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Language training of aviation specialists in the context of aviation security

In the modern world, civil aviation is of great importance for the whole humankind. It is used to meet the needs of the population, provides new incentives for the economic development of all countries: the transportation of passengers, baggage, cargo, mail, as well as implementation of aviation operations, and a variety of services for many industries.

The increasing role of civil aviation in the world economies is driving the growth of international requirements for professional English proficiency of aviation personnel. All pilots flying international routes must know English at a level not lower than the ICAO scale 4th working level. This requirement has been in effect since March 05, 2008. A similar requirement is applied to air traffic controllers. A sufficiently high level of English proficiency recommended by ICAO for aviation specialists is a necessity caused by the requirements of flight safety, directly related to the human factor, ensuring the reliability of the civil aviation functioning. The safety of aircraft flights is dependent on the improvement in the quality of the international radio telephony (R/T) language skills. [1]

The R/T discourse in civil aviation is the professional communication between the pilot and the air traffic controller or between the pilots of different aircraft by means of radio equipment during flight to ensure clear understanding, which is one of the factors in preventing aviation accidents. The causes of aviation accidents can be divided into three main categories: equipment failure; the influence of environmental

factors (thunderstorm, lightning, heavy rain, hail, snow) and accidents caused by the human factor. [2] As for equipment, it is produced quite reliable nowadays. Unfortunately, it is in the human nature to make mistakes. Individual features of a person - character, temperament, fatigue etc. may affect decision-making. Research in this area has shown that 84% of airplane crashes are caused by the human factor, i.e. air traffic controllers' and pilots' errors, which can be explained by both the physiological and psychological characteristics of a person, and his/her capabilities and limitations manifested in conditions of interaction with an aircraft. [3]

Various training programs and refresher courses help overcome psychological incompatibility within the crew in the process of "pilot - controller" professional communication and reduce the accident rate. The pilot must show a complete linguistic competence, be fluent in English at the ICAO 4th level as well as in the professional aviation sublanguage without violation of the basic rules of speech behavior in flight manifesting itself in the intention to use only standard phraseology of civil aviation R/T communication. He must instantly recognize unprofessional vocabulary used by an air traffic controller and be able to use linguistic norms by simplifying the language at the synthetic lexical, phonetic, grammar and semantic levels.

At the phonetic level, the professional standard R/T discourse is distinguished by a distinct articulation, controlled speech rate, speech volume, and the presence of a special intonation of statements to ensure successful communication. The phonetic differences related to the pronunciation of numbers, as well as a special phonetic alphabet, are present in the R/T communication, which ensures the clarity and uniqueness of each utterance. At the lexical level, R/T communication is determined by the use of standardized terminology and specially developed phraseology, the absence of figurative meanings of the words used, the uniformity and predictability of the lexical units.

At the grammatical level, the ICAO standard phraseology is characterized by the presence of simplified syntactic structures with a specific order of their constituent components, a certain limitation in the statements construction, the use of a large

number of elliptical structures in which the subject may be absent, as well as the link-verb "to be", articles, prepositions and some other members of the sentence, much more frequent than in the ordinary language, use of the imperative and infinitive forms of verbs, standard R/T phraseology words in declarative sentences to convey the functions of interrogative questions.

At the stylistic level, the R/T discourse is specified by neutrality, lack of emotionality on the part of the speaker towards the events described, an evident distance between communicants and a strict thematic orientation of the communication. [ibid]

The pilot must be proficient in grammatical constructions, be able to avoid communicative "failure", paraphrase a statement, speak at a fast pace, resolve doubts, professionally transmit and receive information, request data, report on non-standard situations, i.e. demonstrate competence in understanding the language, which ensures a correct and timely assessment of the emergency, so that the controller's commands do not lead to misunderstanding, since proficiency in English as a common communication tool is a key condition for pilots and controllers to work in the aviation field.

The most serious errors in the perception of radiotelephony communication information in English resulting in aviation incidents are connected with distorted perception of numerals. In the American variant of R/T phraseology the numbers are pronounced not in accordance with the ICAO standard norm, where all numbers are pronounced separately, but by the groups of conventionally pronounced numbers: fourteen thirty eight, five forty six; though, as for the heading, it is the standard both in America and in the ICAO member-states to pronounce every numeral separately. Instead of the word "decimal" in the American variant the word "point" is used, borrowed from the military lexicon. And pilots from different countries of the world, trained in the USA, use this word in international flights communication, which may cause misunderstanding between the pilots and air traffic controllers. Pronunciation of frequency in the shortened form, conflicting with the ICAO rules, in certain situations can be misunderstood as the other group of numbers, for example, the

flight number in the American pronunciation: sixteen one eight northwest four thirty six. Verbal marking of runways from 01 to 09 without the pronunciation of the word "zero", as it is accepted in North America, is also the violation of the ICAO standards.

Potentially dangerous is mispronouncing words or word-combinations and their replacement by similarly pronounced ones; the use of the preposition "to" before numerals without a word-delimiter, which in some situations can be taken for figure "2" (two). In extreme situations, the communicants try to understand the meaning of separate words and fail to grasp the main idea of the received message, transforming it into a similarly sounding utterance. [ibid]

As far as grammar mistakes are concerned there are: misunderstanding of tenses, the difference between the parts of speech; no differentiation of a final verb-form and a gerund; omission of meaningful elements of a phrase (prepositions and auxiliary verbs in general questions) that can change the meaning of the whole utterance. To ensure reliable pilot-controller radio exchange, one of basic recommendations is a correct repetition of the message received (*read back*) by the pilot and its obligatory verification by a controller.

The pilots try to understand the lexical meaning first, and grammar characteristics of utterances are paid no or little attention to. This fact implied by the very essence of the radio telephoning procedure should be taken into consideration in teaching future aviation specialists professionally-oriented R/T English.

The whole learning process, should be primarily communicative. Learning aviation English should start with general English course aimed at developing language and speech skills for the transition to aviation English. The second stage is the study of general aviation English, the third stage being associated with the study of professional aviation English, and only then pilots and controllers should proceed to the study of the R/T communication phraseology. [4]

As a criterion for compliance with aviation security requirements the educational programs for training aviation specialists the specific R/T communication language should take into account the following items:

1. The R/T language is designed to provide concise and unambiguous communication between the pilot and air traffic controllers. 2. It is used orally and outside of visual contact. 3. The R/T language used includes a very specific vocabulary and structure of utterances; differences from the standard pronunciation of some numbers and words; restrictions on the rate of speech and the use of idioms. 4. The general criterion for assessing the level of the R/T language proficiency is not linguistic correctness, but the effectiveness of using the language in the working environment. 5. People's lives directly depend on the level of the R/T language proficiency in the R/T communication.

Compliance or non-compliance of the aviation personnel's knowledge of the professional English language with the ICAO standards is established using special tests. Testing is conducted in accordance with the rules approved by the State Aviation Service to determine the level of aviation English proficiency by the ICAO rating scale. The test should set tasks that require mastery of communication and clarifying strategies, the ability to recognize and solve misunderstanding and linguistic problems arising in unusual circumstances because of an unexpected turn of events or the complication of a situation. [5]

So, a specific target setting in teaching future aviation specialists professionally-oriented language is the focus on the formation of dialogical communication skills (listening and speaking) in the field of radio telephony as the basis for linguistic interaction between the pilot and the controller. In order to achieve this goal, the most optimal teaching methods are primarily communicative ones based on the principles of consciousness, clarity and activity. The main training tools should be original authentic audio recordings of pilot-controller "sky talk". The language and speech stuff should be grouped taking into account their specialization.

In teaching listening, a feature of the training content should be orientation towards mastering two registers of the R/T communication language: the standard R/T phraseology and the spoken R/T sublanguage, that differ in the regulation of the forms and content of the included units, i.e., English analogues of the prescribed phraseology and, on the other hand, a wide range of variations-deviations from the

norm revealed in practical R/T communication. The specifics of the R/T communication language dictates the inclusion of tasks for two-way translation and changing the language code (phraseology - spoken language, spoken language - phraseology) into the exercise system to train oral speech.

The more the content of the professional English course is closer to the situations, activities, functions and topics the learners face in their work, the more effective the learning outcome will be, the higher the motivation of learners. It should be borne in mind that both the training and testing of aviation personnel's professional English proficiency are directly related with maintaining the target level of flight safety.

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