

Say Again, Please

More patience and new methods of presenting information could improve ATC communications with non-native English-speaking pilots.



BY LINDA WERFELMAN

Native English-speaking air traffic controllers need to speak more clearly and more slowly and to be patient with pilots who do not immediately understand their instructions, according to U.S. air carrier pilots who offered their observations as part of a U.S. Federal Aviation Administration (FAA) study.¹

A report on the study — the sixth in a series by the FAA Civil Aerospace

Medical Institute — recommended research to determine “the optimal speech rate” for delivering air traffic control (ATC) information, to identify how controllers and pilots communicate in “non-standard situations” involving such factors as thunderstorms and air traffic conflicts, and to determine whether there are alternative ways to provide pilots with information that they otherwise would obtain by hearing

and understanding ATC conversations with the pilots of nearby aircraft.

“New phraseology may be needed in lieu of the work-around practices of common English currently in use,” the report said. “Pilots unfamiliar with the local jargon and slang are at a disadvantage and may misinterpret these conversations. For example, ‘You’re following an MD-80, but he’s got to slow up ... uh ... the train’s starting to slow



Voice communications between native English-speaking controllers and non-native English-speaking pilots need improvement, according to half of the pilots responding to an FAA survey.

down ahead' may not be meaningful to a pilot unfamiliar with local jargon."

Other recommendations called for making available "graphic and text representations of taxi clearances, route clearances and route modifications" and for using terms and phraseology recommended by the International Civil Aviation Organization (ICAO) in all ATC messages.²

The study asked 48 participating pilots — all of whom flew international routes for major U.S. airlines and held airline transport pilot certificates — to complete a survey; a number of pilots then were selected for follow-up interviews. Sixty percent of the participants said that they understood no languages other than English; of the remaining 40 percent, many said that they spoke/understood French or Spanish or both, one spoke/understood Spanish and German, and one spoke/understood French, Spanish and Portuguese.

Forty-six percent of the pilots said that they considered voice communications between non-native English-speaking pilots and native English-speaking controllers "very good in most respects," but 29 percent said that communications "could use some minor changes," and 21 percent said that communications were "not good enough for extreme conditions" (Table 1, p. 32).

Even the pilots who characterized communications between the two groups as very good said that they had observed problems.

"It's been my experience that controllers in New York speak way too fast and often get short [impatient] with (non-native English-speaking pilots)," the report said, quoting observations from the surveyed pilots. "I can tell right away whether the pilot's 'getting it' or not, from the time lag after the controller has given three or four instructions at once and the presence of a big pause before he reads it back.

"I don't think many controllers have a clue about the level of stress they put the non-native English-speaking pilots under. I know because I've been on the other side of the equation (flying into non-native English airspace). We are worn

out from flying all night and are feeling the stress of too rapid a communication rate, use of slang, nonstandard ICAO terms (or no ICAO terms to begin with) and having to deal with all that."

Pilots who said they considered the communications that they overheard "not good enough for extreme conditions" said their concerns focused on safety issues.

"I have seen some dangerous things purely because of a lack of communication," one pilot said. "We've had near misses, taxiing situations, airplanes cleared for takeoff (executed by) another airplane."

As an example, one pilot described an event at Hartsfield-Jackson Atlanta International Airport:

A non-native English-speaking pilot was given taxi instructions and ended up somewhere where he wasn't supposed to be. There was a miscommunication between him and the ground controller. We became distracted from our own operation because we were trying to figure out where he was (in proximity to us).

Another pilot observed, "A lot of non-native English-speaking pilots and controllers only learn so many words and phrases and basically work off a script. ... I hear long periods of silence after controllers ask [pilots] a non-standard idiomatic question in English. When (non-native English-speaking pilots) get into a non-standard situation [such as the need to deviate around a thunderstorm or a traffic conflict], they cannot adjust."

The pilots said they based their opinions of non-native English-speaking pilots' skills with the language on a number of factors, including their comprehension of clearances and other ATC instructions, fluency, verbal interactions with controllers, pronunciation, sentence structure and vocabulary.

"Are controllers getting their point across the first time, or are they in a debate with the pilot?" one pilot questioned. "Do controllers have to slow their speech and, instead of giving a whole rapid-fire clearance, give it in pieces? ...

"I can tell by how pilots react whether they got it or not. Are they slow to respond, or do

they come right back? The worst thing I want to hear after ATC's given a clearance is silence. If I hear nothing, a long hesitation, a really slow readback, or an incorrect readback, then I know there's trouble."

On the Same Path

Asked how they have reacted when their aircraft has been on the same flight path as one flown by non-native English-speaking pilots, those participating in the study said that they tried to simplify the language they used in their interactions with ATC so that the non-native English speakers would hear simple phrases and ICAO terminology. They also said that they tried to listen more attentively to both the non-native English-speaking pilots and to the controllers.

"We can pretty much determine where the non-native English-speaking pilot is, from

what the controller is telling him to do," one participant said. "We pay close attention to his position and understanding of his clearances. We can determine how that is going to impact our flight or if he is going to have any effect on us."

Another said, "At some of the busier airports, there are separate tower frequencies for each runway, so we don't hear what's going on at the other runways. In my opinion, the threat from a non-native English-speaking pilot with low proficiency skills occurs if we're on parallel approaches — especially if we're joining adjacent localizers. If he doesn't have the right ILS [instrument landing system] frequency tuned in, he's going to stray onto our flight path on down the localizer.

"An even higher threat is on the ground, where he's straying onto our runway as we're taking off or landing. I don't know if he's being cleared to cross the runway in front of me as I'm landing, because he's on a different frequency. I don't know if he's been cleared to take off, or he thinks he's been cleared to take off, because I'm on a different frequency."

In some cases, pilots said, they want to be what the report called "part of the readback-hearback loop," either by asking a controller to clarify instructions to the non-native English-speaking crew or by offering to interpret.

"There are times when I want to get on the radio and say, 'Hey, he said this altitude or this heading' or 'I don't think he understood that,'" one respondent said. "In some situations, the controller might not hear [the pilot's readback] and I know the pilot's going to the wrong altitude and maybe I can help — or certainly keep my aircraft safe."

Some pilots participating in the study said that they had been reluctant to intervene.

"It's probably not the best, but if needed I would interpret for ATC or the other aircraft," one pilot said. "The most I've ever done when things really went south [became problematic] was to say to the controller, 'Hey, slow down. I can't understand you either.'"

| Perceptions of Voice Communications* | | |
|----------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Voice Communications | Number of Pilots | Issues Discussed |
| Excellent | 1 | |
| Very good in most respects | 22 | Failure to communicate can lead to frustration Proficiency matters Slower speech rates and enunciate clearly are key, some problems are universal Taxi clearances are a problem |
| Could use some minor changes | 14 | Failure to communicate can lead to frustration Not getting what you expect to hear Some controllers facilitate Some problems are universal Speak slower and use standard phraseology |
| Not good enough for extreme conditions | 10 | Failure to communicate creates safety concerns Language barriers affect all pilots and controllers Non-native English-speaking pilots and controllers work off scripts |
| Extremely poor | 0 | |
| It varies | 1 | |

* Based on U.S. pilots' comments about radio contacts between non-native English-speaking pilots and native English-speaking controllers
 Source: U.S. Federal Aviation Administration

Table 1

In many cases, the participating pilots said that they did not want to be in the position of telling another pilot what to do.

“If there’s some sort of conflict, I broadcast what I’m doing and what my intentions are, but I don’t tell them what to do,” one said. “I tell them exactly what I’m doing and then I monitor them.”

In other cases, the pilots said that they rely on “all the available situational awareness clues,” including the traffic-alert and collision avoidance system (TCAS), charts and the “back radio air-to-air” — the no. 2 radio set to a non-ATC air-to-air frequency used by pilots in that area.

More Time

Fifty-four percent of those surveyed said that controllers seemed to spend more time on communications with non-native English-speaking pilots than with native English speakers.

“They need to speak more slowly, and things need to be repeated,” one pilot said. “Controllers give instructions piecemeal, rather than in one long, clean transmission, because they understand they can’t give four or five or even three instructions in one transmission because it will all come apart.”

Eighty-one percent said that controllers “have to communicate differently” when dealing with non-native English-speaking pilots.

“Seasoned controllers ... slow down and break it down to the most basic fundamentals so they don’t eat up the rest of the airtime they need to manage the multiple airplanes that they have in the area,” one pilot said. “They understand that if they don’t do that, the pilot’s going to go back to ‘say again.’”

Contingency Planning

When a non-native English-speaking pilot and a native English-speaking controller experience communications problems during the approach phase of flight, the controller sometimes is faced with a choice: alter the arrival plan for either the non-native English-speaking crew or for an English-speaking crew in another airplane.

“Which one does the controller allow to proceed on course and which one is instructed to go around, put into a hold or diverted?” the report questioned. “It is no surprise that during these times, U.S. pilots develop contingency plans — just in case.

“When faced with a possible reduction in situational awareness, brought on by language problems, the U.S. pilots said they may have to revert to the basics of their flight instruction: Aviate first, navigate second and communicate third. They may configure their plane a little early or slow down in anticipation. ... To help with communications, they may continue using ICAO standard phraseology as a way to help the less proficient pilot who is operating in an English-speaking environment. They are focused, deliberate in language production and use crew resource management.”

The report included researchers’ observations that ATC instructions sometimes are “incongruent with pilot expectations,” that “lack of familiarity with a country’s procedures and phraseology slows down the system” and that “countries that do not adhere to ICAO standard phraseology and terminology contribute to the communication problems that occur between their controllers and foreign pilots.”

In addition, a breakdown in communications between a controller and a pilot can distract other pilots in the area and interfere with their performance of certain essential tasks, the report said, adding, “The failure to develop a common ground of understanding is a continuing risk to flight safety.” ➔

Notes

1. Prinzo, O. Veronika; Campbell, Alan; Hendrix, Alfred M. U.S. Report DOT/FAA/AM-11/4, *Airline Transport Pilot International Flight Language Experiences, Report 6: Native English-Speaking Controllers Communicating With Non-Native English-Speaking Pilots*. March 2011.
2. The pilots were interviewed while the FAA was considering changes in controllers’ phraseology to conform to ICAO recommendations. Those changes took effect Sept. 30, 2010.

“The most I’ve ever done ... was to say to the controller, ‘Hey, slow down. I can’t understand you either.’”