RISKS FROM IN-FLIGHT PILOT ERROR PERSIST

News / Airlines

Pilots responding improperly to midair-collision alarms pose one of the top safety risks for airline passengers across Europe, according to studies by the regional authority that show little improvement in addressing the danger.

One-quarter of cockpit crews who received such computer-generated emergency warnings failed to take the correct evasive action, according to data from some 800 incidents in European airspace last year.

Reacting to such commands, which typically pop up less than 30 seconds before a possible collision, roughly 8% of pilots did the opposite of what the technology commanded, such as pulling the plane up when the alert told them to push it down. Another 17% climbed or descended too slowly or too quickly, according to analyses by Eurocontrol, which handles and coordinates European air traffic.

Individual airlines and locations weren't disclosed, but all the events occurred outside airport radar coverage.

Improper pilot responses rose to 36% for follow-up alerts, according to Tzvetomir Blajev, the

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Eurocontrol official who headed the study. Results from previous years were comparable.

None of the close calls analyzed led to accidents, but "the number of improper responses is concerning," Mr. Blajev said in an interview. "We are looking for more information to start safety-improvement actions."

Findings from recent studies in the U.S. or elsewhere haven't been disseminated, so it isn't possible to compare regions. Based on historical data buttressed by recent but limited anecdotal information, some safety experts estimate the error rate to be comparable.

Business jets also are equipped with comparable warning systems, but the performance level of those pilots is even less clear.

In a separate, detailed analysis of dozens of the most serious European midair close calls in 2014, Eurocontrol concluded that only sheer luck prevented two from ending in tragedy.

"The normal safety barriers broke down completely" partly due to pilots' failures to respond properly, according to Mr. Blajev, who directs the agency's safety-improvement initiatives.

Further efforts are under way to determine factors influencing cockpit reactions, he said.

Some independent safety experts believe pilot complacency and undue reliance on cockpit automation are major reasons behind the slip-ups. "When something really goes wrong, crews may not be ready to respond emotionally, or otherwise," according to consultant Robert Matthews, a former U.S. Federal Aviation Administration safety analyst.

The rate of pilot errors in avoiding potential midair collisions in Europe was disclosed at an international safety conference in Miami Beach in November.

The Eurocontrol study was based on data drawn from just 13 radar facilities, a small portion of those in the 42 countries whose airspace Eurocontrol handles or coordinates. It involved an average of 120 incidents each month, indicating that such incidents likely occur thousands of times each year throughout Europe.

A spokesman for the European Aviation Safety Agency, the region's safety regulator, didn't have any immediate comment.

Years before the Eurocontrol study, Airbus Group SE opted to equip its A380 and A350 jets with technology to automatically put the planes into the appropriate climb or descent trajectory, without any pilot action. The company incorporated the technology partly out of concern that pilots would react too slowly or otherwise incorrectly to warnings. Crews are trained to respond within a few seconds.

Current collision-avoidance systems, called TCAS or ACAS, have dramatically reduced the specter of midair crashes world-wide.

When onboard computers determine two aircraft are on a potential collision course, they issue a general warning followed by a more urgent and specific alert called a resolution advisory. That shows up on the instrument panel, typically depicting the other plane in red and instructing pilots to immediately climb or descend.

The start and duration of such advisories depends on variables including altitude, closing speed and pilot reactions. Computers on opposing planes communicate with each other during

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maneuvers and can adjust the warnings they issue, with the goal of ensuring pilots maintain a safe vertical separation of at least 300 feet. Pilots are informed once the danger passes.

The automated commands "should always be followed precisely by flight crews, that's the firm policy of Eurocontrol," according to Mr. Blajev.

In the U.S., pilots and regulators say aviators have somewhat greater leeway to adjust responses, based on their judgment, specifics of the situation and whether crews are able to clearly see the other plane or know its intentions.

Yet the systems aren't foolproof, because equipment failures or pilot mistakes have resulted in several high-profile tragedies since the 1990s. One of the most dramatic crashes occurred in 2002 over European airspace, when a DHL Inc. cargo jet collided with a Russian-built charter plane carrying dozens of teenage tourists, resulting in 71 fatalities.

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