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**Nataliya Pazyura****MAIN ASPECTS IN LANGUAGE TRAINING OF NON-ENGLISH SPEAKING AIRMEN**

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**Abstract**

*In the globalized world and rapid development of technical progress aviation industry has been gaining more importance for humanity and requires a deeper understanding of the English language, its basic characteristics and mechanisms of functioning. **Purpose:** The aim of the article is to study the influence of the proficiency of English on flight safety, to consider the main communication problems of non-English speaking aviation personnel, highlight possible directions for training English-speaking personnel. In the article the author tries to show the disadvantage at which non-English speaking airline staff work in case of emergency. The article highlights the issue about high level aviation English proficiency necessary to avoid communication problem. **Methods:** For the research scientific general methods have been used which are main ways of studying scientific sources, and comparative method for synchronic comparison of events in the different regions. **Results:** The author concludes that at the same time it is necessary for aviation personnel to master plain language for understanding context of communication, to minimize uncertainty and improve understanding between the controller and pilot. **Discussion:** It stresses the idea that the language proficiency level that exceeds the minimum standards according to ICAO, contributes significantly to the reduction of communication problems and in such a way ensures safety.*

**Keywords:** aviation personnel; English language proficiency; non-native speakers; aviation English; communication; phraseology of radio communication.

**1. Introduction**

The role of English as the language of international communication in aviation is gaining more attention with the rapid development of scientific and technical progress in this industry. The peculiarity of communication in aviation is explained by the fact that regulations, standards, and process the radio are in English, which requires from the staff a continuous learning and improving foreign language competence. English-speaking workers should be trained how to communicate simply and clearly with non-English speaking colleagues as the success and development of any industry depends on effective professional communication. This issue gains special importance in sectors requiring cross cultural communication. One of these industries is aviation, as the effectiveness of communications in ATC as well as maintenance affects the lives of many

people. This issue is of global importance, taking into consideration the increase in air travel in the world and it revitalizes the study of aspects that are involved in cross cultural communication.

**2. Theoretical framework and research methods**

Problems of learning a foreign language, has always attracted close attention of Ukrainian and foreign scientists and teachers (N. Chomsky, G. White, J. Raven, N. Kuzmina, A. Markova, V. Kunitsyna, G. Belitskaya, L. Berestova, V. Baydenko, N. Grishanova, G. Ball, I. Bekh, S. Goncharenko, G. Degtyareva, A. Kochubey, V. Kremen, I. Voynar, etc.). Significant contribution to the study of the process of learning foreign languages was carried out in philological direction by S. Ter-Minasova, A. Leontovich, N. Troshina, in ethno-psychology by A. Stefanenko, N. Lebedeva, V. Sadohin, V. Krysko.

However, to ensure the effectiveness of the process of forming foreign language competence for aviation personnel it will be useful to appeal to the experience of other countries on this issue study of which has still remained on unsatisfactory level.

### **3. The aim of the study**

The aim of the article is to study the influence of the proficiency of English on flight safety, to consider the main communication problems of non-English speaking aviation personnel, highlight possible directions for training English-speaking personnel.

### **4. Results**

Language acquisition is a complex process. In order to speak or understand the language it is not enough to know the words and grammar. Bilingualism consists of a person's ability rather to express his thoughts in another language and accurately convey the concepts and structures of a language than just to paraphrase from the native language (A. Connolly) [1].

Mastering a foreign language for professional communication is one of the main requirements to activities in the aviation industry because the explanation of standards, carrying out standard procedures and radio communication should be executed in English, which requires from the staff a continuous learning and improving foreign language competence. Today's air personnel must master the skills of handling large amounts of information during their professional activities. Most of these verbal "incoming" and "outgoing information" enters in the form of the English language. The input information comes in the form of guidelines, technical terms of aviation, and items that require clarification and possible simplification for better absorption. In this context indisputable is the need to minimize misunderstandings between the participants of communication in aviation, which occurs due to the low level of English proficiency [2].

The situation is complicated by the fact that pilots on international flights must interpret various forms of radio communication that vary in different parts of the world [3]. The study, conducted by Bureau of Air Safety Investigation showed that communication problems were identified as one of the influential factors on flight safety, especially in the case of foreign (non-English speaking) crew.

Moreover, the pilots who took part in studies considered insufficient level of foreign language competence the main problem in their activity: 35 (20%) out of 175 respondents pointed to communication problems as a determining factor of flight safety [3].

The possibility of a serious misunderstanding between pilot and controller is very high during international flights. Researchers (S. Uplinger) of this issue highlight the need to study the special terminology of ATC together with a plain language with which it is used in the context of professional communication. Only in such conditions it is possible to avoid ambiguity or to clarify and solve the problems in unexpected situations [3].

Our analysis showed that studies of foreign language competence of aviation staff aim at determination of their level of English proficiency. We should draw attention to the fact that most of the survey results indicate a high level of proficiency (the majority of communication occurred at the Expert level or at the operating and Distributed by level according to ICAO scale on such indicators as the structure of sentences, comprehension, pronunciation and fluency). However, the research of level of English proficiency of foreign pilots (non-English speaking) crew showed mixed results. Their communication was assessed from the Expert level to Operating on all dimensions except Structure for which 93% received level of the Expert. Almost 65% of the messages were assessed at the level of Expert for comprehension, 47% received a level of Expert for pronunciation and fluency. 30 and 37% of the messages received Common level For pronunciation, fluency, and comprehension, and 23% for the interaction. Pronunciation of pilots was estimated to be at Operational level in 23% of cases, 16% had Operational level for fluency, and only 3% of respondents had Operational level for understanding the interaction [4].

Based on the facts and on the basis of studying materials on the research topic, we can make the assumption that the pilots, for whom English is not native, are in a more disadvantageous position. They need to understand spoken English, to carry out radio communication with a controller (for which English also may not be native). In addition, we consider it necessary to draw attention to the fact of active appearance of the Asian airlines in the market of aviation services, particularly China, as a consequence of rapid economic development of

these countries. Moreover, the Chinese pilots are complaining about the insufficient level of their foreign language communicative competence. They recognize that the Chinese crew the use of English in the cockpit is decreased to minimum and is only used in radio communication with controllers. That is, Chinese airlines use English only in extreme cases [2]. In such circumstances of limited English communication and poor level of English proficiency for communication with controllers there is a need to hire translators for non-English speaking crews of commercial airlines or English-speaking pilots who have already retired.

It is important to remember that during stressful and unusual situations the perception and understanding information in a foreign language worsens remarkably and not native speakers demonstrate worse pronunciation. For example, researchers have recorded that during such situations 'Juliet Tango Juliet' was pronounced as 'Jew Jew Tango', a 'Bulls 2 arrival' - 'arrival Buws 2' [3]. In such cases, air traffic controllers need to concentrate to ensure clear transmission of information at a slow rate of speech, especially for non-English speaking personnel.

We should emphasize that poor pronunciation leads to misunderstanding and is a very dangerous factor. One of the problem is that some controllers don't realize that they have bad pronunciation and this is the reason for unconfirmed requests or instructions to repeat [3]. Thus, S. Stewart writes that "the study of terms and phrases radio communication and adaptation to the linguistic features of people from different countries is sometimes like learning another language." Sometimes there are difficulties in understanding of plain English, especially in Asian countries such as Japan, where the pronunciation is always a problem. Lack of understanding of the crew of the Kazakh airlines Ilyushin-76 is an eloquent example of the worst mid-air collision with a Saudi B747 over India in November 1996 that claimed the lives of 349 people. In addition, we must remember that there are many variants of the English language, so the appearance of linguistic problems between people of different nationalities, who speak English is obvious [3].

The analyzed materials show that vividly discussed topic among researchers is the definition of the necessary skills of foreign language

communication for safe operations. G. Goertz believes that the controller who owns ICAO phonetic alphabet and phraseology of radio communication can avoid many problems of misunderstanding due to the fact that most of the critical information transmitted during the radio communication consists of technical data that contains numbers and letters (e.g., e.g. callsigns, altitudes, flight levels, radio frequencies, vectors, runways, wind velocities, etc. etc). Other scholars (S. Uplinger) are convinced that only the possession of special terminology is insufficient to prevent uncertainty in radio communication. It should be remembered that the development of functionality in a foreign language is a complex task, so the pilot and controller which know about 200-300 terms of ATC have insufficient functional skills. In this context we should remember the case with the American aircraft of American Airlines Flight 965 near Cali, Colombia in December 1995. The airport tower controller Kali admitted that he had insufficient skills in English to solve the problem when the crew made illogical message on the position of the aircraft. The result was that a Boeing 757 crashed into a mountain and claimed the lives of 160 people [3].

The study of radio communications is conducted using such methods as content analysis. Such analysis is a complex process that requires a careful study of the messages. It begins with a review of the sentences and continues with a study of the influence of psycholinguistic and social aspects of the language. As a result of these studies it was found that among the American crews in radio communication 51% of the problems were the result of readback errors, and 34% request for repeat, 15% - a break in communication. For comparison, foreign (non-American) planes had 23% problems due to errors in repetition, 62% of requests to repeat, 14% - a break in communication. Radio communication with multiple problems in 75% of cases occurred in foreign aircrafts.

Statistics show that among foreign aircraft the most common readback errors included topics such as radio frequency and route. In 64% of the errors in repetition of foreign pilots, their accent makes it difficult for the controller to understand the contents. For USA planes the most common mistakes are error in repeat which included radio frequency and altitude. It is natural that in such crews accent affected only 1% of these errors [5].

Content analysis of radio communication between Thai Manager and the Thai pilot, the English-speaking and non-English speaking pilots (Japanese, Korean) conducted by T. Tiewtrakul has shown that the local Thai accent of air traffic controllers affects the understanding by the pilots of their messages. More communication problems (errors in repetition, requests for repeat, lack of response) in radio communication of non-English speaking pilots (9.5%) occurred in comparison with English-speaking pilots (4.8%). The fewest amount of problems were observed during the radio communication between local pilots. The author concluded that the native language of the Thai controllers can affect the English pronunciation to such an extent that the pilots who do not speak the Thai language do not understand the message [5].

Our study confirms that English-speaking but non-American crews and crews with a native or official language other than English spend more time on the radio communication with American controllers together with increasing number of messages and the occurrence of a greater number of communication problems during these transfers. Usually they require assistance for their solutions. In such situations, the level of English language skills and particularly accent is often the cause of misunderstanding between the controller and the pilot (although this happens very rarely). Researches of foreign language competence of airline staff determined the pilots' accent who fly foreign airlines as a restrictive factor in the implementation of the radio communication. On the other hand fluency was the limiting factor for pilots that fly by American-English airlines [5].

We believe it is necessary to pay attention to another linguistic factor of safety - the difference between the phraseology of radio communication adopted by a country - member of ICAO and ICAO standard phraseology. For example, according to ICAO standard phraseology a team waiting for the aircraft before entering the runway is "line up and wait". However, American controllers use the phrase "taxi into position and hold". This idiomatic phrase may be unfamiliar to foreign pilots who fly from American airports [5].

The most complete comparison of American and British variants of radio phraseology is presented in the document CAP413 Radiotelephony Manual (CAA, May 2006). We offer just some of the examples given in table 1.

Table 1

**Comparison of variants of radio communication of British Airways and ICAO standards [5].**

The details of the differences between ICAO/British phraseology	Explanation as to why Britain withdrew from the ICAO standards
Phraseological units FLIGHT LEVEL ONE ZERO ZERO (ICAO) is not used in Britain, where flight levels ending in hundreds are transmitted as HUNDRED e.g. FLIGHT LEVEL ONE HUNDRED	To avoid misunderstanding and mixing up adjacent flight levels and incorrect identification of free levels e.g. Flight Level One Zero Zero with FLIGHT LEVEL ONE ONE ZERO.
Phraseological units CLEARED FOR ILS APPROACH is not normally used in Britain, where pilots would ask to "Report established" on the localizer. Once established, they will then be given clearance to "descend on the ILS." In the case of hard work a radio transmitting station phraseological unit can be extended to "When established on the localiser, descend on the ILS..."	Procedural design and complexity of air space, along with experience of safety in the relevant incidents, the UK provides security by introducing clear phraseological units which include a positive statement of descending with an emphasis on the fact that the landing is initiated only when it is safe.

The FAA proposed that ICAO increase requirements in the standards of phraseology because American system does not coincide with the standards of ICAO radio communication. Taking into account the fact that the development of aviation in the future will be very active in developing countries, training air personnel should be based on ICAO standards [3].

In 2000, at the request of the representative of the American Congress Bob Frank, a study was conducted to identify problems in communication among the pilots of different countries operating in American air space and that cannot carry out radio communication with air traffic controllers due to inadequate knowledge of the English language and the influence of this factor on the safety. The results of the study showed that, from January 1997 to August 2000 the FAA recorded 16 309 (5%)

problems during flights across America, the cause of which were problems in understanding the phraseology between pilots and controllers [5]. Despite the small rate (5%) this question requires attention and solution, because the difference between ICAO phraseology and phraseology of local airlines threatens aviation safety. For example, failure to comply with the standards of the phraseology used by air force Royal brought the crash of the Learjet in the UK in 1996 [3].

However, the paradox lies in the fact that despite that the General recognition of the importance of using standard phraseology for safe aircraft control, the world's largest aviation country the United States is often the greatest violator of these rules. No wonder George Bernard Shaw said that England and America – two countries separated by the same language [6], and English in Frankfurt can be closer to international standards and understandable than, for example, in Chicago. In addition, the US is becoming increasingly isolated through the use of local measurement units (hour instead of Greenwich) and some other non metrical units in aviation (mile, Fahrenheit, inches, feet, etc.), which complicates the communication on international flights [3].

If we consider problems in communication at the criteria with more details, it can be concluded that the pilot's accent (36%) and fluency (49%) associated with the request for repeat for the foreign aircraft pilots for whom English is not a native language. The message structure was a factor for requests that included the replacement of words and phrases which are not consistent with standard phraseology. So, in the message of the pilot: "And [Facility ID] we got told on one two three four five squawk zero one to three four. Is that correct?" a more appropriate request would be "Confirm squawk one zero three four." In some cases, there were problems with fluency, words were pronounced together, which hampered the understanding of the message [5].

The situation with break in communications occurs through the use by controllers plain English language and pilots' difficulties with pronunciation and fluency. The pilots' accent affects the occurrence of this type of problem in 79% cases. The problem in comprehension is more difficult to define as it is not always clear if they are associated with the linguistic or technical reasons [5].

A. Fegyveresi summed up a lot of different factors that affect communication, such as workload, fatigue, personal qualities, gender, standard phraseology, experience level, vocal data, and the like. The diversity in language and culture can amplify the difference and misunderstandings in communication, but the language barrier does not always lead to dangerous operations in the cockpit [7].

We should bear in mind that English is the working language in aviation, and not only in ATC but also in the service of the aircrafts. To obtain a license to conduct professional activities the service technicians have to take exams in English. As the service manuals are also issued in English that is a problem for non English speaking staff, which potentially increases their workload, time and error level, or even all three dimensions. In 2001 the report to the Secretary of the transportation Advisory Committee on repair and maintenance of aircrafts stated that the FAA needs to define methods for determining the role of language in the faults of service [8].

Personnel for aircraft maintenance use a lot of languages besides English, particularly for verbal communication. English is mostly used in documents, but there is a difference according to region. North America uses other languages least, only one airline has been found to use of a mix of English and other languages. Europe also prefers English because of its distribution in the European Union. In Asia and other regions other languages are used during meetings and conversations between the mechanics in 79% of cases. Asian countries translate Engineering orders in most cases [9].

Important for pilot training is the practice of using the English language. All interviewed pilots said that the strengthening language practice is a good strategy. Some respondents complained practice is a good strategy. Some respondents complained about the lack of practice in their professional activities, and about the lack of necessary environment to improve skills in English communication [10].

## 5. Conclusions

Thus, a deeper understanding of the language, its basic characteristics and mechanisms of functioning are required in the globalized world in all aspects of aviation. The study showed that non-English

speaking airline staff is at a disadvantage during unusual situations. High level of proficiency in aviation English is a necessary but not sufficient to avoid communication problems during the execution of the professional duties by aviation personnel. However, the language proficiency level that exceeds the minimum, as required by the ICAO standards, makes a significant contribution to the reduction of communication problems. In these situations for aviation personnel it is necessary to master plain language and understanding of context to minimization of uncertainty and understanding between the controller and pilot. At the same time, English-speaking personnel should be trained how to communicate simply and clearly with non-English speaking colleagues and understanding native English speakers is a matter of priority to ensure flight safety.

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### Важливі питання мовної підготовки неангломовного авіаперсоналу

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**Мета:** метою цього дослідження є вивчення причин виникнення певних комунікативних труднощів у професійному спілкуванні неангломовного авіа персоналу в умовах несподіваних професійних ситуацій. Автор порушує питання необхідності високого рівня володіння мовою (відповідно до стандартів ІКАО) для запобігання таких проблем та забезпечення безпеки польотів. **Методи дослідження:** Для проведення дослідження були використані загальнонаукові методи, які необхідні для вивчення наукових джерел, а також метод порівняння для синхронічного порівняння подій у різних регіонах. **Результати:** з метою мінімізації комунікативних проблем та підвищення безпеки польотів разом з авіаційною мовою та фразеологією радіообміну, необхідно оволодіння загальною англійською мовою, як основою подальшої професіоналізації набутих знань. **Обговорення:** потребує глибокого розуміння механізми набуття навичок іншомовного спілкування, разом з базовими характеристиками англійської мови та особливостей її функціонування.

**Ключові слова:** авіаційний персонал; неангломовний персонал; авіаційна англійська; комунікація; фразеологія радіообміну.

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**Важные вопросы языковой подготовки неанглоязычного авиаперсонала**

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**Цель:** целью данного исследования есть изучение причин возникновения определенных коммуникативных трудностей во время профессионального общения между неанглоязычным авиационным персоналом в условиях нестандартных ситуаций. Автор затрагивает вопрос о необходимости высокого уровня владения английским языком (в соответствии с требованиями ИКАО) для недопущения таких проблем и обеспечения безопасности полетов. **Методы исследования:** Для проведения исследования были использованы общенаучные методы, которые необходимы для изучения научных источников, а так же метод сравнения для сравнения явлений в разных регионах. **Результаты:** с целью минимизации коммуникативных проблем и повышения безопасности полетов необходимо приобретение знаний общего английского вместе с авиационным английским и фразеологией радиообмена, как основы для дальнейшей профессионализации полученных знаний. **Обсуждение:** требует глубокого понимания механизмов приобретения навыков иноязычного общения вместе с базовыми характеристиками английского языка и особенностей его функционирования.

**Ключевые слова:** авиационный персонал; неанглоязычный персонал; авиационный английский язык; коммуникация; фразеология радиообмена.

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