

Errors in Calculation

Simple mistakes in calculating aircraft performance data and in data entry have led to a number of takeoff accidents worldwide, according to a report by the Australian Transport Safety Bureau (ATSB).

An ATSB report documented 31 such accidents and incidents between January 1989 and June 2009.

“These types of errors have many different origins: with crew actions involving the wrong figure being used, data entered incorrectly, data not being updated and data being excluded,” said the report, *Takeoff Performance Calculation and Entry Errors: A Global Perspective*.



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“Furthermore, a range of systems and devices have been involved in these errors, including performance documentation, laptop computers, the flight management computer and the aircraft communications addressing and reporting systems. The consequences of these errors also ranged from a noticeable reduction in the aircraft’s performance during the takeoff to the aircraft being destroyed and loss of life.”

Most of the errors — 39 percent — were attributed to “crew actions, including monitoring and checking, assessing and planning, and the use of aircraft equipment,” the report said. The document also noted that 31 percent of errors were associated with “absent or inadequate risk controls, mostly centered on poor procedures, non-optimally designed aircraft automation systems, inappropriately designed or unavailable reference materials, and inadequate crew management practices and training.”

Because individual airlines use different methods for calculating and entering takeoff performance data, there is no single proposal for reducing errors, the report said. Nevertheless, the document suggested that operators and manufacturers consider development of “appropriate crew procedures” such as enhanced cross-checking and modified software design for entering and checking data. In addition, pilots “need to ensure procedures are followed, even when faced with time pressures or distractions,” the report said.

Fatigue Analysis

The airport air traffic controller on duty during the fatal crash of a Comair Bombardier CRJ100ER at Blue Grass Airport in Lexington, Kentucky, U.S., was “substantially fatigued when he failed to detect that the plane was on the wrong runway and cleared it for takeoff,” a team of sleep researchers say.

Researchers at Washington State University (WSU) in Spokane, writing in the journal *Accident Analysis and Prevention*, said their analysis of the case suggests that mathematical fatigue-prediction models could be used to create work schedules that take into account sleep schedules and circadian rhythms to reduce the risk of fatigue-related accidents.

The CRJ crashed Aug. 27, 2006, killing the captain, flight attendant and 47 passengers; the first officer received serious injuries. The U.S. National Transportation

Safety Board (NTSB) said the probable causes were “the flight crewmembers’ failure to use available cues and aids to identify the airplane’s location on the airport surface during taxi and their failure to cross-check and verify that the airplane was on the correct runway before takeoff.”

The NTSB report noted that the controller was on duty alone when the accident occurred just after 0600 local time, that he had been at work since about 2330 the previous night and that he likely was fatigued.

Gregory Belenky, director of the WSU Sleep and Performance Research Center and a coauthor of the paper, said that the controller was tired and “was working a schedule that was not circadian-friendly.”

Belenky and research assistant Lora Wu, coauthor of the paper, said that their work was not intended to place blame



David Mueller/Wikimedia

on anyone involved in the accident but to identify the times of day that are “relatively more dangerous than other times of day.”

The researchers employed a mathematical model in analyzing the controller’s pre-accident work history — two evening shifts, two day shifts and the overnight shift during which the crash occurred.

“While the controller had 10 hours off before his last shift, ... his circadian cycle let him get only two or three hours of sleep,” they said, estimating that at the time of the accident, he was “performing at 71 percent of his effectiveness.”

Air Taxi Training in CRM

Pilots and flight attendants working for U.S. Federal Aviation Regulations Part 135 non-scheduled charter airlines and air taxis must now be trained in crew resource management (CRM), according to new rules established by the U.S. Federal Aviation Administration.

Air carriers affected by the rule have two years to establish initial and recurrent CRM training, which provides instruction in communication and teamwork; managing workload, time, fatigue and stress; and decision making, the FAA said.

Similar training has been required since 1995 for crewmembers in larger airplanes operating under Part 121.

“I know the value of making crew resource management part of the safety culture from my days as an airline pilot,” FAA Administrator Randy Babbitt said. “A crew that works as a team is a better crew, regardless of the size of the plane or the size of the airline.”

Issuance of the final rule comes in response to a 2003 recommendation from the U.S. National Transportation Safety Board (NTSB). The item has been included since 2006 on the NTSB list of “Most Wanted Transportation Safety Improvements.”



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Laser Strikes

The number of reported incidents involving lasers pointed at aircraft in the United States increased 86 percent between 2009 and 2010 to a record 2,836 incidents, the U.S. Federal Aviation Administration (FAA) says.

That number compared with nearly 300 in 2005, the first year that the FAA had a formal reporting system in place to collect information from pilots on laser strikes.

“The FAA is actively warning people not to point high-powered lasers at aircraft because they can damage a pilot’s eyes or cause temporary blindness,” said FAA Administrator Randy Babbitt. “We continue to ask pilots to immediately report laser events to air traffic controllers so we can contact local law enforcement officials.”

More laser events — 102 — were reported at Los Angeles International Airport in 2010 than at any other airport.

Air France Embraces Safety Plans

Air France plans to quickly implement most of the 35 recommendations submitted by an independent safety review team that was established in the aftermath of the June 1, 2009, crash of an Airbus A330 into the Atlantic Ocean.

The airline said that it already has implemented preliminary recommendations, including creating a flight safety committee within the Air France Board of Directors and becoming the first major European airline to institute the line operations safety audit (LOSA) — a program in which trained observers ride in the cockpit on regularly scheduled flights to collect safety-related data.

Air France said the safety review team’s findings “primarily concern the company’s organization, its corporate culture and the individual behavior of its staff managers and unions.”

Pierre-Henri Gourgeon, CEO of Air France–KLM, said, “Air France is the only airline to have [submitted], on its sole initiative, to the opinion of a team of external experts. ... By implementing their recommendations, which combine the best practices observed individually in other airlines worldwide,

Air France will place its flight safety performance at the highest level possible.”

The 2009 crash, which occurred during a flight from Rio de Janeiro, Brazil, to Paris, killed all 228 people in the airplane. Despite several extensive searches, the airplane’s flight recorders have not been found, and investigators have not determined the cause of the crash.



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Coping With Winter

European airports have been told to develop contingency plans as soon as possible to describe how to prevent the disruptions in air traffic that accompanied heavy snows in December 2010.

Siim Kallas, European Commission (EC) vice president in charge of transport, told officials of major European airports that action is needed to “ensure the proper functioning of the airline hubs.”

The aviation industry is primarily responsible for planning, although the EC can strengthen regulations, if necessary, Kallas said.

He noted that many of Europe’s largest and busiest airports were partially shut down at the start of the Christmas holidays, many flights were canceled and thousands of passengers were stranded. Concerns about a shortage of deicing products also affected airport operations, he said.

“We know that winter arrives every year, and we should be ready for it,” Kallas said. “In particular, we need to introduce minimum service and quality requirements at European airports for our passengers.”



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In Other News ...

In a reciprocal membership agreement, Flight Safety Foundation has become an industry partner of the **Arab Air Carriers Organization** (AACO), which represents about two dozen carriers from Arabic-speaking nations. The AACO also has become a member of the Foundation. ... The U.S. National Oceanic and Atmospheric Administration (NOAA) says its satellites aided in the rescues of 43 people involved in aviation incidents in 2010. The 43 were among 295 people saved in 2010 after NOAA satellites picked up distress signals from their **emergency beacons**. ... Jeppesen has introduced a **fatigue risk management** application for the Apple iPhone. The CrewAlert application, intended for use by schedulers, crewmembers and others to predict alertness levels, allows data to be fed into an airline’s fatigue risk management system.

Sarah Lederer

Sarah Bojarsky Lederer, widow of Flight Safety Foundation founder Jerome F. Lederer, died in Aliso Viejo, California, U.S., on Feb. 6 — seven years to the day after her husband’s death. She was 99.

She had been a social worker in New York City, vice president of the New Rochelle, New York, Board of Education and a member of the board of the New Rochelle Municipal Housing Authority. She also was a regulation writer for the District of Columbia Redevelopment Land Agency.

Survivors include a daughter, Nancy Cain; a brother, Eli Boyer; and two granddaughters. Another daughter, Susan Lederer, died in 2008.

Out of ASAP

The union representing pilots at USA 3000 Airlines says they will withdraw from participation in the airline’s voluntary aviation safety action program (ASAP) because of company actions that “destroyed the trust required for a successful program.”

The company said that it “believes strongly in the value of the ASAP program,” that it regrets the pilots’ action and that it hopes the union will reconsider.

The Airline Professionals Association Teamsters Local 1224 complained that unauthorized individuals had access to confidential ASAP information. The union also said that letters had been inappropriately placed in the personnel files of several of USA 3000’s 60 pilots, “even though the events and



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the circumstances surrounding them were admitted into ASAP by the event review committee” at the airline. The union said that the letters were inaccurate and that pilots feared that they might eventually be released under laws that make pilot records available to potential employers.

Compiled and edited by Linda Werfelman.