Aviation Human Factors Industry News

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Charles E. Taylor **WRIGHT BROTHERS MECHANIC**

From the sands of Kitty Hawk, the tradition lives on.

Hello all,
To subscribe send an email to: rhughes@humanfactorsedu.com
In this weeks edition of *Aviation Human Factors Industry News* you will read the following stories:

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MX Fatigue Focus

Current Issue is now available

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https://hfskyway.faa.gov/HFSkyway/FatigueNewsletter.aspx

Fatigue Training:

Chief Scientist Dr. Bill Johnson has informed us that FAA Flight Standards, the Civil Aerospace Medical Institute, and the Chief Scientist Program have joined forces to offer a new fatigue awareness training program. The primary audience is aviation maintenance and engineering personnel, however, the video and other training is applicable to general audiences. The package, released in late October, includes a 20-minute fictional video titled Grounded, and a 90-minute interactive training program with exam. The new training is supplemented with additional support materials and includes tools to assess the short-term and long-term impact of the training program. The package will be available to earn credit on the Federal Aviation Administration Safety Team (FAAST) awards program beginning in January 2011. The mission of FAAST is to improve our Nations' aviation safety record by conveying safety principles and practices through training, outreach, and education. Please visit the FAA fatigue website at www.mxfatigue.com to access the web version and download a copy of the training program. For further information, contact bill-dr.johnson@faa.gov. This research activity supports the Administrator's Flight Plan Goal for Increased Safety.

https://hfskyway.faa.gov/HFSkyway/FatigueVideo.aspx

Maintenance, Pilot Mistakes Likely Caused Jet to Roll Off Runway

An undetected maintenance error, compounded by pilot mistakes, likely caused an American Airlines Boeing 757 to roll off the end of a Wyoming runway in snowy conditions last month, according to people familiar with the details.

Federal safety officials, these people said, are now examining whether the same maintenance lapse discovered after the Dec. 29 incident—which didn't injure any of the 181 people aboard—may affect some of the carrier's other planes.

Arriving at Jackson Hole, Wyo., amid light snow and low visibility, the twin-engine Boeing 757 slid more than 600 feet off the end of the strip into hard-packed snow. Investigators are examining why the pilots didn't promptly recognize certain automation failures that allowed the jetliner to keep barreling down the runway. The probe is examining whether the maintenance lapse caused those failures. Investigators are also examining why the pilots didn't manually deploy certain panels on the wings designed to help slow the aircraft.

A spokeswoman for the AMR Corp. unit and officials at the Federal Aviation Administration declined to comment.

The incident has attracted widespread attention because earlier this month, the National Transportation Safety Board determined that American violated long-established "standards of conduct" by improperly downloading information, for its own use, from the plane's flight-data recorder before turning the device over to the government. As a result, the board took the unusual step of barring American from further participation in the federal probe.

In an update of its preliminary findings released Wednesday, the safety board disclosed that the runway incident followed problems experienced by two separate systems designed to help decelerate the jetliner.

Panels on top of the wings, known as spoilers, failed to automatically pop up and help slow the aircraft, according to investigators. The safety board said that a portion of the linkage to an electrical switch needed to automatically activate the spoilers on the ground "was improperly installed" during earlier maintenance procedures. Investigators didn't indicate when mechanics made the alleged mistake.

Contrary to American's checklists and safety procedures, the cockpit crew apparently failed to try to manually deploy the spoilers in Jackson Hole, according to people familiar with the details.

In addition, the safety board said separate devices at the rear of the engines also designed to help the plane come to stop—called thrust reversers—took too long to deploy. "Approximately 18 seconds elapsed" from the time the plane's landing gears touched the runway "until [reversers] were fully deployed," according to the update.

Typically, the devices should kick in and start redirecting engine thrust in a matter of seconds. They are controlled by the crew.

The plane's cockpit-voice recorder, however, indicates that the pilots commanded the reversers to deploy as soon as the plane touched down, according to people familiar with the details. One angle the safety board is pursuing is whether the earlier maintenance error—potentially binding or restricting the operation of various controls in the cockpit—could have caused the delayed response from the reversers.

To help answer that question, these people said, the FAA has told American to inspect a portion of its Boeing 757 fleet for similar maintenance lapses.

According to the board's latest findings, the 18-year old jetliner experienced "no significant issues with any of these systems" prior to the incident, and all required maintenance items were up to date prior to last month's flight from Chicago to Jackson Hole.

Coffee Spill Over Canada Causes Cockpit Chaos

Pilot Spilled A Beverage, Nav Gear Responds Badly

You know that sinking feeling you get when you see a spilled beverage heading towards your computer or other electronic device? Well, the pilot of a UAL flight from Chicago to Frankfort, Germany may want to consider a lid for his (or her) coffee cup next time, after the flight was diverted to Pearson Airport in Toronto late Monday. The pilot spilled the drink in the cockpit of the Boeing 777, which caused the plane's transponder to inadvertently squawk 7500 ... unlawful interference (hijacking) ... and then 7600 ... loss of communications.

The Toronto Sun reports that, after the confusion was cleared up, the plane landed safely in Toronto. They had originally planned to return to Chicago, but wound up declaring an emergency and landing at Pearson, according to an initial report from Transport Canada.

The flight landed about 2200 local time in Toronto. The passengers were taken on a different plane back to Chicago, and they traveled to Germany on Tuesday. United told CNN that it is looking into the matter.

Disappointing 2010 for Airline Safety

The number of airline accidents and passenger fatalities increased in 2010, while insurance claims have exceeded premiums, according to aviation consultants Ascend Worldwide.
The fatal accident rate worsened in 2010 to one per 1.3 million flights from one per 1.5 million flights in 2009, which was considered the safest year ever. Apart from 2009, only 2007 and 2006 produced better accident rates. There were 28 fatal accidents in 2010, compared with 23 in 2009.
"Despite the relatively poor performance in 2010, we believe that air safety is still improving and this has resulted in 100 fewer fatal accidents during the last decade than in the 1990s-on average, 10 fewer fatal accidents a year," said Paul Hayes, director of safety at Ascend..

As the number of fatal accidents increased, so did the number of passengers and crew killed in those accidents. The number of deaths rose 13% in 2010 to 828 people compared, with 731 people in 2009. This year was 4% worse than the past decade average but was a 27% improvement on the 1990s average of 1,128 deaths. The estimated passenger fatality rate for 2010 was one per 3.8 million passengers carried compared with one per 4.5 million passengers carried in 2009.

The worst accidents in 2010 were the Air India Express Boeing 737-800 crash in May that killed 152 passengers and six crew when it overran on landing at Mangalore in India; the Airblue Airbus A321 accident in July that occurred when attempting to land at Islamabad in Pakistan and killed 146 passengers and six crew; the Afriqiyah A330 that crashed in May while attempting to land at Tripoli in Libya, killing all but one of the 93 passengers and 11 crew on board; and Ethiopian Airlines Boeing 737-800,

which crashed into the sea shortly after take-off from Beirut, Lebanon, killing all 82 passengers and eight crew on board.

"These four accidents account for a total of 472 passenger fatalities, 65% of the total number of passenger fatalities on revenue passenger flights during the year," Mr. Hayes said.

2010 was a "disappointing year from the point of view of both safety and insurance," said Mr. Hayes, director of safety at Ascend. He estimates that incurred aircraft hull and legal-liability losses for 2010 were about $2.15 billion, some $370 million less than 2009. However, those losses still exceeded the $2.1 billion of written premiums during the calendar year.

Mr. Hayes said there tends to be about nine years between two troughs in the cycle in terms of premium income. After the Sept. 11, 2001, terror attacks, he said, the market "hardened" and written premiums hit $3.6 billion for the year. This was followed by a number of relatively benign claims years, Mr. Hayes said, which led to annual premium income rapidly eroding to just $1.8 billion in 2007 at the bottom of the cycle.

Mr. Hayes said that since 2007, estimated premium income has increased by about a third. "However, more than half of this increase came in 2009 following the loss of the Air France Airbus A330 in the South Atlantic that summer." Airbus is a unit of European Aeronautic Defense & Space Co. EADS N.V.

Ascend estimates that written premiums have probably only increased about 7% in 2010, and increases in the coming year are unlikely to exceed this level given the high levels of capacity available in the market, and provided there is no catastrophic loss that could push prices for insurance coverage higher. Between 2007 and 2010, total written premiums hit about $7.3 billion, while incurred losses stand at $8.2 billion, Ascend said.

http://www.ntsb.gov/aviation/Table6.htm

Errors by air traffic controllers set record

The air traffic controllers in the Washington region, who direct more than 1.5 million flights, have made a record number of mistakes this year, triggering cockpit collision warning systems dozens of times.

Errors recorded by air traffic controllers have increased by 51 percent, and the Federal Aviation Administration this week cautioned that warning systems aboard more than 9,000 planes may not be keeping track of all the nearby planes in busy airspace. The FAA wants to require software upgrades to ensure that the emergency units don't make mistakes that "could compromise separation of air traffic and lead to subsequent midair collisions."
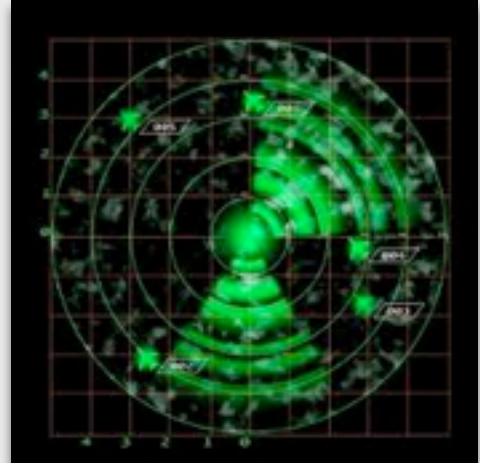
Washington's regional control facility recorded its 52nd error of the year on Christmas Eve, when a controller mistakenly put two Southwest Airlines 737s approaching Baltimore-Washington International Marshall Airport on converging courses. The facility, known as the Potomac Terminal Radar Approach Control center, recorded 21 errors in 2009. The increase corresponds with what the acting director of the center described in an internal document as "a definite increase in sloppy or poor adherence to SOP and handbook procedures."

The record number of errors - locally and nationally - reflects many instances in which planes came too close but without risk of collision and some in which fatal consequences were narrowly averted.
This month in Cincinnati, a 50-seat regional jet was instructed to land on the same runway from which a Delta 737 was taking off. And in September, two planes, one carrying 95 people, flew blindly by each other about 50 feet apart in a cloud bank because of controller errors in Minneapolis.

FAA Administrator Randy Babbitt is confident that his agency runs an "incredibly safe system," and he notes that crash fatalities involving commercial airliners are at an all-time low.

"I think that we have all come a very long way in terms of making our system as safe as it can be . . . and our record proves it," Babbitt said in a speech in October. "And given the collaborative approach we're now using, I expect even greater gains."

Training methods

Babbitt has sought to smooth a generational transition, with the retirement of air traffic controllers who were hired in the 1980s after then-President Ronald Reagan responded to a strike by firing the entire workforce. Critics contend that mistakes have increased as less-experienced controllers are prematurely placed in challenging situations, often receiving on-the-job training from colleagues.

A pitfall of the on-the-job approach at busy facilities was outlined last month in an all-hands memo written by Roderick Harrison, acting director of the Potomac facility. Harrison said veteran controllers were teaching inappropriate shortcuts to new hires, so "our newer controllers are developing the bad habits of some of our older . . . controllers."

"Regardless of what has happened in the past with a procedure, historical practice does not allow for deviation from the rules," Harrison wrote. One of Babbitt's innovations is a system of self-reporting, by which controllers can alert supervisors to their mistakes without fear they will be punished for them. Babbitt reasoned that the more his supervisors knew about mistakes, the better they could catch trends and find ways to strengthen the system.

As Babbitt's new Air Traffic Safety Action Program was rolled out during fiscal 2010, the number of reported errors nationwide jumped by 51 percent, to 1,869.

FAA officials said the program had encouraged greater honesty, which they said explained why the number of errors reported had spiked.
"This cultural change in safety reporting has produced a wealth of information to help the FAA identify potential risks in the system and take swift action to address them," the FAA reiterated in a statement issued Thursday in response to an inquiry from The Washington Post. "The new system has resulted in a higher number of reports of incidents involving the loss of the required separation between aircraft than in previous years." But it does not explain why the official error count locally and nationally has increased so dramatically.

The FAA and the controllers union, which worked with the agency to create the new program, later acknowledged that self-reported errors are not included in the official count.

Harrison's memo to Potomac controllers warned that increased errors had drawn attention to the facility: "The fact that ATSAP is here is not a reason to ignore or cheat, just a little, on directives and procedures. Directives and Order are exactly that. . . . They do not give individuals the latitude to follow the ones they like and ignore the ones they don't like."

Pilots use iPads to navigate skies

Pilot Jeff Curl has a 1 1/2 pound piece of cargo on board his Learjet that's helping change the face of aviation. "I knew it would come. I saw it coming," Curl said. "I have the worldwide charts on the iPad right now."

The private pilot says he's simplifying his flights by using the main on board, but also adding the iPad's flight plan applications.

"It's available with just a couple of finger swipes or touches," Curl said.

The FAA has approved the use of iPads, as long as the tablet is strictly a secondary tool along with traditional paper charts.

"I can see the route structure and see what kind of rate I want to fly. I can also pull up my radar and see I don't want to go straight -- I've got a huge line of thunderstorms," Curl said.

Curl says this technology will also help private and commercial airlines track maintenance problems on their fleets. It could eventually cut down on travel delays by saving pilots time.

"It's collecting information at the source rather than pen and having to be mailed in and having to be entered by someone else," Curl said.

But there are safety concerns that pilots say must be fully tested before the iPad could be considered a trusted resource.

"There are reports some people have had trouble with them overheating and obviously that's a very big safety issue for us. I'm not going to jump on any technology that hasn't gone through testing," Curl said.

And that's why the paper charts are not far from Curl's reach, but he predicts the day is near when the touch screen tablet will change the face of aviation.

Vital Tip

Ever miss an item on your preflight checklist? Chances are you have. Wally Moran shares a personal story about how a missed preflight item nearly cost him his life. It's a story we can all learn from!
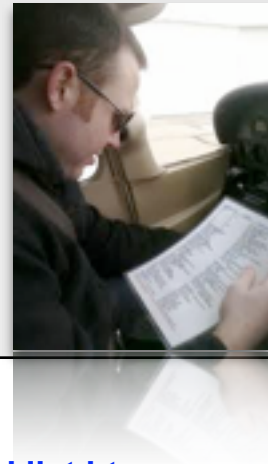
Here's your tip:
http://www.pilotworkshop.com/tips/pilot_preflight_checklist.htm