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Teaching Aviation English and Radiotelephony communication in line with the newly established International Civil Aviation Organization language proficiency requirements for pilots

Abstract

This paper considers the structure of Aviation English and radiotelephony courses currently provided by the Aviation English Department at The Faculty of Mechanical Engineering, University of Ljubljana. It aims to define teaching strategies in line with new requirements from the International Civil Aviation Organization (ICAO) that mandate acceptable English language levels for pilots and other licensed aviation staff. It shows how the teaching of Aviation English combined with the teaching of standard phraseology can work together for the purpose of training students in their interaction and communication skills. This teaching model serves as a tool for managing classroom processes used for ab initio students as well as in refresher courses in airlines and flight schools. The paper describes the use of teaching materials to encourage the development of interaction and communication. Suggestions are made for ways in which a teacher can foster real-word listening and communication skills and for ways to ensure that students continue acquiring the language skills they need for their profession after the period of study has finished.

Keywords: radiotelephony (R/T) communication, language proficiency requirements, aviation phraseology, International Civil Aviation Organization, European Joint Aviation Authorities (JAA), Joint Aviation Regulations (JAR).

Introduction

At the Faculty of Mechanical Engineering, Ljubljana University, the programme for the aviation students in the Aviation Department includes Aviation English and Aviation English Terminology and Phraseology. The programme is structured as follows:

2nd year: Aviation English 60 hours

3rd year: Aviation English Terminology and Phraseology 60 hours

In the Aviation English course comprising 60 teaching hours, the teacher is faced with a demanding scope of English language requirements based on the syllabus which, in addition, includes basic radiotelephony phraseology; however, students get broader and more specific knowledge in the 3rd year aviation English terminology and phraseology course.

The students should achieve and consolidate level B2 (Independent User) of Common European Framework of Reference for Languages while presenting aviation-related topics, demonstrate a sufficient vocabulary range to speak, comprehend, read and write effectively on a variety of aviation topics. Students should demonstrate a knowledge of English in accordance with S5-JAR-FCL-1 1.200. This special document, issued by European Joint Aviation Authorities contains requirements for future pilots who must be able to demonstrate the ability to use the English language for the following purposes:

- flight: radio telephony of all phases of flight, including emergency situations
- ground: all information relevant to the accomplishment of a flight, e.g. ability to read and demonstrate an understanding of technical manuals written in English, use of all aeronautical en-route, departure and approach charts and associated documents written in English
- communication: ability to communicate with other crew members during all phases of flight, including flight preparation.

Joint Aviation Regulations (JAR) programme enables aviation students to pass international aviation exams in different aviation subjects including Aviation English in order to obtain Airline Traffic Pilot Licence (ATPL).

From the year 2003 when International Civil Aviation Organization (ICAO) introduced their language proficiency requirements the need for some alterations in the programme and new teaching strategies appeared.

Newly established language proficiency requirements

The concern about the role of language proficiency in aviation safety resulted in the ICAO revision of the provisions related to the use of language for radiotelephony communication. When investigating a variety of incidents and accidents it has been found that insufficient English language proficiency on the part of the pilot or the controller had played a contributing role in the chain of events leading to the incident or accident. English proficiency levels (1 – 6) have been introduced. Students should reach at least entry level 4, with an emphasis on listening comprehension, spoken interaction and production. They should be able to communicate on common,

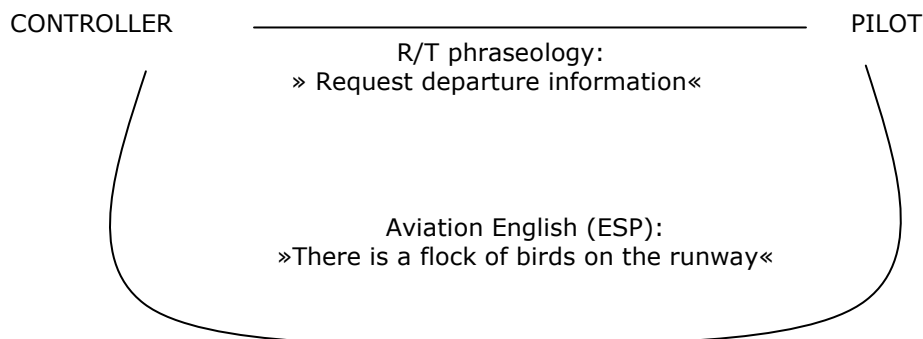
concrete and work-related topics with accuracy and clarity. They should also be able to use appropriate communicative strategies to exchange messages and to recognize and resolve misunderstandings in a general or work-related context. Students should be made familiar with Radiotelephony Communication (R/T) and basic standard phraseology.

Students should be familiar with basic aviation flying procedures and the corresponding phraseologies. The majority of students already possesses private pilot licenses and are therefore acquainted with basic phraseology and aviation terminology. Other students acquire aeronautical knowledge in the course gaining their communicative competence more slowly. Practical experience gives them ability to recognize routine and non-routine circumstances and procedures.

The ICAO language proficiency requirements are focused on R/T communication between the pilot and the air-traffic controller in the international controlled airspace as well as face-to-face communication between pilots in the cockpit and between pilots and aerodrome staff. Furthermore, the training of listening comprehension is inevitable for pilots to be able to understand the air-traffic controller passing clearances, instructions, warnings and information.

The role of aviation English and phraseologies in R/T communications

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.



Before the introduction of new language proficiency requirements in 2003, the »restricted« language of air traffic control, occurring in a specifiable set of what Firth (1957: 182) calls »limited situational context« (Widdowson, 1983: 29) had seemed to be sufficient enough to enable safe and understandable communication between pilots and air traffic controllers. The ambiguous language used in non-routine situations called for general (Aviation English), that covers the situations where there is no standard phraseology available.

The language of R/T phraseology defined

When the intra-linguistic »Q-Code« using wireless telegraphy was abandoned nearly forty years ago, the International Civil Aviation Organisation started to develop a standard language based on aviation procedures, thus providing the norms for worldwide communication in commonly occurring situations of air navigation. The procedures are subject to specific conditions, one of them being speed, therefore R/T language should be concise assuring precise and unambiguous communication.

Linguistic regulations for radiotelephony are presented in aviation documents. The language is produced by working groups, including aviation specialists and linguists, whose responsibility is to create a language which will be appropriate to particular situations and can be understood by speakers of more than 200 languages. Words with Latin roots are chosen to make the language easier to pronounce and to be understood world-wide. These groups also modify the language and communication procedures as required by changing technology or as indicated by observed misunderstandings that may lead to incidents or even accidents.

R/T phraseology consists of a list of standard phrases from which air traffic controllers and pilots compose their messages according to the requirements laid down for a particular procedure. It should be noted that pilots and air traffic controllers should strictly follow the rules of this prescribed language.

Subject-specific competencies in R/T communication

Subject-specific competences where both standard phraseology and general (Aviation English) is used in R/T communication are as follows:

- effective communication in radiotelephone and face-to-face situations
- effective communication on common, concrete and work-related topics

- the use of appropriate communicative functions to exchange messages and to recognize and resolve misunderstandings (e.g. to check, confirm, or clarify information) in a general or work-related context
- handling successfully and with relative ease the linguistic challenges presented by a complicated or unexpected turn of events that occurs within the context of a routine work situation or communicative task with which they are otherwise familiar.

Despite the fact that a student is competent in handling the above language requirements, there are other factors limiting successful communication. These are inappropriate transmitting technique, low grade acoustic mode, regional accents etc. Situation-induced stress and short-term memorization can also contribute to poor communication. Furthermore, the pronunciation of transmitted words, numbers and acronyms is specific and should be transmitted in a "dialect" or accent which is intelligible to the aeronautical community. It should be noted that the language of radiotelephony known as international English, comprises also some French terms to be pronounced as French words.

Syllabus planning

A broader coverage of language skills calls for general English in the course, especially if the teacher notices a lack of fluency of some students. As there are not many teaching hours available, such a course runs the risk of wasting the time needed for professional requirements. Therefore, it is suggested to take a job-specific approach, where language is presented and practised exclusively in professional situations. When organizing the syllabus we were aware of the fact that the main purposes of a syllabus is to break down the mass of knowledge to be learnt into manageable units (Hutchinson, 1987: 85). Three levels were selected to be used for training efficient communication in aviation work environment:

- lexical domains
- communicative functions
- communication in non-routine procedures and circumstances

1. Lexical domains

These domains are essential in syllabus planning as they generate events or real flight situations. The inventory includes mainly aerodrome and flight procedures. The vocabulary can be tied to each of these domains and can make up the lexical core of the syllabus. The following examples show two domains: aerodrome and flight information service and generated events (taxiing and traffic information).

aerodrome/event: taxiing

(routine) Pilot: taxiing via taxiway A to holding point runway 35, S-CD

flight information service/event: traffic information

(routine) Controller: S-CD caution, a helicopter approaching head on, fast moving

The message in the second example is considered routine as similar circumstances occur frequently. The frequent use has resulted in the production of an inventory of information related to different events, e.g.:

wind shear reported 3000 feet final RWY 15

traffic is a light aircraft

construction work immediately adjacent to taxiway A

grass mowing in progress

compacted snow on runway 35

work in progress adjacent to taxiway C

marked trench right side of taxiway B

2. Language functions

Language functions correspond to the speaker's intention in uttering a given message. In R/T communication there is a variety of functions which the students should master.

Functions

Examples

Making a request

request departure information

Asking for information

request actual weather data

Giving information

flight information available

Describing a state

over threshold runway 32

Describing an action in progress

lining up runway 25

Checking understanding

read back clearance

Correcting a misunderstanding

negative, QNH 997

Self -correcting

correction, Runway 25 right

Asking for and giving clarification

verify level; maintaining altitude 3500 feet

Asking for and giving confirmation

confirm passing flight level 130; passing flight level 130

The functions of messages are expressed by standard phraseology in routine procedures. The pilot uses certain lexical items that are mandatory in radiotelephony communication.

3. Communication in non-routine procedures and circumstances

The use of general English/aviation English is mandatory in non-routine procedures and circumstances. The newly introduced provisions call for new teaching strategies. A combined approach to training in phraseology and general aviation English brings

the advent of a better and non-ambiguous radiotelephony communication if pilots strictly follow the rules concerning the radiotelephony communication language.

There are numerous general English sentences used in R/T communication considered to be parts of the official coded language. The responses, however, should follow R/T phraseology rules:

Can you lose time on route?	Affirm, S-DK or negative, unable to lose time due performance, S-DK
What is the delay?	Expected delay 15 minutes, S-DK
What is your level?	Climbing to flight level 340, S-DK
Do you want vectors?	Affirm, S-DK or negative vectors, S-DK
Do you have the latest Ljubljana SIGMET?	S-DK, SIGMET available

Very often there is a need of using the coded language in combination with general English, e.g:

Controller: S-DK, are you ready for departure?

Pilot: Negative, we have engine trouble and want to return to the apron, S-DK

Unexpected event calls for explanation in general English:

Pilot: S-DK, there is a big stone ahead of us.

Controller: S-DK, hold position, we'll send someone to remove it right away.

The pilot having received an instruction in radiotelephony language (hold position) and the information in general English, responds: We'll wait instead of : holding, S-DK.

A problem generated by false recognition of routine and non-routine circumstances and procedures is the use of general English in communication, where standard phraseology would lead to better understanding and thus faster formation of instructions, e.g:

Pilot: I would like to take right turn.

instead of: request right turn.

Controller: You should make right turn to heading 080 because of conflicting traffic.

instead of: avoiding action, turn right heading 080 immediately.

The pilot will recognize the second case, e.g. the message transmitted in standard phraseology much sooner and will react accordingly.

The combined approach to training in phraseology and aviation English can be effective only if the teacher is aware of the problems generated in such communications.

How much grammar in communication?

The majority of students who have finished secondary school are good at English grammar the knowledge of which is essential for the use of radiotelephony language. Usually they have difficulties in coping with the language in its communicative use. It is significant, however, that the teacher introduces those grammar structures which are essential in this area.

Let us demonstrate two grammar exercises based on the communicative approach. The controller instructs the pilot to carry out some flying procedures. The chain of events is demonstrated by the pilot's response using present continuous:

Event: level instructions

Climb to flight level 130	climbing to flight level 130
Expedite climb to flight level 130	expediting climb to flight level 130
Maintain flight level 130 until further advised	maintaining flight level 130
Descent to flight level 130	descending to flight level 130

Another chain of situations includes the use of different grammar structures in one procedure:

Event: after landing

Vacate first exit right	vacating first right
Report runway vacated	wilco runway vacated

The teacher should further demonstrate how the sentences are put in communication by providing non-routine situations where general English should be used:

Event: unexpected vehicle breakdown on a taxiway

We have just vacated the runway and are taxiing along runway B. There is a broken vehicle at the end of taxiway B, at the apron entrance.

The students are taught what values the sentences may have as instructions, reports, descriptions etc. One linguistic form can fulfill a variety of communicative functions and one function can be fulfilled by a variety of linguistic forms (Widdowson, 1979).

Teaching materials

Programmes require good material resources i.e. books and multi media. Two text books are available at present. "Flying - Aviation English" text book provides eighteen units covering most important aviation themes together with the recorded material. The contents of almost all units makes it possible to use both languages, thus the teaching model can be employed successfully. For further acquisition of phraseologies, mainly used in more specific and demanding circumstances, an English phraseology text book "How do you read (me)" is available with the recorded material which is inevitable in teaching R/T language.

The teacher can prepare additional materials based on the authentic situations that are not provided by the text books used in the classroom. The students who are flying already very often present their own experiences thus creating authentic situations in the classroom.

Recurrent training

The emphasis is put on the need of recurrent training for many reasons. We know that language skills slip if we do not use and practice them. At a certain level of language proficiency we do not lose these skills any longer. Bearing in mind that the pilots should be retested in certain periodical intervals, refresher courses should be organized based on the above strategies. It has been proved that the required language qualifications are more easily and speedily acquired by pilots who undergo systematic and continuous courses of training conforming to a planned syllabus.

Professional pilots have opportunity to practice R/T language in the flight simulator. Furthermore, they use both of their language skills, general (AviationEnglish) as well as R/T communication in their professional work. They can record the communication in the cockpit and discuss it with the teacher and the colleagues in class.

Conclusion

We were faced with several problems when introducing new language requirements. The use of comprehensive syllabus should be given a great deal of thought and flexibility. How should we distribute the limited number of teaching hours to certain language competences which the students should master? It should also be taken into account that general language proficiency has a strong relationship to ESP

achievement and that the limited number of teaching hours does not allow effective training of general language for students whose general English competence is poor.

Being aware of the fact that proficiency in communication and listening comprehension is a professional requirement for pilots, the emphasis is laid on these two language competencies.

Nevertheless, with the introduction of newly established language proficiency requirements focusing on communication, interaction and listening comprehension, we should not devote attention exclusively to communicative acts. Reading and writing tasks in the classroom have been reduced, but not excluded from the syllabus as future pilots are expected to be good at writing incident and technical reports. Above all, a need of new teaching strategies appeared with regard to effective teaching of two closely-connected languages, i.e. R/T phraseologies and aviation (ESP) English used over the same period of time. This also prompted a need for new teaching materials and above all, for qualified teachers having a working knowledge of the subject matter and being able to make their teaching efficient, realistic and motivating.

It is worth noting that the teacher can effectively use the above teaching strategies with a great majority of students as they are usually highly motivated.

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