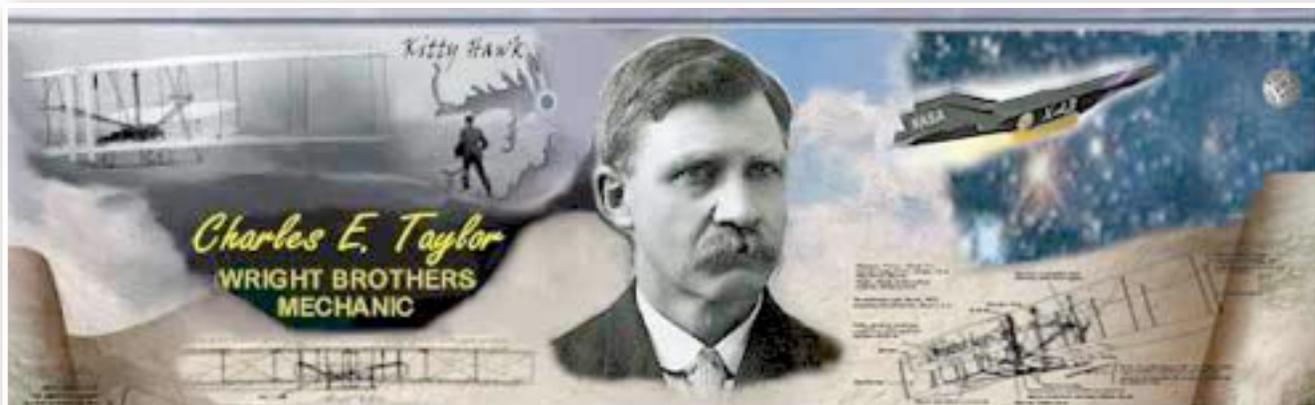


Aviation Human Factors Industry News

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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

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

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An Invisible Killer: The 1985 Crash of Delta 191

The data for the following story was gathered from the official [accident report issued by the National Transportation Safety Board](#).

Just eight years after a severe thunderstorm contributed to the crash of Southern Airways Flight 242, a Delta Airlines flight traveling from Ft. Lauderdale, Fla., to Dallas, Texas, was seconds away from landing when Mother Nature unleashed an invisible killer. Triple-Digit Heat and a Trigger Aug. 2, 1985, was another blistering day of triple-digit heat in Dallas although this is quite typical for the heart of summer. Given sufficient moisture and an "atmospheric trigger," the conditions were conducive for thunderstorm development.



Delta Airlines Flight 191 departed Fort Lauderdale in the mid-afternoon. In the cockpit were Captain Edward Connors, First Officer Rudolph Price and Second Officer Nick Nassick. The experienced flight crew was flying a Lockheed L-1011 TriStar aircraft, a reliable workhorse in the Delta fleet.

By late afternoon, the flight was nearing Dallas. At the same time, a weak frontal system began to provide the needed trigger for thunderstorm development. Just before 6 p.m., a shower developed near the airport but was not a cause for concern. In the air, Captain Connors diverted his plane around a thunderstorm in Louisiana.

On Final Approach

As the L-1011 neared the airport, the previously innocuous shower began to intensify. Just 1,500 feet above the ground, on final approach just 1 minute from landing, Captain Connors noted lightning in the cloud ahead of them. Despite the impending storm, the weather report from the airport **was not ominous** and well within the restrictions for landing.

Just seconds later, at 800 feet above the ground as the plane entered the heavy thunderstorm, a series of rapid events conspired to doom the jet. First the plane accelerated, hit from behind by strong winds.

Then, just as suddenly, the plane rapidly lost speed and altitude. The pilots responded by pushing the throttles to maximum power [but it was too late](#).

Without any altitude left, the plane smacked into the ground, ran across a highway killing a motorist, plowed into two water towers and burst into flames, just thousands of feet from the runway. Including the motorist, 137 people died; 29 survived.

Thunderstorms pose serious flight risks for aircraft including microbursts and windshear.

Microburst Revealed

How could an aircraft only 800 feet from the ground and seconds from landing crash so violently with no warning?

After a lengthy investigation, the NTSB concluded that windshear and a microburst encountered in the thunderstorm caused the pilots to lose control of their plane.

In 1985, although the effects of windshear were known by pilots, microbursts had been studied less and [pilots had only limited training](#). In addition, real-time wind shear information was not readily available to pilots.

As thunderstorms gather strength, they produce turbulent winds. These violent gusts are unpredictable and can bring down an airplane in the right circumstances.

In the case of Delta 191, the [pilots were not aware of the severity](#) of the windshear and potential downburst that was directly in their flight-path.

In the aftermath of this tragedy, NASA developed sophisticated airborne windshear detection systems that pilots could use while in-flight.

As with the crash of Southern Airways 242, the NTSB recommended improved communication between meteorologists on the ground and pilots in the air. [Pilot training was also improved](#).

In addition, airports at high risk to microbursts were fitted with improved radar technology that allowed meteorologists to detect microbursts in a more timely fashion.

Despite all of the improvements made since 1985, landing in violent weather still presents a [safety risk](#). This was never more apparent than in 1999 when a crew of an American Airlines flight attempted to race Mother Nature and failed.

Stay tuned for the third and final installment of this series, Racing the Storm: The 1999 Crash of American 1420.

<http://www.airdisaster.com/reports/ntsb/AAR89-04.pdf>

<http://www.accuweather.com/en/weather-news/a-fatal-mistake-southern-airwa/61989>

KLM 747 de-icer shunt echoed fatal Montreal collision

Supervisory **inexperience and communication problems** resulted in a de-icing worker being badly injured after a KLM Boeing 747-400 toppled an elevating platform at Amsterdam Schiphol. The aircraft (PH-BFB) had parked on position P14 at de-icing platform J - located just south of the Runway 09 threshold - before a departure to Curaçao on 30 November 2010. Investigators from the Dutch Safety Board say the supervisor, overseeing a team of four de-icers, **had only been in the role for four days**.

During the de-icing process, when aircraft communication is handed to a localized control facility, the supervisor says radio messages can be heard from other de-icing positions - a situation that **"disturbed"** the work.

Two elevating de-icing vehicles were still coating the horizontal stabilizer on each side of the 747 when the supervisor - in a car to the left of the aircraft - cleared the crew to contact ground control for taxiing.

While the de-icer on the right moved to a safe position, the one on the left was **still working when the aircraft** received clearance to taxi to Runway 36L. It moved forward, knocking over the 10m (33ft)-high de-icer. Its **worker sustained** serious back injuries in the fall.

The accident bore a striking similarity to a collision that killed three workers de-icing a Royal Air Maroc 747-400 at Montreal in January 1995.



Dutch investigators say the supervisor at Amsterdam, who had completed training on 5 November but only started duty in the week of the accident, [had received insufficient supervision and had "lost track" of the process.](#) [Communications](#) had been problematic, and the inquiry points out that having a single person releasing an aircraft was a ["weak link"](#).

Servisair found not guilty of safety violations in de-icer's death at Calgary airport

Servisair has been acquitted of two Canada Safety Code violations in the tragic death of aircraft de-icer, [who was not wearing his safety harness and lanyard](#) when he fell nearly six metres to his death on the morning of Dec. 21, 2009. Provincial court Judge Sharon Van de Veen said Friday that the worldwide provider of aviation ground services [did everything it could](#) to ensure the safety of its employees and had no idea the [17-year veteran de-icer breached safety provisions.](#)



“This is a case of [very experienced employees deliberately failing to carry out the mandatory policy](#) to wear full protection equipment when de-icing aircraft,” Van de Veen said in a lengthy decision.

“This policy was well known to the de-icing personnel in this case and had been emphasized as part of ongoing training provided by the company.

“There is no evidence the company [turned a blind eye](#) to de-icers failing to wear fall protection equipment, nor is there evidence the company benefited in any way by de-icers taking [shortcuts](#) to complete work for customers.”

The de-icer, 52, fell from an open bucket to the tarmac at Calgary International Airport and suffered a fatal head injury.

Dale Flette, general manager for Servisair in Calgary, which has about 20 de-icers on staff, said outside court he was pleased with the ruling.

“We’re very appreciative of the time the judge put into the decision,” said Flette.

“It was a very tragic event, [one that will remain with us](#) and his family for some time.

“But I want to **reiterate that safety is definitely the most important** for Servisair today and it will remain so moving forward.”

Flette said despite the de-icers decision to breach the company’s safety protocol that day, he was a “great, great co-worker and a great family man and he is sadly missed.

“The healing process has begun and we move on from here,” he said.

“Nothing has changed as far as our procedures. We have put a few things into place for sure, but obviously we’re paying that much closer attention to it. We talk about it daily. There’s a reminder all the time.”

Van de Veen said it was an **unfortunate set of circumstances** that led to Servisair not having a supervisor on-site for the first plane de-icing of the day — an unscheduled Canadian North Boeing 737 aircraft just after 6 a.m. on Dec. 21, 2009.

Lyle Schmalz, who testified he had only once previously caught a de-icer without his safety harness on — ironically also this individual — **had been called away to cover for a sick employee** elsewhere at the airport.

“Although there is evidence that occasionally, indeed rarely, during the first flight of the day, senior employees did not wear their fall protection equipment, the evidence is clear that they always made sure to wear it by the next flight,” said the judge.

“Generally speaking, the next flight would be at a time when other senior management would commence their shifts, and there would be (one of them) carrying out their supervisory duties.”

The judge said this is a case where the company was completely **unaware** that any employees were violating company policy in relation to the use of fall protection equipment.

“At the time of the incident before the court, with the exception of Mr. Schmalz having once observed this individual without his fall protection equipment (when he immediately rectified the situation), the company had never had any reports or observations of any employee failing to wear fall protection equipment while de-icing an aircraft.

“It had never been raised at any of the ongoing safety committee meetings and this practice on the part of senior employees, being rare, had not come to the attention of the management of the company.”

Crown prosecutor Kent Brown said outside court he did not anticipate an appeal.

“The judge made a well-reasoned decision, going through the evidence and concluded it was unfortunate circumstance in which one person lost his life.”

FAA Encouraging Controllers to Report Errors

As the FAA encourages controllers to report mistakes, pilot errors that before went unnoticed **may now** result in certification action. As part of a broad initiative begun five years ago to improve aviation's "safety culture," the FAA is air traffic controllers to report **operational errors and mistakes without fear of punishment or reprisal**. The change is leading to an increase in reported errors but, the agency says, a reduction in overall risk as well. The shift also means that the FAA is now more likely than ever to **crack down** on pilots who make mistakes.



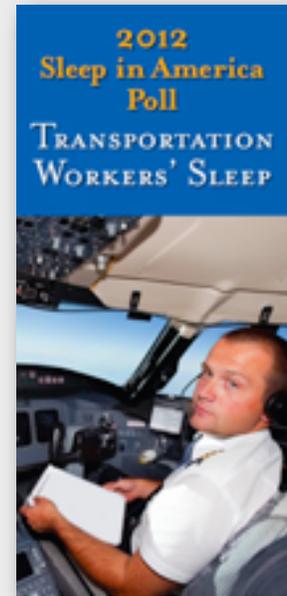
The program is an extension of the Aviation Safety and Reporting System that has been available to pilots for years. To reduce the stigma attached to on-the-job mistakes by controllers, "operational errors" – for example, when a controller allows two airplanes to fly too closely – will now be known as "operational incidents." In addition to encouraging reporting, the FAA has centralized the analysis of potential errors and changed how managers' bonuses are computed, so that pay is no longer tied to reducing error totals, according to a report by Bloomberg News.

The FAA began the safety initiative in 2008 and has been expanding it ever since. The latest expansion **includes the technicians** who maintain radar installations and other equipment. While the change will most likely lead to safer skies in the long run, pilots need to be aware that serious errors they make that might have gone unreported in the past will almost certainly be reported now, possibly leading to certificate action.

National Sleep Foundation Poll: Sleepy Pilots, Train Operators and Drivers

Two Weeks ago it was National Sleep Awareness Week. The NSF has just its annual poll results! This year looks at transportation workers' **sleep-- the people** we trust to transport us safely each day.

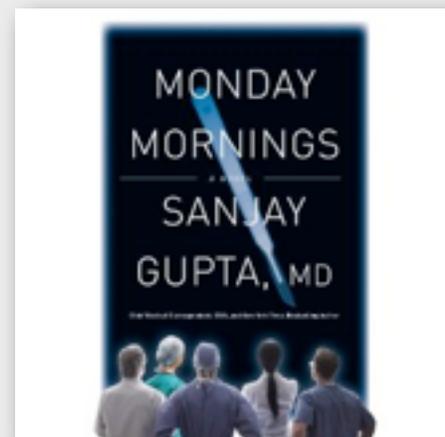
The people we trust to take us or our loved ones from place to place struggle with sleep, according to the National Sleep Foundation's (NSF) 2012 Sleep in America® poll. It is the first poll to ask transportation professionals, including pilots, train operators, truck, bus, taxi and limo drivers about their sleep habits and work performance.



http://r20.rs6.net/tn.jsp?et=1109480055462&s=4477&e=001HHppOIUmo4dtP2ZL4hApr_EdTjAfCC4K7eFdWXbyOqVDY_7jwkhqr6SwCFfmHYP4nz8ttElzGbOOR9PI32agt57BSMiZongNPk0S5WkHp4MEMqplZsnoaBDw2R9Ep0eFeGzQdLi8_s=

Monday Mornings – Book

Every time surgeons operate, **they're betting their skills** are better than the brain tumor, the faulty heart valve, the fractured femur. Sometimes, they're wrong. At Chelsea General, surgeons answer for bad outcomes at the Morbidity and conference, known as M & M. This extraordinary peek behind the curtain into what is considered the most secretive meeting in all of medicine is the back drop for the entire book.



Monday Mornings, by Dr. Sanjay Gupta, follows the lives of five surgeons at Chelsea General as they **push the limits** of their abilities and confront their personal and professional failings, often in front of their peers at M & M. It is on Monday mornings that reflection and introspection occurs, usually in private. It is Monday Mornings that provides a unique look at the real method in which surgeons learn - **through their mistakes**. It is Monday Mornings when, if you're lucky, you have a chance at redemption

How workplace culture can help drive employees to succeed

How would you describe your organization/ department/team's culture? Take a moment and **select three words or phrases** that describe your company culture. Write them down and set them aside; we'll come



back to them in a few paragraphs. If you're like most leaders, you don't pay careful attention to the work environment that exists in your organization today. Most leaders have been groomed to focus primarily **on performance metrics**, things such as net profit, market share, EBIDA, payroll expenses, etc. These are certainly important metrics; all organizations need to meet or exceed performance standards. And research indicates that these, alone, are not the strongest drivers of desirable outcomes such as consistent performance, terrific customer service or engaged employees.

What differentiates great organizations from ordinary ones?

Leaders in every organization around the globe monitor performance metrics. Yet some organizations are seen as **"great places to work" and "great investments"** and deliver "great customer experiences." Most organizations are not seen like that.

Organizational cultures that are consistently high performing AND values-aligned do not happen casually — **they happen intentionally**. The leaders of these organizations understand that they must effectively manage employees' **heads, hearts and hands** — not just one of those three. Leaders that focus on performance alone typically see their role as managing employees' hands, not employees' heads and hearts, as well.

These organizations create a **workplace culture** where employees do the right things — using their heads, hearts AND hands — even when the boss isn't around.

Blanchard's experience and research identified the single foundational component of high performing, "great places to work" organizational cultures. That differentiating component: values alignment, driven by senior leaders.

There are three key elements required for a successful culture refinement effort:

- First, senior leaders (of the organization/department/team) **must champion the culture change**. The responsibility for proactive management of team culture cannot be delegated to any other player or role. Only senior leaders can change expectations, structure, policies and procedures to support the desired culture.
- Second, senior leaders must create measurable, behavioralized values. Defining what a "good citizen" looks, acts and sounds like — down to specific and observable behaviors, describing how leaders and staff treat each other and customers — **sets a clear standard for how leaders and staff are to behave day to day**.
- Third, senior leaders hold themselves and all staff accountable for both performance standards and values expectations. Once valued behaviors are published, leaders at all levels are "under the microscope." Employees will be observing leaders' plans, decisions and actions closely to see if they **"walk the values talk."** Only when leaders demonstrate desired valued behaviors will the employee population embrace those behaviors.

The impact of our culture process is best shown by the results reported by our culture clients. **They consistently report:**

- Increased employee performance.
- Increased employee work passion/engagement.
- Increased customer service experiences.
- Increased profit.

Think back to the three words that describe your organization's culture that you selected earlier in this post. **If you selected words like** trusting, employee-focused, safe, inspiring, family or "work hard & play hard," you're on the right track. If not, you might consider refining your team's values expectations and accountability systems.

Industry

Analysis Ranks Most Sleep-deprived Occupations

A new ranking conducted for Sleepy's, the Mattress Professionals, points to those jobs where workers report the shortest sleep time. The Shortest-Sleep Jobs list is based on an independent analysis of individual sleep habits as reported in the National Health Interview Survey (NHIS). The data reveal the sleep patterns among America's workers—none of whom attain 8 hours of sleep. [The list is presented with the shortest sleepers at the top.](#)

1. Home Health Aides
2. Lawyers
3. Police Officers
4. Physicians, Paramedics
5. Economists
6. Social Workers
7. Computer Programmers
8. Financial Analysts
9. Plant Operators
10. Secretaries

The study also identified the Top 10 occupations generally considered to be the ["most well-rested."](#) The jobs with workers who, on average, get the most sleep are presented below, with the most well-rested at the top.

1. Forest, Logging Workers
2. Hairstylists
3. Sales Representatives
4. Bartenders
5. Construction Workers
6. Athletes
7. Landscapers
8. Engineers
9. Aircraft Pilots
10. Teachers



FAAST Blast

The March/April 2012 issue of FAA Safety Briefing is now available and supports the safety outreach efforts of the FAAS Team's 3rd Annual Safety Standdown. The Standdown's three central themes include: Loss of Control, Aeronautical Decision-making, and Advanced Preflight. Articles on each of these critical areas provide important insight, tips and resources for improving general aviation safety.



http://www.faa.gov/news/safety_briefing