communication as 'speaking events' and thus aviation English can be seen as *transactional* (exchange of services) and *interactive* (pilot/ATCO), as well as both *planned* (normal flight) and *unplanned* (unexpected events – weather change, technical malfunction). A broader perspective is proposed by Hedge (2000:47) who divides the idea of communicative competence into 'linguistic', 'pragmatic', and 'strategic competence'.

> *Linguistic* competence requires that the learner has 'linguistic' skills in order to develop 'communicative' skills (Hedge 2000:47).
>
> *Pragmatic* competence relates to a learner knowing not only the language but the significance of its use in a given context. Qionglan (2008:687) demonstrates that short quasi-elliptical dialogues in aviation communication and their metaphoric lexis would not be immediately obvious without any contextual information.
>
> *Strategic* competence is also an important facet of the communicative approach (Hedge 2000: 52). The ability to paraphrase and negotiate meaning is a requirement for evaluating vocabulary at Level 4 (ICAO, 2010:4-11).

Collectively, this evidence underlines the importance of the communicative approach for the teacher of aviation English. Real life situations, communicative competence rather than reliance on form, pragmatic contextual content and ability to effect appropriate communication are crucial in teaching aviation English.

1.3. Establishing an Analysis of Student Needs

If the communicative approach is at the heart of teaching aviation English, then central to the methodology is knowing what the learner needs. Unlike certain other more formulaic approaches, such as those which include pre-determined drills (Audio Lingual) or where 'mental discipline' is the supporting theory (Grammar Translation) (Knight, 2001:148), the communicative approach is not underpinned solely by a strict and 'conscious understanding of the rules' (Knight 2001: 155). This necessitates a more focussed and flexible approach based on the objectives and needs of the learners rather than a disciplined pre-written script.

In order therefore to define the objectives and needs of a learner, a step-by-step approach could be a practical option. Hedge (2000:339) suggests that 'analysis of student needs' is the first stage for an ESP teacher, followed by consideration of the context, with the third step of 'establishing goals and objectives' whilst Sarmento (2011:4) indicates that once you know the language requirements in ESP, you can define the methodology to teach it. Dusenbury and Bjerke (2013:13) partially characterise the language requirements of aviation English by pointing out that students must have a solid basic understanding of English so they can apply it to a 'technically dense and domain specific vocabulary in context' whereas Kukovec (2008:136) maintains that, although students may have suitable grammatical proficiency, using it in an operational context may prove difficult. Additionally, Uplinger (1997:3) points out that competence in radiotelephony alone is not sufficient to achieve 'functional proficiency' in plain language.

The typical objective for my learners is to have the operational Level 4 of language proficiency, so my first step is to assess their current level. Each student takes a diagnostic test in listening and speaking which evaluates the six required language components of the ICAO rating scale – *pronunciation, fluency, vocabulary, structure, comprehension* and *interactions* (ICAO 2009:2). Furthermore, in order to assess a learner's general English level, i.e. without an aviation bias that may have been gained from theoretical training, each student also takes a written general English vocabulary and grammar test.

The next stage considers Hedge's idea of language context as well as Richards and Rogers' (2001:21) consideration of three specific areas from which to define language – *structural*, *functional* and *interactional*. The most appropriate area for aviation English would therefore be *functional* as it emphasises a 'semantic and communicative dimension' and a 'functional account of learner needs'. As the contexts, forms, and functions are established it is now possible to develop the methodology.

1.4. Consideration for an Appropriate Methodology

As explained earlier, language in aviation communication has many complex and unnatural functions and forms and so establishing a methodology to teach this should be carefully principled. To help define which principles to utilise for teaching aviation English, I will discuss 3 of the twelve research based principles for classroom practice suggested by Brown (2002:12). Those chosen are:

Principle 2	*Meaningful learning*
Principle 4	*Intrinsic motivation*
Principle 12	*Communicative competence*

Table 1.

Meaningful learning implies learning centred on content which has contextual meaning – a key element of aviation English. Teachers should also look to prepare material on relevant topics and meaning focussed activity that also promote learning (Knight 2001:156). *Intrinsic motivation*, which is driven from within the learner, has the potential to be self-rewarding. As there is a high level of personal and professional investment for learners here, intrinsic motivation is also likely to be high. *Communicative competence* is gained through more targeted activities that highlight use, fluency and authentic language from the real world that the learners communicate in. This does not just facilitate expression but 'survival' and 'repair' strategies (Harmer 2007: 344)

It is also important that such considerations that define the methodology for teaching aviation English are supported by clearer ideas from the communicative approach. Knight (2001:155) shows that meaningful tasks using language promote learning whilst Thornbury (2008:112) states that teaching speaking is not simply 'teaching oral production of grammar and vocabulary items', it should also target the skills to be taught. Kukovec (2008:131) suggests a 'job specific approach' where teaching focuses on 'lexical domains', 'language functions' and communication in 'non-routine' situations. It is also likely that students will benefit more from learning and acquiring language in smaller more manageable amounts as it can consolidate and improve the language they already have before attempting any real-life communicative tasks. Hedge (2001:283) maintains that learners need more controlled forms of practice whereas Qionglan (2008:688) suggests that contextualised material should include linguistic, situational and cultural context. In the next section I will discuss the techniques I use to support such methodology.

1.5. Ensuring the Techniques support the Methodology

In aviation English, because of its specific communicative nature, definition of techniques, and the material to support such activities, must carefully match the needs analysis. ICAO has defined the areas of communication into *language functions, events & domains* and *tasks* (ICAO, 2010) but concrete examples to help prepare

material are not given. There are course books available but these do not always provide appropriate materials for every student. There is no aviation English book, for example, for private pilots. Teachers may therefore have to consider preparing a lot of material themselves whilst ensuring it is meaningful and contextually authentic in order to be more motivating for the student. Below are the most common techniques and activities that I use based on the linguistic areas of the ICAO rating scale.

Vocabulary:

Speaking activities aim to consolidate and increase students' *range* and *accuracy* (ICAO, 2010:4-11), are essentially *material* aided (Shumin 2002: 210), and based on standard ESP English course books that adopt the communicative approach. Material is divided into 4-page 'unit's with each unit having an overall 'genre' domain such as *weather* and then subdivided into events – *thunderstorms, turbulence*, etc. Warmer discussion questions start the unit to create interest and motivation, and help maintain interaction (Thornbury 1996) whilst pictures are used as referencing for extended discussion in technical areas. Parts of the unit also include reading texts to expose learners to a 'meaning-focussed input' (Paramasivam 2013:105).

Aviation, like a large number of technical domains, has many compounds nouns (*Precision approach path indicator; Aerodrome traffic circuit*) and context specific collocations (*snow clearance in progress; to make a fly-past of the Tower).*Vocabulary cards and interactive games enable the student to use the language less explicitly, giving learners *declarative* knowledge – knowing what the word looks and sounds like, but more critically the *procedural* knowledge or the pragmatic competence – knowing how to use it (Hedge 2000: 48). These techniques enhance language learning through visually re-enforced input such as reading texts (Uplinger 1997:4).

Structure:

Proficiency in the use of 'basic grammatical forms' and 'syntactical competence' are required for operational level 4 (ICAO2010:B13). To contextualise the material many exercises are adapted from typical activity books such as *Games for Grammar Practice Extra* and *Timesaver Grammar Activities.* They work well, particularly as an explicit way of revising and improving proficiency in grammar forms required for aviation safety, whilst in a contextually appropriate situation for aviation English in line with communicative methodology (Brown 2007:214; Shumin 2002; 209).

Fluency:

Fluency (cited by Fearch, Haastrup and Phillipson, in Hedge 2000; 57) refers to the *flow* of a language and the facility to link units of speech together 'without undue strain'. Students are thus made aware of the importance of discourse markers and how to use them in fluent discourse (McGrath, 2011: 36) as well as increased awareness of reducing fillers and hesitation. Fluency may also acquire more importance than accuracy in order to keep learners meaningfully engaged in language use (Brown 2007) and, as Paramasivam (2008:100) suggests, certain learners, even though they have a core grammar and vocabulary may still have problems establishing and maintaining fluency.

Techniques to improve Fluency include guessing games, where a learner has to describe something on a picture and another has to guess what it is, as well as thinking strategy exercises where students discuss and try to resolve problems. Simulated communication in authentic situations, such as role-play activities, are also purposeful for aviation English as they help to improve oral fluency (Harmer 2007: 352).

Interactions:

Techniques to practice interactions are based on simulated real-life tasks of ATCO/pilot communications and, whilst incorporating all the linguistic features of the language areas mentioned above, they include practice of clarification techniques, particularly in unexpected situations, and ensure that students have the opportunity to initiate dialogue. Authenticity and personalising in interactions can also be done by eliciting from students their own experiences. This contextualises the language to aid storage for later retrieval (Kukovec 2008: 135).

This section has summarised the methodology and techniques that I currently use for my teaching. In the next section I will go on to consider additional techniques that may be considered useful for teaching in aviation English.

2. In Consideration of New Techniques

As was mentioned earlier, the communicative approach demands a more focussed and flexible approach based on the objectives and needs of the learner, rather than a disciplined pre-written script. It is therefore important to analyse and consider new techniques wherever possible. What follows is a review of how further techniques may be useful in my teaching and whether such techniques would be suitable for my students.

2.1. Language Level

Whilst the key objective for most of my students is based on a specific level, the idea of Hedge (2000:11) to set 'language ... just above that of the student', rather than *at* their current level, as I use now, is very useful as it could offer more probability of matching the student's objective. However, whilst it may be seen as suitable, the material shouldn't be too challenging to be de-motivating (Brown 2007:160).

2.2. Learning Strategies

The rationale for placement tests seems to assume intuitively that everyone may learn the same things in the same way, even when an assessment may show similar levels among learners. However, Hedge (2000:24) suggests that students may well have different learning strategies and by knowing this it is possible to target lesson activities more to their way of learning rather than simple reliance on a placement test result. Thornbury (2008), gives good guidance on this whilst Brown (2007:123) cites a very useful tool in Rubin's fourteen characteristics of a good language learner. The addition of appropriate questions on a needs analysis questionnaire could make this a suitable pre-course 'learning technique analysis' for each student.

2.3. Error Correction and Feedback

Hedge (2000:289) discusses the use of *global* errors to determine where linguistic errors cause communication to break down. Any error that does not cause a communication breakdown would be categorised as *local*. As success in communication is the key to language proficiency in aviation English this practice could also be very useful in assessing errors in other linguistic areas, such as fluency or pronunciation. While any error correction should be handled sensitively and discretely, as proposed by Hedge (2001:15), immediate intervention by the teacher could be a suitable strategy to make the learner aware of how *global* errors can cause communication breakdown. Such correction techniques could be:

- an intentional direct request for clarification – "Sorry?"
- explicit clarification – "What do you mean by immatriculation?"
- implicit clarification – "Are you sure?" "Confirm ...".

Local errors could be handled in a five to ten minute session at the end of a lesson and students guided to search for examples and to learn the words in context for self-study.

Regarding error correction, there is also a suggestion form Richards and Rogers (2001:13) to give a quick L1 translation. In rare cases, this is done to 'avoid going to great lengths' to explain something in English and whilst practical in this sense, the key problem is that students have too much reliance on their L1 and this may not be a practical option when communicating with someone who is not the same L1. For this reason it would appear not to be a suitable option for aviation English.

2.4. Activities

In order to include the objectives of the needs analysis Hedge (2000:263) suggests that, when organising a teaching programme, activities should be as varied as possible. For lessons of aviation English it may also be useful to list how lesson activities focus on the specific requirements of the ICAO language functions, domains and events (ICAO 2010). Activities used at the moment do focus on these requirements but are not specifically annotated in the syllabus. Hedge's idea would allow a syllabus to be more clearly targeted towards the needs analysis for students and, as such, could be considered as suitable for aviation English.

2.5. Analysing Speech Acts for Oral Production

Hedge (2000:265) considers analysing listening texts by discussion and investigation of language areas used under guidance and highlights 6 points for the student to investigate. Whilst the importance of language functions in aviation communications is a key point in learning, one of the limitations, as McGrath (2011:37) states, is that when analysing transcripts 'rarely are whole sentences ... observed'. This makes the analysis of specific elements that much harder not just for the teacher, but the student. A lot of redundancy and ellipsis may also seem confusing for the student and be difficult for the teacher to explain. So whilst potentially a useful tool for maybe higher level students with greater exposure to more complex language functions, this idea would only be suitable for lower level students in a controlled and guided context

probably with considerable input from the teacher (Uplinger 1997:3).

2.6. Code Switching

There is a strong possibility that a pilot or ATCO could study and understand standard R/T phraseology but have insufficient competence in plain language, hence the recent introduction of language proficiency testing in aviation. Hedge (2000:271) and Breul (2013:75) however, point out that students should be given activities where they can identify plain language expressions in restricted codes and this may be a useful tool for learners of aviation English to facilitate a link between the restricted code of phraseology and that of unrestricted plain language. In view of the findings in 3.5, however, such a technique may only be suitable for lower level learners if carried out in controlled exercises, with short texts.

2.7. Gap Fill Activities

Such activities are typically advocated (Thornbury 2008:80; Hedge 2000:281; Khosravany2014:66) in the communicative approach and are well covered in most course books (Paramasivam 2013:103). These can easily be adapted into an aviation context, making this technique very useful in tasks such as: discussing a flight, where, for example, each student must exchange information in order to organise a flight. In the course of normal language functions in aeronautical communications pilots and ATCOs must have communicative strategies to fill gaps in the dialogue and so, in order to increase proficiency in this area, it would be both useful and suitable for teachers to introduce more such gap fill activities into simulated role plays, particularly where there is no visual contact.

2.8. Functional Language

The need for better understanding of plain language functions in aviation English is highlighted by the information given in the ICAO documentation, despite the lack of concrete examples. Hedge (2000:275) suggests a better awareness of social language by listing expressions under functions and so if functions are taken from the ICAO documentation and the specific language added it could be a very useful tool for preparing activities. The suitability of this activity is that it adds context to material which can help increase a student's functional output.

2.9. Materials Preparation

In preparing appropriate and meaningful tasks for aviation English learning adaptability of readily available materials for communicative tasks is often required. This allows flexibility towards the students' needs and can increase motivation of students because of its varied and contextual content. Paramasivam (2013:99), however, highlights the importance of principled criteria towards material writing and suggested Troncoso's checklist guidelines for such tasks. Simple *who, what* and *how* principles may well be a useful way of improving and facilitating materials for speaking activities in the future and would almost certainly be suitable for my learners.

2.10. Speaking Tasks

Although speech acts and language functions in aviation English are relatively well defined by ICAO the means of teaching students how to use them often relies heavily on a teacher's operational experience and intuition. The criteria checklist for speaking tasks by Thornbury (2008:90), however, on six specific areas: *Purpose, Productivity, Interactivity, Challenge, Safety, Authenticity*, provides a useful and clearer guide on how best to match techniques with activities. As this is adaptable to any teaching domain it would appear to be suitable for use in an aviation English context.

Conclusion

This paper set out to look at the teaching of speaking skills in an ESP context – aviation English and, in particular, how to define the techniques and material used and how these could be supplemented with further research. It has shown that the teaching of aviation English has a recommended communicative approach reflecting the task and language specific events and domains of the communication between pilots and ATCOs. The paper has provided an important opportunity for the aviation English teacher to analyse more the approach in order to better understand the methodology. This, along with the fact that certain linguistic content and functional language of such communications are also defined, enables the teacher to more clearly determine the techniques.

Furthermore, this paper has demonstrated that the communicative approach, by its need to be flexible and adaptable, allows appraisal and input of new techniques to suit learners and teachers alike allowing a clearer understanding of teaching methodology and practice, which, in turn, underpins the contextual knowledge in teaching an ESP such as aviation English.

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Effective Aviation English Teaching Catering to the Various Needs of AbInitio, Trainee and Operational Pilots and Controllers

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Abstract
This paper stresses the centrality of the trainer in the need for Aviation English skill development and the crucial need to give individual attention. With a blended learning process, a trainer can monitor online learning as well as give intensive speaking seminars where motivation can be raised and where weaknesses in specific skills required by the rating scale will emerge. Regular testing practice will also reinforce this ongoing assessment. With this information, trainees will be encouraged to set their own improvement goals, using a weekly form-filling process. This allows the trainer to match his own monitoring with the trainees' self-assessment and counsel them appropriately. Remedial action can then be taken where necessary. This process can work with a group of trainees in an eight-week programme, or with operational candidates in irregularly timed sessions.

Firstly, I need to stress that I believe there is no one ideal way to teach Aviation English – even best practice offers a variety of approaches. My own approach is based on 40 years of language teaching and teacher training, learning about and developing methodologies that worked for me and my students and then spending 8 years working out how to apply them to Aviation English. I base my course planning mainly on the AES ISS (intensive speaking seminars) and WBT (web-based training) teaching course which was developed by Elizabeth Mathews, Philip Shawcross, Don Toups and others to respond to the demands of Document 9835.

I want to begin by asking you to consider a dialogue between a pilot and a controller which I think illustrates what we are about and the first key skill an Aviation English teacher requires. *(JFK Flight 981)* How do you think this pilot would cope in a real emergency?

[19] After taking a first degree in English at Cambridge, Colin Davis taught for 18 years in East Africa, the UK and Singapore. He then did an M.A. in Applied Linguistics focusing on spoken discourse at the National University of Singapore and was an in-service teacher trainer and curriculum developer for 20 years in Singapore, Cameroon, Nigeria, Brunei and New Zealand. In 2007, Colin was trained by Elizabeth Matthews of ICAO as a rater trainer and by Don Toups of AEC as a trainer trainer. He has since taught Aviation English and trained raters and AE trainers in many different countries.

Flight 981: Transcript
Controller – Pilot Exchange

Setting: A few moments ago, _____ 981 landed and was cleared to taxi via J,A, MA.

C: _____ 981, make the right turn here at Juliette, join Alpha, hold short of MikeAlpha.

P: Ey…ah…right tah.. Julia, hold sh…ah…we are taxi Arapha. Hold it Nowember…
….. now, do you know …. taxi now?

C: Make the right turn here at Juliette, join Alpha, hold short of MikeAlpha – _____ 981.

P: _____ 981, roger. Join ..eh..right.. eh.. Julia, join Arapha, … uh… hold short of November.

C: Okay, I'll say it again. Hold short of MikeAlpha, M, A, MikeAlpha, not November.

P: Okay, I hold short of..ah.. MikeArapha, 981.

C: _____ 981, have they cleared you in to the ramp?

P: Roger, ramp … to the … ramp, _____ 981.

C: Okay, they have cleared you in to the ramp?
_____ 981. Ground.
_____ 981, Kennedy Ground.

P: 981, go ahead.

C: Have you been cleared in to the ramp?

P: Okay, cleared to the ramp.

C: No, that was a question! Have the ramp people cleared you in to the gate?

P: Roger, to the gate, _____ 981.

C: I'll try it again. It's a question. Hold your position. This is a question….try an interrogative…
Have you been cleared in to your gate?

P: Okay, we.. ah … hold….hold here.

C: Okay, how 'bout the question? Have they cleared you in to the gate?

P: Roger

….
… uh, Tower, uh … Ground, _____981, …uh… we are … gate number 3 is open…
we… are… taxi to the northern….

C: _____981, taxi to the ramp.

P: Roger, taxi to the ramp.

I would like to invite teachers to consider what are the pilot's main linguistic weaknesses and what attention he needs from the language trainer. I would suggest he needs help in at least four of the six ICAO rating scale skills – pronunciation, structure, comprehension and interactions. This leads me to think that an Aviation English teacher must first of all be a diagnostician. We must be able to diagnose our students' weaknesses in relation to the rating scale. Ideally, we should be raters ourselves.

I suggest that such weaknesses evident in Flight 981 are quite common amongst operational pilots and controllers in many countries where English is hardly spoken. My contention is that such weaknesses need more than a quick fix. We are talking about a new discipline with the highest of stakes, life and death, passenger safety, as well as the professional career of the pilot and the reputation and commercial well-being of the airline. In addition to these high stakes, Aviation English always comes with an acute time pressure.

My pedagogical starting point is that everybody is different, with different language backgrounds and different strengths and weaknesses, which is why being a diagnostician is so important. Therefore, taking a single commercial course as your teaching base is unlikely to achieve rapid success in the proficiency test. The teacher's planning, monitoring and judged interventions are likely to be the key factors determining success or failure in the minimum time available.

Everything being equal, these are our (AES) estimates for the minimum times needed to bring pilots and ATCs to level four:

Pilots	Controllers	Minimum time required to reach Level 4
AbInitio – with minimal English (elementary)	AbInitio – with minimal English (elementary)	6-8 months intensive EFL plus 8 weeks intensive AE
AbInitio – with some English (pre-intermediate and higher)	AbInitio – with some English (pre-intermediate and higher)	10 weeks intensive AE
Trainees with some aviation knowledge	Trainees with some aviation knowledge	6-8 weeks intensive AE 4 weeks intensive (ESL)
Operational – Level 2	Operational – ground / tower / approach / area Level 2	2 months intensive EFL +1 month intensive AE (longer, intermittent times may be necessary)
Operational – Level 3	Operational – ground / tower / approach / area Level 3	1 month intensive AE or a longer intermittent time

However, everything is rarely equal, so every student you will encounter in Aviation English teaching process is likely to have different problems in mastering

the six skills required by the rating scale and in becoming an effective and safe communicator in radiotelephony.

For successful Aviation English teaching, in my view, we need to take into account four key aspects of language learning which underlie best practice:

- "Effective language development takes place organically, not in a linear sequence" *(Tom Hutchinson)*
- "The corollary to this is that effective language teaching must involve multiple and varied activities offering wide-ranging challenges"
- "Successful learning takes place when every student is fully engaged in interesting activities involving language." *(Tom Hutchinson)*
- "For long-term learning, each student must take some responsibility for his/her own development." *(David Nunan)*

That being said, language development within Aviation English has many advantages over a general English course:

- We have a syllabus and detailed criteria – ICAO Doc 9835 and the rating scale and commentary
- We have a fixed and well-known context – aviation
- All our students are highly motivated to reach ICAO Level 4.

But the high stakes and time constraints put pressures on the teacher that other courses do not have. For rapid and assured long-term skill retention, a new approach to language teaching is required:

- The aviation operating environment will be the central content base.
- Speaking and listening within the aviation context will be the basis for the skills to be developed.
- The whole programme will be directed towards the development of the skills in the rating scale.
- The focus must be on the development of productive skills, not on the acquisition of aviation knowledge. (This is a problematic requirement for teachers of AbInitio trainees as their operational knowledge is likely to be very slight.)
- Adaptability, flexibility and imagination will be vital parts of the make-up of an Aviation English teacher. *(As a practice item, think of 6 classroom uses of this ATC instruction:– "Hold at the TORY VOR; you are number 6 in the approach sequence." – e.g. context – meaning – response - role-play – repeat for vowel and consonant enunciation – repeat for stress, intonation and fluency).*
- The ability to produce fully accurate grammar will be secondary to the ability to get a message across clearly and effectively.
- Learners of Aviation English will need to be constantly active in the learning environment for skill absorption and retention, with the teacher as facilitator, observer and monitor.
- If the students are listening to the teacher, they are not learning Aviation English. They should be interacting in pairs and groups.

- The teacher will need to monitor his or her students constantly and individually.
- To do this, the teacher will need to be able to assess his or her students on the rating scale.

Since time will be crucial, the teacher must plan and operate with maximum efficiency.

A summary of the key Aviation English teacher's skills required to follow this approach can be seen in the diagram below:

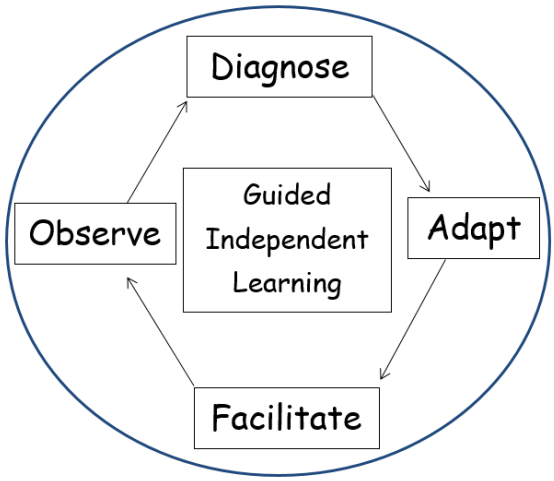

Diagram 1.

On the basis of these pedagogic approaches, here is a suggested modus operandi:

- Interview each student in advance of the course to assess entry level
- Plan from the variety of courses available
- Use ELT support material for weak students, e.g. Fifty-Fifty, Headway Pronunciation
- Employ realia and use them in realistic operational tasks – airport layout, pictures, models
- Introduce games and other motivational activities – even songs!
- Encourage daily reflection on skill development
- Arrange for weekly goal setting (see sample goals chart below)
- Use a blended learning programme with WBT, ISS, mock tests, games and realia
- Use weekly films of real incidents for language input and discussion
- Use WBT in the classroom for groupwork, e.g. AES materials
- Employ an individual monitoring clipboard
- If possible, have a remedial support teacher
- Know the test and give lots of practice
- The teacher/student talking ratio should be 20/80, NOT 80/20
- Don't be afraid to experiment! (e.g.: ball / callsign game)

(e.g. Try an interactive icebreaker – 2 minutes: Everyone should prepare a two letter two number call-sign; Teacher will call out a call-sign, throw a ball and the catcher must read back the call sign, call out their own and throw the ball to someone else……It is possible to 'check' a call-sign……Then teacher will throw a second ball with a new call sign. Both balls should be flying round the room accompanied by call signs and readbacks…….).
There are no guarantees, but good luck!

Appendix:

AES

NAME:

_____

AVIATION ENGLISH STUDY PLAN Short-Term Goals

My Goals for Week __ *(**SMART: S**pecific, **M**easurable, **A**chievable, **R**ealistic, **T**imed)*

What do I want to achieve? *(Be specific)*	**How will I do it?** *(Activities/resources/strategies)*	**When will I do it?**	**How will I know if I succeeded?** *(Targets achieved and how well)*	**Achieved?** (√)
Goal 1:				
Goal 2:				
Goal 3:				

Reflection	
Did you achieve your goals? *(Check the last column – Achieved √)* …… …… …	Were your goals realistic? *(It means you can succeed if you try your best.)* …… …… …….
Did they help motivate you to study? *(Did they make you want to study more?)* …… …… ….	What was the most useful activity you did? Why do you say that? …… …… ……..

Training Needs Beyond the ICAO Language Proficiency Requirements

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Abstract
There appears to be a discrepancy between the language learning needs of pilots and the expectations of the airlines. Airlines are often mainly interested in enhancing the pilots' operational English while many pilots feel a need to also improve their general English skills. Airlines seem to be investing less in pilots' continuous English training and only in essential areas (e.g. training pilots to fly a new international route, retaking ICAO test). Pilots are required to take responsibility for their own English learning where many engage in self-study by listening to RTF radios and watching American films etc.
For the majority of pilots, regular radiotelephony English is no longer a barrier, especially if this has become their daily job; however, there's a need for both airlines and pilots to work on English to deal with extraordinary situations. Though much of what a pilot speaks when flying consists of standard phraseology, there are times when plain language is used. This paper will show how we can help pilots gain a working knowledge of the vocabulary and structures that would be most often used during a particular situation.

Introduction

This paper looks at the critical role of English in promoting airline safety and identifies three action points for the industry:

- As airline operators strive for ever-higher safety levels, Aviation English alone may not be flexible enough to adequately cope with all the types of unforeseen situations that can lead to an air travel disaster.
- Recognize the importance of English skills beyond the ICAO Language Proficiency Requirements for pilots, ATCs and for others working in the aviation industry.
- Identify and remedy weak spots in current communication skills.

[20] With a strong background in both science and management, and a former Head of the Clinical Chemistry Department for Heart Surgery at the University of Pennsylvania Hospital in Philadelphia, USA, Peggy moved to Sweden as a 'love refugee'. After re-training in English and Pedagogy to fully leverage her native tongue, Peggy was soon at hand to help Swedes communicate better in English and joined EF Corporate Solutions in 1996. Starting off as a Business English teacher, Peggy then became responsible for developing business language solutions for one of EF's major accounts and is now involved in the development of solutions to help clients communicate more efficiently when working across borders.
As VP Academics EF Corporate Solutions, her previous business experience has proved useful in understanding client's needs whilst making sure EF's language learning solutions are pedagogically sound. Peggy holds an M.S degree in Chemistry, English and Pedagogy and now lives in London, UK.

1. The Vital Role of English in Airline Safety

English language competence has always been recognized as a critical element in airline safety. Now there is growing recognition of the need to go beyond basic standards and to also include more people in training.
Some of the limitations of ICAO Level 4 proficiency:

- Pronunciation, stress, rhythm and intonation sometime interfere with ease of understanding.
- Vocabulary range and accuracy may be limited beyond common, concrete and work-related topics.
- There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction.
- When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.

2. ICAO/plain English

ICAO guidelines state that pilots and air traffic controllers involved in international operations should attain the ability to speak and understand English to Level 4 of ICAO's Language Proficiency rating scale.

The main objective of Level 4 proficiency is to make sure pilots and air traffic controllers whose first language is not English can operate in routine situations with little or no problems in an Aviation English-dominated environment.

When plain language is required, it should be delivered in the same **clear, concise, and unambiguous** manner as the standardized phraseologies, for example,

- in emergencies or unusual situations
- to clarify or elaborate on instructions
- to negotiate information.

In an aviation context, for example, an air traffic controller instructing a pilot to 'keep your speed up' (meaning maintain speed) may not be aware that such a phrase could be interpreted as 'increase speed' to a non-native English speaker.

Four ways language can affect airline safety are the following: (Source: Elizabeth Mathews, *International Civil Aviation English Association Communications*, Human Factors and Safety workshop, Istanbul, 2015)

1.

Language is a contributing factor to a chain of events leading to an accident.

Example: Lack of English skills led to the world's deadliest mid-air collision, over Charkhi Dadri in India in 1996. The crew of one of the aircraft, Kazakhstan Airlines Flight 1907, was relying on the only person who could speak English, a radio operator, to interpret ATC commands, which caused a mix-up over flight altitude.

2.

Linguistic challenges worsen an existing situation.

Example: Avianca Flight 52 to New York ultimately crashed because it ran out of fuel. But the accident investigation determined that ATC had failed to fully appreciate

the aircrew's plight because there was no mention of 'Mayday' or 'emergency' in communications.

3.

Loss of communication or information ends in an accident.

Example: In September 2006, an Embraer Legacy 600 business jet lost contact with ATC and failed to spot an oncoming Boeing 737-8EH over Mato Grosso, Brazil. All 154 passengers aboard the Boeing were killed in the accident, although the Embraer landed safely.

4.

A communications incident leads to a problem in flight.

Example: Although fortunately no-one was hurt, passengers aboard an Air China Boeing 747-400 en route to New York got a shock on August 29, 2012, when the crew turned back to Beijing after three hours of flight time. The trigger was a threatening message received while in flight.

NOT ENOUGH PEOPLE KNOW ICAO

Guidelines state that English language proficiency is critical for pilots and air traffic controllers. The standard of English used by flight attendants should also be considered.

There are two areas in which flight attendant language skills are important for passenger safety:

a) in correctly conveying standard safety briefing information

b) in providing instructions in the event of an emergency

Both pose challenges.

The whole subject of flight attendant safety briefings is one that regularly attracts comment (and indeed parody), highlighting the difficulty staff can have in being understood and/or being noticed. A growing solution to the first problem is to use pre-recorded announcements.

On the second point (b), some airlines encourage creativity in the delivery of safety briefings. It is unclear which strategies work best from a safety perspective, although a lack of English skills is unlikely to be helpful in either case.

Turning to emergency instructions, it is clear that flight attendant communications may be important in helping to save lives during an inflight crisis. As with flight deck crews, it is far from certain that solely Level 4 proficiency would be sufficient for this purpose. The underlying message is that good communication is critical for all aspects of aviation safety.

ENGLISH DOESN'T COVER ENOUGH

Clearly, airline crews and ATC staff are responding appropriately to most emergency situations, saving lives in the process. The exceptions are likely to be outliers: events that are beyond the realms of standard procedure or everyday experience. This is precisely when accurate, fluid communications skills can make a big difference to safety outcomes. But while Level 4 proficiency is clearly sufficient for day-to-day operations, it is far from certain that the vocabulary and fluency it offers is enough to communicate clearly and concisely when things go wrong in an unexpected way.

Recall one of the limitations of Level 4: when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.

One other important factor to consider is the role that human factors play in communication – both in relationships with others and in situations when there is fatigue, complacency or stress involved.

NASA researchers concluded that pilot error was more likely to reflect failures in **team coordination.**

TEAM COORDINATION – COMMUNICATION IN CONTEXT

All communication occurs in context and is interpreted in context.

There is the **physical aspect** - noisy or quiet cockpit, face-to-face where body language helps with communication, or communicating remotely.

The **social and organizational aspect** - pilot-to-pilot, pilot-FO, pilot-flight attendant.

Task and operational aspect - communication during different phases of flight, routine or non-routine situation. And finally a **Speech and linguistic context** – completed speech versus speech fragments, the role that different cultures have on communication – for example, culture-specific terms or phrases.

Regardless of the context there are 3 factors for sharing information that are important when working as a team:

Inquiry - making sure that you understand what has been said and asking for clarification when you don't.

Advocacy - being willing to voice your opinion about situations even to your superiors.

Assertion - making sure that in dire situations people really understand your concerns.

When crew members have differing views of the situation interpersonal conflict may arise which could result in a negative group atmosphere. This could be due to increased workload, poor situational awareness or even poor crew relationships.

TEAM COORDINATION – COGNITIVE AND SOCIAL SKILLS

Crew Resource Management lists several non-technical skills that should be taken into consideration:

Situation awareness

Decision-making

Leadership

Manage work-related stress and fatigue

Teamwork

These skills are meant to complement the technical skills, should reduce errors and increase the capture of errors, and should help to mitigate when an operational problem occurs.

Being able to speak a common language to a higher standard means international aircrews and ground personnel can make decisions more quickly. They will commit fewer errors and work more efficiently.

EXTRAORDINARY SITUATIONS

- ⊡ Identify the context of the situation
  – physical, social and organizational, task and operational, speech and linguistic
- ⊡ Identify the cognitive and social skills of the conversation
  - situation awareness, decision-making, leadership, mange work-related stress and fatigue, teamwork
- ⊡ Identify how the message is delivered
  – inquiry, advocacy, assertion
- ⊡ Uses of plain language
- ⊡ Were there any breakdowns in communication?

Consider this script:

Losing Situational Awareness
CC = crew chief (female)
R/C = ramp control (male)
CA = Captain (male)
F/O = First Officer (male)

CC: Captain, this is the ground crew chief, how do you hear me?

CA: Not very well. You're coming in broken with a lot of static noise. How do you hear me?

CC: I hear you but with lots of static noise also.

CA: Then let's use hand signals instead of the headsets.

CC: Negative. This is OK. The area is clear. Release brakes for pushback.

CA: The brakes are released.

CC: You are cleared to push back. Tail north for exit at taxiway Echo. Push far enough to let the seven sixty-seven on your right park at this gate.

CA: Roger. Tail north. Starting push. Cleared to start engines.

F/O: It's beginning to snow. We'll have to de-ice. There is a long line for takeoff tonight.

CC: Push back complete. Set parking brake.

CA: Negative, this is not far enough. Another twenty feet.
CC: I can't hear you. Say again.

CA: Push back additional twenty feet. Confirm.

CA: Did you hear her response?

F/O: I didn't hear anything. The snow is building up on the wipers and it's getting dark now.

CA: Starting engine - 1.

F/O: Roger. Engine - 1.

CA: Crew chief can you hear me? We need to push back farther.

CA: Starting engine - 2.

F/O: Roger, #2. I don't hear or see our ground crew. Did they disconnect the headset and the tug?

CA: I didn't give her clearance to disconnect. She is not answering. Call ramp control.

F/O: Ramp control, World-22. We just pushed back from gate 10, can you see if our ground crew has disconnected the tug. We cannot see or hear them. We want to push back farther.

R/C: I cannot see your crew. The blowing snow is too heavy. But the inbound seven sixty-seven is now parked at gate 10. When you are ready, you are cleared to exit via Echo.

F/O: Captain, ramp cannot see the crew because the snow is blowing too much. When ready, we are cleared to taxi out.

CA: I won't move until I know that the ground crew is clear below. We'll wait until the snow lets up.

Analysis of the script:

- **Identify the context of the situation**
  - physical
  Flight deck to crew on tarmac
  Static noise, poor visibility
  Remote communication (CC, R/C)
  - social and organizational
  Crew Chief/Captain/ First Officer/Flight Attendant/Ramp Control
  - task and operational

Before take-off, non-routine
- speech and linguistic
Misunderstandings – CC push back complete, set parking brake CA
Negative, this is not far enough. CC – I can't hear you.

- ⊡ **Identify the cognitive and social skills of the conversation**
  - situation awareness
  Poor audio, poor visibility, ice build-up
  - decision-making
  Seems quite weak - F/O: Roger, #2. I don't hear or see our ground crew. Did they disconnect the headset and the tug?
  CA: I didn't give her clearance to disconnect. She is not answering. Call ramp control.
  - leadership
  CA: I won't move until I know that the ground crew is clear below. We'll wait until the snow lets up.
  - mange work-related stress and fatigue
  CC: I can't hear you. Say again.
  CA: Did you hear her response?
  F/O: I didn't hear anything. The snow is building up on the wipers and it's getting
  dark now.
  CA: Crew chief can you hear me? We need to push back farther.
  F/O: Roger, #2. I don't hear or see our ground crew. Did they disconnect the headset and the tug?
  - teamwork
  CA, F/O not CC

- ⊡ Identify how the message is delivered
  - inquiry
  CC: I can't hear you. Say again.
  CA: Did you hear her response?
  - advocacy
  F/O: It's beginning to snow. We'll have to de-ice. There is a long line for takeoff tonight.
  - assertion
  CA: I didn't give her clearance to disconnect. She is not answering. Call ramp control.
  CA: I won't move until I know that the ground crew is clear below. We'll wait until
  the snow lets up.
- ⊡ **Can you identify any breakdowns in communication?**

This is an interesting scenario because **plain language did not seem to be the issue**. Rather, it **human factors played a major role** because there seemed to be distraction inside and outside of the cockpit. **CRM was lacking** in some respects as evidenced by

the **CC who resisted the CA's instruction to use hand signals for the pushback**. This resulting **snowstorm** contributed to a **break in communication between the CC and CA**. The deteriorating weather also seemed to be a **distraction for the F/O** whose attention was focused on **deicing** and the **long line of aircraft waiting for takeoff**.

Summary

In summary, communication between flight crew members is not only the words that are said but is, as we've seen, made up of

Communication in Context – We saw that communication occurs in context which will influence the message and interpretation of that message depending on the: physical, social and organizational, task and operational, speech and linguistic context.

Cognitive and Social Skills – There are certain non-technical skills that are involved to help reduce errors and to enhance teamwork: situation awareness, decision-making, leadership, manage work-related stress and fatigue, teamwork.

Role of Human Factors on Communication – We also examined the influence of human factors on different extraordinary situation(s), how information is delivered (Inquiry, Advocacy, Assertion), the use of plain language, potential breakdowns in communication in losing situational awareness.

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Do Expert Speakers Need to Practice a Language?

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Abstract
The aim of the presentation is to stress the relevance of language awareness for expert speakers of aviation English in the operational environment. As the language in the sky should be one, there is no place for regional varieties. Native, being Expert, speakers of Aviation English should undergo some sort of a training that will make them conscious of their language behaviour and its impact on aeronautical communication. Elements of possible training will be presented.

Introduction

Communication is one of the cornerstones of the air traffic system. Aviation personnel's communication errors are very often a cause of many incidents and accidents. Those 'human errors' that cause most of such events are often results of bad habits that had been formed over a period of time (Stewart 1989: 38). Namely, every pilot and air traffic controller has the responsibility to recognize and eliminate these habits and conduct his or her operation with a high degree of professionalism.
Aviation English (AE) is a global language that enables routine and non-routine aeronautical communications among professionals who speak different native languages. However, such communication is demanding not only for non-native speakers of English, but also for those whose mother tongue is English as communication itself is seen as a kind of behaviour – 'linguistic behaviour' (see Linke 2001: 173). In the aviation environment the risks of misunderstandings are too high. As AE, though based on English of course, has its own rules to be followed and requires being brief but clear, the stress should be put on language practice in all its possible aspects, involving native speakers of English in this process.

1. Expert speakers of Aviation English

Expert speakers of Aviation English are either aviation personnel being native speakers (NS) of English who are not required to take any language exams or non-native speakers of English who have been tested for ICAO level 6. As in the case of

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practicing English by non-native speakers (NNS) whilst a lot has been done, it is high time to focus now on the first group, namely native speakers performing their operational tasks in English, both pilots and air traffic controllers. Their effective use of English in aviation contexts is usually taken for granted, as in *Aeronautical Aviation Publication*: "…the U.S. does not require air traffic controllers or aeronautical station operators to demonstrate the ability to speak and understand the language" (FAA 2009: section GEN 1.7).

During their regular training all pilots and controllers, including those who are native speakers of English, are given instruction in ICAO or FAA standardized radiotelephony phraseology which they must be able to use appropriately in aeronautical communication. In *General Aviation Accident Prevention Program* of U.S. Department of Transportation, Federal Aviation Administration, we read the following:

> All pilots will find the Pilot/Controller Glossary very helpful in learning what certain words or phrases mean. Good phraseology enhances safety and is the mark of a professional pilot. Jargon, chatter and "CB" slang have no place in ATC communications. The Pilot/Controller Glossary is the same glossary used in the ATC controller's handbook. We recommend that it be studied and reviewed from time to time to sharpen your communication skills.

Thus the recommendation above is also prescribed to those expert speakers of Aviation English, who are native speakers of English and who may be given no more specific tests or discussions concerning this issue, not to mention practice in the plain English that they are going to use in the aviation world. Therefore, very often unconsciously, these expert speakers (ES)[22] face a real test from the first days of their actual work, i.e. communication with non-native speakers that suddenly appears to be quite demanding. Moreover, when an expert speaker for whom English is his mother tongue uses his English with a group of people for whom English is a second language, it is used in that capacity as a global language not only by non-native speakers of English, but also by native speakers themselves (Modiano 2010: 61).

Among other ICAO descriptors for proficient speakers we can read that they should:

- communicate on common, concrete and work-related topics with accuracy and **clarity**;

If ES follow phraseology rules, they are accurate. But how can they be sure their messages are clear enough? Nobody has indicated which forms or dialects are globally accepted. Additionally, the findings from some research have shown that, for example, English speakers tend to use direct forms less frequently than do speakers of many other languages (see Blum-Kulka and House 1989 in Yates 2010: 291), so accordingly NNS of English in general prefer direct forms.

[22] For the purposes of this paper the abbreviation 'ES' stands for *expert speakers* of Aviation English who are at the same time native speakers of English.

- use **appropriate communicative strategies** to exchange messages and to recognize and resolve misunderstandings (e.g. to check, confirm, or clarify information) in a general or work-related context;

ES have never been given the list of communicative strategies recommended for aviation communication, let alone appropriate ones. They may not be certain which ones are inappropriate either. It is only-common sense and their experience that they follow in this context. Thus they should definitely be provided with some professional help.

- **handle** successfully and **with relative ease** the linguistic challenges presented by a complication or unexpected turn of events that occurs within the context of a routine work situation or communicative task with which they are otherwise familiar;

No hostile attitude is welcome, but again what 'with relative ease' means we may only guess. Again intuition and common sense are recommended as the only possible available solution.

- use a dialect or accent which is **intelligible** to the aeronautical community that almost never interfere with ease of understanding.

As a matter of fact, NNS often complain about ES' accent or pronunciation. On the world stage, if you wish to tell everyone which country you belong to, an immediate and direct way of doing it is to speak in a distinctive way (Crystal 2013: 145). The abovementioned idea sounds perfect but nobody has specified yet which dialect it may be. It is hard to believe that a native speaker instructor tell his native speaker student: 'you are not intelligible, switch to another accent'. Strong accent causes misunderstanding even between NS of various regions themselves.

It is thought that there ought to exist a standard pronunciation as a model to be taught. Though attempts have been made to devise and recommend standards, it cannot be said that any standards exists. If there are none, we are left with a sort of English pronunciation easily understood throughout the English-speaking world, so by both NS and NNS. The rate here is a majority of speakers who are able to understand it. Jones defines 'bad' speech as "a way of talking which is difficult for most people to understand. It is caused by mumbling or lack of definiteness of utterance" (Jones 2002: 4). However, a person may speak with sounds very different from those of his hearers and yet be clearly intelligible to all of them thanks to his clear articulation.

Generally speaking, ICAO is conscious of the issue pointing out that improvements could be made if native-English speakers also familiarize themselves with the challenges faced by NNS and adopt certain strategies such as:

- Learning strategies to improve cross-cultural communications
- Refraining from the use of idioms, colloquialisms, and other jargon
- Modulating the rate of delivery
- Making sure there is not too much information in a single transmission (Rees 2013: 102).

Although it seems quite easy to employ the last three techniques, the first one still remains in the shade. Follow-up questions immediately arise: What kind of strategies?

How? At which stage of the learning process? Are these four points, when achieved successfully, enough to solve main problems in NS-NNS communication?
Neither reference document nor theory exist to answer them.

2. Aviation English as a global language

Following Jennifer Jenkins' theory[23], the term 'global English' is being used increasingly nowadays:

> It is a means of demonstrating that English is spoken in every part of the world, both among speakers within a particular country who share a first language, and across speakers from different countries/first languages. English is no longer spoken only by its native speakers in the UK, North America, Australia and New Zealand, and by those who learn English in order to communicate with native speakers. It is also spoken among non-native speakers within countries like India, the Philippines and Singapore and internationally among non-native speakers from a wide range of countries/first languages throughout the world. This last use of English is often referred to as 'English as an International Language' or EIL.

Being used worldwide, it seems obvious that we can look at Aviation English in a similar way. Moreover, the global presence of English has given rise to a growing number of international non-native - non-native English interactions that have come to be called 'lingua franca communication' (House 2010: 363). This fact can be also easily observed in aviation communication. However, it should be taken into account that when ES take part in such a global interaction, they are supposed to follow its rules automatically. Namely, not only should they expect this from interlocutors using an appropriate level of language, but also speak in a comprehensible way when addressing NNS.

Here it should be explained what expert speakers in general are not conscious of. One of the main issues is the fact that ES still treat AE as their own. However, reality presents another data, namely ES constitute only ca. 25% of all speakers in aviation communication. This data stresses the fact that Aviation English is first of all a global language as its users are mainly NNS and NS form the minority.

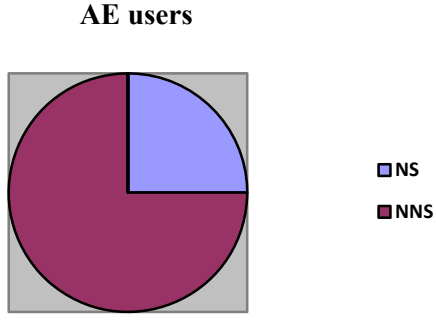

Figure 1. Aviation English users

[23] Jennifer Jenkins, *Global English and the teaching of pronunciation* http://www.teachingenglish.org.uk/think/pron/global_english.shtml

Thus it should be specified whose language we are talking about, if it does not belong to NS anymore. The communication mainly takes place among speakers of different first languages which also influences the use of English. Thus in contrast to essentialist claims of Anglophone linguistic imperialism, what is currently spreading around the world, particularly true in the aviation world, is neither British English nor American English, nor any other common variety of English, but local adaptations of English (Mukherjee 2008; Widdowson 1997:140 in Motschenbacher: 21). The loss of ownership is of course uncomfortable to those, especially in Britain, who feel that the language is theirs by historical right, but they have no alternative (Crystal 2013: 141). As a matter of fact, there is no place in AE for 'nativeness' being a key model of language in use.

AE belongs therefore to the world. Every nation which uses it does so with a different tone and quality. Many nationalities speak with accents when they speak English, but so do Canadians, the Irish etc. (Ali 2010: 44). ES have to accept the fact that a native speaker norm does not exist anymore and it is simply not the case that English emanates from a native speaker centre. Though it is true that NS have some advantage in that they are the only ones that do not need to learn this global language from scratch. Of course NS profit massively because of that, but today the attitude towards the acquisition of English has changed.

When NNS communicate successfully with one another, they do not need the assistance of a native speaker. Now these are expert speakers who should be taught to understand this global language and also to adapt to the new situation because they are no longer on top with their accents and communication techniques. They need to remember they do not communicate exclusively with NS. Expert speakers have acquired English in communication with other NS in their natural environment and therefore they are not automatically or naturally well equipped for transnational communication via global English. Nor are they more adept in its communicative use. There are now studies becoming available that show that NS may actually be at a disadvantage as they tend not to be very effective communicators in intercultural encounters (Jenkins 2007; Wright 2008 in Seidlhofer 2012: 364). They use the language at their disposal to negotiate meaning and construct mutual understanding. But AE is not the natural English of NS. Therefore, it seems to be obvious that NS are required to familiarise themselves with the practices of meaning negotiation when they wish to become successful AE communicators. As MacKenzie (2012: 84-85) notes, global English communication differs from native English in that it draws on the linguistic repertoires of NNS:

> This repertoire does not consist of several clearly separable linguistic systems of which one is switched on when a person is speaking while the others are switched off. It is rather the case that all linguistic resources within the repertoire are constantly activated and interact.

AE is thus partly de-anglicised transnational medium of communication and nobody's mother tongue and all its users are required to make an effort to become efficient AE communicators. Ideally, the objective is to make AE as perfect as possible in order to have one linguistic model in aviation. We should now specify the basis for a possible

model. Undoubtedly, it needs to be based on a recognition and an examination of language use. First and foremost, a reliance on native-speaker model as the pedagogical target must be put aside. NNS practice AE and are tested. That is why, they tend to adapt to their 'commonsense' criteria when choosing grammar structures later.

3. Expert speakers perception by non-native speakers

Performing their work, expert speakers communicate with NNS every day. Phraseology training given to them does not cover strategies of communication with NNS, thus such training is only partially correct as it does not provide the actual aim which is a real work communication in the global environment. It often happens that ES do not conform to the standards of aviation communication and are too demanding towards non-native speakers. These dimensions of language use are still sadly neglected in language teaching programs. In the meantime NNS accuse ES of being not clear, making communication errors and using phraseology inappropriately or not using it at all. These issues continue to feature as contributory factors in safety-related aviation incidents. It is relevant today that there is also a need for specific language training for ES in order to simplify the communication for operational speakers of a lower language proficiency and at the same time make ES understand the message given by NNS.

Firstly, we should specify what exactly ES have already known in the field of AE usage in addition to phraseology itself. ICAO requirements say: "The burden of improving radiotelephony communications should be shared by native and non-native speakers" (Doc. 9835). However, if you ask ES how to improve these communications and what sort of strategies they may employ, the majority of them do not provide you with many ideas, usually one or two without being sure they are right. Nevertheless, this is not their fault. They are supposed to follow the general rules without knowing how to implement them. The strategy suggested by the Federal Aviation Administration (FAA) clearly emphasizes in its publications: "Since concise phraseology may not always be adequate, use whatever words are necessary to get your message across" (FAA 2010, chapter 4-2-1). The outcome of this recommendation may at times appear to be very confusing.

Hopefully, ICAO Doc 9835 (2nd edition 2010) Manual on the Implementation of ICAO Language Proficiency Requirements makes it clear: "…native speakers of English, in particular, have an ethical obligation to increase their linguistic awareness and to take special care in the delivery of messages" (ICAO 2010: section 5.3.1.3). However, ES will not accomplish this goal on their own, so they have to be made aware that meaning in human interaction is not simply transferred but has to be negotiated by the interlocutors (cf. Allwright 1999: 230).

Expert speakers still make errors in the context of aviation communication. NNS usually accuse them of:

- not using proper phraseology;

This may be caused by unwillingness to use artificial language, not natural for NS. Nevertheless, they are conscious of their linguistic power, namely that they are able

to think and work quickly in their mother tongue and in this way to manipulate it to their own advantage at the expense of those who do not have it. Surely, at times it may not be exclusive to native speakers but also to NNS who may wish to demonstrate their command of the language.

- being too fast;

Decades ago the speed rate was estimated as 100 words per minute by ICAO that is rather unrealistic and definitely not practiced these days. 180-200 wpm may be considered the norm for routine messages and 160 wpm when passing instructions and clearances, but for expert speakers this rate exceeds 200 words per minute (according to LiveATC). At JFK high speech rate is fairly common and equals up to 260 words per minute – produced by native speakers. This is for sure problematic in high risk environments in which details are crucial, particularly in communicative situations involving speakers from different linguistic backgrounds (Bieswanger 2013: 17).

- using unclear pronunciation of local variety;

A unique dialect is hardly ever understood by NNS, especially those of an operational level in communication.

- using complex phrases and syntax, idioms or phrasal verbs;

They are all natural for them, but should not be used in AE.

- not acting appropriately in case of misunderstanding;

Some appear unable to employ techniques to clarify information or make attempts to rephrase.

- being hostile;

It happens that some ES answer with sarcasm, condescension, agitation, scream at an interlocutor or are ironic towards them.

All the abovementioned elements will always cause problems to NNS, so in order to reduce them or eliminate them step by step, a basic training for expert speakers may be suggested.

4. Shaping expert speakers' linguistic behaviour

After the analysis of training needs has been done, the objective is to not only make ES aware of their linguistic behaviour, but also suggest useful ways of dealing with communication breakdowns by taking necessary actions during aeronautical (specifically pilot/controller) communication. Such training does not aim at teaching them a language, but rather to train their communicative competence. It can be conducted as a set of workshops based on interaction, but NS should not interact with themselves during such practice. Moreover, it is recommended their instructor should also be a NNS in order to increase communication manipulation chances.

First of all, main conditions to improve ES' performance should be presented. These are the following:

- awareness

ES should be aware of the possible problems their linguistic behaviour may raise during interaction with NNS, especially at ICAO operational level 4. NNS' target

language is highly influenced by the syntax, semantics and pronunciation of their own mother tongue. There may exist a discrepancy between a performance of NNS engaged in a conversation and what an ES expects a conversation to sound like. Such awareness can often reinforce ES training, reduce coordination time between a pilot and controller and help to solve operational problems. ES may therefore employ some communicative strategies to be able to identify and then eliminate possible problems.

To increase the linguistic awareness, it is advisable for ES to learn another language. By doing so, they will understand better the common problems NNS usually deal with, being themselves NNS of an acquired language. Step by step they will become conscious of linguistic diversity, i.e. problems with syntax, choice of lexis and in this way they will better understand NNS linguistic behaviour.

- willingness

Without the proper attitude, namely willingness to modify existing communicative conventions, much cannot be done. Once they fulfill these conditions, NS will see how helpful they may be.

- knowledge

It should be demonstrated to expert speakers what actions they may take, namely which techniques they may employ, to improve communication process.

- ability

All abovementioned components, when employed, make it possible to solve the problem. These are essential for handling the motivational and knowledge-based challenges that arise during interaction.

Then ES can implement their knowledge to real-life communication:

Figure 2. Key conditions to improve ES' performance

ES need to be prepared for 'state of expectancy' for hearing and comprehending live global language spoken by NNS. It will help get ES to a level where they can understand and converse with NNS so that ES would focus on their own linguistic performance.

The next step towards development of expert speakers' training is to specify key communicative competency strategies that should be presented during the course:

Communicative strategy	Action
Active listening	To check important words and phrases
Attuning	To pay attention to speed, complexity of sentence structure and vocabulary (no idioms, colloquialisms), not to use local accents and dialects
Language adjustment	To adapt use of language to the proficiency level of the recipients
Interpersonal attentiveness	To pay attention to interlocutor's sensitive areas of language use and avoid making them 'lose face' as well as encourage them and 'give them face'

Table 1. Native speakers' communicative strategies (see: Spencer-Oatey 2010: 201-202).

The training should provide expert speakers with practical tips how to employ the abovementioned strategies and especially how to be efficient when they need to:

- make sure there is not too much information in a single transmission;
- reformulate the utterance;
- use repetitions;
- make their speech unambiguous, e.g. no use of homonyms;
- adjust their pronunciation to a way of speaking that is clearly intelligible to most people;
- use simplified grammar structures, e.g. no auxiliaries, simple tenses.
- use self-initiated repair;
- develop meaning negotiation strategies.

In real life all of that must be performed quickly bearing mutual respect in mind. As for language simplification, ES should be taught how to produce clear utterances, which is the best technique to simplify the complex ones. The structures of aviation phraseology may be applied for messages in plain English, too. For example, instead of saying 'Would you please say that once more?' a single phrase is recommended: 'Say again' though it is far more restricted than everyday language.
Based on presented issues, it is easy to draw some conclusions and compare briefly NS' and NNS' linguistic behaviour:

NNS	NS
grammatical and lexical awareness	metalinguistic awareness
focus on rules	focus on strategies
correctness	meaning negotiation

Table 2. Native speaker's and non-native speaker's linguistic behaviour in aviation communication

NNS should be aware of grammar rules and the meaning of lexical units, aim at using them correctly, whilst NS should be aware of metalinguistics, various levels of language in use, focus on strategies they employ to negotiate meaning in order to maximize comprehensibility (see Canagarajah 2006: 210).

With proper attitude and willingness to cooperate the whole ES communicative competence training process is possible. Being aware of linguistic situation discussed above, being familiar with basic techniques of preventing the occurrence of problems and dealing with problems, ES will be successful interlocutors in global aviation communication. The listener simply has to understand what has been said. Thus we not only have to deal with the simple physical facts of phonetics but moreover with 'the perlocutionary act where the speaker, after having finished his message, has no influence on the comprehension process' (Searle 1971: 42). Communication participants, NS or NNS, may misunderstand the message when the utterance is not understandable or ambiguous or when the attitude of two conversational partners is not proper. The following diagram iillustrates presented stages of expert speakers' training:

Figure 3. Expert speakers' training stages

5. Practical applications of ES awareness training

One of the possible tasks to be used in ES awareness training may be listening exercises where the language is presented in full, e.g. pilot/controller dialogues at least one of them being a NNS. In this way ES may observe consciously characteristics of NNS language, namely its pronunciation, intonation and syntactic patterns. Then ES may analyse problems they noticed. This suggests that ES have some norm of grammaticality against which they can compare utterances to determine whether or not the utterances are like those that a native speaker of English would produce. ES will probably notice differences in sounds. The subset of all possible sounds used in one language does not coincide completely with the subset of sounds used in any other language. Even when certain sounds are used in two or more languages there may be differences in the possible distribution of those sounds in the two languages. Some NNS may naturally avoid a combination of sounds that would violate the rules of their mother tongues.

Suggested activity for ES (1): Listen to a NNS of English and try to identify at least 3 phonological and 3 grammatical errors that you would consider violations of the rules of English. Are they ambiguous? What should be done to prevent and correct them?

This simple task will help ES notice the features of English used by NNS and at the same time raise the awareness of clear articulation importance.

Suggested activity for ES (2): Give a short (one paragraph) oral message on aviation topic directed to your NS pilot friend. Then give precisely the same message but directed to NNS pilot you do not know. Compare the language used in both messages. Are there any differences in vocabulary selection or structure of your sentences? Is articulation exactly the same?
This activity will help to understand why techniques of choosing appropriate language, its complexity, rate, articulation should be consciously employed.

Moreover, ES may need to take into account the process of encoding a message. ES usually complete the following steps: selecting the raw content of the utterance, choosing the syntactic patterns, plugging in lexical items, adding inflectional forms, composing a sequence of the utterance, grouping the sounds, uttering the sounds. ES complete these steps in a split second. However, even this performance is often flawed by false starts, pauses, meaningless fillers, or faulty choice of vocabulary, all of them not recommended in aviaton. The difficulty of becoming a fluent speaker is obviously compounded for NNS, who must cope with these performance factors as well as more seriously with limited grammatical competence, with cultural differences, and with the wide range of linguistic features which determine the context for speaking (Mockridge-Fong 1979: 90).

Finally, ES trainers should present research-based approaches and activities that enable learners to successfully communicate in AE and develop tasks that can be assigned to them. Every task should be based on a NNS-NS interaction with regular feedback provided by a NNS. Evaluating the effectiveness of each training is critical. Uptake can be measured by having learners take post-training tests and demonstrate learned skills and abilities during interactions with NNS. Job observation can also be used to assess communicative and language skills development.

Conclusion

Concluding, there is a constant need for research in order to examine the frequent problems with language. ES are not required to commit linguistic suicide or to learn a global language on a daily basis to improve their strategic competence. Most ES are totally unaware of their capability to simplify global comprehension. This lack of knowledge and the resulting inability to take full advantage of their communicative competence can be very costly. It seems to be proper time nowadays to modify existing communicative conventions and stress the need to prepare ES, from the start, to understand the speech of NNS in a normal manner, but also to make themselves sound intelligible. By being aware of potential problems in aviation communication with NNS, ES must only know which techniques they should employ and how to do it. This may help them face the problem and be more flexible in solving communication breakdowns. Therefore, it is recommended they need basic training in this context followed by evaluation of learned skills.

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Defining Competency Qualification of Aviation English Instructor

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Abstract
The article deals with the problem of defining a competency profile of an Aviation English Instructor (AEI) relevant to ICAO language requirements and, therefore, training needs of a standard English language teacher.

Introduction

It is obvious that following the new ICAO language requirements for air traffic controllers and flight crew members to operate on international routes as well as the ICAO recommendations for professional quality of the teaching staff (Doc 9835) one should clearly understand the training needs of an Aviation English Instructor (AEI). In this respect, a special training course for AEI might be viewed as one of the contributing factors to overall flight safety. Therefore, it is important to identify some kind of benchmarks to assess the readiness of AEI to provide the quality and efficacy language teaching of pilots and air traffic controllers in compliance with the language requirements and training recommendations outlined in ICAO documents (Doc 9835 - Manual on the Implementation of ICAO Language Proficiency Requirements 2nd edition 2010 and Cir 323 – Guides for Aviation Training Programmes 2009).

Statement of purpose

The aim of this paper is to discuss some conceptual approaches as well as practical ways to meet the training needs of Aviation English instructors based on our observations and work experience. A key approach is to view the problem within a competence paradigm. Therefore, the training course format should follow the AEI competence profile. Though it is obvious that the main practical way of bringing up awareness-level competencies to capacity building of future AEI would be through

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induction and mentoring within the university programme, then with further professional development at English for Aviation Purposes courses as well as learning from more experienced practitioners through communication within professional communities.

Research method

ICAO Doc 9835 suggests quality requirements for AEI. To study the further training needs of a standard University diploma holder, two competency profiles have been compared (Table 1). The knowledge areas required by ICAO documents and not covered by the university programme (in Ukraine) have been considered key training needs of future AEI.

Review of Research Results

The term 'competency' is increasingly being used in education circles today. It is a description of one's ability, a measure of one's performance. What are the competencies that matter among educators? And are these the same qualities that will be valued in the AEIs? First, one should give answers to the questions:

- How does the concept of competencies relate to AE instructors?
- What are the competencies that the English teachers today need to develop?

A person's competencies may be defined in terms of one's knowledge, skills and behaviours. To understand the competencies required of a teacher, we must first define the job of a teacher.

The task of an English teacher is closely tied to the nature of the special language classroom. Today's special language classrooms call for teachers to "prepare virtually all students for higher order thinking and performance skills once reserved to only a few" (Darling-Hammond, 2006: 300).

Researchers and practitioners are becoming increasingly aware that the character of the 21st century classroom – and thus the demands on both students and teachers – is undergoing significant change. Especially it is noticeable for the classroom of Aviation English because the new language requirements have been implemented.

Another factor that indicates changes in Aviation English (AE) teaching is a need to teach aviation phraseology and plain English in an integrative manner because the two both languages are being integrated in radiotelephony communication between flight crew and controllers.

The aim of the ICAO standard phraseologies is to cover many routine circumstances and include some predictable emergency or non-routine situations. However, the prescribed phraseologies cannot fully cover all possible circumstances and responses. Consequently, a need for the language beyond the narrow subset of the ICAO phraseologies arose, a need for Aviation English based upon good knowledge of general English. Therefore, the ICAO provisions provide improved guidance on the use of Aviation English and at the same time strengthen the provisions on the use of phraseologies used in R/T communication (Kukovec 2008).

The competency profile suggested for AEI articulates a set of professional standards or benchmarks for all who graduate from a University with a qualification of a teacher of English and would like to have special certificate of AEI. The AEI competency profile specifies the competencies that AEIs should be equipped with to be able to effectively teach AE pilots and controllers in compliance with ICAO recommendations and safety requirements.

In order to answer the above mentioned questions let's have a look at what makes AE teaching unique and different from any other special language teaching. At least three factors can be highlighted. Firstly, this is a safety issue. The results of work of AEI in the classroom will contribute (positively or negatively) to the whole aviation safety phenomenon. Secondly, AEI should be able to teach both artificial (aviation phraseology) and natural (plain English in aviation context) language. Thirdly, AEI should understand the international requirements to language performance demonstrated by pilots and controllers, which differ from similar ones in general English, e.g., CEFR (Common European Framework for Reference for Languages).

Further details concerning the differences can be studied through analysis of the following 5 AE teaching aspects: linguistics, discursive-interactional, subject matter, assessment and classroom teaching.

Linguistic aspect

This aspect reveals the co-existence of two languages – artificial and natural. The English language used by air traffic controllers and flight crews in radiotelephony communication has a twofold nature based on standard radiotelephony phraseology including approximately 400 lexis and plain English in aviation context, the corpus of which is not available. Our text analysis of 38 authentic exchanges in non-standard situations suggests the ratio between the languages as 1/5 – the average percentage of plain English lexis was 20 and phraseology – 80 (Petrashchuk, Vasiukovych 2015).

The aviation phraseology as a technical artificial language is limited, standard, strongly regulated, mandatory, action linked, alphanumeric, dominated and different from plain English, which is a natural language. The plain English in aviation context is not the same as general or spoken English due to its being compensatory, situation linked and level prescribed. The expression 'in aviation context' used in ICAO documents is not only about topics. It means that the plain English is a simplified version of general English with the simplification according to the same regularities as for aviation phraseology to provide safe radiotelephony communication.

Plain language in aeronautical radiotelephony communications means the *spontaneous, creative and non-coded use of a given natural language, although constrained by the functions and topics (aviation and non-aviation*) that are required by aeronautical radiotelephony communications, as well as by specific *safety-critical requirements for intelligibility, directness, appropriacy, non-ambiguity and concision.* (ICAO Doc 9835, 2010: 3.3.14).

Therefore, both phraseology and plain English are to provide efficient, clear, concise, and unambiguous communications.

Discursive-interactional aspect

This aspect indicates that aeronautical radiotelephony communication is non-visual [telephone mode]. Specificity of oral language communication on the work place of air traffic controllers it is provided in-voice-only format, which means that non-linguistic means like mime, gesture, facial expression, eye contact are not available.

It is also characterized by language code switching between phraseology and plain English, which is used when phraseology is not sufficient (especially in non-routine situations). As a conversational genre the communication is cooperative though 'ritual' - readbacks are obligatory by rules. It is also economical, routine and non-routine, and can be culturally biased.

Researches point out three groups of factors, which can easily affect radiotelephony communications (P. Ragan, 1997; Estival, Molesworth, 2012):

- The most important linguistic factor for aviation communication is the *choice of lexical items or phrases*, the *conversational use or interpretation of aviation terminology*.
- Other linguistic factors affecting radio communication, such as *comprehension, phraseology, intonation, speech irregularities and the use (or misuse) of pauses, cultural factor.*
- *Non-linguistic factors* known to affect radio communication include: (a) quality of transmission; (b) noise in the cockpit; and (c) the operational expectations of both pilots and ATC.

Subject matter aspect

Under this aspect, it becomes clear that aviation is a highly regulated industry due to safety issue. AE is *the element of the bi-lingual communication medium,* which makes international civil aviation workable for airlines and other operational entities and possible for the travelling public of all nations.

AE is a *combination of professional jargon and work-oriented uses* of English, which are predominant in the field of aviation. English is the *internationally agreed language for aviation,* which is now a global business (McGrath 2005).

Situations/contexts for AE use: aircraft construction, aircraft sales and supply, crew training, aircraft operation and maintenance, public transport flight operations (3 domains – airlines, airport operations, air traffic service), international flight operations, in-flight activities. For purposes of effective AE teaching AEI should have at least basic knowledge of aviation equipment [electronics, avionics, system engineering, aircraft and tower specific equipment, etc.], flight operation procedures, air traffic service procedures, civil aviation safety requirements as a key priority.

Assessment aspect

This aspect is crucial because of strong language regulations and requirements for licensure purposes. The language assessment in aviation is a specifically regulated area, with defined type of test - a high stake proficiency test, prescribed assessment criteria - ICAO Language Proficiency Rating scale. There are recommended testing requirements and practices to be used in AE language performance assessment. It is important that testing objectives are documented by ICAO Cir. 318 - Language Testing Criteria for Global Harmonization, 2009.

Classroom teaching aspect

This aspect is a key one. The specificity of AE teaching, which makes it different from any other ESP, is that language target skills are limited to two – Listening Comprehension and Speaking (Interaction) Skills with a special focus on pronunciation. The AE teaching is based on Communicative approach (CLT), learner-centered approach, content-based syllabus and job place simulation. It is important, that both teaching and learning objectives are documented by ICAO Cir 323.

Taking into account what was mentioned above the term 'AEI competency' can be defined in the following way: Aviation English instructor's competency is *special knowledge and ability to use the knowledge in teaching aviation specialists to contribute to flight safety by minimizing language radiotelephony communication failures.*

This understanding of the competency identifies a rationale for the AE instructors' training course, which should meet special training needs of an English language teacher – a University diploma holder.

Key competences of English teachers - University degree holders as a useful resource	*Necessities and lacks as training needs of Aviation English instructors*
Linguistic knowledge of English for general/academic purposes English language proficiency at Level C1 Skills of teaching General/Academic English Awareness in cross-cultural communication Awareness in syllabus design Basic skills of materials development	Aviation phraseology Plain English in aviation context RT procedures RT communication functions Job related settings Language proficiency requirements in civil aviation EAP (communicative, learner-centered) teaching skills EAP course design and Aviation English materials development

Table 1. The comparative layout of key competences of General English language teachers and training needs of AEI

Conclusion

The aforementioned analysis of competency profiles of two English teacher categories clearly demonstrates that teaching English to pilots and air traffic controllers is not possible without special training. On the other hand, the training course should be designed accordingly to the specific training needs of an ordinary English language teacher – a University diploma holder, which are reflected through qualification gaps.

Based on ICAO qualification requirements to aviation teaching personnel (ICAO Doc 9835), analysis results and our work experience it suggested to design the training course correspondingly to the competency profile of an AEI which comprises 5 knowledge areas. They are the following:

1. aviation language competence
2. RT communication competence

3. technological competence
4. assessment competence
5. ESP teaching competence

It is important to understand that the above mentioned competences will also include abilities to use the knowledge.

The following competence components have been identified as minimum resources (in italics) and lacks (underlined) of an AEI – general English University diploma holder:

1. **Aviation language competence**: knowledge of R/T phraseology and *plain English* in aviation context and its ratio in authentic R/T communication.
2. **Communicative competence**: *knowledge and ability to interact* in cooperative and culturally sensitive manner for purposes of flight safety.
3. **Technological competence**: knowledge of procedures (aircraft operation and air traffic control), role of language related human factor and documents regulating language requirements.
4. **Assessment competence**: knowledge of ICAO language proficiency requirements and ICAO test format; awareness in high stake language testing.
5. **ESP teaching competence**: *knowledge and skills how to teach* job (aviation) related language skills in compliance with ICAO recommendations.

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Modern technologies in teaching specialised languages

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Abstract
The main objective of the present paper will be to define the role of modern media in specialised languages teaching and/or learning. Contemporary foreign languages teaching and/or learning, supported by electronic media (also referred to in the literature as "new media" or "(new) electronic media"), do/does take place indeed thanks to different e-learning products or, rather, purely hardware solutions both in their desktop and mobile forms (such as, for instance – but by no means restricted to – laptops and tablets or even phablets or smartphones), and the application of glottodidactic programming (commonly available on the Internet). In other words, modern electronic media are represented by hardware tools-based systems by means of which texts and pictures (whether fixed or not), film or sound are both presented and processed.

Introduction

Modern foreign language teaching/learning supported by electronic media (also referred to as modern media or [modern] electronic media) takes place thanks to various e-learning products or, rather, purely hardware solutions, be they in both desktop and mobile forms (such as, for instance – but by no means restricted to – laptops and tablets or such devices as phablets or smartphones), and the application of glottodidactic software commonly available on the Internet. In other words, modern electronic media are represented by hardware systems by means of which texts and pictures (whether fixed or not), films or sounds are presented and processed (cf. W. Tulodziecki 1996: 12).

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The main objective of the present paper is to define the role of modern electronic media in teaching specialised languages. But before we do so, let us first make a few general remarks on the role of electronic media in teaching modern foreign languages, and then focus on one of the fastest growing and relevant glottodidactic types of e-learning products, i.e. glottodidactic platforms which will be juxtaposed with other e-learning products. We shall briefly present the major types of glottodidactic platforms, their constituent components and the development of the teaching modules that comprise their contents. In conclusion, we shall refer to a few examples of platforms devoted to learning specialised languages. The considerations made will focus on German, Polish and English language literature. Finally, we would like to stress that our considerations have been based on P. Szerszeń's monograph (2014) *(Glotto)didactic platforms. Their implementation in teaching and learning specialised foreign languages*.

Bearing in mind any possible limitations of our analyses, we have decided to omit issues concerned with the development of such research directions as computer-assisted language learning, computers in language education history or information processing theory, which, as a matter of fact, have all contributed to the use of multimodal (e.g. audiovisual) and multi-coded (e.g. text- and image-based) combinations.

The main purpose of teaching (foreign) languages supported by electronic media is to stimulate the student to achieve the level of language, communication, cultural and intercultural skills, which on the one hand would be consistent with their own needs and on the other hand with the curriculum requirements and/or educational goals. It indirectly also develops other skills, including media skills, understood here primarily as reflexive skills of using electronic media.

There has been much discussion on the possibilities of using computers in teaching foreign languages, which is reflected in publications.

Indeed, when it comes to the development of electronic media, the discussion on computer-assisted language learning has concentrated on the different types of media used, as indicated by N. Würffel (2010) who presents basic contemporary uses of electronic media in the following manner.

Media type	**Offline**	**Online**
authentic media	lexicons; audiobooks; feature/documentary films on CD-ROM/DVD	weblog; wikipedia, online lexicons; video clips; text corpora
adapted media	electronic dictionaries and lexicons for kids on CD-ROM/DVD	online grammar books; online dictionaries
methodological media	CD-ROM/DVD software	educational programs; textbook supplements

authentic tools	text processing programs; presentation programs; structuring programs (for mind maps)	e-mail; forum, chat, voice and video communicators, audio- and videoconferences, cooperative editors (e.g. Wiki); weblog, podcast
adapted tools		learning platforms
methodological tools	curricula, wordbuilders	curricula, 'wordbuilder'-like programs, e-portfolio

Table 1: Example use of electronic media in teaching German as a foreign/second language according to N. Würffel (2010).

It needs to be stressed at this point that we have decided not to go into much detail regarding validity of doubt-arousing nomenclature (e.g. in relation to *tool* or *medium*). In actual fact, the above table proves that certain media types may be present both online and offline (e.g. dictionaries, lexicons, educational programs, curricula) while some of them such as learning platforms or e-portfolio are present only in the online form.

1. The didactic platform and its role in teaching foreign languages

The (glotto)didactic platform (DP), to put it in simple terms, is a modern web-based software enabling, to a greater or lesser extent, the machine (computer)-man interaction or in relation to the glottodidactic process DP-student (DP *sensu largo*), which, in turn, allows for a more advanced interaction between the DP and the student (DP *sensu stricto*), for instance the Linguistically Intelligent Systems for Translation- and Glottodidactics, Tell me more Campus and others[27]. Indeed, the following terminology referring to the type and functionality of the DP is most often used: LMS (*Learning Management System*), LCMS (*Learning Content Management System*) and VCS (*Virtual Classroom System*). The analysis of the majority of texts (especially in the area of advertising), the authors of which apply various terms to the didactic platform, leads to the conclusion that in addition to some fairly well-defined expressions such as, for example, particular types of platforms (e.g. LMS, CMS) there are other terms used such as *virtual campus* or *learning in the cloud* which are applied in various senses and as a consequence are not of such a strict terminological character.

The didactic platform (DP) (see N. Würffel, 2010), as we comprehend it, stands for any software installed on the server that offers both access to large amounts of data in various forms and a number of functions that can be applied to the following three main areas: organisation, communication and cooperation. Thanks to this the process

[27] For Spanish see the official platform of *Instituto Cervantes* for French: *Institut de Francais*

of learning is made possible. Their main purpose is to generate particular knowledge on their users' side and/or skills by performing appropriate tasks/exercises.

What is more, the following features are also characteristic of the DP: management of users and courses, sharing different access rights between different users (administrators, teachers, tutors, students, etc.), calendar, internal system of communication, voting tools, management of literature, links, bookmarks and *awareness*-like tools (cf. S. Szabłowski 2009: 85).

Among the didactic platforms one can distinguish between *open-source* products (e.g. *OLAT*, *Claroline*, *Dokeos*, *ILIAS*, *ATutor*, *LRN*, *Moodle*, and others) made available, maintained and developed by institutions that make use of them, and platforms offering their services on the commercial market. The most famous didactic platforms are: *ILIAS*, *Stud IP*, *Blackboard* licensed system and, probably *Moodle*, the most popular nowadays (used at many Polish universities, including, among other things, the University of Warsaw)[28].

Apart from the aforementioned platforms, new ones are constantly being created and launched – of these those represented by such well-known institutions (offering the most comprehensive range of language training) as, for example, the Goethe-Institut deserve special attention. Current commercial leaders of LMS platforms include: *Blackboard* /*Angel* /*WebCT*, *Desire2Learn*, *Pearson eCollege*, *Edvance360* (former *Scholar360*), *Jenzabar e-Racer* and *SharePoint LMS*. Among the open-source leaders one needs to mention not only the already cited *Moodle* but also *Sakai*, *Canvas* by Instructure, *LoudCloud*, *OLAT* and *Claroline*.

As per the role of didactic platforms in the (glotto)didactic process, it has to be said that every system of teaching is characterised by a certain kind of interactivity that occurs between the teacher and the student. The teacher's role is to influence the student with intentionally defined cues so that thanks to them (s)he is able to create in his/her brain a specific knowledge/skill.

The main research questions can, therefore, be formulated: to what extent the N element of the (glotto)didactic system can be replaced with the DP element?

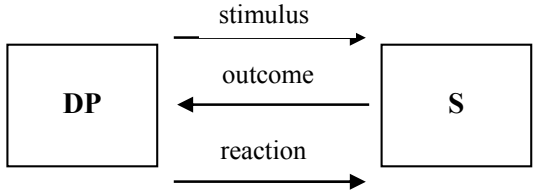

Figure 1. DP – didactic platform (S. Grucza, P. Szerszeń 2012)

[28] Following the development of an increasing number of platforms, a need has arisen to introduce their operation standards. This is reflected, for example, in the SCORM (Sharable Content Object Reference Model) system, which is currently one of the most famous standards of recording courses used in e-learning and a means of communication between the platform user and the server. This standard defines the basic principles of training (learning) development as well as the IT environment of platforms by formulating technical requirements and guidelines for platform designers and/or those responsible for teaching contents.

The key questions posed can be answered by evaluating the (glotto)didactic potential of e-learning products. This task, however, is in no way easy due to the continual introduction of new and/or permanent development of existing e-learning products, which can be ascertained when, among other things, attempting to keep up-to-date with current, at any given time, e-learning products.

2. The didactic platform versus other e-learning products

While perusing the existing platforms and e-learning software, one can conclude that any evaluation of e-learning products should begin with distinguishing between the two main e-learning categories/forms, i.e. tools and programs[29].

The first class of these products is created by e-learning tools understood as hardware objects which enable the generation of didactic stimuli addressed to the learner within the didactic platform, (periodic) storing of outcomes based on the learner's knowledge/skills and the virtual environment of messages formed by the learner in a substantial manner that constitute a response to the received stimuli generated by such a tool. These can mostly comprise desktop computers, portable computers (laptops, notebooks, netbooks, servers etc.), and devices such as tablets or iPads and iPods, phablets, smartphones – that is any devices equipped with smaller screens with the touchscreen function. A significant drawback of the latter, in contrast to desktop and laptop computers, is, besides the small size of the screen, their lack of compatibility with certain software systems as well as unsatisfactory speed of processors, limited possibilities for connecting additional accessories and consuming too much energy when working with applications or multitasking problems. All things considered this limits the possibility of their widespread use in teaching, at least in the near future.

In addition, one can also include (to the above category of e-learning tools) multimedia projectors which display an image on the screen based on the received signal[30] or interactive whiteboards which combine features of a large computer monitor with the touchscreen function and the school board. To work effectively, any interactive whiteboard requires a multimedia projector and a computer. Thanks to the rapid development of technology (including LED technology), interactive whiteboards are growing larger yet remain compact. What is more, they are also characterised by their higher resolution. Information or handwritten notes are

[29] Apart from the two categories mentioned above, the term *learning in the cloud* is also extensively used in the literature, which, only seemingly, suggests the change of the learning environment and, primarily, denotes a technological dimension. *Learning in the cloud* is sometimes assigned many different meanings – at times, *the cloud* is used to refer to the setting/environment of different platforms or programs (platforms and cloud applications), on yet different occasions – to determine a specific type of the didactic platform, that is the cloud platform. In view of the conceptual nature of such discrepancies, one can conclude that *learning in the cloud* is an example of the new marketing magnet, and does not constitute a new/autonomous solution/e-learning product.

[30] A desktop computer, laptop, camera, DVD player, satellite tuner etc. can all be the source of such a signal.

displayed on the touchscreen[31] (both on the clean and display panel, for example in the form of written text fragments, pictures, images) and therefore, work with it resembles work with any ordinary board but for information displayed that can be deleted, saved, sent to the printer etc. at any given time[32]. Thanks to the use of the interactive whiteboard any material (e.g. text, graphics or multimedia) is not only reconstructed by the teacher but it also becomes for example part of the presentation or notes which, in turn, can be stored during classes e.g. as a video, website, PowerPoint presentation or pdf file.

Another class of e-learning products is constituted by software, once frequently enclosed – nowadays open, i.e. implementing functions thus making it possible to go beyond their originally limited formula. The examples of such programs are online versions of applications already known on the market such as *Tell me more*, to the significant advantages of which one may include, among other things, an advanced system of the modules applied, a wide variety of interactive exercises in the field of general and, to a much lesser extent, specialised communication, an ability to customise the program to the current level of learning, an advanced voice recognition system and an ability to interact with the tutor (teacher). While interactive language learning programs of the previous generation were mainly based on the drill-and-practice type of exercise (e.g. multiple choice), programs of the present generation involve a more extensive interaction. All in all, modern didactic programs offer much broader support of the didactic process both on the side of the teacher and of the learner.

In general, a viewpoint can be expressed that the current generation of didactic programs, although based to a larger extent on the so-called artificial intelligence, is still unable to catch up with the user, especially in the context of planning and supervising the (widely comprehended) didactic process in all its stages (especially the complex T-S interaction). Nonetheless, these programs (at least partially) outweigh the man's (teacher's) abilities at certain stages of the process, mainly in terms of its organisation and management, and the presentation of didactic materials. The main advantages of the above-mentioned software primarily relate to: (a)

[31] The touchscreen, depending on technology, may now be primarily operated by a finger (optical, infrared-positioned, capacitive technology) or a special pen (electromagnetic technology).

[32] An interesting feature is its ability to interact with the user. The lecturer/participant standing by the board can handle any program run on the computer, and (s)he can write, take notes, highlight or underline every image/photo/text displayed on the board. All the notes can subsequently be saved, sent via an e-mail, uploaded onto the school server or printed; one can also return to them at any time (e.g. during later repetitions or catch-up classes). It is equally important to pay attention to the use of multimedia programs or films with the possibility of taking notes on freeze-frames and storing them in an electronic form. A significant advantage of the interactive whiteboard is the fact that, if necessary, the learner is more likely to focus on the issue presented, without any need of taking notes at the same time, and that it is possible to share the interactive whiteboard between classrooms, which allows for savings in the school budget – not to mention that it somehow makes teachers independent when it comes to the availability of the computer lab.

simultaneous performance of (the same or different) didactic tasks by many people, (b) rapid assessment of (certain types of) the above-mentioned tasks, (c) simultaneous supervision of work of many learners, (d) permanent access to/use of didactic software, (e) precise supervision of a didactic curriculum (f) integration of a variety of glottodidactic materials, (g) cooperation opportunities, e.g. within participants of a project group or e-learning community, (h) possibility of creating extra space on the Internet conducive to the development of students' individual interests, (i) possibility of students' higher impact on the course and content of teaching, (j) possibility of creating teachers' own workshop (to prepare for classes).

The type and range of deficits of didactic programs result from technical limitations (including the inability to take into account an adequately deep linguistic analysis) and to a greater or lesser degree, properties of the learning object, i.e. the kind of "assimilated" knowledge and/or skills. Contemporary e-learning programs are capable of substituting the individual teacher during their didactic interaction only in the circumstances when it is easy to determine the extent of knowledge/skills, and also when it is relatively easy to formulate a zero-one (yes-no) tasks/exercises testing the degree of (already) internalised knowledge/skills. Examples of such programs include applications aimed at learning different sets of rules and instructions (e.g. operating machinery and equipment, traffic etc.), and other software that checks a specific declarative knowledge (i.e. knowledge of). Some of them can successfully be used for specialised language learning. It is important to be aware of the fact that at times they might not be able to verify knowledge or complex (highly generative) abilities such as language or translational skills, especially when the nature of learning per se involves no possibility (or it is greatly reduced) of programming the zero-one kind of exercises that test the degree and extent of internalised knowledge/skills.

At the end of this brief review of e-learning products, it has to be mentioned that the majority of modern software solutions (including mainly the DP) serve an organisational role of the learning process. These functions can be divided according to some various criteria, for example temporal, i.e. with respect to the time in which e-learning is organised (programs organising e-learning synchronously and asynchronously), referring to the type of communicative medium (mobile e-learning/mobile teaching/M-Learning, stationary e-learning) or the type of e-learning service/e-learning tool (e.g. wiki, webinar, podcasting, virtual classroom, blog) or the criterion taking into account the ratio of the e-learning time to the stationary education time (full form in which the entire learning time is organised via e-learning and mixed forms, such as the before mentioned hybrid/complementary/mixed learning – blended learning where the learning time is organised, to a greater or lesser extent, with the help of e-learning forms)[33].

[33] As indicated by the results of research on foreign language courses based on the so-called mixed teaching which combines learning using e-learning products and the phases of group meetings in the classroom (blended learning, the most favourable ratio of the "traditional" learning time to work involving the use of the computer and the Internet is, more or less, 30% to 70% although 50%-50% may be equally beneficial in certain glottodidactic contexts.

3. Example platforms

a. Tell me more Campus

Tell me more Campus software is a modern version of the well-known *Tell me more* (*TTM*) program available primarily on CD-ROM discs. It has an intuitive interface, and has been designed in order to learn foreign languages (including English, German, French, Spanish, Italian, Dutch, and also other languages such as Chinese, Japanese or Arabic – solely on CD-ROMs though), both in the scope of a primary as well as specialised language at different levels (from A1 to C1). Due to the fact that the *TMM Campus* system is most developed in the area of learning English (cf. *TMM Campus* 2 in 1 offered as part of a complete course allowing study of British and American variations of English) or, to a lesser extent, German. Further attention will be devoted to education in the context of these foreign languages. That said, one can work on one's own through successive stages of a complex (modular) educational path, following the curriculum or as part of extracurricular activities.

The program is equipped with, among other things, an advanced (though not always functioning properly) speech recognition system (Spoken Error Tracking System) and 3-D animations in order to practise pronunciation. These properties enable a wide range of activities including: phonetic exercises (pronunciation of words, sentences), speech training such as for instance dialogues, combining images with words, organising different elements or virtual conversations and film synchronisation. The software company assures that it is possible to hold a fairly relaxed (not forced) conversation with a native speaker (in American English). The trial tests conducted (tests of independent work and work with students by P. Szerszeń in 2014) have shown that it is basically real, but to a rather limited extent, i.e. reduced to a specific topic and use of certain formerly provided phrases, words, etc. Nonetheless, one should be aware of the fact that the program offers a new interesting type of exercise which is worth further development and application especially in the context of specialised language learning (e.g. during exercises of specialised vocabulary in a particular communication situation).

In total, the *TMM Campus* system offers more than 40 types of exercises developing a variety of skills such as: listening comprehension, writing, speaking, or the ability to interact with the tutor.

Of central relevance are tools for creating interactive materials based on the previously prepared text, tracking progress of learning, modules introducing system functions, a guided tour option, an ability to create a personal account, online functions (for example tests checking the level of progress, certification testing, lessons organised around the *Euronews* program, an option to export data to a Pocket PC, MP3 player, iPod, audio CD, a print function or a choice of interface language in over 15 languages).

The development of skills in the range of specialised language in the *TMM Campus* system is possible to the largest extent in English – at C1 level one is offered the thematic areas as presented in Table 2.

Professional situations/level C1 (English)	
Examples of professional situations trained	- participation in discussions on the project or product, conducting negotiations with more or less favourable conditions; - participation in various discussions with customers and business partners; - exchange of information on the company's operations, for example employment, projects; - organisation and conduct of meetings; - public speaking
Fields and functions within which specialised vocabulary is acquired	automotive industry, banking and insurance services, pharmaceutical industry, medicine and health, hotel sector, construction industry, energy economics and petroleum industry, information technology industry, sales, marketing and advertising, telecommunications, aerospace industry, military and defence industry, accounting and finance, human resources, management, office, customer service, information technology, law
Fields within which vocabulary is available in special databases	marketing and advertising industry, information technology, aerospace industry, architecture and construction industry, banks and finance, local governments; medical assistance; security and defence industry, tourism industry, natural environment and meteorology, business ethics
The subject of the video lesson based on broadcast fragments from *Euronews* television program	video lessons (British English): culture and society, universe, politics, economy, science

Table 2. Thematic modules in Tell me more Campus (based on AUROALOG advertising materials, http://auralog.software.informer.com/).

The authors of the program also offer video recordings relating to the following thematic areas: culture and society, universe, politics and economy or science. As one can observe, the aforementioned information presented by the manufacturer is of a fairly superficial and general character.

b. The Linguistically Smart Software System for Glotto- and Translation Didactics

Another example of advanced software (the DP sensu stricto) whose authors have made an attempt to deal with the aforementioned problem using the latest achievements in the field of computer analysis of the text is *the Linguistically Smart*[34]

[34] *Smart* refers here primarily to the way of analysis of linguistic data input by the system user and return metacommuniction applied.

Software System for Glotto- and Translation Didactics[35]. The novelty of this system lies primarily in the fact that automatic evaluation of utterances produced by learners runs both on the purely linguistic level and the level of translation. Indeed, any assessment of this kind is generated by the system in the form of return metacommunication, i.e. messages that not only inform about correct or incorrect task completion, but also, in the case of an error, its type is revealed. Generating metacommunication is possible mainly due to the implementation of grammatical and orthographic, and morphosyntactic and semantic analyses to the program module. In short, *the Linguistically Smart Software System for Glottodidactics and Translation Didactics* allows to develop grammar and terminology skills making it possible to refer online to the issues previously discussed in class thanks to specially developed interactive e-learning modules, presenting grammar and terminology, and checking their practical knowledge in translation tasks.

Conclusion

Bearing in mind the remarks on the role of modern electronic media in teaching and learning (specialised) languages, one should admit that their potential lies in the development of e-learning products, in particular didactic platforms which are able:

(1) to support to a great extent, and sometimes substitute the teacher~~'s~~ in the form of verbal, written and audiovisual messages. Their didactic success depends on the degree of functionality of hardware tools (their technological advancement) – for example, their compatibility with other hardware and software systems, processor speed, screen size and resolution etc.~~).~~

(2) to replace only some of the teacher's actions directed at assessment of the student's work.

The superiority of the DP over the teacher is manifested in particular in the field of management and organisation, especially in the case of: (a) simultaneous performance of (identical and different) didactic tasks by many people, (b) rapid assessment of tasks (c) simultaneous supervision of work of many learners, (d) non-stop use of didactic software (de facto), (e) precise supervision of didactic curriculum, (f) integration of many different glottodidactic materials, (g) collaboration opportunities (e.g. within participants of project groups or e-learning communities), (h) opportunity to develop individual interests of many students, (i) opportunity to increase students' impact on the course and content of teaching and (j) opportunity to create their own workshop by teachers preparing for classes etc.

By and large, modern didactic platforms can support~~,~~ and even take over more and more activities of the teacher (in particular those of the managing and organisational character), but in many cases they do so only to the extent strictly defined

[35] This system is based on the prototype of an already known system developed during the implementation of previous projects at the University of Saarbrücken. The Linguistically Smart Software System for Glottodidactics and Translation Didactics has been created thanks to cooperation of four partners – three universities: the University of Warsaw, A. Mickiewicz University in Poznan, Saarland University with Institut der Gesellschaft.

(programmed) by the teacher. Despite this fact, some of them (like *Tell me more Campus* program) enable a more advanced machine-human interaction and in some contexts of linguistic communication, especially specialised communication that allows for a fairly free, though of course still somewhat limited, interaction (i.e. incomparable with the human-human communication).

All considered, one can formulate a general conclusion emphasising the need to increase the share of online didactic modules in teaching specialised languages based on existing and/or new (tested) models of didactic modules. The Internet didactic modules currently developed should take into account the needs of specific users and/or professionals in the field of particular areas, be based on didactic tasks created as a consequence of observations of specific tasks in specialised communication and make greater use of research results in the field of text linguistics and contrastive studies (especially corpus-based) both in the form of scientific publications and specific tools, e.g. modern language portals.

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Part II.

Aviation English Training Practical Issues

ICAO Circular 323: Guidelines for Aviation English Training Programmes

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Abstract
Documentation is available for trainers of aviation English yet is this guidance material being used? Jointly developed by ICAO and ICAEA it centres around training content design and development, training delivery, the trainer and training the trainer. Each is examined in the context of aviation English. This document is essential material for teachers and trainers.

The question for today is "ICAO Circular 323 – is it dead or alive?" The document seems to be above all a forgotten one. The fact that no-one bothers to read it or refer to it in the pragmatic world of trainers is worrying. We want to know why.

Of interest not only to trainers of aviation English but also to language proficiency test providers and developers, course book authors, raters, safety experts, aviation consultants and linguistic researchers is a shared commitment to the development of effective aviation English training programmes.

If we look at what is happening in aviation English training just now as we must ask ourselves:

- is our training on the right lines?
- are we in tune with industry demands?
- are we making an impact in the safety of the skies?
- are our delivery methods focused correctly?
- do we need to change our impact, revamp our methods, adapt to a sharper technology in training?

In a word, is our current 'best practice' good enough?

But first, let us turn the clock back a little – to 2007 in fact when ICAO Circular 323 – **Guidelines for Aviation English Training Programmes** was conceived. This was joint undertaking by the International Aviation English Association (ICAEA) and the International Civil Aviation Organisation (ICAO). Four workshop groups at the ICAEA Forum in Cambridge (UK) in 2007 produced the structure and basic content laying down the essential principles for Aviation English training programmes. ICAEA Board members drafted the document that was then jointly edited by ICAO/ICAEA. The final document was published as an ICAO Circular, No. 323, in December 2009 - a comprehensive overview of the field against the standard principles of training, of course materials, of trainer profiles, of targets and objectives.

[36] For over 30 years Dr. Terence Gerighty was Director of an English language training centre (ELT Banbury International) specializing in ESP and teacher training (CTEFL). He is the author of language training materials for pilots, air traffic controllers and cabin crew. Terence is currently a Vice-President and Treasurer of ICAEA.

But all that was in 2007. Have we moved on since then?

Are the Guidelines still relevant?

Thus the opening question should be repeated: "Is ICAO Circular323, with its guidelines of best practice, Dead or Alive?" Or perhaps one should also ask how many people are familiar with this document?

It's important to understand the situation in 2007 – although much teaching of English for aviation was taking place and books on English for Aviation were in the pipeline, trainers were still trying to work out what Aviation English was and desperately searching for experienced Aviation English teachers to bridge the gap between English language learning and the world of pilot-controller exchanges.

Why then did we need the Guidelines for Aviation English Training in 2007?

First of all, there was no accreditation! Everyone was doing their own honest thing without much guidance as English teachers were discovering this new world of English for Special Purposes, approaching the world of Aviation with considerable ignorance of its operations and with little help from the industry itself - Aviation English was a new profession.

The terms of reference were well known however and were clearly laid out in the famous ICAO document 9835 **(Manual on the Implementation of ICAO Language Proficiency Requirements)** that introduced us to

- ICAO Rating scale & holistic descriptors
- Operational communicative requirements

together with a series of premises which have since become part of the Aviation English landscape:

- Aim of language upgrade: ensure clear pilot-controller communication
- Solid familiarity with ICAO Standardised Radio Telephony phraseology
- Aviation language: a specific set of lexis, structures & functions
- Criterion of proficiency: operational efficiency
- Communication: predominantly oral
- Impacts: on public safety, careers, economy

In meeting the above premises, the authors preparing ICAO Circular 323 sought to address a number of issues. Among them:

- Realistic training durations
- Differences between learners
- Communicative nature of language required
- Value of training content
- Operational relevance
- Effectiveness of blended learning
- Need for remedial and recurrent training
- Qualities of appropriate language trainers

The crux of the new Guidelines centred around four major areas of training and was the result of the work at the ICAEA Forum which took place in Cambridge in 2007, namely:

- Training Content Design and Development

- Training Delivery
- The Trainer
- Training the Trainer

Each of these is in turn is examined in the tight context of Aviation English Training.

Training Content Design and Development focuses on the design of course materials and their relevance to the operational world of pilot-controller exchanges;

Training Delivery is all about different methodologies for the implementation and measuring of training objectives in differing various training environments. Providing a supportive learning environment that considers the integration of distance and classroom learning together with lesson duration and frequency. Exploring the effectiveness of blended learning in the operational environment and restrictions that apply to learning by busy professionals.

Seeking appropriate, user-friendly training materials and activities relevant to the operational environment of pilots and air traffic controllers. A progressive plan of progress tests with remedial and recurrent training. The eventual aim being to achieve the required (ICAO) level of proficiency in aviation English.

The **Aviation English Trainer** comes under the microscope, as their qualifications are examined, their profile refined, their expected familiarity with aviation operations defined and their competency to achieve targeted aims clarified. Additional to recognised English language teaching qualifications will be knowledge of the operational environment of their (pilot and air traffic controller) students – terms and phrases most commonly encountered. Exposure to the operational environment will greatly assist understanding of what specific language skills are needed for aeronautical communication. Establish interaction between language teachers and subject matter experts (SMEs) in order to better harmonise the language teaching with technical studies.

Some pointers:

- Create conditions for speech production
- Use the ICAO Rated Speech Sample Training Aid (RSSTA)
- Motivate and support students
- Prioritise communicative effectiveness
- Observe, coordinate, facilitate and learn
- Be aware of safety critical language, and
- Be sensitive to cultural differences.

Finally, the essential **Training of the Trainers** is seen as a vital requisite to ensure their familiarity with the Aviation environment and the development of specific language awareness.

Some practical training measures for trainers:

- Sitting in during simulator training sessions
- Listening to live (or recorded) ATC communications
- Using rated speech samples
- Developing lessons from raw data

- In-flight incident reports, emergencies
- Review examples of communication in plain language
- Adapting material to specific needs
- Working in tandem with SMEs.

Additionally for trainers, creating awareness of specific language needs:

- Language functions in aviation
- Language objectives and proficiency
- Criteria for content based learning
- Safety critical nature of language
- Social and personal impacts of aviation language training.

Let us remember, *Guidelines for Aviation English Training Programmes*, was delivered to the young world of largely inexperienced Aviation English teachers long before a fuller understanding of the notion of the implementation of ICAO Language Proficiency Requirements.

The Guidelines laid down the initial building blocks for establishing and developing Aviation English programmes against the background of an innovative Rating Scale and the holistic descriptors.

In ICAO's own words, the aim was *…not to recommend or accredit any given training programme or school…This circular does seek to lay down a set of principles of best practice.* 'Best practice' is what the Guidelines document is about. As such it lists essential elements of Aviation English programmes – a kind of check-list of items to ensure that all angles are covered. Its conclusions are perhaps its best legacy:

- Aviation English training and testing are ultimately about safety;
- The relevance of language objectives and activities are to be assessed in the light of real-life operational requirements;
- Aviation English training must have a predominantly communicative bias;
- Content-based language training is more efficient, motivating and cost-effective; and
- There are no short cuts to training competent Aviation English trainers.

So – back to our opening question – **Dead or Alive?** If it's dead, then at least we have a valuable historical insight into the making and development of Aviation English training in the first phase of the LPR implementation. If it's alive, then let's continue to build on those essentials of best practice laid down in the Guidelines.

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Designing an Aviation English Instructors Training Course

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Abstract
The article deals with the problem of designing a training course for trainers – Aviation English Instructors in accordance with language requirements and teaching recommendations of ICAO.

Introduction

It is obvious that any general English teacher should go through a special training to become an Aviation English Instructor (AEI) in accordance with ICAO recommendations and language requirements.

The need for such a specialist training is justified by at least two major reasons. Firstly, the English language in aviation is a globally agreed working language, which is presented by various genres – from documents and aircraft manuals to radiotelephony communication between flight crew and air traffic controllers. Secondly, this is a safety issue, which is a priority when dealing with language related human factors.

Therefore, the aforementioned factors are much too important not to ignore providing special training for AEIs.

Discussion

The training course for an Aviation English Instructors is a training course for trainers. One of the possible approaches to the course design is that proposed by T. Hutchinson & A. Waters (1996). According to this approach, the course should be designed on the base of clear information provided:

What is the AEI course?

This is a course to meet specific AE instructors' needs defined by AEI qualification competency.

What does the course design involve?

The course design involves:

a) ways of describing competencies;

b) models of learning; and

c) needs analysis – all together for making solutions about course design approaches.

How is the course design applied?

It is applied through syllabus design, materials evaluation and selection; materials design and teaching activities selection.

What are the criteria for the training course evaluation?

There could be three main criteria for the course design evaluation:

- targeting aviation language (derived from Needs Analysis of relevant communication),
- developing a specific competency profile,
- making the AEI contribute to flight safety through awareness of human factors issues in aviation communication.

What is a role of the trainer?

A trainer should be a specialist in ESP teaching and having experience in teaching or working in aviation.

The training modules of the course could be developed in accordance with the competency profile. In the Table 1 below one can see the name of the competence and its corresponding materials to be learnt/taught.

NAME	CONTENT
Aviation language competence	Radiotelephony phraseology; plain English in aviation context
Communicative competence	cooperative and culturally sensitive radiotelephony communication
Technological competence	flight operation and air traffic control, aircraft and aeronautical equipment
Assessment competence	ICAO Language Proficiency Rating scale
ESP teaching competence	ESP teaching skills adapted to AE instructors' needs

Table 1. AEI competencies and contents

In the next Table 1 the documents and other possible resources are presented. They can be used for developing the thematic modules.

NAME	RESOURCES
Aviation language competence	ICAO Doc 9835, Annexes 1, 6, 10, 11; NAA documents; textbooks available
Communicative competence	Articles and manuals describing language misunderstandings in radiotelephony communication; cooperative principle in interaction, cultural identity in professional communication
Technological competence	ICAO doc. 9432, 4444; other materials available including personal familiarization with the working settings
Assessment competence	ICAO Doc 9835; Cir 318; textbooks on testing [e.g., Testing for teachers by Huge], speech samples with ICAO language proficiency levels
English for Aviation Purposes (EAP) teaching competence	ESP teaching skills adapted to AE instructors' needs; ICAO Doc 9835; Cir 323; textbooks on ESP [e.g., English for Specific Purposes by T. Hutchinson & A.Waters]

Table 2. AEI competencies and materials

It is important to keep purposeful training, which means focusing on each AEI

competence. Therefore, it is recommended to develop thematic modules according to the names and content of the competencies. Thus, teaching Module '**Aviation language competence'** will provide Aviation language knowledge [standard phraseology, ICAO lexical domains and basic grammar structures, idiomatic language under a lexical domain], to be exposed to various accents in radiotelephony communication, practicing in radiotelephony comprehension and use, etc.

Teaching Module **'Communicative competence'** will make it possible to familiarize AEIs with communicative functions in radiotelephony communication, to develop awareness of discursive-interactional strategies, to understand the role of cultural identity, to understand language behavior in emergency situations, etc.

The Module **'Technological competence'** will focus on special training by the aviation specialist as an introductory short term course to familiarize AEIs with aviation equipment, procedures as well as practicing the use of terminology.

The Module **'Assessment competence'** will have to introduce AEIs to language testing theory and practices within ICAO recommendations, to familiarize with ICAO language proficiency descriptors, typical speech samples, practicing at language proficiency levels identification; practicing in test task design for formative and summative [end-of-course] assessment, etc.

The Module **'EAP teaching competence'** will enable the AEI to gain more knowledge on teaching special language, to practice communicative teaching skills focusing on specific aims of AE, e.g., pronunciation training, simulations, code switching in role-plays. The Module should also be focused on basic knowledge on special materials selection and syllabus design, methods to collect the learners learning needs, etc.

Conclusion

The training of trainers course design is to be oriented on learners' needs, which in our case are the training needs of an AEI. The instructors can come from the industry or from the academic environment, which is general English language teaching. Our working experience proved that general English language teachers can become an AEI after a special training that focuses on developing a special qualification competency of teaching pilots and controllers Aviation English in accordance with ICAO language requirements. This training course should be modular with each individual module focused on special training needs identified by the corresponding competence content.

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Aviation English Games

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Abstract
The paper presents four language games adapted to Aviation English.

Here are four highly motivating methods that any EL teacher may be familiar with – including running dictation –, adapted to Aviation English. It combines TPR, inter-group competition, time-pressure, intensive pair interaction, role-switching, checking and clarifying and operational problem solving. Ideally, it needs a room where people can move around, and works better with groups of less than 40. The practical hands-on for 20 minutes (using the Air Cal incident pilot/ATC transcript) will be followed by a discussion of the value to AE training of such an exercise as well as the sharing of three other highly motivational techniques.

Game 1:

AVIATION 'MESSENGER AND SCRIBE'
(adapted from 'Dictation' by Davis & Rinvolucri)

- **PARTICIPANTS** – class divided into threes or twos.
- **AIM - Messenger** – to read, line by line, an aviation dialogue on the wall and come back to the scribe with it memorized for transmission

Scribe – to write down exactly what the messenger transmits, checking wherever necessary

Checker – to make sure what is written makes sense and to request the messenger to re-check if it does not seem to do so.

Note - These roles will be switched more than once during the process of the exercise.

- **PROCESS** – The teacher will post two large printouts of a pilot/controller dialogue involving a non-routine incident. The printouts must be as far as possible from any group.

- The scribe will have a blank sheet of paper on which he is to write out the incident dialogue as accurately as possible.
- On a signal from the teacher, the messengers will rush to the nearest printout, memorize the first line and run back to the scribe to transmit the message. He will then run back for the next line.
- After five minutes, the teacher will announce 'change roles!' when the Checker becomes the Scribe, the Scribe becomes the Messenger and the Messenger becomes the Checker.

- After another five minutes, another role-change is made.
- The first group to complete will put up a hand, but they must check their script while the others are finishing.
- After a set time, scripts will be exchanged between groups and the correct version is projected on the screen. The most accurate completed version is the winner.

- **DISCUSSION STAGE** – groups will merge into fours or sixes to discuss the completed dialogue, with key questions – What is happening? What went wrong? Whose fault was it? How could the dialogue have been better managed?
- **SKILLS –** All rating scale skills plus checking and confirming, and communicating under pressure (good to use Air Cal incident transcript).

Game 2:

INTERRUPTIONS, or "JUST LET ME FINISH!" or "CHECK, CONFIRM, CLARIFY"

- **Groups of 3 Players:** Reader / Interrupter / Adjudicator
- **AIM: Reader –** to read a short aviation story aloud

Interrupter – to make ten different reasonable interruptions based on details in the story

Adjudicator – stops reader if interruption is fair, if not, waves to continue

- **PRE-TEACH/ELICIT** – interruption etiquette and structures – 'Sorry…', 'Excuse me…', 'Could you repeat…', 'Sorry, how many…?' etc.
- **PROCESS:** Reader begins reading his story (does not show the text) Interrupter can only butt in at a natural pause. Adjudicator controls the flow and logs the correct interruptions
- **SKILLS: Reader:** Pronunciation and Fluency

Interrupter: Comprehension, Interactions, Structure, ability to check, confirm, clarify

Adjudicator: Comprehension, Interactions, Structure

- **WHERE'S THE FUN? Reader** is trying to finish his story before the interrupter makes ten interruptions

Interrupter is trying to make ten different interruptions based on the story before the reader finishes

Adjudicator is trying to keep things in order!

- **END OF GAME**: When story is finished, reader puts up hand – the winner? When ten interruptions have been made, interrupter puts up hand – the winner? Adjudicator acknowledges genuine interruptions

Game 3:

BLINDFOLD TAXI

- **PART*/*CIPANTS –** teams of up to ten
- **AIM: Pilot** - to reach take-off without a runway incursion in a low-visibility situation as quickly as possible.

Controller – to assist pilot in reaching take-off through clear directions and readback checks

Opposing team – to make the taxi route difficult but possible

- **PROCESS**: - Pilot is blindfolded and disoriented, Opposing team rearranges furniture to make a new taxi route to the door which is take-off point.
  - Controller has a fixed point representing tower. Gives careful and detailed taxi instructions, one at a time.
  - Pilot reads back each instruction and then acts on it.
  - Pilot must not touch the furniture or he has crashed.
- **SKILLS – Pilot -** Situational awareness /give readbacks, check and confirm / Interactions, Comprehension, Pronunciation, Fluency

Controller – clear instructions, judgement, Pronunciation, Fluency, Interactions

- **WHERE'S THE FUN?** The situation is timed so there is a competitive edge. Another team will follow, trying to reach take-off quicker than the first team, but they have no control over the route. The competitors who keep the coolest heads and have the controller with the best judgement and the pilot with the best response to instructions will win.
- **END OF GAME:** There will be a time limit to how many teams can complete their **blindfold taxi**, but scores/times can be recorded so that other teams can try another days to improve on the times achieved.
- **MOTIVATION:** This game has a close parallel to a real aviation situation and pilot and controller trainees will respond to the challenge. It also calls for carefully worded instructions and accurate readbacks to ensure optimum communication. Good to reinforce with the real-life youtube of a runway incursion.

Incident, e.g. www.**youtube**.com/watch?v=cofPH1y9vuw

Game 4:

AVIATION ARTICULATE

(based on the popular board game 'Articulate')

- **PARTICIPANTS –** teams of four or five
- **AIM: Team -** to be the team to reach the finish or a set score first

2 Describers – have one minute to describe as many aviation words or phrases as possible without using each word in any form and for the team to guess the word

2/3 Guessers must guess the words the describers are conveying as quickly as possible, by calling out possible words.

- **MATERIALS REQUIRED** – laminated cards of dozens of everyday aviation words, not too technical, but increasing in difficulty, in categories e.g. verbs, nouns, adverbs, aerodrome, in flight, emergencies, etc. (see sample) / 1 minute timer
- **PROCESS –** The words and phrases are in categories which rotate.
- Each pair of describers take words from the next category and try to describe as many as possible to the team within one minute. You can only start a new word when the team has guessed the last one, but you can 'pass' on a difficult word.
- The guessers call out words until they hit the right one.

- After one minute the number of correct words guessed is totalled
- **SKILLS** – Vocabulary, paraphrasing, communicating under pressure, pronunciation
- **WHERE'S THE FUN?** - This is a high-pressure vocabulary game, always working against the timer and trying to communicate as rapidly as possible. The teacher can decide if miming is allowed, but that might detract from the vocabulary skill required.
- **END OF GAME** - After three of four rounds, the team with the highest score is the winner, **or** the first team to correctly guess 20 words.

Specialised Language Teaching and Learning through Modern Technologies

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Abstract
The paper aims to familiarize language for specific purposes, including Aviation English, trainers with the modern methods of teaching by introducing basic types of such teaching and learning, presenting e-learning modules and lesson planning and giving suggestions for developing courses based on modern technologies. It also defines the objective of hi-tech class and presents a brief outline of teaching approach using modern technologies.

Introduction

One of the well-known facts nowadays is that students are changing. Contemporary ones have differently working brains than those years ago and are technologically literate. The natural and familiar learning environment for them is via modern technology tools rather than books and realia. Thus teaching methods should adjust in order to be effective. There is also a threat that teachers who do not use technology may be replaced by those who do. Hi-tech classes are especially popular in a specialized context, e.g. aviation, as one can easily access all specifications, diagrams, photos etc. in the web without a need of creating them alone. However, interaction with technology is not recommended, as students should still interact with each other as these are real humans with whom they are going to communicate with in their professional life.

1. Basic types of learning through modern technologies in specialised contexts

It is worth mentioning two fundamental approaches to using online technologies in language acquisition, namely *distance learning* and *blended learning*[37]. The first one is based on students doing online out-of-class work where the need of a well-designed platform arises. The other constitutes a blend of different information sources that can be used in language teaching including out-of-class learning by using innovative computer technologies. The first one constitutes a convenient tool for mobile professionals. The latter has become very popular in teaching Aviation English lately. It mainly focuses on students' developing for themselves learning strategies that would enable them to extract information from texts and recordings in accordance with the purposes for which the text or recording was being studied. The instructor's role here is conceived as being that of motivating the students to study, providing the

[37] More on blended learning approach for teaching ESP: Tarnopolsky O., (2012), *Constructivist Blended Learning Approach to Teaching English for Specific Purposes.* A. Borowska [ed.], London: Versita.

opportunity and materials for them to do so and later providing appropriate feedback. Thus Internet based activities seems not to be supplementary anymore, but they become sort of built-in component:

> the possibilities provided by the Internet for successful language learning, especially in what concerns its learning for professional communication, are so broad that no approach can be considered as fully adequate if those possibilities are neglected (Tarnopolsky 2012: 123).

As in traditional teaching, for specialised language teaching and learning through modern technologies we need to define realistic objectives, basing teaching about the needs and characteristics of learners and develop appropriate methods and materials. Nevertheless, here we may also need to design a didactic platform. One of the possible methods is presented below.

2. E-learning modules and selected components of the platform

One of the primary factors in the development of e-learning within the framework of specialised language learning is a systematic reflection on the organisation of e-learning education, in particular planning and implementation of the so-called (glotto) didactic modules.

According to A. Thillosen (2011), didactic modules should be produced in the four main phases: conception (C), didactic structure (DS), formal structure (FS) and operational structure (OS). This model can be used in the development process of glottodidactic modules, and can be presented in the following manner:

I. Conception (C)	**II. Didactic structure (DS)**	**III. Formal structure (FS)**		**IV. Operational structure (OS)**
Didactic-methodological model **C1** professional environment tasks skills **C2** educational environment skills tasks	**DS1** **Forms of work** (e.g. individual/group work; simulation) **DS2** **Information base** information shared/individually worked out **DS3** **Outline of module scenario** lesson plan, frequency of activities, auditorial and virtual phase planning, tutoring, control etc.	**FS1** **Individual lesson planning** skills; tasks, teaching content and forms of work **Lab use** software accessibility, planning, management, communication, cooperation, control and evaluation	**FS2** **Multimedia library/work outcomes** sources shared, own materials worked out (WBT, CBT[38], tele-seminars etc.), following principles of optimal design, and navigation, multimedia	**OS1** **Multimedia scenario** data concerning (glotto)didactic materials in the module, page order, layout of content etc. **OS2** **Work plan of construction of didactic modules** work schedule forms of control of the results, use of lab, contact in case of questions, use of cooperative

[38] WBT – web-based training (teaching via web applications), CBT – computer-based training (teaching via off-line applications, closed on e.g. CDs, DVDs).

			representation of contents, web data updating; securing work results etc.	forms of work etc.

Table 1. The phases of creation of didactic modules used in (specialised) glottodidactics (based on A. Thillosen, cf. P. Arnold, L. Kilian, A. Thillosen, G. Zimmer, 2011: 126 ff.).

In the first phase (C) one should establish which tasks ought to be the subject of learning in a given didactic module so that students acquire skills necessary for solving tasks during their later education stages and/or professional life. In the second phase (DS) decisions are made relating to the didactic structure of the module. In the third phase (FS) a detailed structure of teaching units (FS1) is formed. The last phase (OS) stands for concretisation of existing decisions.

An example project which makes use of glottodidactic modules (*sensu largo*) to learn a specialised foreign language is, supported by the European Union, an initiative called "IDIAL for Professionals (IDIAL4P): regionalised – intercultural – qualifying– professional", the aim of which is to strengthen the role of the German language in Eastern Europe as well as Russian and other less popular Eastern European languages: Polish, Bulgarian, Slovenian and Hungarian in Germany. In view of such a strategic objective, an online version of prototype modules has been developed in order to learn a specialised foreign language which can be extended in case of education continuation. Among many important areas of communication included in such modules, one needs to mention, among other things: information technology, economy, tourism, politics, journalism, office-management etc. According to the authors of the project, whose patron is the European Union's *Lifelong Learning Program* (LLP), the modules can be used as part of business training and professional development, language education in high schools, technical and vocational schools as well as colleges and universities[39].

As far as the DP components are considered, we would like to focus solely on a brief presentation of two such examples: WBT (web-based training) and the aforementioned pedagogical agents or intelligent tutoring systems.-When it comes to the above-named examples of the DP components, it should be noted that both the former and the latter can provide/sometimes provide separate e-learning solutions. The Internet applications (WBT) are usually equipped with a browser and the so-

[39] At the end of the project methodological guidelines have been passed to those interested for the development of further modules according to the IDIAL4P conception. 10 partner institutions: 3 German, 3 Bulgarian and one from Poland, Austria, Slovenia and Hungary participated in the project which lasted from 1st Jan 2010 to 31st Dec 2011. Cf. also other projects supporting the development of various communication skills, e.g. for reading comprehension in the German language see FörMig project, ch. 2.6, for the Russian language see, for example, Russisch HQ, http://www.uibk.ac.at/elearning/veranstaltungen/russianhq_elearning_praesentation_neu.pdf (2nd Feb 2014).

called plug-ins, and sometimes operate in joint educational scenarios alongside less popular closed off-line applications (computer-based training, CBT), distributed on various data carriers, e.g. CD-ROM, DVD. In addition to WBT/CBT, an increasingly important role is played by probably the most technologically advanced Internet applications of intelligent tutoring systems (ITS) and the so-called pedagogical agents (PA).

In addition to more advanced web applications, one needs to mention vocabulary bookmarking systems effective particularly in vocabulary acquisition, also used in the so-called mobile education, making it possible, among other things, to create traditional flashcards, enriched with recorded words/expressions, illustrations, ability to record in the MP3 format or the so-called long-term learning system allowing for efficient repetitions. On a critical note, one should recall the fact that in the process of creating flashcards only the program "itself" is involved while according to traditional vocabulary memorising sessions it is the student who writes them manually, which, as a matter of fact, supports memorising to a greater extent. The first are programs that adjust to the user's properties, i.e., for example, to the extent of knowledge possessed, way/ways of acting or information seeking and are able, depending on one's needs and expectations, to assist in the learning process (e.g. by offering accordingly adjusted exercises). Hence, and as a consequence, one can distinguish between micro-adaptive systems, the task of which is to determine the scope of assistance and to adjust to it, and macro-adaptive systems (requiring even lesser workload) that, together with the teacher, adjust the learning environment etc. (an example of the most advanced software for learning foreign languages using a wide range of games and simulations: pedagogical agents[40]).

Another example of advanced software are pedagogical agents whose job is, mainly, to respond properly to the user's preferences, classify information and solve various problems on the basis of experiences gathered. The figure of a man (e.g. an animated 3D figure or an avatar) is a visualisation of the pedagogical agent, and its actions resemble that of humans. Pedagogical agents use spoken texts for communication and can occur in various roles including, for example: trainers, advisers, experts, people asking questions or those accompanying the learning process.

3. A brief outline of hi-tech language for specific purposes teaching approach

The following is a brief outline of hi-tech LSP teaching approach that has been used by LSP trainers in adult professional learning process, though sometimes subconsciously. It employs elements and features of some other well-known teaching approaches, e.g. Direct Method, Cognitive Approach, e-learning techniques, with the stress put on Aviation English teaching context:

- an emphasis on communication or communicative competence;
- a renewed interest in professional strictly limited vocabulary;

[40] http://www.alelo.com/alelo_inc_rt_its.html, 13th Dec 2014

- contextualization of all teaching points through the use of audiovisual aids, texts or other appropriate means;
- the use of mother tongue and elements of translations are permitted after explanations given in the target language for understanding specialized lexis only;
- proficiency in the target language is seen as an ideal goal;
- deductive explanation of grammar rules is preferred;
- structural patterns are taught using repetitive drills – especially in Aviation English communication practice;
- pronunciation is emphasized, since it is considered crucial for students to sound natural with special attention being paid to intonation;
- the teacher is viewed as a facilitator;
- group work and individualised instructions are required;
- the importance of comprehension is emphasised – especially listening comprehension in Aviation English context;
- repetition and revision are seen as crucial – rate of reaction is especially important in Aviation English communication context;
- successful responses are immediately reinforced;
- errors, though inevitable during learning process, serve as useful examples for interpretation and remediation.

All of the above features are recommended to be accompanied by technological equipment to serve the purpose of a perfect model of hi-tech professional language teaching class.

4. Some practical suggestions

Following the outline of some of the issues that need to be taken into account in a discussion of specialised language teaching and learning through modern technologies, it might be appropriate to outline some practical suggestions deriving from instructors' experiences in developing English and German for specific purposes courses for intermediate/advanced university students as well as professional training.

The objective of a high-tech class is to combine various skills and competencies of language learners through the use of online tools and material that for sure can provide a variety of activities in the language classroom and enhance work out-of-class.

Generally speaking, blended learning students particularly enjoy using their smartphones for looking up the meaning of new words and their equivalents in their mother tongues as well as using tablets for not only taking notes during classes, but also preparing oral production, e.g. in order to provide a brief summary of the topic in question. Nowadays they appreciate an interactive whiteboard as a tool for grammatical structures being presented and drilled. In the aviation context, they especially enjoy real-life situations such as dialogues between two speakers. The lines of each speaker should be kept fairly short, though natural. Inductive approach is welcome, supported by a series of examples the teacher presents to the students thus leading them to induce a grammatical rule or a word meaning for themselves.

Development of computer programs called *concordances* was expanded by the appearance of corpus linguistics that aims at determining all possible ranges of meanings and combinations of lexical units within a certain language (Tarnopolsky 2012: 124). Therefore, improving vocabulary may be done through compiling concordances of lexical units with the help of computer programs. This idea requires cooperation among linguists, technicians and professionals.

All of the available online courses already develop reading and listening skills, but the stress is hardly ever put on intonation learning. We all know that changing the intonation can change the meaning, so teaching patterns of pitch variation are essential as awareness of intonation aids communication. As Bowen (1989:101) suggests, pronunciation features and contrasts should carry meaning with minimum redundancy that will offer additional clues affecting interpretation, i.e. the student should rely on what he hears (and then produces) rather than on an intelligent estimate of what the situation calls for and some tasks should be designed to give practice when the students' attention is on the content rather than the form of the message.

Last but not least, it looks[41] nowadays like a motivated adult learner is the one who is allowed/instructed during completing tasks to help himself produce foreign language phrases and structures by using modern technology tools. In a carefully structured course learners are immersed in multi-media language presentations. Since oral communications depends on more than mere linguistic skill, it is felt that cultural, non-verbal, situational ingredients should permeate the presentation. Here film strips are the dominant medium: students watch a sequence, then summarise it in their own words or repeat the material chorally without looking at the transcript.

Nevertheless, some possible limitations may be observed in the hi-tech class approach. One is the training required for an ideal teacher. He (or she) has to have a perfect command of the target language if he is not a native speaker. Besides, he also has to be professionally competent in the field of knowledge if he is to convey information and instruction via the target language, as well as sometime in his mother tongue. Additionally, the trainer should possess the working knowledge of software and technological tools in use, let alone psychology that may be helpful for interpersonal problems which could arise. All of those trainer's characteristics are hardly be expected of many individuals.

5. Hi-tech language lesson planning

Let us consider how the hi-tech LSP language class trainer might use the preceding information and plan his lesson effectively. The following checklist constitutes easy reference or just a reminder presenting crucial points of a successful lesson plan. The checklist presented here is our suggestion and derives from preceding discussion. Each trainer can adapt it as necessary.

[41] Observations conducted during the process of teaching English and German for Specific Purposes to professionals and professionals to be in 2009-2015.

Elements	Yes	No or not applicable
Target audience		
Level of target language		
Objective(s)		
Materials Do I need non-technical teaching aids? Should I use a textbook?		
Modern technologies Which aids/tools/software can I use? Which aspects can be enhanced by using them? Which aids best serve the objectives of the lesson? Did I use the same ones last time? (to avoid routine)		
Variety of learning tasks Is there appropriate variation in language skills required in the lesson? Is there appropriate variation in pair and group work? Is there appropriate variation in student input?		
Pacing variation Is there appropriate variation in pacing (easy vs. harder activities)?		
Revision		
Feedback Do I support students in monitoring their performance? Attitude towards errors: do I elicit self-correction? peer correction?		

Table 2. A checklist for lesson planning

Conclusion

In modern world, the best course design will be the one that not only will help promote a positive social climate in the classroom and also beyond it, but enhance learner motivation and make this modern type of teaching enjoyable for the instructor. The aims of instruction in foreign language teaching, especially in a specialised context, are the most important. This means that in the teaching situation it is the methods used, more than any other factor, that determine the results achieved. If the results do not coincide with objectives, the teaching is at least partially unsuccessful. In any given classroom, let alone a hi-tech one, the trainer must have as clear idea as possible of what s/he wants to accomplish and should choose his or her techniques and materials accordingly. The clearest conclusion to be drawn from a study of the aims of teaching languages for specific purposes to speakers of other languages is the necessity for variety and flexibility of methods. If a course aims to improve mastery of all the different language skills, it is evident that it should include practice in all of them.

Although there is still no evidence that students reading texts or listening to audio recordings online score better than those reading old-fashioned paper versions or

listening to CDs in terms of learning new vocabulary and noticing linguistic rules, they do seem to be more motivated by using online tools and modern equipment constituting their natural learning environment. Thus it is recommended for trainers to remodel their (old) approach to training.

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