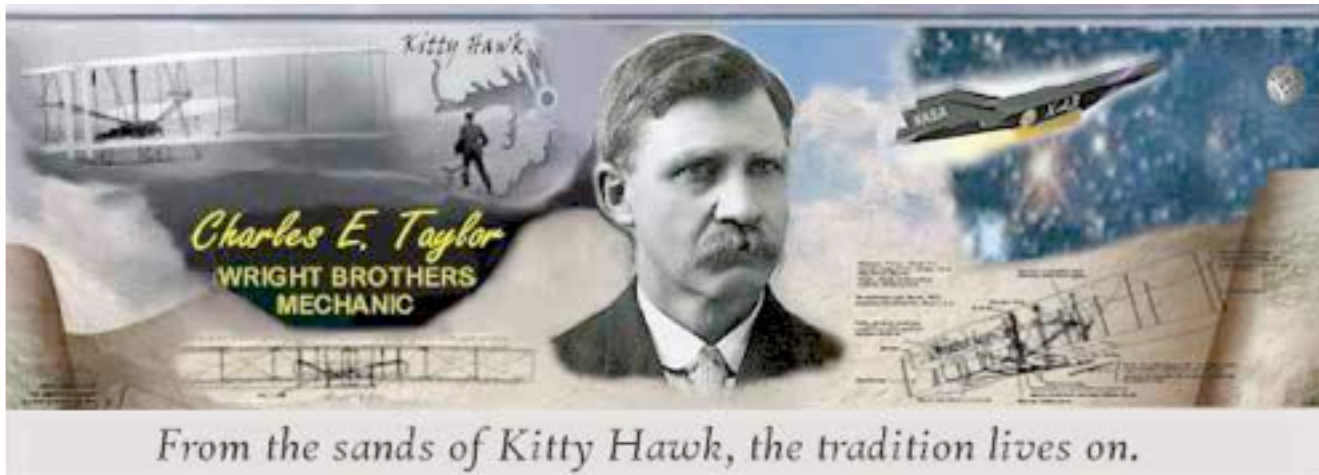


# Aviation Human Factors Industry News

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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:

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## New FAA Safety Culture Reflected In Operational Error Reporting

### Reducing Emphasis On Blame In Controller Errors.

The FAA says it has taken another step toward a **new safety culture** by reducing the emphasis **on blame** in the reporting of operational errors by air traffic controllers.

"We're moving away from a culture of **blame and punishment**," said FAA Administrator Randy Babbitt. "It's important to note that controllers **remain accountable for their actions**, but we're moving toward a new era that focuses on **why** these events occur and **what** can be done to prevent them."



Effective immediately, the names of controllers **will not** be included in reports sent to FAA headquarters on operational errors, which occur when the proper distance between aircraft is not maintained. The controller's identity will be known at the facility where the event took place. Necessary training will be conducted and disciplinary action taken, if appropriate. Both will be recorded in the controller's record. Removing names on the official report will allow investigators to focus on **what happened** rather than who was at fault.

"We need quality information in order to identify problems and learn from incidents before they become accidents," Babbitt said. "The best sources of that information are our front-line employees. Our success depends on **their willingness** to identify safety concerns."

In order to avoid disrupting operations, controllers will not be automatically removed from their position following an operational error unless it is deemed necessary to remove them. Another change designed to avoid disruptions allows reports to be filed by the close of the next business day unless the operational error is significant. Reports previously had to be filed within four hours.

This action is part of the transition to the FAA's **new non-punitive reporting system** for controllers. The Air Traffic Safety Action Program (ATSAP),

which now covers one-third of the country, allows controllers and other employees to report safety problems without fear of punishment unless the incident is deliberate or criminal in nature. Today's change in the reporting requirements for operational errors provides for a more seamless transition as ATSAP is rolled out to the entire country.

The reporting changes do not alter the investigation and analysis of operational errors. They also do not change the requirements for addressing the **causal and contributing factors** to those events.

## **NTSB Releases Photos Of Depressurized 737**

Two Pictures Of The Effected Area Released. In its continuing investigation of the Southwest Airlines 737-300 (N387SW) that experienced a **rapid decompression** during a flight from Nashville to Baltimore on July 13, 2009, NTSB Acting Chairman Mark V. Rosenker has authorized the release of two photographs showing the **compromised** section of the area of the fuselage that failed in flight.

### exterior photo

The damaged aircraft skin section was visually examined in the NTSB's Materials Laboratory. The damage left a hole measuring approximately 17 inches by 8 inches. The skin in this area of the fuselage is 0.032 inches thick with an additional 0.032 inch thick layer bonded to the interior surface in selected areas.

### Interior photo

Rosenker said that the initial visual examination found the fractures in good condition and suitable for further analysis.

**No significant corrosion or obvious pre-existing mechanical damage was noted.**



A detailed metallurgical examination of the skin section and the fracture surfaces will be accomplished by the Safety Board in the coming days.

## **American 767 damaged at its Alliance maintenance base**

American Airlines says the nose gear on a 767-300 **retracted on the ground** its base at the Alliance Fort Worth Airport on 15 July while the aircraft was undergoing post-heavy maintenance functional testing before being put back into service.

The carrier would not reveal the tail number, the extent of the damage or when the aircraft might be back in service.

"No employees were hurt during the incident," an American spokesman tells ATI. "American will complete an internal investigation of the incident to determine exactly what happened and how another occurrence of this kind **can be prevented in the future.**"



## **NTSB: Broken steering cable found in Continental 737 Denver accident**

Information released by the US National Transportation Safety Board (NTSB) reveals that a **mechanical problem** and complicated weather could have combined to cause the runway excursion of a Continental Boeing 737-500 at the Denver International Airport the night of 20 December.





Continental Flight 1404 was taking off from Denver at 1818h local time when pilots **lost directional control** as the aircraft reached approximately 100kt airspeed. The aircraft departed the left side of Runway 34R, coming to rest in a drainage basin and catching on fire. All 115 passengers and crewmembers escaped, though 41 were injured.

In a systems group reports released last week, one of dozens of factual reports that include crew statements, flight data and cockpit voice recorders and meteorology, the NTSB reveals that a cable used to operate the aircraft's nose wheel steering (NWS) system had been **found broken** in the wreckage.

Pilots steer an aircraft on the ground using the rudder pedals, which directly control the nose gear through control actuators, or at lower speeds using the cable controlled NWS, which connects to the "tiller" wheel on the left side of the cockpit.

A **materials analysis** of the removed broken NWS cable by the NTSB found issues **"typical of internal wear at a pulley location"** in the cable in the vicinity of the pulley where the break occurred. A portion of the recovered cable was also **"kinked" at several locations**, with a single wire strand fractured at the worst kink locations. An analysis of a NWS cable earlier removed from another Continental 737 due to "visible wear" showed certain external wear features also noted on the accident aircraft's cable.

According to Boeing, the broken cable in that location could have caused the nose gear to rotate 7 degrees to the left. Seven degrees also represents the maximum amount of nose wheel steering provided by full deflection of the aircraft's rudder pedals, according to the NTSB.

Magnifying the NWS problem that night would have been the **strong left crosswind conditions** during the takeoff roll, winds that would have pushed the aircraft's tail to the right and nose to the left due to the "weathervane" effect.

An analysis of the airport's low-level windshear alerting system, compiled by the National Centre for Atmospheric Research and provided in the NTSB reports, shows that crosswind velocities during the takeoff run varied from approximately 25kt to 30kt, just slightly below the winglet-equipped Boeing 737's maximum demonstrated crosswind component of 33kt.

Statements from the pilots would tend to lend credence to a **"perfect storm"** scenario where a **broken steering cable** and **strong crosswind** might have combined to overwhelm the directional controllability of the aircraft.

"Initially, the takeoff roll was relatively smooth, with no shimmying or shaking of the aircraft," stated the aircraft's captain, who was performing the takeoff.

"However at about 90 knots (prior to the monitoring pilot's 100kt call out), I felt the rear end of the aircraft slip out hard to the right and the wheels lose traction. It had felt like a slick patch of runway, or a strong gust of wind, or a combination of both, had pushed the tail hard to the right. The aircraft tracked left and I countered with right rudder to full right. This was ineffectual."

The NTSB did not include any analysis of the materials released last week, nor did it provide for interviews with the investigating team, which is continuing its analysis.



In 1993, following several publicized maintenance-related aviation incidents and accidents, Transport Canada developed programs which would serve to reduce maintenance error. In close collaboration with the aviation industry, Transport Canada subsequently identified **12 human factors – called the “dirty dozen”** – that may lead to maintenance errors. Since then, maintenance technicians at many major air carriers have routinely received training to recognize the “dirty dozen” factors and prevent their occurrence.

**“Dirty Dozen”**

This issue we take a look at how the “dirty dozen” human factors play a role in maintenance incidents reported to the ASRS. **The “dirty dozen” factor of fatigue.**

I flew to work on aircraft X to repair a wiring problem. I worked the aircraft **through the night** and it was not fixed until the following day. It then needed

to be taxied from the hangar to the gates. The flight crew was not available and there were no means to tow the aircraft. I am qualified to taxi the MD80 but I am not qualified to taxi at ZZZ unless there is a ZZZ qualified AMT in the right seat working the radios.

I contacted the contractor that provides maintenance to the air carrier and provided us with an AMT to ride the right seat and work the radios. Before we started to taxi he called the Tower and he wrote down all the instructions he was given. He was given many instructions -- many more than I could remember -- **so I relied on him** for accuracy.

The conditions were dark, icy and very busy with all the maintenance repositions happening at the same time. The fact that this was the first time I had to taxi an aircraft at this **unfamiliar airport** was one more **distraction**.

We began our taxi and before long we were instructed to follow a DC9. We followed him for quite sometime until he turned off to go to his company's gates and we turned to go to ours. While taxiing, we came to a **runway intersection** and I asked my radio man if we were OK to cross and he responded yes, so I proceeded.

We turned right and came to another intersection and again asked him if we were OK and he responded yes. **I am not sure** if we were in error or not. The Tower did not indicate that we were. But in retrospect, **I do not remember** receiving clearance all the way to the concourse. **I did not realize how tired I was at the time**, but if not so tired I do feel I would have made him call the Tower again instead of **taking his word** that we were clear to cross.

### Synopsis

A mechanic qualified to taxi his carrier's MD-80's, but not qualified on the airport he is at on a field trip, has to rely on a contract maintenance person to work the radios. He was so **fatigued, he does not remember receiving clearances** all the way to the concourse.

## Emirates Pilot Tells Story About A340 Tail Strike

### Narrowly Avoided A Disaster Down Under

Officials say it was the closest thing Australia has had to a major air, and after 4 months of silence, the pilot **has finally told his story** to the Australia Herald Sun...

The A340 was fully loaded with 257 passengers and 18 crew on board. As it approached the end of the runway of Melbourne Airport on its takeoff roll, the pilot **knew they were not fast enough** to provide the required lift. He pushed the engines to 'Take Off And Go-Around' power and rotated, bouncing the tail of the Airbus three times off the pavement and hitting the REIL lights at the end of the runway as the airplane finally became airborne. After 30 minutes dumping fuel over Port Phillip Bay, they returned to Melbourne and landed safely, but the Emirates pilot was **badly shaken**.



The pilot said he still doesn't know exactly how he managed to get the Airbus in the air. "I . . . sort of reacted on instinct," he told the Herald Sun. "I had a **feeling** that (something) wasn't working, but I couldn't find out what was wrong. I knew I couldn't stop. At that point I knew we just had to go. And we got it off the ground, miraculously."

Safety investigators found that the First Officer was flying the plane when the Captain called "Rotate". When it failed to fly, he called "Rotate" again, which caused the first tail strike. It was then that he pushed the plane to Take Off and Go-Around power and hit the tail again as they became airborne. Once off the ground, they **realized that the calculated departure weight was 100 tons lighter than the actual weight of the airplane**. While the crew is not responsible for entering the takeoff weight, **they are responsible for checking that it is correct**. The **typo** meant incorrect calculations of takeoff power and requisite speeds.

According to the Herald Sun, the pilot has left Dubai with his family and returned to Europe, where he is from. **He reportedly had slept only 3 1/2 hours in the 24 before he was scheduled to fly**, and both he and the co-pilot were handed prepared letters of resignation when they returned to Dubai



after the incident. There were four pilots on board the aircraft, including two relief pilots, due to the 14 1/2 hour length of the flight from Melbourne to Dubai.

## Unreported Near Miss Re-enacted in Fatality

A worker with nearly 20 years of experience was attempting to remove a tank from a piece of heavy equipment. He had no advice on how to do this from his supervisor, **nor were there any instructions** in the manufacturer's manual. He had not jacked or blocked the tank for support, nor had he emptied it of water.

He was removing the bolts **which he thought** held a protective barrier in place, not realizing that they were the only support for the heavy tank itself. When the last bolt came out, the 1,200-pound tank fell on the victim, crushing his chest. He never regained consciousness and he died of the injuries.

Investigation showed that **two years before, a similar incident** had occurred involving another worker. Because the tank had been partially supported by a jack on that occasion, the worker involved had escaped with only a bad scare. **However, this near miss had not been reported.**

This fatal incident underscores the importance of **reporting all** incidents, including near misses. Near misses serve as a warning that something is wrong and needs to be corrected before someone is injured or killed. This fatality also points out the **importance of written procedures**, regular training reviews and **supervision for workers** who are servicing equipment.



## Report: Driver in Logan incursion said he didn't know runway was open

The driver of a construction vehicle that **had a close call** with a US Airways jet last week when it crossed a runway at Logan International Airport has said he **didn't know the runway was open** when he drove across it, federal transportation investigators said.

The National Transportation Safety Board, which is looking into the runway incursion said in a preliminary report that the runway, 15R, is occasionally closed due to airfield construction. When the runway is closed, signs indicate that it's closed, the NTSB said. **But no signs were up** indicating that the runway was open. Airport officials also said that all personnel **had been briefed** that the runway was active.

But the driver of the vehicle "indicated that he **had not been briefed** to that fact," the NTSB said in a one-page report posted on its website.

NTSB spokesman Peter Knudson said the agency would, as part of its investigation, look into **how people on the airfield are notified** of runway closures and openings.

"Part of our investigation is the extent and the circumstances of the **communication**," he said. He said a report by his agency determining the probable cause of the incident and **any factors** that may have played into it will be finished in 6 to 12 months.

The NTSB report also said there was a 500-foot separation between the airplane and the vehicle. But officials said that with the Airbus A320 hurtling down the runway, **only seconds separated** the plane and the truck. An A320 jet can take off at speeds ranging from 170 to 250 miles per hour.

"It's very serious," said Phil Orlandella, a spokesman for the airport, which is run by the Massachusetts Port Authority. "That's why the CEO of this company decided that **safety's first** and we're going to cease construction until we figure out what happened." All airfield construction has been suspended since the incident, while officials review procedures.



A spokeswoman for HNTB Inc., the company the driver worked for, didn't immediately return messages seeking comment.

The incident happened at about 6:36 a.m.

## Picture This!

Gee, if a fire breaks out, does anyone know **who has the key** to the lock securing the fire extinguisher? When a fire starts, seconds count and the time it would take to get to this fire extinguisher could make all the difference between a minor fire and an out-of-control inferno. What were they thinking?

