

Estival, Dominique/Farris, Candace/Molesworth, Brett, Eds. (2016): *Aviation English. A Lingua Franca for Pilots and Air Traffic Controllers*. New York/London: Routledge. ISBN: 978-1-138-022386. 197 pages.

Aviation English is the first in the Routledge series of books devoted to research in English for Specific Purposes (ESP). The authors are both experienced linguistic researchers and instructors in pilot trainings or are pilots themselves. Their specific linguistic interest is in pilot communication, in particular in controller-pilot interaction, pilot risk management and adherence to the International Civil Aviation Organization (ICAO) regulations for radio communication. Their book falls into eight well-structured chapters each supplemented by an extensive reference section for further reading. It is a book full of information providing deep insight into communication conventions in Aviation English (AE) and communication and therefore a recommended mandatory read for those teaching, learning and using AE.

As important as Maritime English is for shipping and navigation, is Aviation English for any flight traffic communication. For safety reasons, it is highly important for the involved personnel to know and properly apply this standardized language and its conventions applicable in the diverse aviation situations. Therefore, the book analyses the state-of-the-art in research on aviation English training, testing and assessment. It refers to recent empirical studies and considers AE from a linguistic perspective. Moreover, the book focuses on the assessment of Aviation English skills through testing (English Language Proficiency test – ELP) and it assesses the empirical research ongoing in this domain.

In their Preface, the authors point to some questions that arose throughout the planning process of their book (cf. p. XIV): Is Aviation English a separate language from English? Is English being used as lingua franca and what does this actually imply? Is the language of controller-pilot communications a cross-linguistic register? The authors clearly state that it is not their intention to answer all of these questions but “to explore the nature of Aviation English (AE) and to describe it” from the individual perspective of the author’s professional backgrounds – Dominique (pilot and linguist), Brett (pilot, psychologist, lecturer in aviation) and Candace (applied linguist, language tester).

Chapter 1 provides an insight into what the authors understand by AE and English as a Lingua Franca (ELF). ELF refers to the use of English as a common language between non-native speakers (NNS) of English but also includes communication between NNS and native speakers (NS). AE is thus considered a language for specific purposes used by NNS and NS at the same time as a working language to ensure mutual understanding. It is a broad term basically covering naturally spoken English used in the domain as well as written documented phraseology used in the very specific aviation communication situations. Its correct use is of utmost importance for air safety. And this is why in 2003 the ICAO introduced language proficiency requirements to make proficiency in AE mandatory. Following a short glimpse into the history of English as the language of communication in aviation, the authors consider the complex causes of a flight accident resulting, among other causes, from miscommunications. This incident is where they derive the urgent need for a common language in the domain.

Chapter 2 provides a linguistic description of AE in a top-down manner, starting from a pragmatic and discourse perspective level down to phonology and intonation. Most importantly is the authors' statement that all AE is restricted code and therefore to be learned and trained by both NS and NSS. Using dialogue structure analysis, the authors stress the importance of turn-taking and turn-giving, of clauses and phrases applied and refer to grammatical categories such as prepositions, determiners and pronouns and their communicative function. On the lexical level, they examine the role of adjectives, verbs, proper names, call-signs, time expressions, clock code, the units of measurement, phonetic alphabet and prosody. For example, the rate of speed of any speech act shall not exceed 100 words per minute. Moreover, they point to the dynamic character of the phraseology implied which also prompts adaptations in the respective flight instructions.

In Chapter 3, Candace Farris deals with ICAO language proficiency requirements (LPRs). Again, the reader is first introduced into ICAO LPRs development which is then followed by a concise perspective on the native speaker role in this context. The assessment of national civil aviation authorities of native-English speaking pilots is then discussed for all pre-dominantly English-speaking countries individually: Australia, Bahamas, Canada, New Zealand, Nigeria, Singapore, United Kingdom and United States of America. As a result of this survey one can conclude that there is a fairly different attitude towards language proficiency assessment of native and non-native speaker pilots in the individual countries, which poses a challenge for further work and research in the context of ESP and ELF.

Chapter 4 is on aviation language testing, in particular referring to the question which tests should be performed and accepted for the licensure purposes. Regulators and other stakeholders in the communication process require such guidelines because they most often lack information on the reliability and validity of existing language tests on the market. The chapter then provides an insight into some of the tests used. In 2011, the Aviation English Language Test Service (AELTS) was founded which provides a list of tests that passed their evaluation process along the lines of ICAO. Among these are the following four: ELPAC for Air Traffic Controllers, RELTA for Pilots Heavy, the Versant Aviation English Test (VAET) and the ELPAC Level 6 test. These tests are then described in their structure and rated accordingly. This chapter proves to be an excellent source of information for flight agencies, flight schools and partners involved in the communication process because they need to judge upon applicable and reliable testing instruments both for NS and NNS pilots and air traffic controllers.

Chapter 5 provides an overview of communication settings between air traffic controllers and pilots. It analyses the contextual framework and the communicative partners involved. First, the role of the air traffic controllers is examined and then the one of the pilots is described. Moreover, the chapter analyses the individual phases of a flight and the challenges occurring in each of these phases for the interaction between the pilots and controllers, in particular message length, speech rate and workload. It becomes obvious that interaction is specific on both sides because of time pressure and workload (convey as much information as possible in one message and multitask during take-off or landing). Moreover, communication is a challenge because the partners are not familiar with each other, have different nationality and sociolinguistic backgrounds. Interaction is dependent on radio communication and therefore subject to noise and other technical problems. Thus, interaction poses a multitude of contextual challenges and constraints to be investigated in order to assure safe and smooth communication scenarios and above all flight safety.

Consequently, Chapter 6 is devoted to a closer investigation of these contextual factors (so called stressors, cf. p. 111) which have an impact on aviation communication. Among these environmental factors are: noise, temperature, light, psychological aspects, stress which all affect cognition, perception, attention, auditory discrimination, memory and motivation. Moreover, noise, language background and headphone use need to be considered as relevant constraints for the mutual understanding in high-workload situations.

Chapter 7 reports on a set of four flight simulator experimental studies which involved native speakers (NS) and non-native speakers of English (NNS) in AE communication scenarios in order to find out more details about causes for miscommunication under stress and high workload. From two questionnaire-based studies, the authors first could surprisingly establish that English native language was not an influencing factor for pilots in miscommunications. Among the challenging items mentioned most often was communication with other pilots but not with air traffic controllers (ATC). NNS pilots, however, found it difficult to understand ATCs and to properly respond to them. In this context, the number of years of speaking English had no impact on miscommunication because the language to be used was fairly standardized. In a follow-up study involving 17 pilots conducting 8 flights each, a total of 136 flights were recorded and transcribed investigating length of speech items, prosodic features, relation between pilots' workload and miscommunication and function of radio frequency communication in pilots' effectiveness to communicate. The independent variables of the study included: language background, flight experience, qualification and flight condition. The dependent variables comprised of: number of incorrect transmissions, number of incorrect items, error categories, and locus of error (cf. p. 148). The study clearly revealed that pilot workload had the most adverse communication effect for both NS and NNS pilots. Speech rate and absence of pauses had an enormous negative impact on communication accuracy of NNS pilots. Overall, the study proved to be effective in determining the categories of errors that may occur during flight communication which is very helpful for aviation schools and teaching purposes, to make students much more aware of what actually can go wrong. So there is the need for a combined flight and language training on both sides – for native and non-native speaker pilots and air traffic controllers.

The final chapter summarizes the specific purpose of this very informative collection of papers in order to consider perspectives for research and teaching. The authors state that there will probably not be "error free communication in aviation" at no point in time. However, miscommunication in this domain may not simply be attributed to language proficiency because native-speaker pilots may under certain circumstances commit an equal number of errors as non-native speaker pilots do. AE is more than a specific compilation of words and phrases. Standardization and simplification of AE are required to avoid ambiguity. Structured read-backs and rigid turn-taking methods in the interaction are of utmost importance in avoiding errors and need to be trained consistently. The resulting conclusion from the investigations is to train all personnel involved in AE so that "all speakers communicate effectively with each other, and demonstrate not only knowledge of the specific language and procedures with aviation communications, but also awareness of the challenges inherent in these communications" (cf. p. 184).

All in all, this collection of papers written by experienced AE experts provides a “treasure trove” for everybody involved in learning or teaching AE. It is written in a clear academic style, provides a lot food for thought and is clearly based on scientific research and practical experience. It is recommended as an informative reading for AE instructors, students, pilots and ATCs. It is the first in a number of forthcoming challenging books on research in ESP in the Routledge Research in English for Specific Purposes series, with hands-on experience highly awaited by ESP professionals.

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