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WSJ.com

THE MIDDLE SEAT | SEPTEMBER 2, 2010

The Difficulty in Improving Airline Safety Now

By SCOTT MCCARTNEY



This year may end up being the worst of the past five years for airline crashes worldwide, and that doesn't count some high-profile military and private-plane fatal accidents that killed major political figures.

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Associated Press

The wreckage of an Embraer E190 aircraft operated by Henan Airlines that crashed at Yichun City, in northeastern China, on Aug. 24.

So far, there have been 13 fatal crashes of passenger-airline flights, according to Ascend Worldwide Ltd., a London-based aviation consulting company. That's through eight months. Last year there were only 10 fatal airline crashes of flights carrying passengers, and 13 total in 2008.

"It's an average sort of year, but the problem is we still have four months to go," said Paul Hayes, Ascend's director of safety.

The frequency of airline crashes is basically random, and they do sometimes come in bunches. In August alone, Ascend counted five

airline crashes that killed passengers, including the crashes of a Boeing 737 in Colombia and an Embraer 190 in Yichun, China. In addition, the Alaska crash of a private plane claimed the lives of former Alaska Sen. Ted Stevens and four others on Aug. 9.

An increase in accidents in 2010 doesn't mean safety is eroding, aviation safety experts say. And travelers need to remember that it is still a very small number among millions of flights every year.



But the numbers do highlight a concern among safety officials: Rapid safety improvement that airlines have enjoyed for several decades may be bottoming out.

In 1959, as the jet age was only beginning for passenger airplanes, there were 36 fatal accidents in every one million departures, according to a recent Boeing Co. report. That quickly plunged to 2.4 fatal accidents in every

million takeoffs by 1969. In the past decade, the fatal accident rate for airlines hasn't been higher than 0.6 per million flights.

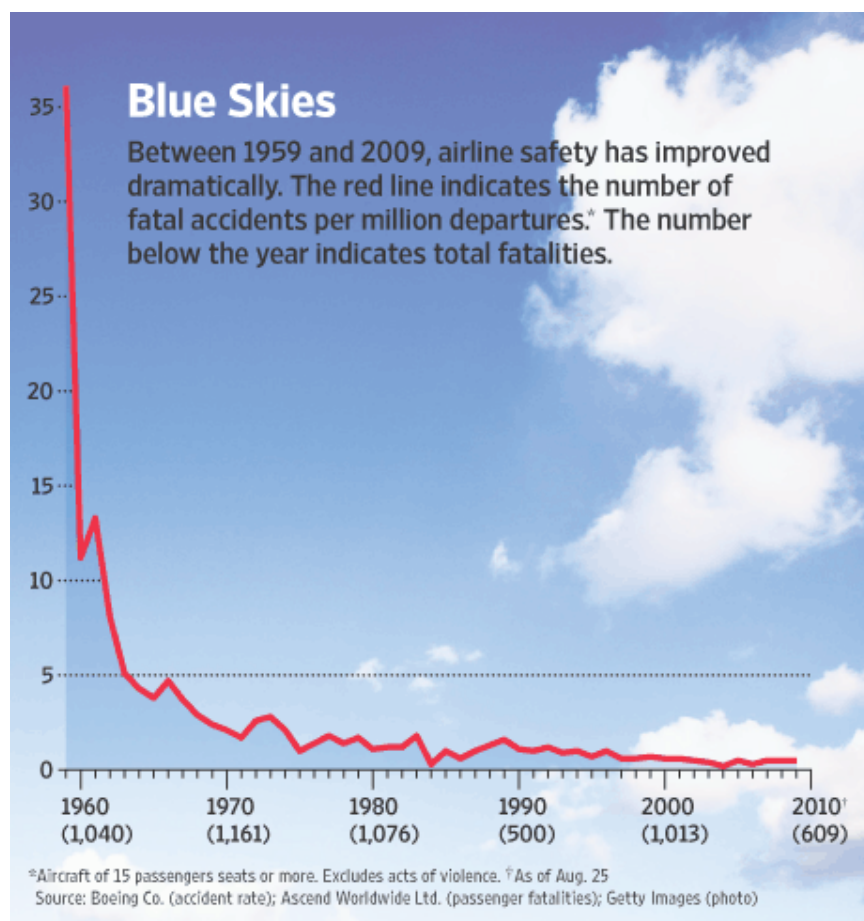
Can it go lower? As the industry gets safer, it gets harder and harder to reduce the accident rate further. In addition, advances in cockpit technology and aircraft reliability can lull pilots into

complacency, and even erode basic flying skills because computers do so much of the flying on commercial airliners.

"You can look at it as a plateau in the western world," said Kevin Hiatt, executive vice president of the Flight Safety Foundation, a non-profit international safety group.

To make further improvement, safety officials have focused on pilot professionalism, training and experience as key issues. One big task is getting pilots to battle complacency and better understand all the technology given to them so they can respond well to unusual events.

"The technology in the cockpit works well 99% of the time. It's the 1% of the time when you look at the other guy and say, 'Why did it do that?'" said Mr. Hiatt, a former [Delta Air Lines](#) international chief pilot.



Most crashes occur as planes take off and climb or as they approach and land at airports. This year has seen several landing accidents, such as the Embraer crash in China, the 737 crash in Colombia and the Polish military transport crash in western Russia in April.

Regional airlines—smaller carriers that typically fly planes with fewer than 100 seats—have a worse safety

record when compared with the big airlines to which they feed passengers. In the U.S., regional airlines have been involved in five of the seven fatal accidents on scheduled airline flights in the past 10 years, according to National Transportation Safety Board records.

Outrage over a Continental Express accident outside Buffalo, N.Y., last year led Congress to pass requirements to raise the minimum flight experience for newly hired regional airline pilots to 1,500 hours from 250.

Private planes, categorized under general aviation, have far higher accident rates than commercial aviation, which has tighter U.S. standards for maintaining and flying planes. Airline pilots even have to get required FAA medical evaluations more frequently than private pilots.

NTSB shows accident rates based on flight hours instead of takeoffs. Over the 10-year period ended 2008, "corporate aviation," usually company-owned aircraft with professional pilots, had a fatal accident rate about roughly twice the rate for airlines, and general aviation had an average rate of 1.27 fatal accidents per 100,000 flight hours—65 times higher than the very low airline fatal accident rate.

Multiple Causes

Since 1997, roughly 80% of crashes involve some human error, either by pilots or ground workers, according to the NTSB's annual review of accident data. About 50% have some environmental contributing cause, such as bad weather, and 20% have something wrong with the aircraft. Multiple causes are typically cited in investigation reports, so the factors add up to more than 100%.

Continental Divide

Accident rates vary considerably by continent. African airlines have the worst safety record, with a "hull-loss" (a destroyed plane) accident rate 25-times higher than the U.S., according to a Federal Aviation Administration study of 10-year period ended with 2007. The Flight Safety Foundation notes, however, that Nigeria is making improvements.

The hull-loss rate for European airlines was slightly higher than U.S., and Chinese airlines were about the same as the U.S., based on the FAA research. But airlines based in Asia (excluding China), Latin America and the Middle East had fatal-accident rates roughly five times higher than the U.S.

Mr. Hayes of Ascend says many of the crashes around the world happen with smaller, perhaps even obscure airlines.

Some have older planes and less training for pilots and mechanics. Some have new planes with advanced avionics flown by pilots who aren't well versed in how to use them in irregular situations. Airlines with fatal accidents this year include Ethiopian Airlines, Afriqiyah Airways, Pamir Airways, Air India Express, Airblue, Henan Airlines and Filair.

"Airlines having the accidents are not the big majors, in general," Mr. Hayes said.

In terms of planes, newer is definitely better in terms of accident rates. Boeing's annual statistical summary shows that the latest versions of the venerable 737—the 737-600, 737-700, 737-800 and 737-900—combined have a fatal accident rate of 0.11 per million departures. The A320 family of Airbus jets does almost as well, with 0.21 fatal accidents per million departures. But older planes like the DC-10 and the 727 had significantly higher accident rates—1.34 fatal crashes per million departures for the DC-10 and 0.68 for the 727. The McDonnell Douglas MD-80, still widely in use, has a fatal accident rate of 0.31 per million departures.

And the safest place to sit on a plane in case of an accident? Aviation Safety Network, a unit of the Flight Safety Foundation, scoured through accident reports on air disaster survivors looking for mentions of where survivors sat, and location really didn't seem to matter.

At least some survivors were seated in the front of the jet in 26 accident reports and rear-seated survivors were mentioned in 30 accident reports. Center sections only were mentioned in only 16 reports.

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