Daniel Rose, a Navy-trailed pilot and lawyer for Kreindler & Kreindler LLP – which specializes in aviation-accident litigation – said aviators can't be expected to make up for a plane's design flaw no matter where they came from, especially when Boeing didn't initially inform them about the MCAS.

"Even if you accept the fact that on average pilots in developing countries are less able to deal with an emergency for whatever reason, that's what the aircraft has to be designed for," Rose said. "Boeing is selling these aircraft to every country that wants to buy them. There has to be somewhat of an understanding of what the average pilot is capable of."

He added, "Not every pilot in the cockpit is going to be Sully Sullenberger."

Are pilots outside the U.S. getting the training needed to fly jets, including Boeing 737 Max 8?

Jorge L. Ortiz
USA TODAY

The catastrophic crashes of two Boeing 737 Max 8 planes in less than five months have focused attention on what information the company shared with pilots and how much training they received on the new aircraft.

Aviation experts also now question whether pilots for some foreign airlines are prepared to handle emergency situations.

The accidents involving Lion Air Flight 610 off the coast of Indonesia on Oct. 29 and Ethiopian Airlines Flight 302 on March 10 just outside the capital city of Addis Ababa killed all aboard, a total of 346 passengers and crew.

The crashes are still under investigation, but the Ethiopian transport minister said there are "clear similarities" in the doomed planes' movements, with erratic changes in speed and altitude. In both cases the pilots unsuccessfully attempted to return to the airport a few minutes after takeoff before the aircraft nosedived.

While signs point to a faulty sensor linked to a new feature of the jet's flight-control system as the likely source of the problem, some industry observers have also noted pilots in many other countries don't undertake nearly as extensive a training regimen as their American peers.

To fly for one of the scheduled U.S. airlines or their regional carriers, the Federal Aviation Administration requires an Airline Transport Pilot certificate, which calls for at least 1,000-1,500 flight hours, depending on how the training was done. And pilots hired by the major airlines typically have much more experience than that.

By comparison, the roughly equivalent Multi-crew Pilot License issued by the International Civil Aviation Organization (ICAO), which takes a different approach to training, can be earned with as little as 200 flight hours.

Brent Bowen, professor of aeronautical science at Embry-Riddle Aeronautical University and former dean of its College of Aviation, said most U.S. pilots come from military or college-based programs and have four-year degrees. That's often not the case elsewhere, he said, especially in developing countries.

"Some nations hire pilots basically off the street without a degree and send them to 18 months of training, then put them in the co-pilot seat of a 737,"

Bowen said. “You can pretty much say the co-pilots at our major airlines in the U.S. have probably 10 times the amount of experience that some countries’ co-pilots have.”

Ethiopian Airlines, which before this accident had a stellar safety record, said the captain of Flight 302, Yared Getachew, was an experienced pilot with more than 8,000 flight hours. However, co-pilot Ahmed Nur Mohammed had only 200 hours of flight time, according to the company. Both trained at the airline’s academy.

In addition, the New York Times reported Thursday that Getachew did not receive simulator training for the Max plane, even though Ethiopian Airlines was among the first carriers to acquire that teaching device, and it was operational by January. It wasn’t clear whether Nur trained on a Max simulator.

The airline challenged the report’s accuracy and said in a statement both pilots completed the “differences training” recommended by Boeing before upgrading from the old 737 to the Max model, adding that the pilots were also briefed on the FAA directive following the Lion Air crash.

Ethiopian did not address whether Getachew and Nur trained on a Max simulator, but noted that the machine does not replicate the problems

apparently created by the new software in the Max flight-control system, known as MCAS.

What happens if?

The time spent training on simulators is particularly critical to developing the ability to respond to emergencies, said Robert Ditchey, a former Navy pilot and co-founder of America West Airlines who used to hire and train pilots.

“The only way you get that kind of training – what happens if your engine quits; what happens if this fails or that fails – is in the simulator,” Ditchey said, pointing out U.S. airlines have more and higher-quality simulators than their foreign counterparts.

“If they don’t have simulators, they can’t do it. So if you’re Kazakhstan and you don’t have your own simulator, you can’t teach that kind of stuff. The only training you can give your pilots is normal stuff. You don’t teach them engine outage, you don’t teach them emergency, you don’t teach them if the airplane’s on fire. So foreign airlines are limited by a number of factors, one of the major factors being what’s available to them.”

Though Ditchey lauded Ethiopian, which does have a Max simulator, he also said most developing countries lack the kind of aviation infrastructure found in the U.S., where there are plenty of flight schools and all five of the armed service branches train pilots.

In fact, many foreign countries send their aspiring pilots to hone their skills here, although it’s expensive. Simulators cost millions of dollars, as much as smaller planes, and time on them is scarce and can run into the thousands per hour.

Martin Rottler, who teaches at the Center for Aviation Studies at Ohio State University, said that experience has helped even out the airfield, so to speak, between foreign and domestic pilots.

Rottler argues that, despite the disparity in required flight hours, the training undertaken by pilots from other countries is not lesser, only different.

Instead of emphasizing flight time as in done in the U.S., the ICAO model – adopted in most of the world – is geared toward preparing students for what a pilot for a commercial carrier might encounter.

Rather than making their way through several pilot categories, Rottler said, "They're training from Day 1 to be a professional airline pilot."

ICAO overhauled its training system in 2006, at a time when demand for pilots increased significantly as the international airline industry expanded.

Rottler acknowledges more study needs to be done on the results of ICAO's competency-based system, but some veteran pilots are ready to give it the thumbs-down, arguing that too much reliance on automation has eroded modern pilots' flying skills, and not just the foreign ones.

Inside the cockpit

While the Air Line Pilots Association – the world's largest union of its kind with more than 61,000 members – limited its comments for this story to expressing support for the current grounding of the Max jets, others have not been as circumspect.

Albert Ricks, who flew American Airlines planes for 35 years, said he and several fellow retired pilots have been dumbfounded about the inability of the aviators on both crashes to handle the emergency.

He said the cockpit of the Max and the 727 jets he used to fly are essentially the same, with two prominent wheels sitting in the middle of the center console next to the pilots' knees. That trim wheel – which controls the horizontal stabilizer in the tail – typically moves incrementally up and down.

If at any point it starts spinning, though, experienced pilots know to instinctively grab and stop it right away, Ricks said, preventing what's known as a "runaway stabilizer."

"What we believe is that, even though the captain had all this experience, his training did not include this rapid response that is needed if that wheel should run away," Ricks said of the Ethiopian crash.

"One of faults that all senior pilots find with the new way of flying is that pilots now don't have that basic military training, and the airlines and the FAA seem to think it's better that you fly the airplane on autopilot and flight director all the time. So typically you take off and you might get to 1,100 feet and put the autopilot on and it's programmed to fly the airplane right to the destination airport."

A more common source of the blame, though, has been Boeing, which reconfigured the 737 – an airplane initially unveiled in 1967 – by outfitting it with larger and more fuel-efficient engines.

Because of their size, the engines had to be relocated, making the plane more prone to stalling. The MCAS software was designed to counter this problem, forcing the nose to automatically pitch down when the possibility of stalling was detected by the angle of attack sensors.

But the MCAS uses readings from only one of two such sensors, an unusual decision in an industry that relies on redundancy for safety, and faulty readings apparently triggered the series of events that led to the Lion Air crash and possibly the Ethiopian Airlines one as well.

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