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USING OF TWO LANGUAGES IN THE GROUND – AIR RADIO EXCHANGE AND ITS INFLUENCE ON SAFETY OF FLIGHTS

Annotation: *The bottom article discusses phraseological mistakes that arise in the process of air traffic control. The main mistakes made during the ground-to-air communication, the reasons for their occurrence, as well as the impact of using two languages on flight safety are analyzed. Particular attention is paid to impaired perceptions by Russian-speaking aviation specialists of messages in English.*

Key words: *ATC, ICAO, phraseology of radio exchange; Aviation English mistakes of air traffic controllers; flight safety.*

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ИСПОЛЬЗОВАНИЕ ДВУХ ЯЗЫКОВ В РАДИООБМЕНЕ «*ЗЕМЛЯ – ВОЗДУХ*» И ЕГО ВЛИЯНИЕ НА БЕЗОПАСНОСТЬ ПОЛЕТОВ

Аннотация: *В донной статье рассматриваются фразеологическех ошибки, возникающие в процессе управления воздушным движением. Анализируются основные ошибки, совершаемые во время связи «земля – воздух», причины их возникновения, а также влияние использования двух языков на безопасность полетов. Особое внимание уделяется на нарушения восприятия русскоязычными авиаспециалистами сообщений на английском языке.*

Ключевые слова: *УВД, ИКАО,* фразеология радиообмена; авиационный английский; ошибки авиадиспетчеров; безопасность полетов.

The main priority and primary responsibility of the state bodies regulating the activities of civil aviation is flight safety. This has led to an increase in requirements for providing communications using radio stations as an effective way of communicating at airports with air traffic control personnel (air traffic control). Studies have shown that the more reports, the lower the risk of an accident. If the radio message is misunderstood or misrepresented, it may violate safety standards. The purpose of any communication is to provide unambiguous and correct information to other pilots and controllers. The Guide to the International Civil Aviation Organization, Chapter 2, Clause 1, states: "The standard ICAO phraseology is used in all cases for which it is established. Only when standard phraseology cannot be applied in the planned transmission, is a simple spoken language used" [4, p. 44]. Nevertheless, the pilot or controller receiving the message must correctly perceive the transmitted information. Since the crews communicate over the territory of the Republic of Uzbekistan in Russian, and when flying in the area of international airports, radio is exchanged in both English and Russian, this significantly increases the risk of misunderstanding between ATC members, and therefore affects flight safety. That is why the implementation of radio communications between the pilot and

the controller in English only significantly increases the level of air traffic safety.

The relevance of this work is to study the causes of radio communication mistakes between the pilot and the dispatcher and the impact of using two languages on flight safety.

The purpose of the study is to study the impact of the use of two languages in radio communication on flight safety, as well as to study the main mistakes of radio communications between controllers and pilots made during the transmission of commands and messages during flight.

The goal involves the following tasks:

- to study the main causes of mistakes in the radio transmission between the pilot and the controller and briefly consider the types of mistakes in aviation communications;

- identify mistakes in the aviation phraseology of radio communication in English that affect flight safety;

- to argue the choice of English as the main language of radio exchange;

- draw conclusions on the work done.

To date, speech mistakes in the conduct of radio communications in Russian and English are one of the main factors affecting flight safety. As is known, negotiations between the dispatcher and the pilot can be conducted in two languages over the territory of the Republic of Uzbekistan, in particular, in Russian and English. In connection with the new decrees, air traffic police officers are obliged to fully switch to negotiating only in English, as this positively affects flight safety and reduces the dispatcher's multitasking in the process of negotiating.

The air traffic controller dispatcher works under conditions of high information loads, in a tight time limit, with constant and long-term exposure to the body of a number of unfavorable factors of the working environment [7, p. 5].

Scientists traditionally classify the mistakes of air traffic control officers into the following groups: speech mistakes, mistakes in the translation of special languages, and mistakes in the perception of the translation of a command or message. A person can make a mistake if he performs the task incorrectly or is unable to complete it within the time allotted for this [4, p. 46].

Mistakes are also classified as random and regular. Everyone knows that absolutely no one is safe from accidental mistakes. They are due to fluctuations (fluctuations) in attention and a coincidence. Natural mistakes are a predictable consequence of the chain and provoking factors. In the latter case, we can talk about provoked mistakes [3, p. 295].

Aeronautical communications mistakes are critical to aircraft safety. Even the smallest mistakes can lead to disastrous consequences. Studies of live broadcasts have shown that less than 1% of all broadcasts contain mistakes. We studied the classification of communication mistakes between pilots and air traffic controllers presented by Melissa Robinson on the Aviation Knowledge training site for pilots [9]. Among the most common mistakes are the following:

1.   Mistakes of correct reading and perception of commands.

A readback error is defined as an important mismatch between the resolution that the dispatcher gives out and what the pilot says. When the dispatcher cannot resolve the mismatch, it develops into an error.

Possible ways to reduce mistakes of this type are to identify and notify pilots about similar callsigns. Provided that dispatchers must speak clearly and slowly, providing clear and concise commands regardless of their workload, the number of incorrect requests or commands will be reduced. Despite the fact that these mistakes are the most common, dispatchers on average make about 66% of incorrect handling. As a rule, this type of error is the most common in the aviation industry and often leads to disastrous consequences.

2.   The lack of reverse reading from the pilot.

Altitude deviations and runway incursions (runway) are the only two

significant consequences of this error. Ways to reduce these mistakes are to ensure that pilots and controllers read the data correctly, regardless of the workload.

3.   The second type of error in correct signal perception.

The dispatcher may not notice his error in the response to the pilot or may not correct erroneous information in the requests of the pilots. In many cases, the root cause of this error is unknown.

Table 1 presents the causes of mistakes of pilots and controllers during the flight of the vessel, identified by Melissa Robinson.

Table 1. The most common causes of mistakes in broadcasts.

Broadcast Mistakes	%
Mistakes of correct reading and perception of commands	47
No pilot read back	25
The second type of error is the correct signal perception	18
Other bugs	10

The standard phraseology of radio exchange is characterized by the following features: the use of "non-standard" forms of the natural language, the predominance of highly specialized vocabulary and the limited use in other areas of communication.

The established and developed phraseology of radio exchange does not require long distractions of crew members from the direct piloting process, facilitates the process of transmitting and receiving information in conditions of

time pressure and other extreme conditions. In addition, a clearly defined and well-established procedure for transmitting information is a kind of guide to the action or implementation of a certain algorithm of crew actions at specific stages or special cases in flight.

Table 2: Communications Mishaps Occurrences and Contributing Factors

Occurrence	Contributing factors
Similar call sign	Controller accent (34%), controller speech rate (28%), pilot distraction (22%), pilot expectation (25%) and pilot fatigue (20%)
Frequency change	Controller accent (51%), controller speech rate (42%), pilot distraction (43%), pilot fatigue (35%) and pilot workload (31%)
Non- standard phraseology	Controller (64%) and pilot (41%) use of non-standard phraseology, controller accent (49%), language problems (46%), ambiguous phraseology (41%)
Blocked transmission	Frequency congestion (63%), controller workload (33%), untimely transmission (27%), pilot workload (22%), long message (20%)

When working directly with aviation phraseology, radio exchanges in English have to deal with a common misconception that it is completely

unnecessary to study the intricacies of English phraseology. It is enough to translate Russian phraseology into English, and all problems will be solved. Analysis of air traffic control procedures and lexical and grammatical means used in English and Russian phraseology allows us to identify 4 groups of correspondences according to the degree of relevance [2, p. 33]:

1. Complete analogues. When using this lexico-grammatical means, the concepts in Russian and English completely or almost completely coincide.

2. Meaningful analogues. They imply a complete conceptual correspondence, which is expressed by a variety of linguistic means. The meaning of the phrases is general, but different grammatical means are used depending on the language.

3. Partial matching. Differences not at the linguistic, but at the conceptual and procedural levels:

Some foreign pilots already familiar with the practice of flying in the CIS countries. After the aircraft reaches 200 meters, they will switch to the Circle frequency. Other foreign pilots may miss this difference and stay at the Start frequency. This entails a violation of the rules for the use of airspace. Partial correspondences require knowledge of the language, the aviation profession, and especially the documents of states and ICAO (International Civil Aviation Organization). All this is very difficult to translate.

4. Complete discrepancies. It is very difficult to correctly translate complete inconsistencies. When using a descriptive translation, the volume of expression increases greatly, which is unacceptable in this area of activity, since brevity is the main requirement for negotiations between the pilot and the dispatcher. Moreover, there is a likelihood that the command or expression will be immediately correctly received, and this contradicts understandability - the second requirement of aviation phraseology. Therefore, complete discrepancies must be avoided.

Having examined this topic in detail, one can also find the existence of other

typical violations in the perception of English-language messages by Russian-speaking aviation specialists:

1. Grammar violations:

• • non-identification of the category of time;

• • indistinguishability of the verb and gerund;

• • indistinguishable parts of speech.

2. The omission of meaning-bearing elements of the phrase, such as a preposition, the loss of which can radically change the meaning of the statement [6, p. 193].

3. Intentional omission of words that do not significantly affect the meaning of the whole phrase [1, p. 30].

Political and cultural reasons may hamper the use of English as the only one in the airspace for international use. In a number of countries of the world, the use of English is not regulated by national rules, and if it is, then the national language has the same priority as English, and this is the starting point for various problems [8, p. 168]. In the Republic of Uzbekistan, two languages are used for radio communication: Russian and English, while performing international flights - only English. But today, an increasing number of controllers and pilots prefer to negotiate only in English, both on international and domestic flights. This is due to the fact that the dispatcher, using both Russian and foreign languages in his messages, can create confusion for the pilots and increase the transmission time of the message, which can lead to disastrous consequences. In turn, using only English to transmit commands and messages to several flights, the dispatcher adheres to one of the most important requirements of radio exchange - brevity. Therefore, negotiating only in English greatly simplifies the radio exchange procedure, reducing the time of transmission of the command and, accordingly, favorably affecting flight safety.

Thus, the analysis of mistakes made by air traffic controllers and flight safety violations when using the Russian and English languages allows us to

conclude that the implementation of radio communication only in English significantly increases the level of air traffic safety. Any of the above mistakes can become extremely dangerous and pose a threat to flight safety.

Numerous cases of unsuccessful language communication carry significant risks to the safety of crews and passengers. In our time, a number of measures have been taken to reduce the number of cases of language misunderstanding in the air. Among such measures are tighter control over the level of language proficiency by foreign pilots and dispatchers according to ICAO standards, the development of requirements for controlling pronunciation and speech speed, and the fight against corruption when passing language exams. It must be understood that language proficiency is as important to aviation security as any other aspect.

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