

A Multilingual Speaker in Global Aviation Communication

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Abstract: Many flights operate in different countries and aviation communication takes place mainly between non-native speakers of English. Unfortunately, real life professional discourse seems to go beyond its prescribed standardization. Moreover, it still happens that many languages are used simultaneously on the frequency. This paper investigates the matter of multilingual usefulness in global aviation communication. The author presents the current state of affairs and discusses whether or not operational personnel need to know how to speak multiple languages or if it is better to speak only prescribed Aeronautical English. Empirically based research is also presented. What matters in a given context and especially in a particular non-standard or emergency situation is the language used for professional communication, but in the aviation context it is not only the communication between parties involved that really counts. All the users of airspace should understand words uttered by their colleagues present at frequency in order to be able to correct wrong instructions or react in case of distress.

Keywords: multilingualism, global aviation, English, aviation communication

1. Introduction

English was established as an official language of aviation in 1951 by the International Civil Aviation Organization (ICAO), the United Nations agency responsible for air navigation. This action was aimed at improving global aviation communication since every user of airspace is supposed to speak prescribed Aeronautical English. Currently, aeronautical communication takes place mainly between airspace users who are not native speakers of English. Therefore, it is a common practice now to switch into a mother tongue when, for example, flying into domestic airspace or when a mother tongue or a more familiar language than English to a particular airspace user is heard on the frequency. To this end, we can talk about multilingual aviation communication. However, in aeronautical settings it seems to be not only the communication between parties involved that really counts. What matters in the given context and especially in a particular non-standard or emergency situation is the choice of language used for professional communication. For safety reasons, all the users of airspace are required to use English mainly due to the fact that they are supposed to understand words uttered by their colleagues present at frequency in order to be able to correct wrong instructions or react in case of distress when necessary.

2. Global Aviation Communication

During the sixty years after the introduction of English as a language of aviation, the

level of English used for aeronautical communication was not satisfactory. Therefore, March 2011 brought new language proficiency requirements for international aviation communication. The ICAO imposed the new law on all its member states¹. Since that date, mandatory Aeronautical English tests have been introduced for all operational personnel excluding native speakers of English. These tests are to check if a pilot or an air traffic controller easily understands instructions and utterances in Aeronautical English and if they are able to communicate fluently in both routine and non-routine situations, e.g. emergency or distress. Still, the basic aspects of global aeronautical communication are the strictly regulated phraseology and communication procedures that have been developed in order to avoid misunderstandings. Standard phraseology is characterised by short elliptical utterances prescribed for each phase of flight. The ICAO (Doc. 9835, 2010: 6.2.8.4) defines standard phraseology as “the formulaic code made up of specific words that in the context of aviation operations have a precise and singular operational significance”. That is why it is so critical that all pilots and air traffic controllers adhere to communication procedures, which afford multiple occasions to catch errors. One procedural requirement, for instance, is careful “readback” by the pilot of what the controller has said, and “hearback” by the controller. The latter is supposed to listen to the pilot’s readback and catch any readback errors in order to react when necessary. In this way we deal with addressing any misunderstandings in the specific communication loop (Eurocontrol 2006). However, according to S. Cushing (1994: 44), a full readback may be also insufficient to prevent misunderstanding, especially ‘at a foreign airport’ where English, though required for aeronautical communication by international law, is likely otherwise to be a foreign language (more in S. Cushing 1994: 14, 44).

It is crucial that English should be used in commercial aviation where a given language is shared by only some of the occupants of the airspace because the use of the local language may lead to decreased situation awareness if the crew cannot understand the exchange of transmissions around them or, even worse, the instructions from the controller directed at them (D. Estival). Moreover, ‘The English language shall be available, on request from any aircraft station, at all stations on the ground serving designated airports and routes used by international air services’ (ICAO 2001: 5.3). Even for general aviation, all ATC stations must be able to provide service in English if requested by an aircraft (D. Estival, C. Farris & B. Molesworth 2016: 37): “Thus, a default common language in theory ensures a greater ease of communication between controllers and pilots and should lead to increased situation awareness and improved air safety. Nevertheless, there are still a number of issues to be addressed in those multilingual situations.

3. Multilingual aviation settings

The pattern of language use among multilinguals has been studied deeply so far in various contexts (see M. Martin-Jones/ A. Blackledge/ A. Creese 2012). However, the analysis of multilingualism in the aviation context is not popular among researchers and academics, though it seems to be one of the key current issues nowadays. We can

¹ ICAO member states list: <https://www.icao.int/about-icao/Pages/member-states.aspx>

assume that each multilingual speaker and group behaves somewhat regularly in their use of language for various purposes (S. Boyd 1986: 103). But with different interlocutors, and without a given context, it is not possible to provide any valuable language outcome.

D. Gabryś-Barker (2016) suggests that the major aim of multilingualism research should focus on an individual language user and not just on statistically verified models of numerous language users. Moreover, the complexity of individual multilinguality derives not only from the multiplicity of languages known and used. It is also shaped by individual differences such as preferences of language choices and use in different contexts and in different domains. According to D. Gabryś-Barker (2017): “Individual multilinguality is seen as an ability to understand and use two or more languages, in which multilinguals may differ in their preferences for different languages in different contexts and for different functions”. These are in accordance with an individual pilot or controller code-switching. General observations of their language choice in a given multilingual situation have proven that those preferences are more personal than general. It means that if a given pilot feels better communicating in the local language, he or she usually switches to it. But it cannot be said, fortunately, that this is a common practice for all pilots or controllers who find themselves in a similar situation.

Generally, in any multilingual settings, alternation between codes – dialects or languages – is the norm rather than the exception and seems to be a natural phenomenon (R. Mesthrie/ R.M. Bhatt 2008: 150). It seems that being able to communicate in two or more languages may support the communication process, especially when the interlocutor is not fluent in speaking the required language. However, in aeronautical communication there is no place for ‘being not fluent’ in English. Therefore, the global aviation context constitutes another example of multilingual effectiveness. Still we can easily observe air traffic controllers and pilots engage in extensive switching and mixing with the local languages. This phenomenon is called code-switching by the ICAO and refers to the habitual switching back and forth from one language to another of bilingual and multilingual speakers during the course of a conversation (A. Borowska 2017: 212). This issue has been found to be contributory factor to occasional aviation incidents and accidents during the last few decades and thus has been officially regarded as risky communicative behavior. In order to assess any situation during each phase of flight, airspace users have only their microphone and headphones at their disposal. The airspace is divided into sectors that communicate on the same radar frequency. Pilots can therefore increase their situation awareness by listening to other communications on the same frequency. This tells them who is near and whether they encounter any weather conditions that they should know about. Moreover, they may even catch an air traffic controller’s mistake, such as clearing them for the same runway as another airplane, confusing the call signs, etc. (F. Grosjean 2017). Consequently, pilots and controllers speaking in languages other than English deprive English speaking pilots flying in the same airspace of the information they need or feel comfortable with and thus diminishes their situation awareness:

In addition to code-switching phenomena, compliance with Annex 10, Volume II, 5.2.1.2.1, leads, in many parts of the world, to the creation of a bilingual environment in which controllers alternate between their local (usually native) language and the English language, while pilots may choose which of the available languages to use. In these environments, pilots who are proficient only in the English language may be unable to take into account exchanges taking place in the local language with other aircraft in the same airspace (ICAO Doc. 9835, 2010: 3.3.22).

4. Threats of multiple language use on frequency

It has been observed for many years now that there are speakers who feel more comfortable using their mother tongue in aeronautical discourse than using English. Therefore, it is worth pointing to a few sample hazardous situations that illustrate the negative impact of the multilingual approach, so as to prevent similar occurrences in the future. These are as follows:

- a) different languages used in the cockpit and in radiotelephony communications that may cause discrepancies;

In the example presented by S. Cushing (1994: 44), the pilot tells the copilot, in Spanish, to inform the controller that an emergency prevails, but the copilot tells the controller, in English, only that the plane is running out of fuel. In this scenario, an emergency had not been declared nor the need for priority emphasised:

Pilot to copilot (in Spanish): Tell them we are in an emergency.

Copilot to controller (in English): We're running out of fuel.

Pilot to copilot: Digale que estamos en emergencia.

Copilot to pilot: Si, señor, ya le dije.

Copilot to controller (in English): We'll try once again. We're running out of fuel.

Pilot to copilot (in Spanish): I don't know what happened with the runway. I didn't see it.

Copilot to pilot (in Spanish): I didn't see it.

Pilot to copilot (in Spanish): [Advise the controller that] we don't have fuel.

Copilot to controller (in English): Climb and maintain 3,000 and, ah, we're running out of fuel, sir.

Controller to copilot (in English): Is that fine with you and your fuel?

Copilot to controller (in English): I guess so. Thank you very much.

(S. Cushing 1994: 44–45)

The result was a crash because the aircraft ran out of fuel (Cove Neck, New York, 25 January 1990). The proper degree of urgency was not conveyed to the controller. Cushing (1994: 44) points to the possible reasons of the terms used in English by the copilot: "The problem is probably compounded here...by the fact that the language being used is a technical variant of a language other than the speaker's own, leaving him twice removed from vernacular with which he is most familiar". It is believed the Spanish-speaking pilot was "not thoroughly familiar with English and all of the standard international aviation phraseologies, and felt that advising ATC of an acute fuel shortage was sufficient to grant him an immediate landing clearance. Consequently he never literally declared an emergency" (P. Illman 1998: 29 in D. Estival/ C. Farris/ B. Molesworth 2016: 58).

- b) problems with understanding a local controller's dialect (more common for native speakers of English);

American crews tend to have difficulty communicating with controllers in foreign locations as it happened during a final approach into a South American airport when a flight attendant was summoned into the cockpit because the crew could not understand controller's English:

Neither the Captain nor I could understand the instructions of the controller, even after repeated requests to repeat the instructions. For example, the controller would say something, which we thought was possibly a heading of 150 but could have been a flight level. The Captain asked the controller, 'Understand turn to 150 heading?' and still, we could not understand the answer to the question. In all my years of flying all over the world, Africa, Turkey, all over the Middle East, that was the worst English-speaking controller I've ever heard. Not only was his English non-existent, he held the mike too close to his mouth, further disrupting his transmission. Finally, the Captain brought the Flight Attendant into the cockpit because she was Spanish-speaking and maybe that would help. The weather was IMC at the time, and not so comfortable considering the language barrier. Eventually, we got it straightened out, and landed uneventfully (*Callback*, no. 354, June 2009).

The above solution was successful, though the controller's poor English could have caused a serious accident. Such a situation should not have taken place, since the English language is officially prescribed for aeronautical communication. However, the question arises if in similar settings it would be better for safety reasons that a captain could speak Spanish. There are scenarios in which pilots learn basic local expressions as is the case of pilots flying to Korea, China, Japan etc., who learn these basic local phrases for their own safety. On the other hand, it seems reasonable that in similar contexts a multilingual native speaker of English would be more sensitive to linguistic problems non-native speakers might have and the way they pronounce and intonate words. Having been a foreign language learner, one might have experienced similar problems himself. Thus, in similar global contexts, such speaker could be more beneficial than the one who can speak Spanish only.

- c) multilingual chatter on the frequency;

Although Spanish, along with English and French, is one of the three original official languages accepted by the ICAO for aviation regulations, this fact has never aimed at causing potential hazards especially when these languages are used simultaneously for aeronautical communication aims. Nevertheless, conversations between aircraft crews and traffic control in Spain are currently conducted in the common language of both parties, resulting in multilingual chatter over the radio waves (S. Tallantyre 2014). Incidents reports (e.g. presented in *Callback*) provide numerous examples of similar events where multiple language use on the same frequency has been attributed as a contributing factor of an incident or accident. Below we can find two examples:

Example 1

On 25th of May, 2000 a UK-operated Shorts SD330 aircraft waiting for take-off at Paris CDG in normal visibility at night on a taxiway angled in the take-off direction

due to its primary function as an exit for opposite direction landings. The aircraft was given a conditional line up clearance by a controller who had erroneously assumed without checking that it was at the runway threshold. After an aircraft which had just landed had passed, the SD330 began to line up unaware that an MD83 aircraft had just been cleared in French to take off from the full length. As a result, a collision occurred (www.skybrary.aero, 2017). In the incident report (BEA 2000) we can read an interpretation of this event that indicates that the contributory factor of the accident was the use of two languages (English and French) for instructions, so the pilot's situational awareness was hindered by the use of two languages:

2.3.2.2 Shorts Crew

The crew of the Shorts, who were not French-speaking, did not understand the MD 83's clearances to line up then take off. In addition, it was obvious to them that these messages were not addressed to them. The clearance they received, "line up runway 27 and wait, number two", could have warned them. In their position, the expression "number two" could only mean "number two" for takeoff, which implied that there was an aircraft before them. We may note that the terminology used did not oblige them to identify the other aircraft formally, the "number two" in the second part of the message possessing an ambiguity as to whether it was information or a condition associated with the lineup clearance. (...).

Communications with the crew of the MD 83 were made in French, those with the crew of the Shorts in English. The LOC controller cleared the MD 83 to take off and immediately afterwards cleared the Shorts to line up, specifying that it was "number two".

- The configuration of access taxiway 16 made it impossible for the crew of the Shorts to see the upper end of the runway at the time of the line-up.
- The crew of the Shorts did not realise that there was an aircraft taking off from the threshold. They entered the runway at the same time as they were trying to identify the "number one" aircraft.
- The crew of the MD 83 saw the Shorts late and, bearing in mind the speed reached, was unable to avoid a collision.
- The crew of the Shorts saw the MD 83 at the last moment. The use of two languages for radio communications meant that the Shorts crew were not conscious that the MD 83 was going to take off.

We can assume that this incident could have been avoided if the controller's error had been identified by the Shorts, which means that if the controller had instructed the MD83 in English, the Shorts would have easily noticed that MD83 aircraft was cleared to take off and could have immediately reacted by telling the controller about his mistake. These are common practices today especially at busy airports. Here, the lack of ability to understand French by the British crew made this correction impossible. Consequently, the Bureau Enquêtes-Accidents of France recommended that:

4.1.8. in the light of the analysis of this accident and previously acquired experience, the DGAC study calls for the expediency and methods of implementation for the systematic use of the English language for air traffic control at Paris Charles de Gaulle aerodrome, as well as the extension of this measure to other aerodromes with significant international traffic (BEA 2000).

Example 2

In 2012, two aircraft came into conflict over Ibiza, Spain as both aircraft were positioning to final approach. The controller cleared one aircraft to a level where it would be in conflict with the second locally-based aircraft; the aircraft was unaware of the error because communications with the locally-based aircraft (ECJIL) were being conducted in the local language of Spanish, whereas other aircraft (CS-DP) communications were being carried out in English (www.skybrary.aero 2017).

An investigation found that one of the aircraft had passed a procedurally-documented clearance limit without air traffic control clearance or intervention and that situational awareness of its crew had been diminished by communications with the conflicting aircraft being conducted in Spanish rather than English:

All the communications between aircraft CS-DP and the Ibiza approach controller before and after the incident were in English. The communications between the ATC and ECJIL aircraft, however, were in Spanish, except for one exchange that was made in English, at 19:16:23, during the close approach between the two aircraft.

The fact that the ATC did not use English with aircraft EC-JIL while it was providing vector guidance to both to intercept the localizer on the same runway prevented the crew of aircraft CS-DNP from having a clear picture of the approach sequence, since they were unaware that the preceding aircraft in the approach sequence was aircraft EC-JIL, information that was conveyed in Spanish. This lack of a clear situational awareness by the crew of aircraft CS-DNP could have contributed to its crew's misunderstanding of the instruction to cross the LLZ. One of the contributing factors has thus been identified as the use of Spanish in a situation involving an aircraft whose crew did not master this language (Report IN-037/2012, Addenda Bulletin 1/2014).

The Safety Recommendation that was made as a result of the above mentioned incident was that the Spanish Aviation Safety and Security Agency (AESA) would promote the implementation of appropriate actions in order to minimise the problems caused by the use of the Spanish language for aeronautical communication in situations involving crews that do not understand that language. A Safety Recommendation on resolving the “persistent problem” of such language issues was made, noting that a similar recommendation had been made 11 years earlier. Moreover, currently the AESA calls upon all aviation communications to be conveyed in a single language – English (S. Tallantyre 2014):

Given the time elapsed since and in light of the persistent problem, the CIAIAC considers it necessary to issue a new recommendation along the same lines as 25/03 regarding the exclusive use of English in communications:

REC 08/14.

It is recommended that AESA promote the implementation of the necessary actions in order to minimize the problems caused by the use of Spanish in situations involving crews that do not master the language.

(Report IN-037/2012, Addenda Bulletin 1/2014)

5. Conclusion

Following Skybrary (2017), it may be concluded that although nowadays the default language of international aviation worldwide is English, local languages are used concurrently for radiotelephony communications, even in busy and complex operational environments. In the majority of cases, operational personnel still feel more comfortable using their mother tongue (e.g. Spanish, Italian) than using English. Sometimes this practice is 'justified' on a local level by the reasoning that it avoids possible misunderstandings when addressing local specifics and facilitates the speed of the communication process with the native flight crews. However, controllers using both English for communication with international flights and the country's native language for communication with the local crews potentially prevent both crews from achieving the desired level of situational awareness with respect of the other traffic. Even though it seems reasonable to use a more familiar language for both conversation partners for communication purposes, when necessary, the effectiveness hereof works only well at the 'internal' level (e.g. a pilot and an air traffic controller oriented) in the aviation context. When it comes to the 'external level' of communication, namely the one that can be monitored by other airspace users than those being directly involved in the communication process, it does not suffice and does not enable controller's error correction. On the contrary, it may be a contributing factor to incidents and accidents as the history of aviation shows.

Therefore, new regulations have also caused new requirements for multilingual speakers. Multilingual speakers who have easily switched from one language to another and adapted their language according to the audience and topic will have to refrain from such practices. It looks like there is the only aspect of multilingualism that can be positive and useful in global aviation communication nowadays and this is a multilingual native speaker of English alone who is familiar with the linguistic problems facing non-native English speakers. Such a speaker not only becomes a more conscious thinker and listener who can communicate clearly and think creatively, but also gains the most significant benefit of multilingualism: a broader, more global perspective (D. Roitman 2013). The ideal picture of all airspace users speaking all possible languages does not exist, so it has been reasonable and useful to impose one language of aviation, Aeronautical English, in order to ensure the safety of each flight.

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