

ПРОФЕСІЙНА ОСВІТА

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The article deals with the problem of measurement and assessment of language proficiency of aviation personnel. The types of tests appropriate for use in aviation context are being described and approaches to Aviation English test design are being identified in compliance with the language ICAO requirements for pilots and controllers.

Розглянуто проблему вимірювання та оцінки рівня володіння англійською мовою фахівцями авіаційної галузі. Описано види тестування і типи тестів. Обґрунтовано підходи до розроблення тестів для авіаційного персоналу з урахуванням міжнародних вимог ICAO до мовної підготовки фахівців льотного і диспетчерського складу. Запропоновано шляхи удосконалення процедури вимірювання та оцінки рівня володіння англійською мовою в авіаційному контексті.

Рассмотрена проблема измерения и оценки уровня владения английским языком специалистами авиационной отрасли. Описаны виды тестирования и типы тестов. Обоснованы подходы к разработке тестов для авиационного персонала с учетом международных требований ICAO к языковой подготовке специалистов летного и диспетчерского состава. Предложены пути совершенствования процедуры измерения и оценки уровня владения английским языком в авиационном контексте.

Statement of purpose

There is no shadow of doubt that communication between a pilot and an air traffic controller is a safety issue for the aviation industry.

The International Civil Aviation Organisation (ICAO) has decided that “all airline and helicopter pilots who fly internationally, and all air traffic controllers who provide services to international flights ... must have a minimum level of English”. This level of English is known as ICAO Operational Level 4 (see table).

The new ICAO language standard requires the aviation industry to implement Aviation English language testing and training strategies [1].

Pilots and controllers who fail to demonstrate compliance with the ICAO Language Proficiency Requirements may have their licence suspended or even withdrawn. Therefore language testing in aviation has exceptionally high-stakes.

It, in turn, requires finding solutions to provide quality and appropriate assessment of the English language proficiency (ELP) in compliance with ICAO recommendations. Hence, the test design and test administration in aviation should be considered as a well-developed domain of academic activity and body research with cross-disciplinary links, codes of ethics, codes of practice, qualification of testing service providers, etc.

Review of research results

ICAO has developed a rating scale with level 4 considered the minimum acceptable level (“Operational Level”). A speaker is assessed to be proficient to Operational Level 4 if the ratings for the following criteria are as follows in the table below.

ICAO has also developed the following “Holistic Descriptors”. Proficient speakers shall:

ICAO Rating Scale for Operational Level 4

Pronunciation (Assumes a dialect and/or accent intelligible to the aeronautical community).	Pronunciation, stress, rhythm, and intonation are influenced by the first language or regional variation but only sometimes interfere with ease of understanding
Structure (Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task).	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	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
Fluency	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	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
Interactions	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

a) communicate effectively in voice-only (telephone /radiotelephone) and in face-to-face situations; b) communicate on common, concrete and work-related topics with accuracy and clarity;

c) 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;

d) 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;

e) use a dialect or accent which is intelligible to the aeronautical community.

A few options for assessing ELP for aviation can be used. They can be:

a) informal observations like “line checks”, “inspections” or classroom assessments;

b) formal language tests of direct/semi-direct/indirect format, simulated language use, paper and pencil or screen and mouth tasks.

There are main four standard types of formal language tests:

- entry/placement;
- diagnostic;
- progress/acchievement;
- proficiency.

The ICAO level 4 can be measured by a high-stake proficiency test designed on the base of standard test specifications applied to oral proficiency tests [2].

A language test for aviation is defined as a measurement tool with a format of structured events or procedures and aimed to elicit performances as samples of test-taker's language skills in a standardised way enabling reliable inferences to be made concerning his/her level of competence and possibility of reproducing those skills at that level of competence consistently over time [1; 3].

It should be underlined that in addition to the standard test qualities, namely validity, face validity, reliability, practicality and security [2; 4], a proper test designed for the assessment ELP in aviation is to meet the following requirements a/ in compliance with the ICAO recommendations, b/ designed to elicit language that is assessable according to the ICAO Rating Scale, c/ conducted in the format simulating real radio-telephony communication "from air to earth" and d/ suitable for both pilots and controllers [3].

The task is complicated and its solution requires professional approaches and methodologies. Otherwise the language test will be inappropriate as well as useless for aviation and won't meet the quality requirements for a high-stake oral test.

For example, Lancaster Language Testing Research Group commissioned by Eurocontrol to conduct a validation study of the English Language Proficiency for Aeronautical Communication Test, carried out the Internet searches for other tests of air traffic control. The researchers reported that the study revealed a number of tests but "found very little evidence available to attest to the quality of these tests" [4].

Since the consequences of inadequate language tests being used in licensing pilots, air traffic controllers and other aviation personnel are potentially very serious, it was decided to undertake an independent survey of tests of aviation English. For this purpose a questionnaire was developed and sent to numerous organizations whose tests were thought to be used for licensure of pilots and air traffic controllers.

Twenty-two responses were received, which varied considerably in quantity and quality. This probably reflects a variation in the quality of the tests, in the availability of evidence to support claims of quality, and in low awareness of appropriate procedures for test development, maintenance and validation.

The researchers came to the conclusion that there could be little confidence in the meaningfulness, reliability, and validity of several of the aviation language tests currently available for licensure.

Therefore the quality of language tests used in aviation should be monitored to ensure they follow accepted professional standards for language tests and assessment procedures [2; 4].

Purpose of the work

To properly design a valid and a reliable test to assess ELP at least three main considerations should be taken into account. The first one is to produce a valid assessment procedure that reflects candidates' proficiency according to the ICAO Rating Scale. The assessment is conducted by a two skill test – Listening Comprehension and Speaking.

The second consideration is to produce a tool that provides obtaining a speech sample measurable against the ICAO scale. It can be provided through semi-structured and non-structured face-to-face oral proficiency interview. In order to simulate real radio-telephony communication "from air to earth", some part of the test should be «voice-only».

The third consideration is to produce an objective, standardised test format that can be delivered in the same way by different examiners. It requires special training of examiners/interlocutors and a well designed standard scenario of an interview to be conducted by several interlocutors in a similar way.

It is obvious that for this purpose the test should be based on ICAO recommendations [1; 3], the test tasks should contain plain English (but not disregarding some phraseology) in a

work-related context,¹ the language proficiency should be assessed in unexpected situations, and the assessment should focus on appropriacy of language use rather than on appropriacy of procedures supported by radio-telephony phraseology.

Typically in assessment of Language for Specific Purposes (LSP) which is Aviation English Language (AEL), test content and methods are derived from an analysis of the target language use (TLU) situation [2]. However, the criteria by which performances are judged are seldom derived from the same source. I agree with Dan Douglas that LSP/AEL assessment criteria should be derived from an analysis of the TLU situation [5; 6]. In case of aviation personnel assessment one of the TLU lies within radiotelephony communication between a pilot and a controller.

It should be stressed that the TLU analysis should be supplemented by the analysis of communication needs of pilots and controllers in order to design the test in compliance with the ICAO recommendations. Normally the needs analysis is carried out to take into account specific purposes of the candidate and language to be used in specific job related circumstances.

It is a well known fact the Language performance (LP) is an intricate interplay of knowledge, skills and competence requiring more than rote memorization of vocabulary. Memorization of ICAO phraseology alone does not constitute LP is unsafe. The LP addresses appropriate needs in the domain of operational aviation communications [1].

There are two types of the needs:

- 1) objective needs – target language use in real life communication situations;
- 2) subjective needs – personality, degree of confidence, attitudes to studies and worries, expectations, learning style.

The both types should be identified for the test design purposes.

Another crucial issue of provision of appropriate language testing in aviation results from a lack of quantification of ICAO descriptors [1]. In this regard some solutions are still to be found. As an example, a few discussion points are the following:

– Assuming a purely work related situation, which essential vocabulary/structure items will be required to handle communication requirements?

– Which production or reception skills will be particularly useful? (taking into account the speech medium).

– What cognitive or organizational language skills may be required? (taking into account the typical content).

– Which English teaching/learning strategies would prepare the aviator for dominance of the communication field?

J. Mell underlines the importance of the checklist of dominant communicative functions in radiotelephony communications [7].

To my opinion this document may be developed further by the following:

– Collection of typical phrases (examples) matching each function.

– Identification of grammar exponents to illustrate each function and appropriate to the typical phrase.

One more solution has not yet been found. It is about a common test for air traffic controllers and pilots. It is obvious that the test design should be based on accepting the following factors:

a) Pilots and controllers are partners in radio-telephony communication;

b) they are set apart by different interactive roles, complementary passive/active competencies, opportunity to use other job-related language uses to extend speech sample, e.g., controller: telephone coordinations, report to supervisor, etc., pilot: pre-flight, cabin announcements, ground staff, etc.

A possible solution could be found via common core tests of knowledge, job-specific components for testing competence [7].

¹ Plain English in aviation context: pilots for briefings, announcements, flight deck communication, maintenance technicians, attendances, public, between pilots and controllers etc.

Conclusion

Regarding the issues analysed in the article above it can be concluded that the language test for aviation should have definite specifications to meet ICAO language requirements as well as standard quality requirements for a high-stake test.

The test shall:

- provide a representative range of intelligible international accents as input for comprehension;
- provide a professionally relevant format for candidates to display comprehension;
- elicit an adequate continuous speech sample to test fluency/pronunciation;
- provide a voice-only setting for “diadic” (2-person) interactions;
- provide examples of routine and unexpected events in a work-related context;
- allow the candidate to use basic grammatical structures creatively;
- allow the candidate to demonstrate ability to paraphrase;
- allow the candidate to change between rehearsed/formulaic speech and spontaneous interaction;
- simulate unexpected events to create opportunities for misunderstanding.

Another key issue to ensure quality language testing for aviation is standardisation of results. It can be reached by extensive trialling, provision of comparable conditions of test administration, examiner training/auditing based

on speech samples, paired/multiple rating, provision of test security and rater/interlocutor qualifications.

References

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