

International Civil Aviation English Association
Presentation
University of Cambridge
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Aviation English - FOOD for THOUGHT

1. As a former pilot, senior air traffic control officer, and as director of a current training provider in the UK, I have been invited today by the International Civil Aviation English Association (ICAEA) to provide you with food for thought in respect of Aviation English language training, from the perspective of both the aircraft operator and the language-training provider. I have 30 years experience in aviation, and spent 2 years with the Ministry of Defence at policy level, at Headquarters National Air Traffic Services, in the days when National Air Traffic Services was a government agency in the UK, staffed by personnel from both the Civil Aviation Authority and the Ministry of Defence. On leaving the Service, I trained as an English-language trainer, have since spent 10 years as a language-training consultant, and am Executive Director of Bournemouth Business School International (BBSI), a UK training provider that specialises in Aviation English training. My aim today is to provide you with some indication as to the degrees of enormity and complexity that we all face in contributing to, and in meeting the task of imposing safe English-language communication skills among aircraft operators Worldwide.

Aircraft Operators

2. We should first consider the aircraft operators, particularly pilots and air traffic control officers (ATCOs), who are at the front line of aircraft operations. We should examine the nature of the personnel concerned and the extent of the training they have to endure to achieve full operational status. That training can extend to periods of up to 2 years in the case of pilots and tends to comprise one long, uninterrupted process. In the case of ATCOs, however, because of the different specialisations involved in that function and their varying degrees of complexity, training tends to be conducted in phases, as controllers' progress through their individual career paths and gain experience in the different specialisations open to them. In both cases, training is ongoing, not only because of the degree of knowledge required, due to ever-changing working locations, but also because of the continual updating of the equipment in use, ongoing revisions to the rules and regulations, and also frequent changes in the air traffic operating environment.

3. Following a rigorous selection process, whereby only very small percentages of individuals actually have the aptitude to be successful pilots or ATCOs, there begins a learning process that is extensive in respect of the degree of fundamental knowledge required by aircraft operators in a wide range of fields. In addition to the many practical skills required to perform their respective roles, pilots and ATCOs require extensive knowledge of the following: meteorology; physics; geography; navigation; maps and charts; theory of flight; mechanics; aircraft construction; airframes and engines; electrics, electronics and avionics; instrumentation; hydraulics; rules of the air; aviation rules and regulations, both in the air and on the ground; and air traffic control regulations. Aircraft operators are also required to have a precise and unambiguous knowledge and understanding of the following: a vast range of aviation-related definitions, some straight-forward, others quite complex; a wide range of very precise and unambiguous phraseology, to cover all routine and non-routine situations; a plethora of aviation-specific abbreviations; and a vast array of aviation-related vocabulary, which most native speakers of English seldom use in everyday life. In addition, all aircraft operators require an appreciation of medicine, biology, and human performance limitations. Furthermore, all concerned with aircraft operations are required to undergo daily briefings, both oral and written, and have to read and fully understand numerous daily and periodical publications: for example, Flight Information Publications, which provide essential information and warnings related to flight safety, and Notices to Airmen, which provide information concerning daily changes within the aviation environment. Comprehending these documents would prove a significant challenge to any aircraft operator who is not a native speaker of English. In addition to speaking and listening skills in English, therefore, reading comprehension is a skill that should also be given emphasis in any Aviation English training syllabus.

4. To become a successful pilot or ATCO, one requires a very high degree of a particular type of aptitude, coupled with a supreme mental agility of many different kinds. However, it is important to

note that the aptitude required to be a successful pilot, is very different to that required to be an effective and competent ATCO. Nevertheless, both professions require individuals to have the ability to be extremely calm under pressure, to multi-task both mentally and physically, and to assimilate information quickly and effectively and to act upon it correctly and decisively. At the end of their rigorous and lengthy process of training, and when they have achieved full operational status, these individuals possess a wealth of knowledge and have well-honed and acute mental and physical skills. However, even fully-trained and experienced, pilots and ATCOs are continually operating at the extremes of effective human capability, whereby everyday, decisions they make as individuals can, in many cases, mean the difference between life and death for others. Therefore, at any stage within this ongoing process of professional development, to expect an aircraft operator to repeat the entire very demanding and complex training process in a second language, is a daunting prospect. Indeed, it is hard to assimilate the degree of difficulty involved, because, yet another factor comes into play: that of an individual's degree of aptitude as a linguist.

5. When assessing the operational and international requirement within the aviation community for precise and accurate communications in English, both in the air and on the ground, there are several factors to be considered: the vast array of different communications and means of communication in use; the skills necessary to communicate effectively, by which ever means; and the difficulties faced by non-native speakers of English, who require to perfect those communication skills, with all their inherent complexities, in a second language. Those concerned face an extremely difficult and daunting task.

The Aviation Environment

6. A second consideration is that of the aviation environment and 2 significant factors of everyday life in that community: those of the emergency situation and of the non-routine situation. Aircraft operators learn very precise procedures, definitions, and rules and regulations, and all are presented in very formal, precise and unambiguous language. Introduce the unknown, those frequent occasions when something does not happen in the way it should, or in the way that those involved are expecting, and we can readily identify where many of the major communication problems lie. Pilots and ATCOs are well trained to deal with the unexpected; nevertheless, no organisation or individual can cater for every eventuality in such a precarious operating environment. In such situations, therefore, yet another factor comes into play: that of the degradation of an individual's performance under stress and under duress. In a very difficult, ever-changing and ever-challenging working environment, which is fraught with danger and the unexpected, circumstances can change within seconds, inducing both crises and panic in those directly concerned. At that juncture, individual performance levels plummet and instinct takes over. Effective communication becomes paramount and must be second nature. If one then considers the added complication of a particular individual, if not 2, one in the air and one on the ground, operating in a second language, performance degrades further. Hence, the importance and necessity of a high level of English-language proficiency in all concerned.

Aviation English Training

7. A further consideration must be that of the enormous task that English-language trainers face in facilitating the service necessary to meet the demands for effective training in Aviation English communication skills Worldwide. The ICAO impetus, quite rightly, is on general English-language comprehension, which has to be the basis for any training. However, to meet the minimum communication standards for safe aircraft operations internationally, trainers must also consider the contextual issues. It is the enormous scope of English in the context of aviation that presents language trainers with their significant challenge

8. Earlier, I provided some indication of the enormous range of knowledge, terminology and phraseology that aircraft operators require to function effectively in their everyday roles. In a short English-language course for aircraft operators, therefore, trainers must consider where to place the emphasis. Many trainers focus on R/T phraseology, primarily because they lack fundamental understanding of the requirements. Phraseology is an important aspect of aviation communications; however, it is one aspect of many. Most aircraft operators are familiar with standard R/T phraseology; they use it every day. Language trainers therefore need to address also the many aspects of non-standard and non-routine phraseology that might be used in emergency situations and

create difficulties for non-native speakers, ie those aspects of English not necessarily covered in aviation manuals. Also, to be effective, Aviation English training needs to address those aspects of language that relate to the vast knowledge-base that I detailed earlier: specialised elements with which even native speakers are unfamiliar. So where do language trainers begin? How do they structure their training to meet the multitude of requirements of their clients? Let us examine the process.

9. **Sponsored Groups.** Firstly, there is the need to cater for sponsored groups of trainees. Groups can work well, provided that the specialisations of the trainees, their respective training needs and also the English-language levels of each are similar. The needs of pilots and ATCOs are very different: whilst the sponsored-group scenario generally works well with pilots of similar rating, in the case of ATCOs training providers need to consider 'specialisation'. There are 3 separate air traffic control specialisations, each of which has its own particular requirements: Aerodrome Control, Approach Control and Area Radar Control. When designing a course in Aviation English, therefore, the 'one-size-fits-all' scenario simply does not work. In the interests of their own credibility, training providers must consider specialisation, and also the breadth and depth of subject matter for a particular syllabus, as well as the knowledge-base to be covered to meet the specified training objectives. Moreover, some aspects of aviation language are more complex than others and the learning process more time-consuming. The duration of a particular training programme can therefore vary for reasons other than that of the respective language levels of the trainees on entry. Furthermore, training objectives and learning outcomes must be clearly defined and, importantly, they must be agreed in advance between the client and the training provider. From my experience, language training is a requirement more often than not driven by budgetary constraints, operational constraints and logistical considerations on the part of a client, who invariably lacks appreciation that Aviation English training takes time, particularly when it is so specialised and so far-removed from basic everyday language. Nevertheless, provided there is adequate compromise, understanding and agreement between the client and the training provider, the sponsored-group scenario can work well. The key to success, however, is that the client and training provider agree precise and realistic learning outcomes.

10. **Individual Tuition.** The ideal scenario is that of individual tuition. In this event, the trainee can negotiate his or her own training programme and achieve precise and very individual learning outcomes both efficiently and effectively. The downside for the client is that of cost. However, although individual tuition is a costly option in EFL terms, it is not so when compared with that of the cost of professional aviation training. The operational situation should therefore dictate to the client whether or not this option is value for money.

11. **Groups of Mixed Specialisation.** The worst-case scenario is that of the single trainee, or small group of trainees, who elects to join a scheduled 'one-size-fits-all' course in Aviation English, an option offered by some training providers. This is the least effective way of achieving a satisfactory result from any viewpoint. For example, in a cyclical, ongoing course in Aviation English, which one frequently sees promoted on the Internet, how does a training provider select what and what not to include in the syllabus? We should consider, once again, all the specialised knowledge, the many topics and the very specialised and diverse nature of the language to be covered, not in lecture format, but by the time-consuming process of skills development, skills practice, the learning of structure and vocabulary, language acquisition, and the very precise and concise nature of aviation communications, little of which follows normal language conventions. The training cycles for 'one-size-fits-all' courses, were they to be made effective, would need to be months in duration; moreover, to ensure that each trainee achieved his or her personal training requirements, he or she would need to complete each entire course and enter that course at commencement of the training cycle. Such courses are not cost-effective either for the client or the training provider. Furthermore, a training provider offering ongoing, scheduled courses of fixed-duration, would need to conduct several courses simultaneously to offer anything resembling a satisfactory service and to ensure that all aviation specialisations were properly catered for. That situation would be neither viable nor cost-effective for the trainer, unless trainees were forthcoming in sufficient numbers.

12. The latter is, indeed, a very grey area, particularly when one considers the variety and extent of the 'one-size-fits-all' course options on offer in just a quick scan of the Internet. There would appear to be very little substance or thought behind the design of such courses, and it is also very clear that those training providers concerned lack the credibility, and the degree of professional knowledge

required to enable them to offer training in such a specialised area. Much of the Web-site content seems to have been copied directly from the ICAO Manual of English Language Proficiency Requirements, without a great deal of thought or analysis. The content of that manual can be understood only by individuals with extensive experience both in language training and in aviation. One cannot function without the other.

13. One has to view the current situation in the round, however, and appreciate the very difficult task that all training providers face: that of acquiring effective trainers with both aviation and English-language training expertise. There are good-quality English-language trainers and there are experienced and effective aviation instructors. Unfortunately, there are very few individuals that are qualified and experienced in both. An English-language trainer with little experience of aviation could not hope to satisfy the needs of a class of aviation professionals with very particular, individual and specialist needs. Conversely, an aviation instructor with little or no experience in language training and who is used to an environment centred on high-intensive lecturing, could not possibly understand the complex linguistic training methods required to teach English to non-native speakers. The current solution for most training providers of quality, is to employ both types of trainer, and combine and closely coordinate their respective performances within a carefully designed study programme with sound quality-management systems.

14. The case for employing an experienced aviation specialist within the process is fundamental. To explore the language of aviation to the extent that aircraft operators need, one requires a trainer who has been a part of that environment and understands not only the language, but also the types of situation to which it relates. However, for trainees to achieve efficiently the necessary proficiency in basic language skills that is also required, an effective and experienced language trainer must also be involved. For example, a simple sentence or a phrase in aviation 'speak' could have 4 or more entirely different meanings, much to do with the intonation of the delivery in conveying the intended meaning. Take a simple statement: *Flying planes can be dangerous*. That statement could be interpreted 2 ways: first, that *the act of flying planes can be dangerous*, or second, that *planes that are flying can be dangerous*. Ambiguity in the language is therefore the key problem, and avoiding ambiguity is the key to effective Aviation English training. Another simple example of ambiguity, is the word 'hold'. The word 'hold' has numerous meanings in aviation; furthermore, it can be used in very different contexts. The trainer(s) must not only understand those different meanings in aviation terms, they must also be able to explain effectively how to avoid the ambiguity factor. Moreover, to explain the problems of ambiguity associated with the word 'hold', so that every trainee in a class understands the different meanings in proper context, and also to allow the trainer(s) sufficient time to check understanding, so that each trainee fully comprehends the different ambiguities, would take considerable time and expertise. Furthermore, in that one example, we are considering just one simple word in English that is in common use in everyday language. There are of course many such words that create similar difficulties in relation to the ambiguity factor, which demonstrate the enormity of the task that trainers face in covering every possible eventuality. The current solution to the problem of sourcing appropriate trainers for most training providers of quality, would appear to be to employ both types of trainer simultaneously, and combine and closely coordinate the performance of the 2 within a carefully designed study programme with sound quality management systems.

15. To meet the rapidly-growing and ongoing demand for Aviation English Worldwide, the international aviation-training community must develop, evolve and adapt so that sufficient numbers of former pilots and ATCOs can be encouraged to train as effective language trainers. To satisfy that requirement effectively, whilst also meeting published quality-control standards and likely requirements in the future for internationally-recognised regulation, the training industry would require not only support at both national and at international levels, but also the international cooperation of the aviation industry generally.

Testing

16. There is currently no standardised international format for testing in 'Aviation English'. An international organisation with whom my organisation works closely, stipulates that testing must be conducted only by external, independent and approved examiners. The same organisation, therefore, cannot both train and formally evaluate and certify. Yet another consideration that is currently under evaluation is that of targeted testing, whereby tests are designed to match the rating and specialisation of the individual being tested, whether he or she is a pilot or an ATCO. First, there is no

question that pilots require different assessment criteria than ATCOs. Second, it is currently being argued that both pilots and ATCOs should be tested in accordance with their individual rating criteria. For example, would it be fair to test a private pilot with a single-engine, VFR rating, against the same criteria as a pilot with a commercial, multi-engine, full instrument licence? In the case of ATCOs, similar considerations apply: an Aerodrome Controller would require a different assessment than, say, a Radar Approach controller, or an Area Radar controller. Testing is in the early stages of development and both national and international authorities need time to standardise their criteria.

Training Sponsors

17. Having discussed extensively the perspective from the view of the training providers, I must also emphasise those issues that currently relate to their clients, aviation companies and national organisations who sponsor training in Aviation English and who have the requirement to meet specified ICAO standards within a defined timescale. It is apparent that many in the industry who sponsor Aviation English training, need to acquire a greater level of understanding of the language-training and testing processes. Moreover, those within the aviation industry with responsibility for ensuring that personnel meet the ICAO English-language proficiency standards, need to develop more realistic expectations in terms of learning outcomes. Language training of any kind takes time; the process cannot be hurried. There is also a need for sponsors to identify and specify realistic and precise training objectives, and to carefully match their trainees to a particular training programme. Currently, that is seldom the case. Lastly, sponsors must seek value for their respective training budgets, rather than continually attempting to seek the cheapest option in their ongoing quest to achieve the unachievable, ie unrealistic learning outcomes at unrealistic prices. That particular situation is all too common.

Conclusion

18. In summary, the task ahead is both enormous and daunting. ICAO has produced a creditable and expansive manual, which details future English-language communication requirements for aircraft operators. That document, to all intents and purposes, is a Statement of Requirement. Training providers Worldwide, and the aviation industry as a whole, now need to adapt to meet the demand and the challenge faced by all concerned. My aim in this presentation was to provide those concerned with food for thought in respect of the major challenge facing us all in raising standards in aviation communications globally. My point is that there needs to be a greater understanding among all concerned that the term 'Aviation English' covers a considerably wider field of knowledge and expertise than many currently appreciate. I hope that I have succeeded, in some small way, in highlighting the enormity of the task we face.

IAN GAULT
Squadron Leader
Royal Air Force (Retd)
Executive Director
Bournemouth Business School International

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