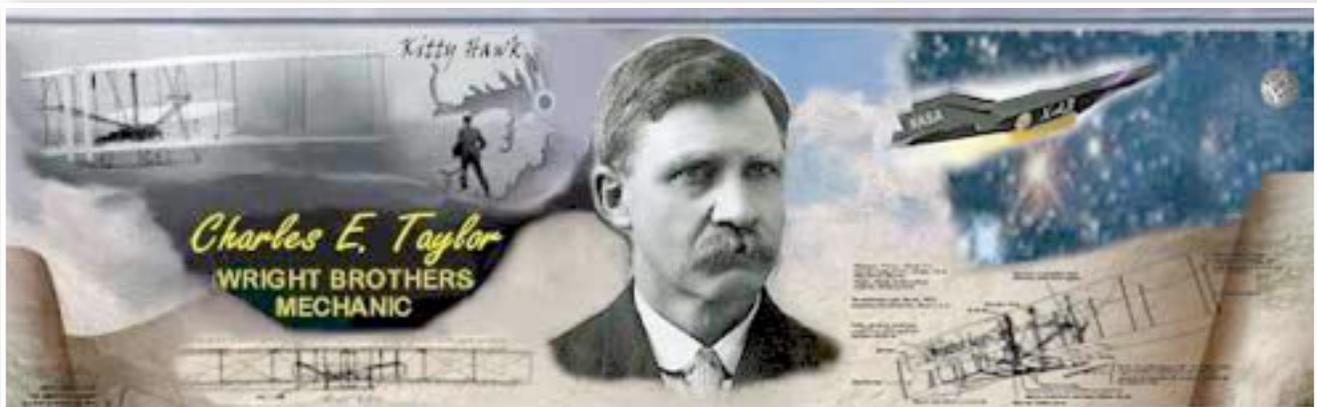


# Aviation Human Factors Industry News

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

Hello all,

To subscribe send an email to: [rhughes@humanfactorsedu.com](mailto:rhughes@humanfactorsedu.com)

In this weeks edition of *Aviation Human Factors Industry News* you will read the following stories:

★Boeing worker run over by 787 in Everett

★Pilot fatally struck by moving propeller he tried to manually restart after plane stalled

★NTSB Faults Cessna and FAA in Tailcone Icing

★“He Yelled at Me to Stop!”

★Safety is never an issue – until there is an “issue”

★How U.S. Airlines Got a Whole Lot Safer

★Safety First: Beginning and ending on the runway

## **Boeing worker run over by 787 in Everett**

A Boeing worker was seriously injured last Friday evening at Everett's Paine Field after being run over by a 787 Dreamliner.

Dozens of paramedics and firefighters rushed to Paine Field **after 6:00 p.m.**, working quickly to free the person from under right wing landing gear. The victim was eventually extricated and immediately airlifted to Harborview Medical Center. He is in serious condition.



As of late Friday night, Boeing had not provided details as to exactly what happened. KING 5 learned the worker **was part of a team** moving the 787 from one part of Paine Field to another and **got caught under the right side landing gear** of the jet.

Firefighters and other workers were able to free the trapped person using a powerful jack.

One source says the worker may have been **in charge of the blocks** used to keep plane tires from rolling.

In a press release, Boeing said it will investigate the cause of the incident and will implement the necessary changes to avoid a future reoccurrence.

## **Pilot fatally struck by moving propeller he tried to manually restart after plane stalled**

Pilot was trying to **hand crank propeller** after Piper Cherokee stalled struck him in head; he was taken to hospital and died four hours later

A pilot died on January 30, 2012 after being struck in the head by the moving propeller of a single-engine plane.

The horrific accident happened at 8:30am on Monday at the Gillespie Field airport in San Diego, California, while the victim was trying to restart the plane after it stalled, witnesses said. Two pilots were on board when the Piper Cherokee was taxiing out



to the runway when the engine stalled and **one of them got out** to hand crank the propeller. But it struck him in the head.

The struck pilot was taken to Sharp Memorial Hospital for treatment of critical injuries after the incident. He died there at 1pm. Flight safety authorities are now investigating what happened. The blue and white Piper Cherokee PA-28R-200 four-seat fixed-wing plane was built in 1974 and is registered to a man in nearby Lakeside, California, according to official records.

It comes after model and fashion blogger Lauren Scruggs, 23, walked in front of a plane at Aero County Airport in McKinney, Texas, last month and **lost her left hand and left eye** in the incident. Her mother Cheryl said last week that although her daughter's pain is reduced 'when she is moving about and distracted', when she tries to sleep, 'it comes - and it comes ferociously at times'.

Gillespie Field was constructed by the government in 1942 during World War Two to be used for training Marine Corps parachutists and it was originally named Camp Gillespie.

<http://www.nbcsandiego.com/video/#!/on-air/as-seen-on/Pilot-Dies-After-Propeller-Strike/138399914>

## **NTSB Faults Cessna and FAA in Tailcone Icing**

The NTSB has issued its final report on the first of several incidents in which Cessna Citation 560XL Excels encountered rudder binding while in flight. The Board ruled that the **manufacturer's inadequate initial design** and **subsequent modifications of the aircraft's tailcone** allowed moisture to collect and freeze around rudder cables during flight above the freezing level,

resulting in a loss of rudder authority. The Board cited the FAA's [lack of oversight of the manufacturer's design and production](#) as a contributing factor.

On Dec. 1, 2010, a NetJets-operated Excel encountered the problem while on a flight from Monmouth Executive Airport near Belmar, N.J. The crew reported it had been

raining during the preflight examination, which included a visual inspection of the control cables in the aft equipment bay. No irregularities in the control systems were noted.

As the twinjet cruised at altitude above the freezing level on its way to Toledo, Ohio, the crew experienced no difficulties until they disconnected the autopilot and yaw damper on descent. During the landing flare, the pilot found he could not move the rudder pedals, but was able to land the aircraft safely. The Excel taxied to the ramp using differential thrust and braking. Once the engines were shut down, manual attempts to move the rudder were unsuccessful, and examination by maintenance personnel revealed that [an accumulation of ice](#) in the tailcone stinger had interfered with movement of the rudder control cables and pulleys.

Similar situations involving the 560XL were reported on Dec. 13, 2010, in Birmingham, Ala.; Dec. 20, 2010, in Idaho Falls, Idaho; and March 10, 2011, in Haynesville, Md. None of the incidents resulted in personal injury or damage to the aircraft.

### Moisture Projection

In April 2005, Cessna issued a service letter directing operators of early production Excels to drill a 0.201-inch hole in the stinger to provide a drain path for accumulated moisture. Later models (S/N5545 and up) were to have this hole installed at the factory, but the FAA [found that the hole diameter on some aircraft had been drilled smaller than prescribed](#).

On Jan. 21, 2011, the manufacturer issued an alert service letter (ASL560XL-53-08) acknowledging water-collection issues in the airplane's stinger that could result in ice formation.



The mandatory actions prescribed in the letter advised operators to look for drain holes in frames immediately forward and aft of access panel 321ABC and to drill them if not present. The letter also instructed operators to drill a drain hole in the aft canted bulkhead. According to the NTSB's preliminary report, the Excel involved in the March 10, 2011 incident had been modified to comply with the ASL.

Last October, Cessna issued a new service bulletin (560XL-53-16) regarding the installation of a stinger drain as a follow up to its previous ASL. Recipients of the bulletin (aircraft S/Ns 5002-5372, 5501-5830, 6002-6080 and 6082-6086) were supplied parts and instructions to install a drain and seal. The service bulletin specified a compliance time of "within 1,200 flight hours or 18 months from the date of receipt, whichever occurs first."

In response to the NTSB report, the Wichita airframer said it "has been looking at this issue since it first came to light and has developed a solution to address it," citing the October service bulletin. "This service bulletin, which Cessna provides free of charge to operators, provides for the installation of a drain and seal that will reduce the amount of water entering the stinger and improve drainage."

The FAA is in the process of composing a new airworthiness directive addressing affected 560XL models and has designated February 13 as the closing period for comments. The proposed AD would shorten the period of the mandatory required installation of the stinger drain modification to within 800 flight hours or 12 months after the effective date of the AD, whichever occurs first.

## **"He Yelled at Me to Stop!"**



One of several versions of the origin of "Murphy's Law" contends that the Law's namesake was Captain Ed Murphy, an engineer at Edwards Air Force Base in 1949.

Frustration with a transducer which was malfunctioning due to an error in wiring caused him to remark that—if there was any way that something could be done wrong, it would be.

Recent ASRS reports indicate that Captain Murphy’s Law was in full effect when several aircraft components managed to get installed upside down or backwards.

*If a little voice in your head says that something doesn’t seem right, pay attention. It could be Captain Murphy warning that you are about to install something upside down or backwards.*

The problem this Maintenance Technician reported provides a dramatic lesson in the need to **verify proper setup before going ahead with a job**, especially one involving high-pressure jacks.

■ I was assigned to work at jack point “E” at the left-hand, inboard side of the B777 wing. At the site, I found that the jack pad [adapter] was already installed and the jack was seated with 4,000 LBS of pressure on it. When all the jacks were in place, my Lead instructed me to start jacking and he left the site to check on the right wing jacking area. I started jacking by increasing the pneumatic pressure to 7,000 LBS. As the jacking process was going on, my fellow Mechanic, who was on the wing dock at the jack point, heard a cracking noise and saw the panel cracking. He yelled at me, “Stop!” I immediately stopped the jacking process. I went up on the left-hand wing dock and found out that the [wing] panel underneath the jack pad was damaged. Afterwards we learned that the day shift had **installed the jack pads backwards**.

## **Safety is never an issue – until there is an “issue”**

When accident investigators begin piecing together the puzzle of an aviation accident, they often find that **human factors** played a role in what happened. It might be a **mistake** by a member of the flight crew or any of the dozens of people – **mechanics, cargo handlers, vendors and others** – who came into contact with the aircraft before it left the ground.

**Aircraft Accidents**



Too many times, accident investigators conclude that the airplane or helicopter was perfectly flyable, and that nothing caused the mishap but [human failure](#). Indeed, human factors play a huge role in aviation safety. It can happen because pilots made a mistake or because they didn't have proper training.

In other cases, aviation accidents occur because the individual relied too heavily on automated equipment, and either didn't recognize when the equipment failed or couldn't compensate for it.

It is obvious that the "[human factor](#)" plays a significant role in each of our daily lives. As an aviation safety professional, your efforts for a long time have been dedicated to providing current and relevant safety information to all you can. By doing this, we hope to enhance all employee's ability to complete their duties safely. Trust me, all who operate aircraft are very important... and the key to aviation industry SAFETY.

## [How U.S. Airlines Got a Whole Lot Safer](#)

Efforts by the FAA, airlines, and others have reduced the chances of a plane crashing and killing someone by 93 percent

Since the Jet Age began in the 1950s, air travel in the U.S. has never been safer. In a decade since passengers have died in the crash of an airliner carrying more than 100 people, and there hasn't been a deadly crash of a plane with more than 10 seats since a Colgan Air flight bound for Buffalo went down in February 2009.

[It's a dramatic turnaround](#). From July 1994 to January 1997, an airliner crashed at least once every three months, killing a total of 805 people. "It was overwhelming," says Frank Tullo, a former vice-president for flight operations at Continental Airlines. "They were falling out of the sky."

The federal government intervened, but not with sweeping laws or regulations. Instead, a series of [seemingly mundane, incremental changes](#), many recommended by the industry itself and put in place at little cost, have gradually made skies safer. "Everybody was looking for the home run that solved all of the accidents," says Ed Soliday, a former United Airlines executive. "The more we got down to it, the things that had the biggest impact were base hits."



After TWA Flight 800 exploded over the Atlantic Ocean in July 1996, killing 230 people, President Bill Clinton created a commission that called on the federal government and the airline industry to reduce the accident rate **by 80 percent over 10 years**.

Groups used to working against each other—the Federal Aviation Administration, commercial airlines, manufacturers, and labor unions—formed the Commercial Aviation Safety Team (CAST) to analyze accident data and suggest improvements. Some of the changes seem obvious, yet weren't always part of the flight plan: The pilot and co-pilot must now discuss well before landing—the most dangerous part of a flight—how they will approach the runway and agree on what they would do if they had to abort the landing. Crew members are also taught how to spot dangerous ice on the wings.

Under a program the FAA adopted at the airlines' suggestion, pilots can report errors without fear of punishment. CAST also recommended that airlines install "terrain avoidance" systems to warn pilots if they're too close to radio towers, buildings, or mountains. From 1982 to 1995, bad weather or dark conditions caused pilots on 12 planes to crash them into the ground, killing 420 people. No such accidents have occurred since 2005, when the FAA required airlines to install the warning devices on aircraft.

In the last five years, the odds of a U.S. plane going down and killing someone have been **1 in 49 million**, a 93 percent decline from 1994 to 1998, when they were 1 in 3.7 million. Accident rates are also down in Canada, Europe, Australia, and Japan. CAST has made 185 recommendations since it first met in 1998 and continues to debate improvements. **"A period of no accidents can ... breed complacency that ends up causing accidents,"** says Deborah Hersman, chairman of the National Transportation Safety Board. Airlines now download data from millions of flights annually and have begun pooling records to look for dangerous patterns. "What safety is about is attacking all of those issues that lead up to an accident," says Don Gunther, a former Continental executive and CAST's co-chair until last year, "and really they are pretty minor."

***The bottom line:*** *In the past five years, 1 in 49 million commercial flights has crashed, a 93 percent decline from 1994-1998.*

## **Safety First: Beginning and ending on the runway**

It's sometimes easy to forget that this industry, with its constant exposure to the impact of the economy, political upheavals, wars and other events outside of its control, has much to celebrate.

There are the constant technological “firsts” and the innovations in passenger service celebrated this month with our 38th Annual Airline Industry Achievement Awards.

But above all, this industry’s most remarkable achievement is its safety record, which has now been maintained at around 4 accidents per 1 million departures for some 10 years.

Two reports underscore why the airline industry stands high above all others in safety. The US National Transportation Safety Board’s 2010 accident report and ICAO’s first-ever State of Global Aviation Safety report emphatically affirm famous cinematic assurance to Lois Lane that flying is the safest way to travel. Statistically speaking, flying commercially is by far the safest way to get from one point to another.

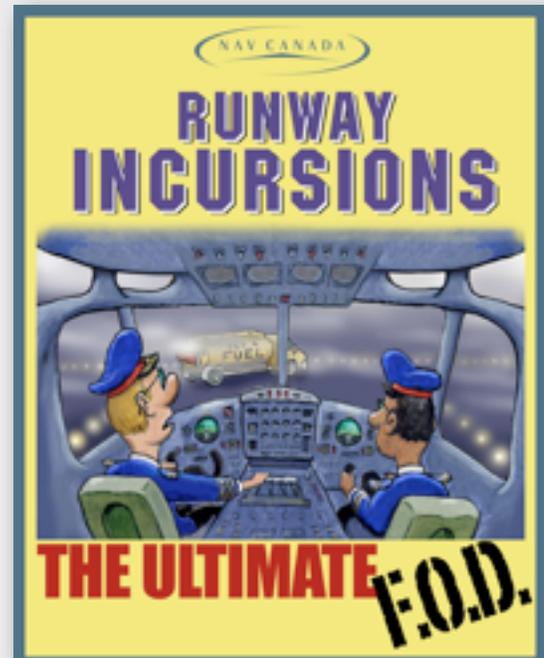
Total US aviation-related fatalities in 2010 were 472, well below total fatalities from boating (733), rail (813) and roadway (33,883). To put things in perspective, 44 people died in bus accidents in the US in 2010 while 618 died in bicycle accidents. Some 4,280 pedestrians were killed in US road accidents in 2010.

Globally, ICAO reports there were 121 commercial airline accidents in 2010 compared to 113 in 2009. While that resulted in a marginal increase in the accident rate, from 3.9 per 1 million departures to 4 per 1 million, it is clearly an extraordinary record that has been achieved despite continued growth—worldwide scheduled traffic volume experienced a year-over-year increase of 4.5% in 2010, setting a new record of more than 30.5 million departures.

Still, there are **areas of concern** and the most critical of these is **runway incursions and excursions**, the number one cause of fatal accidents today. Given that by 2030, the number of departures is expected to reach more than 52 million annually, this is a serious issue that requires top priority. If runway safety is not addressed, the industry will not be able to maintain its stellar accident rate of the past decade.

As always, the industry is working collaboratively to address this issue. Led by ICAO through its Runway Safety Program, there is a coordinated and global effort to improve runway safety.

But it now also becomes more critical than ever for governments and authorities around the world to understand the importance of airport and infrastructure



investment—as well as the need for more urgent attention to speeding up the introduction of new-technology air traffic management systems such as NextGen.

That's an industry lobbying task to secure the political support—and appropriate levels of funding—that are necessary to make this a top-level priority for all countries, whether in those regions like North America and Europe that are straining under congestion, or those regions with emerging economies and booming air traffic growth.

Without that level of prioritization, [the unacceptable risk is that the world's runways will not stay as safe as the world's skies.](#)