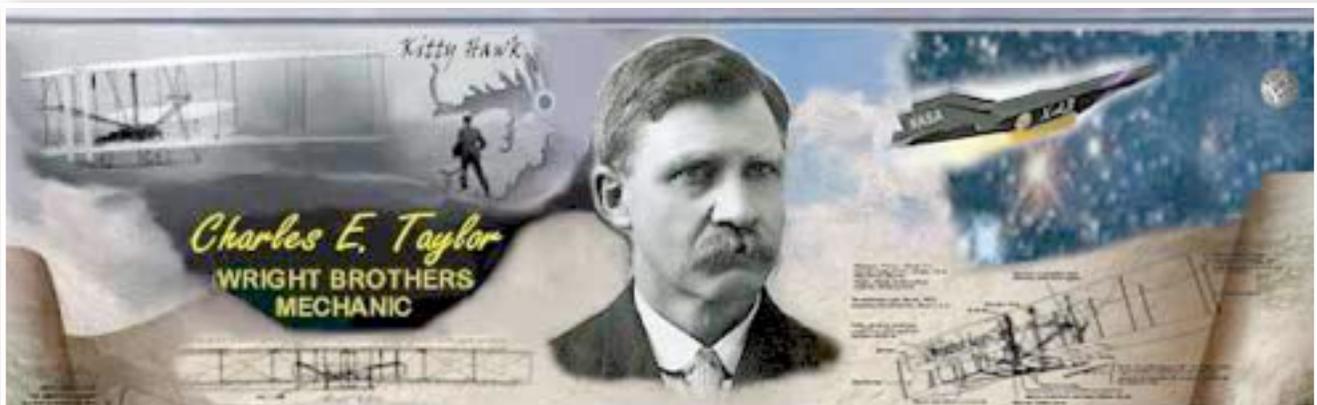


Aviation Human Factors Industry News

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

Hello all,

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

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Delta Settles With OSHA In Death Of Tug Driver

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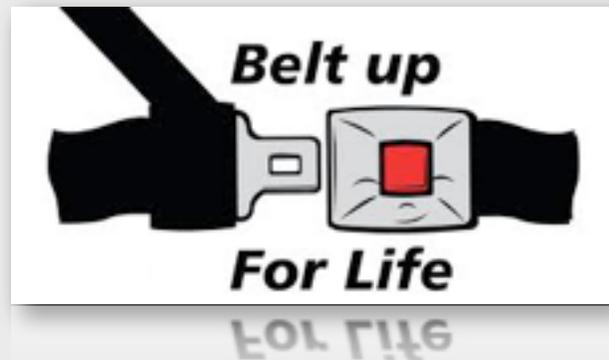
Delta Air Lines has agreed to install seat belts on airport vehicles under a settlement with the U.S. Department of Labor's Occupational Safety and Health Administration, following the August 2010 [death of a baggage tug vehicle driver who was ejected from his vehicle and was not wearing a seat belt](#).

Atlanta-based Delta said in a memo to employees that many of its vehicles do not have seat belts, and that it averages 14 ejections per year, with half resulting in "serious employee injury." In 2010, two Delta [employees died](#) in different incidents after being ejected from baggage tugs.

The agency said Delta violated a federal regulation that requires employers to provide employees with personal protective equipment, which in this case means seat belts. In the settlement, Delta agreed to pay an \$8,500 penalty and install seat belts in vehicles that don't have them, train employees to use the seat belts, enforce the requirement and report results of a monitoring program back to OSHA.

The settlement covers 16,000 Delta employees, 6,000 baggage handling vehicles and Delta operations at 90 airports. Delta said it will extend the requirement to all employees and to international operations.

OSHA said it also sent a hazard alert letter to airlines across the nation reminding them of the seat belt requirement.



NTSB: Clipboard hitting tail rotor caused fatal 2010 helicopter crash in northern Idaho town

A 2010 helicopter crash in a small Idaho town that killed two state wildlife biologists and the pilot was caused when an aluminum clipboard belonging to one of the biologists [somehow fell out of the aircraft](#) and hit the tail rotor, the National Transportation Safety Board said. A report released Thursday said it's unclear if the clipboard came from an external luggage rack or from inside the cabin.

The Hiller UH-12E helicopter had a three-abreast bench seat that had the pilot in the center. Its cabin was fully enclosed, but officials said [occupants sometimes open the doors](#) during flight.

"It's not common but pretty unusual," said lead investigator Michael Huhn.

Killed were 47-year-old Larry Barrett and 34-year-old Danielle Schiff, Idaho Department of Fish and Game biologists who were to count salmon spawning nests in the Selway River. The pilot was 43-year-old Perry J. Krinitt of Belgrade, Mont.

Fish and Game had chartered the aircraft from Clarkston, Wash.-based Leading Edge Aviation.

Officials said the pilot stowed most of the biologists' equipment in the aircraft's external racks. The helicopter then started its flight from Clarkston, with the pilot planning to fly to a fuel stop about 80 miles east.

About 33 minutes into the flight, the pilot broadcast that he was "landing in Kamiah," a small town in northern Idaho. The report said that transmission came within 4 minutes of the Aug. 31, 2010, crash.

The helicopter went down on a street in downtown Kamiah, hitting a travel trailer. No one on the ground was hurt.



The 1,500-foot debris path included parts from the tail rotor and clipboard, and the clipboard showed signs of striking the tail rotor, including paint transfer marks, the report said. Witnesses also told investigators they saw pieces falling from the aircraft before it crashed.

Texts, fatigue factors in Jetstar botched landing

A Jetstar crew botched a landing into Singapore after the first officer turned off the autopilot to "wake himself up" and the captain was distracted by phone messages, a report found Thursday.

The flight from Australia's Darwin to Changi Airport in 2010 had to abort landing and circle around for a second attempt after the wheels were lowered too late due to a series of distractions, Australian air safety officials said.



The captain received a phone call about weather in Singapore just before takeoff and, as he had forgotten to turn his phone back off, got a series of text messages from local mobile providers as the plane began its descent.

According to the report by the Australian Transport Safety Bureau (ATSB) published Thursday into the incident, the first officer had earlier switched the controls off autopilot "in order to hand-fly the aircraft and 'wake up'".

Consequently, the plane still did not have its wheels completely down when it was just 500 feet (150 meters) above the aerodrome and had to pull out for a second attempt.

"A number of distractions during the approach degraded the crew's situation awareness and resulted in the crew not detecting the incorrect aircraft configuration," the ATSB said, indicating the texts and fatigue were key.

Both men **had limited sleep before the flight**, with the captain woken twice by fire alarm tests in the Darwin hotel where they were staying and the first officer receiving a phone call from housekeeping at 4.30 am.

The ATSB said it had not identified "any organizational or systemic issues that might adversely impact the future safety of aviation operations" but the carrier, a budget offshoot of Qantas, had made a number of changes.

Jetstar has **edited its manual** to require descending aircraft to have their wheels in the correct position and landing checklists completed by 1,000 feet above the airport. It is also improving training on "**human factors**" in flying.

Battling the effects of pilot fatigue

A report released April 16 by the Transportation Safety Board says that **poor rest** led an Air Canada pilot to make a sudden and hazardous descent during flight ACC878 from Toronto to Zurich in January 2011.

According to the TSB report, about halfway through the flight the plane's captain made a position report that awoke the first officer, who had been taking an authorized rest nearby.

In his grogginess, the report says the first officer misjudged the path of an oncoming aircraft and pushed the control column forward, resulting in an abrupt change of altitude that pitched the Air Canada plane and caused injury to 14 passengers and two flight crew.

'This occurrence underscores **the challenge of managing fatigue** on the flight deck.'—Jon Lee, lead investigator

While technology has greatly improved the safety and efficiency of air travel, pilots are still susceptible to the **physical stresses** of flying.

Working for long hours while passing through different time zones can disrupt the human body's **circadian rhythms** and affect performance.



In addition to that, pilots must contend with [dehydration](#), which can also lead to drowsiness. Because the plane is pressurized, the air is very dry and can sap moisture from the body, which is why pilots must take steps to consume ample amounts of water while in the air.

'Sleep inertia'

What the first officer on that Air Canada flight was dealing with specifically was something called "sleep inertia."

"Sleep inertia is a very disorienting, very confusing feeling that occurs right as people transition from sleep to wakefulness," says Dr. Elliott Lee, a specialist in the sleep clinic at The Royal Ottawa Mental Health Centre.

Dr. Lee says that sleep inertia is [provoked by several factors](#), including how much time the person has been awake prior to the sleep period, and what stage of sleep they're in when they awake.

"If they're in light sleep and they wake up, sleep inertia is limited. But if they're in deep sleep, that's where sleep inertia will become more prominent," he says.

Power-napping in mid-flight

The pilot of the Air Canada flight was taking what is known as "controlled rest," which is essentially an unscheduled but authorized power nap. Air Canada's flight operations manual states that each rest period should not exceed 40 minutes, to specifically avoid sleep inertia.

According to the TSB report, the first officer on ACC878 [had been asleep for 75 minutes](#).

Air Canada's flight operations manual also allows pilots 15 minutes after napping in order to recuperate from sleep inertia.

Dr. Lee contends this may not be enough. "It would be ideal to have 30 minutes to an hour to have appropriate time to recover from the previous sleep."

According to the Air Line Pilots Association International, which represents more than 53,000 pilots at 37 U.S. and Canadian airlines, pilot [fatigue can have the following symptoms](#):

- Forgetfulness
- Poor decisions/mistakes
- Slowed reaction time
- Reduced vigilance
- Poor communication
- Fixation
- Lethargy/complacency

- Bad mood
- Nodding off

Flight crew schedules

To maintain flight safety, airlines schedule larger crews for longer flights. Every flight, no matter the duration, has at least two pilots, but longer haul flights can have one or two additional pilots, sometimes called international relief officers (IROs), to split up the workload and allow rest breaks.

Before a flight departs, the captain and crew agree on how to divide the load between them, making sure to take rest periods into account.

According to Air Canada's flight operations manual, only one pilot can rest at a time. Furthermore, **each rest period should not exceed 40 minutes**, a measure specifically intended to avoid sleep inertia.

The area of the plane where pilots can rest varies from airline to airline. Some airlines have specially designated bunks inside the cockpit, others may section off a seat in first class, and some have larger rest areas for crew located at the rear of the plane.

UTAir revises de-icing procedures after fatal ATR crash

Russian carrier UTAir has revised its de-icing procedures, following an order from the federal transport supervisory agency in the wake of the fatal ATR 72-200 crash at Tyumen.

Rostransnadzor told maintenance operation UTAir Technik that, in the period from 30 March to 5 April, four of the carrier's aircraft had flown from Moscow Vnukovo airport **without undergoing proper anti-icing**, despite the weather conditions.



The incident at Tyumen took place on 2 April, during this period. Thirty-one of the occupants on the twin-turboprop were killed when it came down shortly after its take-off for Surgut.

While Russia's Interstate Aviation Committee is still formally investigating the cause of the crash, there has been increased attention [on de-icing](#), following the discovery that the procedure was not properly conducted.

UTAir Technik states that the crew "had the right, at any moment, to request de-icing", and that Tyumen airport had the facilities and personnel to de-ice the aircraft.

The captain of the crashed turboprop had logged 2,580h while the first officer had accumulated 1,690h. The carrier also emphasizes its "strict" adherence to crew training and international practices. UTAir has passed IATA's operational safety audit, and is registered until October 2013.

The airline suspended services with its ATR 72-200s, but reaffirmed its confidence in the turboprop and insisted it would continue services with its newer ATR 72-500s after implementing the procedural changes.

It says the new procedures ["exclude error in decision-making on de-icing,"](#) adding that de-icing will be carried out in all weather conditions which can contribute to icing on the ground.

UTAir says it put the rules in place after Rostransnadzor had warned of restrictions on its ATR 72 flights, as well as activities by UTAir Technik at Vnukovo. The carrier admits that the revised de-icing regulations will "entail additional costs", but will ["dramatically reduce" the risk of incorrect decisions](#) during preparations for departure.

Catalina crash 'due to different expectations'

An accident involving a Catalina flying boat during a Fermanagh festival last year was due to [different expectations between the pilots and boat crews](#).

An official report said this [could have been resolved during the pilot's briefing before the event](#).



The Second World War aircraft damaged an elevator when it drifted into a yacht while attempting to moor.

The report said the [plane crew expected](#) that after they shut down their engines a tug boat would tow them to a mooring.

The [marshal boat crew expected](#) the Catalina to taxi to the mooring under its own power.

The French-owned aircraft flew to Enniskillen last September to take part in the festival at the former RAF airbase at Killadeas, which played a crucial role protecting Allied convoys during World War II.

'Limited experience'

The 70-year-old flying boat had recently been returned to an airworthy condition after a lengthy restoration program.

Accident investigators said the aircraft had not been operated on the water for more than 10 years and, with the exception of the Dutch commander, [the crew had limited experience of water operations](#).

The AAIB report said that during a pilot's briefing held on the morning of the event, specific details on how the Catalina was to moor [up were not covered](#).

After it landed in the water and shut down its engines attempts were made to attach a line from a marshall boat.

But as they tried to pull it to the mooring, the line became tangled in the boat's propeller.

The ground crewman fell into the water as he attempted to prevent the boat becoming separated from the Catalina.

Another marshal boat went to help the man in the water but also became tangled in the line.

A third marshal boat was unable to prevent the aircraft from drifting into the moored yacht, damaging its right elevator.

The Catalina and a French pilot were stranded in Fermanagh [for 10 weeks](#) while repairs were carried out.

It eventually took off and returned to Paris at the beginning of December.

Ask Captain John Cox: Is takeoff or landing more dangerous?

First let's look at a few statistics to determine if there is truly a danger. According to the International Air Transport Association (IATA) in 2011, 2.8 billion people flew in 38 million airline flights (30 million jet and 8 million turboprop). There were 11 hull loss accidents in Western-built jets, with 5 accidents involving fatalities. fatality rate was 0.07 per million passengers. Of the 2.8 billion passengers, 486 were fatally injured on all types of aircraft (jet and turboprop). This was down from 786 in 2010. [The last two years have been the safest years in aviation history.](#) It is hard to say that flying is dangerous when viewing this remarkable record.



To your question about the relative risk between take-off and landing: According to the Boeing Statistical Summary of Commercial Jet Airplane Accidents - Worldwide Operations 2001 to 2010, 17% occur in the takeoff phase (10% on takeoff and 7% on initial climb) accounting for 25% of the fatalities. During the landing phase, there are 36% of the accidents (14% during the final approach and 22% during landing), accounting for 24% of the fatalities. This means that there is a greater chance of being in an accident [during the landing phase](#) but the likelihood of being a fatality is approximately the same. Again, the statistics show an extraordinary safety record.

FlightSafety Renews Program for Laid-off Pilots, Techs

FlightSafety International announced recently that it is again offering its proficiency protection program for 2012. The program is intended to help laid-off business aircraft pilots and maintenance technicians [maintain their proficiency by providing no-cost training.](#)

To be eligible, pilots and technicians must have lost their jobs as a result of a staff reduction or job elimination that occurred after January 1 this year.

In addition, they must have been training under a FlightSafety full-service contract at the time of the involuntary job loss. For pilots, the no-cost training provided under the program will be for an aircraft type that they trained on under that agreement. Maintenance technicians who were enrolled in the company's master technician program at the time of involuntary job loss can receive the next course toward the completion of the program at no cost. The free course must be started while the pilot or technician is unemployed and completed by year-end.



Pilots and technicians who qualify and take advantage of this program “are not required to repay the cost of the course or to enter into a new training agreement with FlightSafety once re-employed,” the company said.

Program details, including eligibility requirements and training request forms, are available at [FlightSafety's website](#).