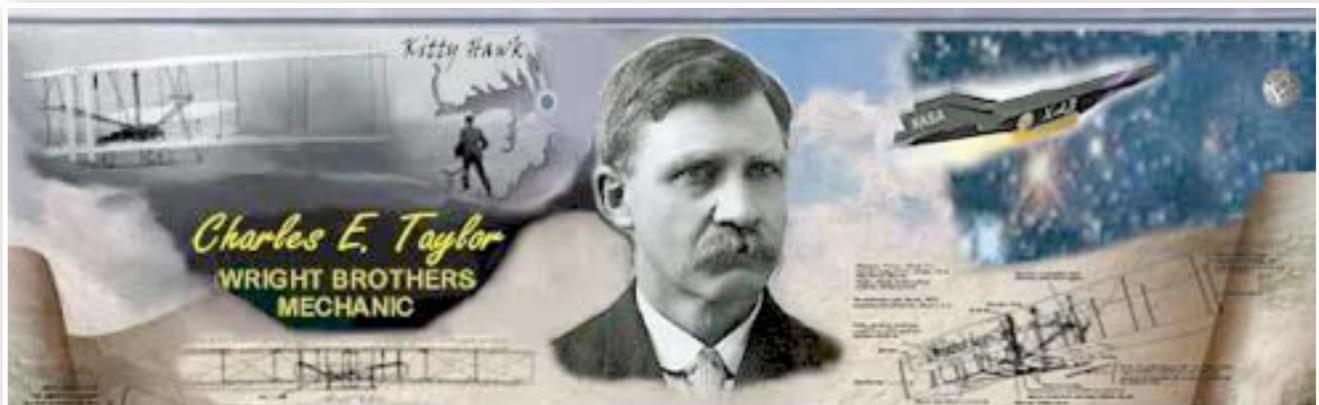


# Aviation Human Factors Industry News

*Volume VIII. Issue 12, March 23, 2012*



*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:

★Feds Increase Punishment For Pointing Lasers At Aircraft

★Researchers Work Toward Quiet Taxiing

★Reno Races IMAX Film Coming To U.S.

★Fact Check

★It's plane nuts! Jet plowed into work truck parked too close to taxiway and driver AND airline sue

★High School Students Test Best with 7 Hours' Rest

★Perception, Work-Life Balance Key Factors in Workplace Safety, Study Says

★Warning Signs of Fatigue Poster

## Feds Increase Punishment For Pointing Lasers At Aircraft

Federal authorities are cracking down on pointing a laser at aircraft by stiffening the punishment.

A laser attack on aircraft is a federal offense and across the country, the number of incidents [has increased to nearly 10 a night](#). "Between September 2009 and the present, more than 75 aircraft laser incidents occurred within the Allegheny Flight Standards district office," U.S. Attorney David Hickton said.

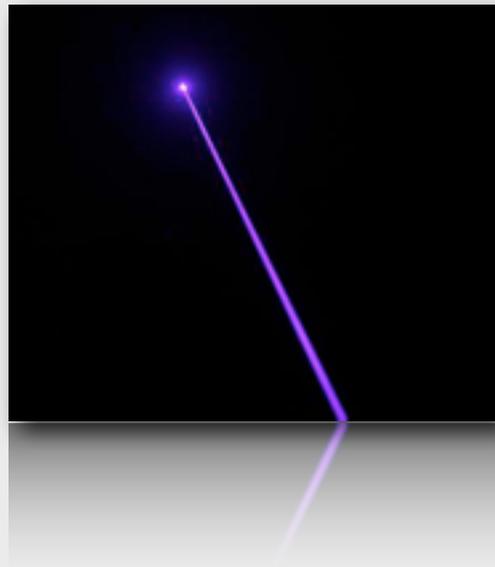
Offenders can now face a fine and up to [five years imprisonment](#).

The problem is the laser, which can be purchased for less than \$50, can put a flight in danger.

Pilots report flash-blindness, blurry vision, eye irritation and headaches - any of which have the potential to affect safety.

"Many high-powered lasers can completely incapacitate pilots who are trying to fly safely to their destinations - oftentimes with hundreds of passengers aboard," Hickton said.

The FAA has charged a Pitt student in an incident last year involving a laser pointer case with risking a catastrophe.



## Researchers Work Toward Quiet Taxiing

The heat energy produced by the friction of a passenger jet's braking system during landing could be captured and converted into electricity, according to research by an engineering team in the U.K.

"Taxiing is a highly fuel-inefficient part of any trip by plane, with emissions and noise pollution caused by jet engines being a huge issue for airports all over the world," said Paul Stewart, a professor at the University of Lincoln, who led the research.

**Motor-generators built into the landing gear** could capture the wasted heat and convert it into electricity, which would then be stored and supplied to the in-hub motors in the wheels of the plane when it needed to taxi. An Airbus A320, for example, could potentially produce up to 3 megawatts of power, Stewart said.



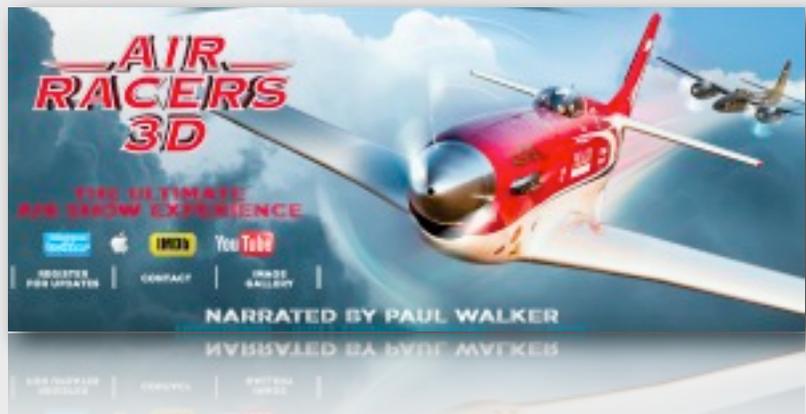
"We explored a wide variety of ways of harnessing that energy, such as generating electricity from the interaction between copper coils embedded in the runway and magnets attached to the underside of the aircraft, and then feeding the power produced into the local electricity grid," Stewart said.

"If the next generation of aircraft that emerges over the next 15 to 20 years could incorporate this kind of technology, it would deliver enormous benefits, especially for people living near airports. Currently, commercial aircraft spend a lot of time on the ground with their noisy jet engines running. In the future this technology could significantly reduce the need to do that."

<http://www.epsrc.ac.uk/newsevents/news/2012/Pages/aircraft.aspx>

## **Reno Races IMAX Film Coming To U.S.**

Air Racers 3D, a 40-minute-long **IMAX film** about the Reno National Air Races, will be coming to U.S. theaters in April, the filmmakers said recently.



It's the first film about the races ever shot completely in 3D, and "unprecedented access" to the course was granted, according to the filmmakers.

The film will be shown at National Infantry Museum in Columbus, Ga., and the Naval Aviation Museum in Pensacola, Fla., starting April 5, with other theaters to follow. The Reno footage was shot in 2009 and 2010, and has been in production for two years. The film also features many airshow performers, including Canada's Snowbirds, the late Greg Poe flying his MX2, and Kent Pietsch, known for landing his Cub on top of a moving truck.

The filmmakers used new stereoscopic technologies, including a helicopter-mounted gyro-stabilized aerial 3D camera rig, a custom wing-mounted camera and 3D cameras placed inside the cockpit. All six classes of racing aircraft -- Biplane, Formula One, Sport, T-6, Jet Class and Unlimited -- are featured in the film, which cost about \$5 million to produce. Appearing in the film are Bill Destefani's 1944 North American P-51D Mustang, "Strega" (pilot: Steve Hinton Jr.); Rod Lewis's Grumman Tigercat F7F-3, "Here Kitty Kitty" (pilot: Stewart Dawson); "Rare Bear," a Grumman F8F Bearcat (pilot: John Penney); Raju Mann's 1969 Aerovodochody L-29 Delfin, "Raju Grace" (pilot: Heather Penney); Marilyn Dash's 1974 Aerotek Pitts Special S-1S, "Ruby" (pilot: Marilyn Dash); and many others.

## **Fact Check**

**420**

Number of workers who died in 2009 as a result of struck by an object.

Source: National Safety Council, Injury facts.



## It's plane nuts! Jet plowed into work truck parked too close to taxiway and driver AND airline sue

**Driver saw cargo plane coming and figured its wing would clear, but his eye was 8 inches off**

The **first mistake** construction worker Kamall McLean made was parking his boom truck too close to the taxiway at Kennedy Airport.

His **second mistake?** Eyeballing an approaching Boeing 747 and deciding the jumbo jet's wing would clear his vehicle.

McLean was off by 8 inches, and the resulting crash has now spawned a legal free-for-all in federal court with millions of dollars at stake.

Among the plaintiffs in the flurry of suits and countersuits is McLean, who says he deserves \$3 million for damages to his "mind and body."

The collision happened June 9, 2009, while a crew was working on a drainage project. McLean, who works for Tully Construction, was in his truck near Taxiway Y, waiting to deliver pipes.

As the Korean Air Lines cargo plane headed toward him, McLean looked up from his personal laptop, **figured the wing was high enough and looked back down.**

The aircraft's engine slammed into the pickup truck's boom, flipping it over several times, injuring McLean and causing extensive damage to the plane, which was only going 15 mph.

McLean told police **he did not see** the engine hanging below the wing.

Pilot Latulori Toisuta claimed he didn't see the dark-green truck but felt the wing vibrate upon impact.

The accident report by Port Authority police concluded that the truck, which had its **amber flashing light switched off**, was parked inside an "object-free area."

McLean countered that the taxiway had previously been closed for construction and should never have been reopened with a crew working in the area. He said a supervisor told him to park there.

He's suing the Federal Aviation Administration and the Port Authority. Korean Air Lines is suing the Port Authority, Tully and the security firm that patrolled the work area.

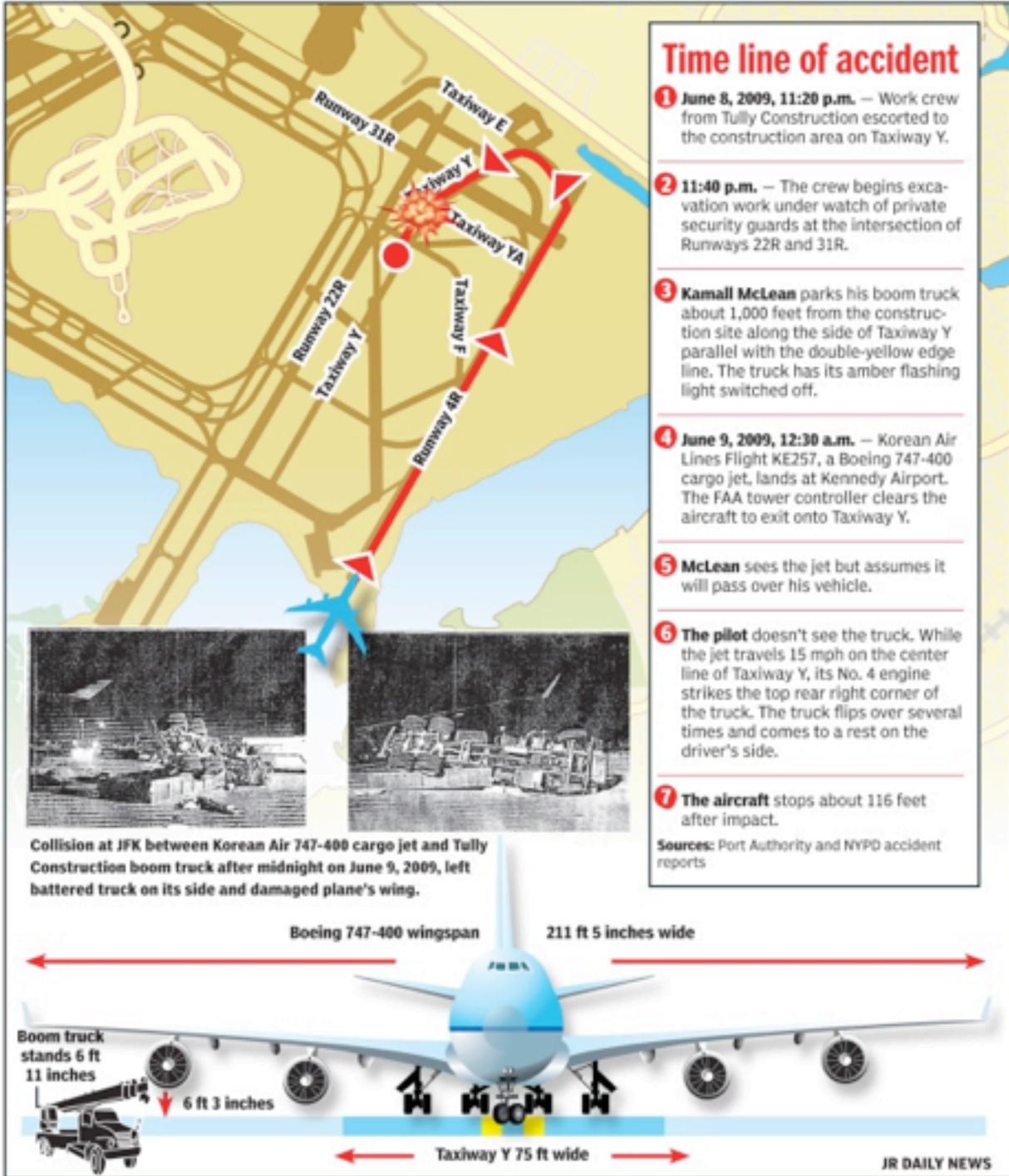
A report from the airline's aerospace engineer, Dennis Moore, noted that McLean's truck was 6 feet, 11 inches high while the lowest part of the jet engine was only 6 feet, 3 inches off the ground.

"If Mr. McLean had been properly trained, he would have known that a wing of an aircraft on a taxiway should never pass over a parked vehicle," the report said.

"[McLean] might have started the truck to give way. The illumination of the beacon and the headlights might have stopped the collision simply by being turned on, and certainly moving the truck would have avoided it."

Moore also blamed Tully and the Port Authority for [lacking safety plans](#) — and the security firm for doing nothing when it spotted the truck in an unauthorized location.

McLean originally filed a personal injury suit against the PA in Bronx Supreme Court, but the complaint was dismissed last year because the statute of limitations had passed. He refiled a suit in Brooklyn Federal Court.



## High School Students Test Best with 7 Hours' Rest

A new Brigham Young University study found that 16- to 18-year-olds perform better academically when they have 7 hours' of sleep. "We're not talking about sleep deprivation," says study author Eric Eide, PhD. "The data simply says that 7 hours is optimal at that age." The new study by Eide and fellow BYU economics professor Mark Showalter is the first in a series of studies where they examine sleep and its impact on health and education. Surprisingly, the current federal guidelines on teen sleep are based on studies where teens were simply told to keep sleeping until they felt satisfied.



"If you used that same approach for a guideline on how much people should eat, you would put them in a well-stocked pantry and just watch how much they ate until they felt satisfied," Showalter said. "Somehow that doesn't seem right."

In the new study, the BYU researchers tried to connect sleep to a measure of performance or productivity. Analyzing data from a representative sample of 1,724 primary and secondary school students across the country, they found a strong relationship between the amount of sleep youths got and how they fared on standardized tests.

But more sleep isn't always better. As they report in the *Eastern Economics Journal*, the right amount of sleep decreases with age:

- The optimal for 10-year-olds is 9–9.5 hours
- The optimal for 12-year-olds is 8–8.5 hours
- The optimal for 16-year-olds is 7 hours

"We don't look at it just from a 'your kid might be sleeping too much' perspective," Eide said. "From the other end, if a kid is only getting 5.5 hours of sleep a night because he's over scheduled, he would perform better if he got 90 minutes more each night."

<http://www.palgrave-journals.com/eej/journal/vaop/ncurrent/full/eej201133a.html>

## Perception, Work-Life Balance Key Factors in Workplace Safety, Study Says

Companies that run in a [smooth and effective manner](#) and have minimal constraints on worker performance can decrease injuries by 38 percent as worker opinions improve, according to survey results. According to a recent University of Georgia study, a worker's [perception of safety in the workplace and the work-life balance](#) established by businesses has a significant effect on on-the-job

injury. "We've known for some time that certain occupations are more dangerous than others due to a variety of physical

and other hazards," said Dave DeJoy, UGA professor of health promotion and behavior. "But in the last 20 years, there has been growing evidence that [management and organizational factors](#) also play a critical role. That is, actions taken or not taken at the organizational level can either set the stage for injuries or help prevent them."

DeJoy and Todd Smith, a recent graduate of the Health Promotion and Behavior doctoral program in the UGA College of Public Health, authored a study to examine [U.S. safety climate perceptions](#) among a diverse sample of occupations and worker groups—from offices to factories—and to highlight the factors linked to injury. The results will appear in the March issue of the [Journal of Safety Research](#).

Companies that run in a smooth and effective manner and have minimal constraints on worker performance can decrease injuries by 38 percent as worker opinions improve, according to survey results. A worker's perception of a [positive safety climate](#) can decrease injuries by 32 percent. The safety climate category assessed worker perceptions on the importance of their safety in their work organization.

"We can design the best safety controls, [but they must be maintained, and that falls on management](#)," Smith said. "Enacted policies and procedures—not formalized ones but those acted upon—define a climate of safety."

In addition to factors identified by the study to decrease injuries, [work-family interference](#) was established as a significant risk for occupational injury.



“We used to think work was one thing and family was another, but now there is a realization that [work-life balance affects performance and productivity](#),” DeJoy said.

The study looked at the mutual interference between job and family demands. In situations where work interferes with family life or family demands affect job performance, they found that the [risk for injury increased 37 percent](#).

Consistent with previous studies performed by the Department of Labor Statistics, they found whites had higher injury rates than blacks, but both had lower rates than the “other” category, which is predominately made up of Hispanics.

“These results provide guidance for targeting interventions and protective measures to curtail occupational injury in the U.S.,” Smith said.

DeJoy was part of a team of researchers that worked with NIOSH to put together a quality of work life survey module that featured a number of scales and measures assessing different job and organizational factors. This module was included as part of the General Social Survey and administered to a national representative sample of American adults.

In their study, DeJoy and Smith assessed occupational injury risk in terms of socio-demographic factors, employment characteristics, and organizational factors for 1,525 respondents using data from the quality of work life module. The study identified race, occupational category, and work-family interferences as risk factors for occupational injury and safety climate and organizational effectiveness as protective factors.

“The data suggests effects are pronounced and generalized across all occupations,” Smith said.

“Most prior research on organizational factors has focused on single occupations or single organizations,” DeJoy said. “There has been a clear need to examine these factors across a diverse array of occupations and employment circumstances to see how generalizable or pervasive these factors are.”

The [nine factors they examined](#) were participation, work-family interference, management-employee relations, organizational effectiveness, safety climate, job content, advancement potential, resource adequacy, and supervisor support.

# Warning signs of fatigue



Nodding off



Boredom



Lack of co-ordination



Slow reflexes



Stress



Hunger



Thirst



Anger



Yawning



Moodiness



Fidgeting



Lack of concentration

[www.easyguides.com.au](http://www.easyguides.com.au)

2008-09-04