BY RICK DARBY

Talking Points

Communication between controllers and U.S. pilots in non-U.S. airspace takes extra attention.

George Bernard Shaw said that England and America are two countries divided by a common language. The same often applies to U.S. pilots trying to communicate with air traffic control (ATC) on international flights, even though their mutual language is ostensibly English — further standardized by International Civil Aviation Organization (ICAO) phraseology. When asked about their ATC communication experiences flying in non-native English-speaking countries, 52 percent of a study group of U.S. pilots reported the experiences as negative, compared with 17 percent who described them as positive or very positive.

The data are contained in the third of a series of reports by the U.S. Federal Aviation Administration (FAA) Civil Aerospace Medical Institute.[1] In responses to a questionnaire and interviews, 48 U.S. pilots described their radio communications, mainly with air traffic controllers, during international flights.

The FAA estimates the growth of international passenger traffic to and from the United States will average 4.6 percent per year through 2025.[2] As the volume of U.S. and non-U.S. air carrier traffic increases, "so will the number of transmissions necessary to provide ATC services," the report says. "Given that the present air-ground communications system is reaching pre-9/11 saturation levels during peak traffic periods, it is common for some controllers to send longer and more complex messages to reduce the number of times they need to communicate with individual aircraft and use nonstandard phraseology to decrease the amount of time on frequency. The ability to quickly decode, understand, read back and comply with these messages can be a problem for all pilots, especially those who are unfamiliar with how ATC services are delivered by controllers in a particular region."

The survey's frequently used, awkward phrase "non-native English-speaking language experiences" was in many cases interpreted by members of the pilot study group to mean any occasion when linguistic difficulty arose in an environment where English was not the controllers' first language. Their reports involved controllers and pilots of other aircraft speaking their own first language, as well as when controllers' accents proved difficult to understand.

In response to the question, "How would you rate your overall non-native English-speaking language experiences during these [international] flights?" a slight majority rated them as "negative." Sample comments from those pilots included the following.[3]

- "It increases the number of times clearances have to be repeated. It adds to the controller's workload and the pilot's also."
- "We hear controllers and pilots use their native language for conversation — as we do domestically. It perplexes me when I hear things I do not understand. First of all, it eats up airtime that somebody else may need.

> Second, it distracts me from my situational awareness. I was in China this weekend, and most of the other airplanes were getting their clearances in Chinese … . If ATC is talking to Air France, it's in French. I'd really like to know what their clearances were, but I don't speak the local language. They may be talking about a thunderstorm up ahead, and we're heading there."

Hearing radio communication in a language a U.S. pilot does not understand can involve subtle issues of protocol.

- "The other problem is that it breaks radio decorum — the unwritten rules of when to chime in. If ATC talks to Air France in French, I'm waiting for the pilot to respond. I don't know whether this guy should reply or not. I thought that after counting off a few seconds enough time has passed, so I ask to do something, but I just stepped on top [blocked the reply] of Air France, because now he's trying to respond."

Pilots were asked, "How is your workload affected by your experience with non-native English-speaking language differences during a flight?" Among those who offered answers, 48 percent said it increased their workload, 37 percent said it was "workload related" and 15 percent said it required added attention.

"When controllers talk in their language, it's invariably when there's a lot going on," said one. "They revert to their language because the pilots [who speak the national language] don't understand what to do when it's said in English."

Pronunciation of names of fixes, particularly those not immediately visible on the navigation display, caused problems for some pilots: "Where are they sending me? Spell the fix and I'm out of your way."

Other pilots developed their own systems to mitigate language problems: "We went so far as to make a four-page list of Spanish words — what the fixes are; the way they're spelled; the way they sound — the way controllers pronounce them and the way we hear them."

Yet, although there was a consensus that language problems added to a pilot's workload, such problems were not necessarily frequent.

Answers to the query, "How often do you experience communication problems in non-native English-speaking airspace/airports?" were weighted toward "occasionally" (Table 1). Responses of "frequently," "often" and "without fail" combined were 23 percent of the total.

Some examples of communication problems involving non-native English-speaking environments were these:

- "Just as Bangkok Ground [Control] is hard for us to understand, they have just as much difficulty understanding us — it's occasionally hazardous."
- "The big problem is, if I don't hear my call sign, especially the [first part of our company's name] I have to have the entire transmission said again."

But, according to another pilot, "For the most part, English is very good in Costa Rica, Guatemala and Panama. In Europe, everybody is raised speaking two or three different languages."

The pilot group was asked, "Of the non-native English-speaking airports that you fly into, do you find the English language skills of other pilots and controllers comparable from one country to that of another?" Among the 48 respondents, 31 percent indicated that the English language skills of pilots and controllers are comparable across countries. Among the other pilots, 61 percent believed that English skills varied among countries, while the others did not comment or were undecided.

One pilot said, "Controllers whose understanding of the English language is restricted to ATC terminology kind of freeze up when asked a question outside the box [of standard phraseology]. Their communication is limited to basic ATC [subjects] and to what [instructions] they're planning to give you."

The report says that regardless of where pilots flew outside the Anglophone sphere, six general themes emerged: "First, when busy, controllers don't always have the time to

Frequency of Communication Problems in Non-Native English-Speaking Airspace and Airports

Frequency of Communication Problems	Number of Pilots
Rarely (less than 10% of interactions with controllers)	12
Occasionally (between 10% and 24% of interactions with controllers)	25
Frequently (between 25% and 74% of interactions with controllers)	8
Often (between 75% and 90% of interactions with controllers)	2
Without fail (more than 90% of interactions with controllers)	1

Note: Responses were based on a questionnaire and interviews of 48 U.S. pilots who flew international routes.

Source: U.S. Federal Aviation Administration, Civil Aerospace Medical Institute

Table 1

say it right. Second, controllers can become frustrated with pilots who do not immediately grasp what is said in accented English. Third, some controllers speak too fast for pilots to understand. Fourth, controllers who are more experienced make communicating easier. Fifth, as pilots are exposed to an area more frequently, communicating becomes easier. Sixth, accented English requires increased attention."

The study inquired how often, when flying in non-native English-speaking countries, controllers used standard ICAO phraseology for routine radio communications. The most frequent response was "often," followed by "without fail" (Table 2), representing in combination 85 percent of all responses.

"The non-native English-speaking [countries] use more ICAO standards, certainly more than we do in the U.S.," said one pilot. "It's the phraseology they are trained with, and that's what they tend to give us. … My concern is when we come into the nonstandard arena, when there's something wrong with the aircraft and we have to convey a lot of information at a given time and we need very quick, good information right now — is it readily available and how would it be conveyed, standard or nonstandard?"

The ability to form spontaneous, non-routine sentences can be important in unusual or emergency situations. "When flying in a non-native English-speaking country, how often do controllers use common English for routine communications to you?" the pilots were asked — "common English" meaning conversational language rather than by-the-book ICAO-speak.

Controllers scored lower on this scale, by the pilots' reckoning, than on use of ICAO standard phraseology (Table 3).

"Common English might be used when coordinating a ground delay or taxi back to the gate, maybe the routing is nonstandard, or ATC is trying to figure out why we need to delay," said a pilot. "Some experienced controllers revert to common English to help us understand an instruction like 'taxi to holding point.' If we ask for a repeat, they may use common English so we can understand it by saying, 'Do not enter runway.'"

When the subject changed from how often controllers used common English to how well they used it, the most common assessments by pilots were "fair" and "good" (Table 4). Sample comments included the following:

- "It's been my experience that European controllers, especially the German controllers, converse well. We're relatively new flying over to Delhi [India]; we have a little difficulty in Pakistan, Afghanistan and Kazakhstan because they are new for us, as we are new to them."

- "I find that when we step outside the bounds of ATC English, it becomes more difficult for them to express what they want to say and more difficult for us to understand what they're trying to say in common English. Basically, if ground crews want to hear 'Parking brake set,' even the phrase 'Parking brake is set' is outside of the norm."

Frequency of ICAO Standard Phraseology Usage by Controllers in Non-Native English-Speaking Countries

Frequency of ICAO Phraseology Usage	Number of Pilots
Without fail (more than 90% of interactions with controllers)	13
Often (between 75% and 90% of interactions with controllers)	28
Frequently (between 25% and 74% of interactions with controllers)	6
Occasionally (between 10% and 24% of interactions with controllers)	1
Rarely (less than 10% of interactions with controllers)	0

ICAO = International Civil Aviation Organization

Note: Responses were based on a questionnaire and interviews of 48 U.S. pilots who flew international routes.

Source: U.S. Federal Aviation Administration, Civil Aerospace Medical Institute

Table 2

Frequency of Common English Usage by Controllers in Non-Native English-Speaking Countries

Frequency of Common Language Usage	Number of Pilots
Without fail (more than 90% of interactions with controllers)	2
Often (between 75% and 90% of interactions with controllers)	8
Frequently (between 25% and 74% of interactions with controllers)	2
Occasionally (between 10% and 24% of interactions with controllers)	21
Rarely (less than 10% of interactions with controllers)	15

Note: Responses were based on a questionnaire and interviews of 48 U.S. pilots who flew international routes.

Source: U.S. Federal Aviation Administration, Civil Aerospace Medical Institute

Table 3

Controller Common English Skills in Non-Native English-Speaking Countries

Controller Common English Skills	Number of Pilots
Their communication skills are good	17
Their communication skills are only fair	20
Their communication skills are poor	7
Their communication skills are terrible	0
Invalid — Rated British controllers	1
No selection	1
Multiple selections	2

Note: Responses were based on a questionnaire and interviews of 48 U.S. pilots who flew international routes.

Source: U.S. Federal Aviation Administration, Civil Aerospace Medical Institute

Table 4

Amount of Attention Required to Understand Non-Native English-Speaking Controllers

Amount of Attention Required	Number of Pilots
A great amount	11
A considerable amount	20
A moderate amount	13
A limited amount	4
It is effortless	0

Note: Responses were based on a questionnaire and interviews of 48 U.S. pilots who flew international routes.

Source: U.S. Federal Aviation Administration, Civil Aerospace Medical Institute

Table 5

How much attention does trying to understand non-native English speakers take? The most common response, reported by 42 percent of pilots, was "a considerable amount" (Table 5), followed by "a moderate amount," reported by 27 percent of pilots.

"I've found that anything outside the routine, although infrequent, requires a considerable amount of time," said a pilot. "I often ask ATC to repeat what they're saying. We recently had an airplane [crew] in China that wanted the emergency equipment [at the airport] and it never came. The controller didn't understand what they wanted, and neither did the emergency guys."

Another said, "In the non-native English-speaking countries, we really have to listen, stop doing whatever else we're doing, and listen to what they're telling us so we can understand the clearance. A lot of times, I'll pick up a pen or pencil in anticipation of what they're going to say so I have a written backup. This is unlike the U.S., where they're speaking to us as if in conversation — and we instantly say, 'Roger.'"

The report suggested the following "mitigation strategies and techniques" for U.S. pilots flying to non-native English-speaking countries:

- "Develop a visual aid to facilitate communications with non-native English-speaking controllers that lists the names of fixes with their phonetic spelling and identifier;
- "Talk slowly and deliberately to ATC to make understanding easier. Decoding one language into another is not an automatic process and takes time for less proficient speakers;
- "Learn to count in the languages of the countries you frequent;
- "Try to complete station-keeping tasks at cruise altitude (e.g., all briefing items, flight management system entries, flight attendant issues) so more attention is directed to listening to ATC when on descent;
- "Keep communications to very basic ICAO phrases. Any nonstandard requests are often difficult for non-native English-speaking controllers to understand; [and,]
- "Wear a headset or put in an earpiece instead of listening to external speakers."

Notes

1. Prinzo, O. Veronika; Campbell, Alan; Hendrix, Alfred M.; Hendrix, Ruby. "U.S. Airline Transport Pilot International Flight Language Experiences, Report 3: Language Experiences in Non-Native English-Speaking Airspace/Airports." Report no. DOT/FAA/AM-10/9. May 2010.
2. FAA. "FAA Aerospace Forecast Fiscal Years 2009–2025." 2008.
3. The report says, "[Various pilots'] discussions are combined, condensed, edited and presented from the perspective of a hypothetical, albeit typical, ATP-rated pilot in the form of a narrative." For the sake of readability, this article, like the report, treats each comment as that of one pilot although it may actually be an amalgamation.