

# 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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## Tigers and Ducks

A U.S. Navy pilot once wrote, "In aviation you very rarely get your head bitten off by a tiger – you usually get nibbled to death by ducks." What he meant was that most accidents and incidents **are the end game of a series of** interrelated events, interpretations, decisions, warnings or actions that are allowed to progress recognition or intervention. The final trigger decision, action (or inaction) may be relatively innocuous, but sufficient in itself to totally remove a margin of safety previously eroded by other events. So it is in life, where we allow the detritus of **sloppy attention** to detail and average performance to pile up, unaware that the next straw may be the back breaker, or that a tiger lurks nearby ready to pounce on our unpreparedness. It is important to remember that even in a risk world populated mostly with annoying ducks, head-biting tigers still exist. Such was the case of Hurricane Sandy, a once-in-a-century storm that recently slammed the Northeastern United States. In the aftermath, we see differences in those who anticipated the unthinkable, prepared for the unknowable, who gracefully recovered from the unprecedented – **and those who did not**. We also see stark differences in the ability of individuals, companies, local governments and federal agencies to adapt and learn from the devastation. Now that the tiger is gone, we can see who was taking care of their ducks.



### **Luck is not evidence of wisdom**

For the vast majority of us, Sandy's devastation was inconsequential, merely something that happened elsewhere. But it reminds us that when it comes to readiness, we have real choices to make. We can diligently prepare for the tiger's reappearance, or cross our fingers and hope that he doesn't come back for us. Hope is not a strategy and luck is not evidence of wisdom or judgment.

**Uncertainty lurks in every aspect of our operations**, and proactive preparation is the earmark of those we see successfully emerging from Sandy's wrath.

In my book, **Blue Threat: Why to Err is Inhuman** (Pygmy Books, 2009), I have a list of insights called the "Blue Threat Proverbs." Proverb 16 states that "Every post game is a pre game." The ability to learn and improve following loss is the mark of a future winner. Recovery is SO much more than "returning to normal." Ironically, recovery is also something that is prepared for in advance.

A solid safety management system and disaster recovery plan will guide near and long-term actions when the tiger bites.

If you choose to reject this approach, I ask only that you make it a conscious choice – and here is the choice clearly spelled out. If you choose to decline to prepare, [you are agreeing](#) to endure the pain of regret should your future avoidable errors lead to unwanted consequences or tragedy.

### Your call

That choice is yours. The reason I want to force this decision is that in today's fast paced business world, far too many choices get made by our indecision. Here is another way of looking at it. If you are not mindful of the dangers posed by both the ducks and the tigers, you can reach a point where you have made unintentional but vitally important choices without thinking, without reflection, without planning and with no way to reset the chess board. In the aftermath of an unwelcome event, you can end up in an irrecoverable and irreversible situation you never imagined could happen to you. It might be the one you deserve, but not the one you intended. Or, [you have the opportunity to choose a different path](#). If you want to get ready for the next tiger, get your ducks in a row now.

Please don't forget to read and sign our [Aviation Professionalism Pledge](#).

## What the Airline Industry Thinks of "Flight" With Denzel Washington

"Flight" is a movie about an alcoholic commercial airline pilot, which is a fallacy. He minimizes the impact of a plane crash by intentionally flying the plane upside down during the descent. This is also a fallacy.

Our pilot, portrayed by Denzel Washington, flies an aircraft while drunk and high on cocaine. He finds a way to sneak a drink during the flight. After the accident, lawyers for the pilot and his union engage in a cover-up, including paying a pusher for drugs, in order to protect him. And the National Transportation Safety Board seems poised to let him off.



In other words, [the movie makes a mockery of commercial aviation](#). Sure, Hollywood can do whatever it wants. But if you base a movie on a series of false premises, while implying that you portray real life, you diminish your art form and also mislead your audience, a portion of which already harbors misgivings about flight safety.

Not surprisingly, the airline industry has distanced itself from this film. The Air Line Pilots Association, the principal pilots union, [issued a brief statement](#) that concluded, "We all enjoy being entertained, but a thrilling tale should not be mistaken for the true story of extraordinary safety and professionalism among airline pilots." A spokeswoman declined to comment further.

An official in the Allied Pilots Association, which represents pilots at American, recently sent pilots a message noting that "Hollywood has just produced a movie that depicts airline pilots acting in a criminal manner." He said some passengers may react by making comments that include "serious accusations about a pilot's fitness to fly." In these cases, pilots should make passengers aware that such accusations are serious matters, potentially requiring a drug and alcohol test, and should then step back from involvement in the discussion, the union official said.

One airline, Delta, is mentioned in the movie, because a passing reference is made to our fictional pilot's previous employment with Delta. If an actual pilot was dismissed from Delta for alcoholism, he would not fly again. Delta declined to comment.

A few pilots spoke with me about the movie. Some said they will not see it. "[It dumbs my profession down](#)," one said. He reminded that pilots routinely undergo random drug and alcohol testing, which can, in fact, be frequent. Another said, "Everyone knows Hollywood can do as it wishes and no one is off-limits."

One pilot told me he saw the movie and enjoyed it, despite the fallacies. "As far as the drinking, I've been flying for over 30 years and I've never smelled alcohol on another pilot in the cockpit or on an overnight," he said, adding that he would turn in anyone who did smell of alcohol.

Pilots used to avoid alcohol "because the job paid so well they would not want to screw up and lose the job," he said. "Now, it's just a matter of integrity."

The movie is "supported by technical facts (particularly the hearing process) that are accurate, but the premise is ludicrous," he said. Thus, a fictional NTSB official, presumably based on NTSB Chairman Deborah Hersman, leads the questioning. But her line of questioning is clearly not the line of questioning that Hersman would pursue, rather, it obliterates the necessity to arrive at the truth in an accident investigation.

In replicating a crash, the movie relies on details from a 2000 Alaska crash that killed 83 passengers and five crew members. In that crash, a jackscrew failed due to [excessive wear and inadequate maintenance](#). The jackscrew failure led to the failure of the horizontal stabilizer, which normally adjusts the flight control surfaces on the airplane's tail. The plane went into a dive, which the pilots were able to halt. But they could not halt a subsequent dive, which resulted in a crash that killed everyone on board. During the incident, in real life and in the movie, the airplane flew upside down in the last minute of a rapid, uncontrolled descent.

In the movie, the maneuver saved the aircraft. Real life was somewhat different: the upside down flying was unintended and harmful, part of the aircraft's final downward spiral.

John Goglia was a National Transportation Safety Board member during the investigation of the Alaska crash. Throughout the flight, Goglia said, the pilots had no control over the stabilizer. In the final descent, "the airplane flipped upside down because they couldn't control the position of the stabilizer," he said. "The pilots started to lower the flaps and (the plane) flipped upside down." He said the [maneuver was totally unintentional](#) and the airplane could not have survived structurally.

Flying upside down "cannot possibly help you," Goglia said, even if you are Denzel Washington.

## **New Product: How To Improve Your Radio Work**



A [new online course](#) from a new AVweb sponsor promises to be "the greatest radio communication course you've ever taken" or its creator says he will give you your money back, plus \$25. The online training program, Sound Like An Airline Pilot, was developed by Cody Bias, a young CFI and T-38 instructor pilot with the Air Force. Bias believes that efficient, concise and correct radio communication technique [creates the foundation](#) for effective information management and positive control in the modern cockpit.



His course is based on developing fundamental understanding, not memorization, and his program targets a wide range of pilots. And his unique marketing approach puts him at the mercy of his clients' integrity and his own ability to deliver. Bias is aware that his program exists among others. In his own words: "I believe, in order to be successful, I must deliver above and beyond the expectations of my customers. If I have failed to do that I will appreciate you telling me so. That way, I can modify the course and make it even better and continue to outperform my competition."

<http://airlinecomm.com/home/>

## **PPE Non-Compliance Worrisome**

Eighty-two percent of American safety professionals interviewed say they have observed workers in their organizations failing to use required personal protective equipment (PPE) within the past year. Many of the safety professionals responding to a Kimberly-Clark Professional Survey indicated [that non-compliance is their top safety issue](#). "High levels of non-compliance have been an issue since we began conducting these surveys in 2007. Even though it is mandated by OSHA, the vast majority of workers who have experienced on-the-job injuries [were not wearing PPE](#)," says David Matela, director of safety product management for Kimberly-Clark Professional.



More than half of the safety professionals who were polled said that workers seemed to be [unaware of the need](#) to wear PPE. Other reasons workers gave for not using PPE included these:

- Uncomfortable
- Too hot
- Hampered productivity or made tasks more difficult
- Wasn't available near where they were working
- Didn't fit properly
- Not attractive looking

Sixty-one percent of the respondents said they planned to improve existing education and training programs within the next six to 12 months to boost PPE [compliance](#).

## **Working Longer Comes with a Price**

A trio of NIOSH employees discussed the enormous cost of arthritis on the agency's Science Blog. They report its prevalence is expected to rise to 25 percent of the adult population by 2030.

The good folks at NIOSH and their director, Dr. John Howard, remind us about the changing nature of work in America and the shifting demographics of the workers who accomplish it. It's clear many of us [are working longer and delaying retirement](#), either by choice or necessity. Some of the challenges this trend will present are discussed in an Oct. 29 post to the NIOSH Science Blog by Brian D. Lowe, Ph.D., CPE, a research industry engineer with the [Human Factors and Ergonomics Research Team](#) in the NIOSH Division of Applied Research and Technology; Brent A. Baker, Ph.D., ATC, an integrative exercise physiologist and team leader for the Musculoskeletal Pathomechanics Research Team in the NIOSH Health Effects Laboratory Division; and Jim Grosch, Ph.D., MBA, a senior research psychologist with the Work Organization and Stress Research Team in the Division of Applied Research and Technology.



Describing arthritis, one of the musculoskeletal disorders that cause joint pain, they write that it is [the leading cause of work disability](#), according to CDC, and in 2007 represented an annual cost (for arthritis and other rheumatic conditions) of \$128 billion (MMWR, 2007), which included an estimated \$47 billion in lost earnings. "The prevalence of arthritis in the U.S. is projected to increase to nearly 67 million (25% of the adult population) by the year 2030 with 25 million (9.3% of the adult population) projected to be limited in their physical activity because of the condition (Hootman and Helmick, 2006). Working-age adults (45-64 years) will account for almost one-third of arthritis cases. Workplace programs in the areas of safety, [ergonomics](#), wellness, and disability management can all play a role in preventing joint pain and preserving joint health in working individuals of all ages," they write.

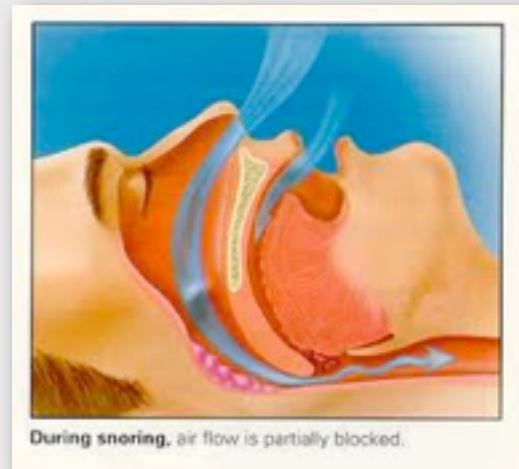
They note that [avoiding obesity](#) will positively affect musculoskeletal health, and [resistance training](#) has been shown to slow the effects of aging — citing Melov et al. 2007, Hartman et al., 2007, and case studies in Promising Practices for Total Worker Health .Their post asks readers to discuss their own programs for preventing and managing joint pain in the workplace and to recommend what NIOSH should be doing in this area.

<http://blogs.cdc.gov/niosh-science-blog/2012/10/joint-pain/>

<http://www.cdc.gov/niosh/TWH/practices.html>

## **"Elbow Test" May Predict Sleep Apnea**

Have your patients been "elbowed" by their bed partner because they were snoring? If yes, new research says [they could have obstructive sleep apnea \(OSA\)](#). Prior to polysomnography testing, researchers from the University of Saskatchewan asked 124 patients two questions: (1) Does your bed partner ever poke or elbow you because you are snoring; and (2) Does your bed partner ever poke or elbow you because you have stopped breathing? Answering "yes" to being awakened for snoring or apneic spells increased the likelihood of an apnea-hypopnea index (AHI) >5/hr (indicating at least mild OSA) compared with "no." Analysis also showed that as disease severity increased, patients were more likely to be awakened for snoring and apneic spells. Researchers conclude that asking these two simple questions could significantly improve the pretest prediction of a diagnosis of OSA.



This study was presented during [CHEST 2012](#), the annual meeting of the American College of Chest Physicians, held October 20–25, in Atlanta.

<http://www.accpmeeting.org/>



## Millions Worldwide Need Eye Exams, Glasses

A study published in the October issue of the Bulletin of the World Health Organization says governments could add billions of dollars to the global economy by [investing in eye exams and providing eyeglasses](#) for some 703 million people who need them. It estimates 65,000 more optometrists, ophthalmologists, optical dispensers and other eye-care professionals would be needed to provide these services, and it would cost between \$20 billion and \$28



billion to train them and operate the eye-care facilities needed."This is a drop in the ocean compared with the \$202 billion in [estimated losses](#) each year in global gross domestic product due to the fact that these 703 million people are living with uncorrected refractive error," said a co-author, Professor Brien Holden at the University of New South Wales in Australia. According to WHO, the four main types of refractive error are myopia (near-sightedness), hyperopia (far-sightedness), astigmatism (distorted vision), and presbyopia (near vision impairment). Uncorrected refractive errors are the most common cause of vision impairment worldwide and the second most common cause of blindness.

"Improving people's vision could generate considerable economic benefits especially in low- and middle-income countries, where these problems are to a large extent not corrected, and could make a major contribution to global development," Holden said.

His co-author is Kevin Frick, professor of health economics at the Johns Hopkins Bloomberg School of Public Health. "Governments face tough decisions over how best to use scarce resources. Now that we have evidence for the economic [benefits of correcting refractive error](#), investing in eye care should be one of the easier decisions," he said.

The findings support a WHO 2009-2013 action plan for the prevention of avoidable blindness and visual impairments.

<http://www.who.int/bulletin/volumes/90/10/en/index.html>

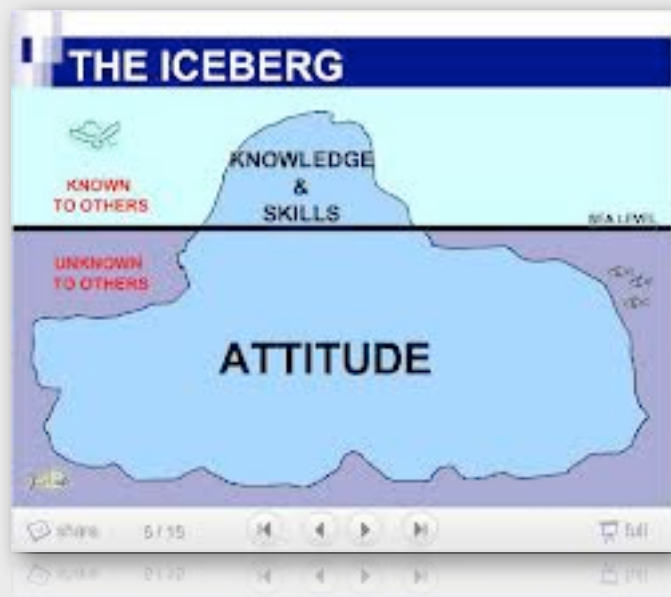
## A Positive Attitude Can Be Contagious, research finds

Research suggests that negative attitudes at work stand to [contaminate a company's culture](#). But there are a few antidotes to this problem.

Goodness knows, plenty workers have reason to complain these days. And yet, most every company has a couple people who take that right a little too liberally -- they are, as a rule obtrusively upset. They are what management expert Rob Cross calls "[de-energizers](#):" "The people who just suck the life out of the room with the way they interact or tones they take." Life-sucking is, without doubt, counter-productive to a healthy workplace, and many a worker would probably prefer to avoid the negative effects of de-energizers. To do so, they might first have to buy into a system that leadership experts call the "informal network." This network exists outside of the official corporate food chain. Instead, it is built on connections between people who, regardless of rank, are either key motivators, energy drainers, or somewhere in between. Cross claims it's possible to actually map the energy flow through the informal network at an organization.

If all this seems a little floofy to you, you're not alone. Both Cross and Booz & Company senior partner Jon Katzenbach have worked with high-level managers who resist the concept that there is a workplace structure outside of the one they know and control. "If you ask people in the upper levels of an organization to identify the best motivators, they won't pick them right," Katzenbach says.

And yet, with a little digging, you can unearth these networks. "We can create diagrams and other visuals that show the connections amongst the people," says Cross, who is a professor at University of Virginia's McIntire School of Commerce. Those diagrams map who interacts with whom and how often. "Then we overlay the engagement scores and career satisfaction scores," Cross continues, and [you can pinpoint your motivating and de-energizing employees](#).



Why do this? There's evidence that de-energizers truly hurt a company. In a 1994 paper published in The Journal of Vocational Behavior, researchers Lawrence Necowitz and Mary Roznowski found that people who have a baseline negative outlook about work tend to withdraw more from productive work behavior than their colleagues, regardless of how satisfied they feel about their jobs. "It may be that these individuals focus on the negative aspects of their jobs even under otherwise pleasant conditions," the paper suggests.

They also tend to drag their colleagues down with them. In unpublished research that's currently under peer review, Cross has found that "negative interactions that create stress have a significant effect on a range of measures of physical health in the workplace." In other words, [dealing with too much negativity can make people sick](#).

Those negative interactions are also significantly more potent than positive ones. While there are far more energizers than de-energizers in organizations, "the de-energizers have [more than twice the negative impact](#) on measures of performance and employee well-being as the energizers have positively," Cross says. Indeed, roughly 5% of employees account for 90% of people's work-related misery, Cross argues.

So how do you stay out of their circle of negative energy? You shouldn't try to fix their attitude, both Katzenbach and Cross agree. People who fundamentally resent their jobs will resist any effort to pull them up -- their end goal isn't necessarily to feel better.

But the opposite is also true. There are people at companies, Katzenbach says, who [gain satisfaction from making others feel good](#) about their work, even though management may never recognize their role.

Managers can make a difference by guiding the workplace environment. Most employees are neither top motivators nor powerful downers; they are somewhere between the two extremes yet highly influenced by both. The best way to get everyone's spirits up [is to position them closer](#) to your active energizers -- create opportunities for employees to learn from your best people. Positivity, Katzenbach says, "is a catching disease."

These positive players behave in certain ways, according to Cross: "They tend to see possibilities in situations rather than constraints. They find ways to make sure that others feel part of a solution." They can also teach these traits to people who would be willing to embrace them and generally tend to know the people they could most easily influence, Katzenbach says.

Of course, it takes a pretty in-tune manager to hire experts to pick through the informal network at a big company and then feed the best parts of it. Usually, Cross says, he works with the top layers of management at big companies.

For those of us at the bottom of the corporate chain, we may be left to fend for ourselves.

[But the lessons still apply](#). Simply put, offices everywhere might become much happier places if workers try to surround themselves with those who make them feel good about their jobs and themselves.

## **Picture This! Living on the Edge**

Talk about living on the edge. The person who snapped this picture must have done a double take or uttered “blimey” after witnessing this guy walking along the edge of a steep roof [without fall protection](#). A fall from even a short height can be fatal. We’re willing to bet that this worker would be looking at a [hospital stay](#) at minimum if he lost his footing on this roof. The positioning of this ladder is a little dicey too, but that’s another story

