

Aviation Human Factors Industry News

Volume VII. Issue 02, January 14, 2011



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:

★Situational Awareness in Maintenance

★ FAASTeam Maintenance Safety Tip - Dec 2010

★Avian radar has limitations

★Survey: Why Aren't More Women In Aviation?

★Buy-In: Saving Your Good Idea from Getting Shot Down

★ Leading Change (Hardcover)

★Can NTSB Move the Needle on Motorcycle Helmets?

★Put It Down



Situational Awareness in Maintenance

Distractions, unexpected events, and schedule pressure are all factors that reduce situational awareness. Unfortunately, these factors are commonplace in Maintenance. An Inspector and Mechanic both reported on the chain of events that contributed to a main gear tire hub cap departing a B737-700 aircraft.

Inspector's Report: I was the Inspector for the right wing and right main gear. A Mechanic changed the #3 main tire, but left the hub cap loose. There were many factors contributing to this including: moving the aircraft **in the middle** of the job, the Mechanic working the tire was **called for** a drug test during the job, and a **general hurried** atmosphere. The Mechanic signed off the job card and so did I. I did a walk-around after the tire change, but did not find that the hub cap was loose. The aircraft made it two flights before the #3 hub cap came off.

Mechanic's Report: I changed three main gear tires, #1, #3, and #4 on a B737-700 aircraft. We started with #4, was finishing up on #4, I started #3. After putting on the tire I put the hub cap on with the three bolts, but I didn't have any tools, so I got up to get some. I decided to move the tire over by the table that the other tire was leaning on. When I did, the table moved and both tires fell over. So I got someone to help me pick them up. After moving them to a better location it was time to swap the aircraft with a hangar line overnight aircraft. After swapping the aircraft, the Hangar Supervisor came and got me for a random drug screening. When I got back, the tire was done. I do not recall ever going back to tighten or safety the hub cap. The next day they found a hub cap on or near the runway. They determined it was off an aircraft. At that time they started looking for the aircraft that had lost it. They found the aircraft that was missing the #3 hub cap.

When inevitable **work interruptions occur**, a Mechanic usually has the option of noting on the job card or write-up that the job is unfinished (“hub cap in place, not tightened”), or tagging the part to increase situational awareness.

FAASTeam Maintenance Safety Tip - Dec 2010

Maintenance Safety Tip - [Material Safety Data \(MSD\) Sheets](#)

Notice Number: NOTC2710

FAASTeam Maintenance Safety Tip
By Eastern Region FAASTeam
December 2010



[Material Safety Data \(MSD\) Sheets](#)

Are you sure you know how to handle that substance in your hand? What if it, splattered, or dripped on you or your co-worker? Would you know how to administer first aid? Did you take the proper precautions to prevent cancer, fire, or poisoning yourself?

[Material Safety Data Sheets \(MSDS\)](#) come with all questionable substances and are provided to warn the user on how to handle the substance, provide proper ventilation, exposure cautions and how to administer first aid in case of an accident while in use. The long term negative effects from mishandling substances can easily be avoided by following these instructions. They come with phone numbers and contact information for clarification of instructions.

These instructions should be kept alphabetically near the storage area of the substance as well as in the area where the substance is most often used. It is suggested that the pages be put in plastic. **[The table of contents should be updated when a new substance is brought into the facility.](#)**

The MSDS sheets should be verified for accuracy and currency when a new batch is brought in. If two MSDS books are used they should be evaluated at the same time. It is suggested that the MSDS books be **[evaluated, initialed and dated at least once a month.](#)** The information in these books could extend your life or save the life of your co-worker. Please be familiar with them.

Avian radar has limitations

Using radar systems to detect **wildlife hazards, mainly birds**, at airports has enhanced the task of identifying potential threats to planes landing or taking off. But they have **functional limitations** that must be considered by operators, concludes a report released by the Federal Aviation Administration that outlines specifications needed for avian radar systems to qualify for federal subsidies. Prior to radar, airports relied mostly on employees walking the airfield to document bird species and activity. The new technology covers more space, allows 24-hour monitoring and can document long-term trends.



But the systems can be **susceptible to erroneous detection**, such as tracking the echoes made by insects and vehicles. Interference can also occur when a large plane moves on the ground at slow speed, producing multiple echoes.

Transmission delay is another factor that can affect the systems. Because the technology relies on a rotating beam, there are lags between detection and eventual display. "Users must be aware that a displayed target may no longer be in the location identified by the radar at that time," it says

Survey: Why Aren't More Women In Aviation?

A two-year study has identified **barriers** that stop women from learning to fly and produced suggestions to increase the number of female pilots. The study was performed by Penny Hamilton, Ph.D., and included 296 surveys or personal interviews of women pilots and student pilots, females who did not complete their flight training, and instructors of both genders. Dr. Hamilton used her research to produce a list of the **top 10 barriers** that stop women from flying and the top 10 ways to increase female success in general aviation.

Topping the list of deterrents was one that anecdotally appears universal -- a lack of money for flight training. Dr. Hamilton addressed gender specific recommendations to counter "instructor-student communication incompatibility (Mars vs. Venus)," a **lack of readily available female mentors**, certain perceived gaps in experience and skill sets and more.

Dr. Hamilton cited "lack of experience with and knowledge of mechanical systems" and "lack of map reading experience & orienteering skill sets" as barriers. She suggests developing more flexible and individualized flight training processes that respect different learning styles and the use of outside resources to bolster certain skills particular to flying. For example, if map reading and orienteering is deficient, Dr. Hamilton suggests that certain outside and no-cost methods be employed, like the use of the geography and map reading websites nationalgeographic.com and knowledgehouse.info.



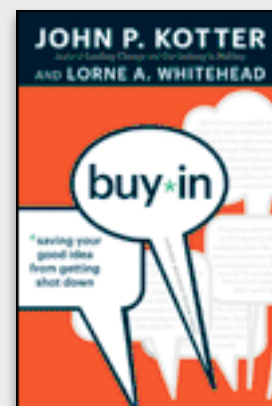
[Find details of the study and Dr. Hamilton's work online here.](#)

Books

Buy-In: Saving Your Good Idea from Getting Shot Down

by [John P. Kotter](#), [Lorne A. Whitehead](#)

You've got a good idea. You know it could make a crucial difference for you, your organization, your community. You present it to the group, but get confounding questions, inane comments, and **verbal bullets** in return. you know what's happened, your idea is dead, shot down. You're furious. Everyone has lost: Those who would have benefited from your proposal. You. Your company. Perhaps even the country. It doesn't have to be this way, maintain John Kotter and Lorne Whitehead.



Leading Change (Hardcover)

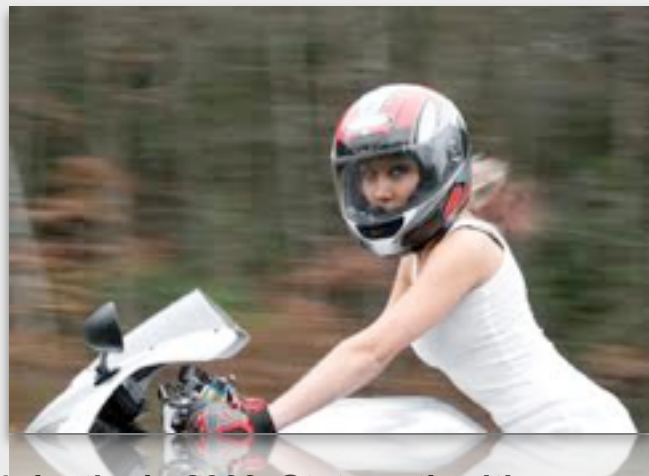
by [John P. Kotter](#)

The author examines the efforts of more than 100 companies to remake themselves into better competitors. He identifies the **most common mistakes** leaders and managers make in attempting to create change and offers an eight-step process to overcome the obstacles and carry out the firm's agenda: establishing a greater sense of urgency, creating the guiding coalition, developing a vision and strategy, communicating the change vision, empowering others to act, creating short-term wins, consolidating gains.



Can NTSB Move the Needle on Motorcycle Helmets?

Motorcycle fatalities in the United States dropped in 2009 for the first time in 11 years, according to NHTSA. The drop from 5,312 deaths and 96,000 injuries in 2008 to 4,462 deaths and 90,000 injuries **was a welcome relief** because 2008 was a record year for motorcycle deaths. NHTSA said the of **alcohol-impaired** motorcyclists dying in crashes also fell by 16 percent, from 1,561 in 2008 to 1,314 deaths in 2009. State authorities suggested several reasons for the declines: fewer miles driven because of the economy, fewer beginner motorcyclists, **more attention to safety programs** by the states, and even poor cycling weather, according to the [April 2010 report](#) published by the Governors Highway Safety Association.



Indeed, Harley-Davidson's latest financial release indicated it will ship fewer motorcycles this year than in 2009.

The National Transportation Safety Board noted Nov. 16 that motorcycle deaths had fallen but said the 4,400 deaths still outnumber those in [aviation, rail, marine, and pipelines combined](#). The leading cause of death for motorcyclists is head injury, NTSB said, as it explained a new [Most Wanted Safety Improvement](#) the board had voted to add to its list: "That everyone aboard a motorcycle be required to wear a helmet that complies with DOT's Federal Motor Vehicle Safety Standard 218." Twenty states and Washington, D.C. have universal helmet laws that apply to all riders, but 27 states have partial laws requiring helmets for riders and/or passengers who are minors, but not for adult riders. Iowa, Illinois, and New Hampshire have no helmet laws.

How important are [helmet laws](#)? They are the only proven strategy to reduce motorcyclist fatalities, according to NTSB, which cites NHTSA as the source for this statement. Illinois' motorcyclist deaths did not decline in 2009 from 2008, but Vermont, which has a universal helmet law, also saw its motorcyclist deaths increase.

Will the NTSB's recommendation cause universal helmet laws to increase? It's unlikely; the agency lacks regulatory authority and sometimes must wait years before its Most Wanted recommendations are fully implemented. Remember, some states repealed helmet laws a few years ago when motorcyclists pushed the issue, calling it a question of [individual rights and freedom](#). Other safety organizations made the same recommendation during the 11-year period when deaths were rising relentlessly.

[A Virtual Tour of the A380](#)

To move around inside the A380, hold down the left mouse and drag ...

it is very sensitive so move cursor slowly up/down/right/left The photo of the cockpit o is impressive, including to the ceiling!



<http://www.a380delivery.com/qantas/panos/tour/tour>

Put It Down

For some people, the holiday's brings unwelcome guest-stress and depression. And it no wonder. In an effort to pull off the a perfect holiday, you might find yourself facing a dizzying array of demands-work, parties, shopping, baking, cleaning, caring for elderly parents or kids on school break, and scores of chores.



There are a number of different ways to reduce stress and to lessen the effect it has on us. One of them is to maintain a sense of humor. Today's crisis often becomes tomorrow's funny story – so why not laugh about it today? So let me share a recent e-mail I received on [stress management](#).

A lecturer, when explaining [stress management](#) to an audience, raised a glass of water and asked, “How heavy is this glass of water?” Answers called out ranging from 20 to 500 grams. The lecturer replied, ‘The absolute weight doesn't matter. It depends on how long you try to hold it. If I hold it a minute, that's not a problem. If I hold it for an hour, I'll have an ache in my right arm. If I hold it for a day, you'll have to call an ambulance.

“In each case, it's the same weight, [but the longer I hold it](#), the heavier it becomes.” He continued, “And that's the way it is with stress management. If we carry our burdens all the time, sooner or later, as the burden becomes increasingly heavy, we won't be able to carry on.” “As the glass of water, you have to [put it down](#) for a while and rest before holding it again. When we're refreshed, we can carry on with the burden.” So before you return home today put the burden of work and other stressors down. You can pick them up tomorrow.

Here are some ways of dealing with the burdens of life:

- Always keep your words soft and sweet, just in case you have to eat them.
- Drive carefully. It's not only cars that can be recalled by their maker.

- **If you lend someone \$20 and never see that person again, it was probably worth it.**
- **Never buy a car you can't push.**
- **Nobody cares if you can't dance well. Just get up and dance.**
- **The second mouse gets the cheese.**
- **You may be the only person in the world, but you may also be the world to one person.**