

# 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:

★From The FAA: SMS: What It Means for the AMT

★Bad Parts

★Alaska Airlines replacing paper manuals with iPads

★Sleep Problems Lead to Other Problems

★Night Owls at Risk for Weight Gain, Bad Diet

★NIOSH Releases Lockout/Tagout Tip Sheet

★The first book written entirely about America's earliest aircraft mechanics

★What every leader can learn from "The King's Speech"

★Picture This

## From The FAA: SMS: What It Means for the AMT?

### **Everyone should be monitoring the risk controls to ensure they remain effective**

One of the popular buzzwords today in aviation is SMS or safety management system. So what is SMS, what is its function, and more importantly, [what does it](#) for the maintenance technician? We will look at a basic overview of what the SMS initiatives are and how it concerns you, the maintenance technician. SMS is an evolving international effort to improve safety of the air transportation system. The FAA is actively engaged in all aspects of the SMS program development. Even though currently there is no SMS rule, guidance is in place to assist aviation organizations to develop and implement SMS-based processes and procedures to enhance their existing safety programs. A SMS provides a [systematic method to control risks and to assure that the risk controls are effective in all aspects of flight and maintenance operations](#).



The foundation of any SMS is defined by two important aspects. First, the responsibility for the management of the safety of aviation products and services firmly rests with the providers themselves. The FAA sets forth the safety regulations and system requirements necessary [to control risks to acceptable levels](#). The individual providers of aviation services are expected to comply with the regulations to maintain effective control of risk rather than just to meet the administrative requirements of the regulations.

The second aspect of a SMS is that aviation contains [inherent risk](#). Aviation can never be entirely risk free. Risk can only be reduced to an acceptable level. But risk can be managed and the essence of a SMS is to establish a management system that maintains an acceptable level of safety to all aspects of our industry.

Any SMS will contain [four basic elements](#). They provide the overall approach and foundation for an organization to achieve the acceptable levels of safety risk. We will examine each element.

#### **Safety policy**

Safety policy is the first element of a SMS. The safety policy provides the requirements, processes, procedures, and expectations of the respective SMS.

The policy also includes implementing those procedures and processes and supports the promotion of the safety culture inside the organization. For the maintenance technician, this will be the documents and procedures their organization puts in place for their SMS. Become familiar with these procedures as you have a valuable part in the SMS process.

### Safety risk management

The second element of a complete SMS is safety risk management. This element is where the SMS identifies various hazards that exist or may exist within the organization and then provides the processes to analyze and control the risk created by the hazards. This could include anything from hazards associated with moving the aircraft on icy ramps to performing maintenance operations that are unfamiliar to the organization. The key here is to be aware of those items that increase risk to levels that may not be acceptable and then control them to an acceptable level.

Risk management as it concerns the maintenance technician includes review of data from the equipment manufacturers, other operators, and any other sources that may assist in defining safety risks with the type of aircraft being maintained. We will discuss in greater detail the subject of risk management in the maintenance arena in a future article.

### Safety assurance

Safety assurance is the third element in a successful SMS program. This function oversees the ongoing risk controls to ensure they are maintaining the risk to the desired levels. Safety assurance should be everyone's responsibility within an organization. Everyone should be monitoring the risk controls to ensure they remain effective at controlling risk. For example, a control process is in place to ensure the safe operation and condition of maintenance equipment. A maintenance technician notices a piece of equipment that requires attention due to a problem that could create an accident. The maintenance technician must be able to effectively and quickly report it and be assured the situation is remedied before an accident occurs.

### Safety promotion

And finally, the fourth element is safety promotion. This is really all about the safety culture within the organization. Every employee should be on the same page when it comes to safety. Encouragement of the safety culture should be promoted from the very top down with emphasis on safety driving all other functions in the organization. Every employee plays a part in the overall success of the system and each employee must realize that their participation is important. Maintenance personnel should not only be on the alert for safety

concerns with the aircraft but the total environment in which the maintenance operations are conducted.

Much of this sounds overwhelming and complex. One of the primary concerns with a SMS is that it has to be scalable. The SMS must fit the size of the organization. A SMS for a company with 4,000 employees and 100 aircraft is going to look and feel much different than for a company of 10 employees providing a specific service to the aviation system. And for a single person operating a single aircraft, they may well not even participate in a comprehensive SMS. Individuals are responsible for their primary safety management and it may be very informal and minimally, if at all, documented.

So in looking at a SMS, it is evident that many of the elements discussed are already in place to some degree in most organizations. Any SMS strives to put all of the elements in a planned and organized manner. For most organizations, developing a SMS will consist of documenting and fine tuning the processes they already follow. Some processes will need improvement or require the development of a process to address new issues.

In closing, remember, the operator or service provider has the legal and functional responsibility for safety management within the organization's line of business. The FAA provides the appropriate oversight to ensure the capabilities of the organization are adequate to control the risk to acceptable levels. As maintenance technicians you have a very active role in your organization's SMS program. Don't take this responsibility lightly; it is a critical part of your job and your commitment to safe operation of aircraft on a daily basis. Familiarize yourself with the procedures and use them to improve the safe operation of all aspects of your organization.

## **Bad Parts**

AeroSafety World April 2011 Issue reports that incidents of [counterfeit parts in the electronics industry](#) more than doubled between 2005 and 2008, according to the Aerospace Industries Association, which is urging action to reduce the risks in the aviation industry. The decreasing numbers of component manufacturers and issues involving shortages of materials also play a role in the production of counterfeit parts, the report said. [\[Download PDF 3 pages. 217K\]](#)



## Alaska Airlines replacing paper manuals with iPads

Alaska Dispatch's Bush Pilot blog previously reported on the increasing popularity among private pilots of iPads and similar tablet computers as an alternative to the [heavy paper manuals and charts](#) that would typically clutter a. Now, the Seattle Times reports that Alaska Airlines will issue iPads to all of its pilots as a space-saving and hopefully [injury-preventing measure](#), replacing the up to 50 pounds of paper manuals a pilot may be required to carry aboard a given flight. Pilots like the ease-of-use and the aviation industry has responded with apps targeting specific airports, aviation-related weather reports, and flight-planning apps. According to the airline, pilots will be required to stow their company-issued iPads during takeoffs and landings, just as passengers are told to do -- and surely it's a small comfort to know that a pilot won't be playing Angry Birds while trying to conduct a landing in crosswinds. However, the possibility of the [cockpit distraction](#) represented by an app-enabled computer such as the iPad is still very real, as evidenced by incidents like the [2009 Northwest Airlines flight that missed its scheduled landing](#) because the pilots were working on their personal laptop computers.



## Sleep Problems Lead to Other Problems

The National Institute of Health reports that studies show 75 percent of Americans have sleep problems more than once a week. About 50 million Americans suffer from chronic sleep disorders. Some tips from The Mayo Clinic for addressing sleep problems include: Cut out alcohol before bed. Alcohol, although a sedative, prevents deep sleep, which encourages light sleep.



1. If you do not fall asleep after 15 minutes, get back up, as stressing over sleep can prevent it.
2. Be wary of sleep aids, only using them as a last resort. Dependence on sleep aids could have negative side effects.
3. An alternative to sleeping aids is boosting vitamins and balancing hormones, which are natural options.

Going to bed and waking up at a consistent time throughout the week helps your body to become suited to a dependable routine. Finding a quiet sleep environment, exercising regularly and staying healthy are other great ways to make sure you won't encounter any disruptions of your sleep.

From personal experience as a shift worker with sleep problems, these problems can lead to obesity, hypertension, irritability, depression, heart disease. Get regular checkups and [discuss any sleep problems with your doctor](#). If you work rotating shifts or work at night, tell your doctor.

A person who works rotating shifts does not have the option of going to bed and waking at a consistent time throughout the week. The recommendations from experts differ, and the tips and suggestions do not work well for every person. Some of the tips below are not practical, but at least consider them. Adapt them for your benefit.

Employers have some responsibility for providing opportunities for adequate rest, but employees have responsibilities for taking advantages of the opportunities.

Fatigue management is a shared responsibility of employers and employees.

### [Sleep Tips for Shift Workers from the American Academy of Sleep Medicine](#)

- If you work rotating shifts, ask your manager to schedule your shifts "clockwise."  
This means that your new shift will have a start time that is later than your last shift.
- Take a nap during a break in your shift or before reporting for a night shift. Even a nap of just 20 to 30 minutes can improve your alertness on the job.
- Arrange for someone to pick you up after a night shift, or take a bus or cab home. Drowsy driving can put your life and the lives of other drivers at risk.
- Try to keep the same schedule on work days and days off. Keeping a routine helps your body know when to be alert and when to sleep.
- Plan ahead for a major change in a shift-work schedule. Begin to alter your sleep time a few days in advance. This will make it easier for your body to adjust.
- Use moderate amounts of caffeine to help you stay alert on the job.
- Ask your doctor if medications, melatonin or bright light therapy might help you.

- Avoid exposure to sunlight if you need to sleep during the day.
- Make sure others in your home are aware of your work schedule. They should keep the home quiet when they know that you need to sleep.
- Talk to a sleep specialist if you have an ongoing sleep problem.

## **Night Owls at Risk for Weight Gain, Bad Diet**

Staying up late every night and sleeping in is a habit that could put people at risk for gaining weight. People who go to bed late and sleep late eat more calories in the evening, more fast food, and fewer fruits and vegetables and weigh more people who go to sleep earlier and wake up earlier, according to a new Northwestern Medicine study. Late sleepers **consumed 248 more calories a day**, twice as much fast food, and half as many fruits and vegetables as those with earlier sleep times, according to the study. They also drank more full-calorie sodas.

The late sleepers consumed the extra calories during dinner and later in the evening when everyone else was asleep. They also had a higher body mass index, a measure of body weight, than normal sleepers.

The **study** is one of the first in the United States to explore the relationship between the circadian timing of sleeping and waking, dietary behavior, and body mass index. The study was published online in the journal **Obesity** and is expected to appear in a late summer print issue.

"The extra daily calories can mean a significant amount of weight gain—**two pounds per month**—if they are not balanced by more physical activity," said co-lead author Kelly Glazer Baron, a health psychologist and a neurology instructor at Northwestern University Feinberg School of Medicine.

"We don't know if late sleepers consume the extra calories because they prefer more high-calorie foods or because there are less healthful options at night," said co-lead author Kathryn Reid, research assistant professor in neurology at the Feinberg School.



The study shows not only are the number of calories you eat important, [but also when you eat them](#)—and that's linked to when you sleep and when you wake up, noted senior author Phyllis Zee, MD, professor of neurology and director of the Sleep and Circadian Rhythms Research Program at Feinberg and medical director of the Sleep Disorders Center at Feinberg and Northwestern Memorial Hospital.

## **NIOSH Releases Lockout/Tagout Tip Sheet**

Workers are at risk of severe injury and death during machine maintenance and servicing [if proper lockout/tagout procedures](#) are not followed. NIOSH has released a [document](#) highlighting best practices for employers, workers, and manufacturers to follow during machine maintenance.



Workers are at risk of severe injury and death during machine maintenance and servicing if proper lockout/tagout procedures are not followed. NIOSH recommends developing and implementing a hazardous energy control program including lockout/tagout procedures and worker training to prevent such incidents.

[Lockout/tagout procedures apply in the following circumstances:](#)

- Workers are servicing and maintaining equipment and unexpected startup of the machine or release of stored energy could occur.
- When, during normal production, workers must remove or bypass a guard or safety device.
- When, during normal production, workers place any part of their body into the danger zone or near the machine's point of operation.
- During all set up activities.

NIOSH recommends that employers comply with the OSHA regulations outlined in 29 CFR\* 1910.147, the control of hazardous energy (lockout/tagout). Results of NIOSH fatality investigations indicate that the following steps are particularly important:

- Develop and implement a written hazardous energy control program, including lockout/tagout procedures, employee training, and inspections before any maintenance or service work is done.
- Be sure that workers have a clear understanding of when hazardous energy control procedures apply and training on how to properly apply the procedures.
- Ensure that procedures on lockout/tagout are developed that are specific to each machine.
- Provide training to production workers in addition to maintenance workers in methods of energy isolation and control.

#### Workers:

- Follow the regulations contained in your employer's hazardous energy control program.
- Complete all employer-provided training on hazardous energy control procedures.
- Before beginning machine adjustment, maintenance, or servicing work, de-energize all sources of hazardous energy:
  - Disconnect or shut down engines or motors.
  - De-energize electrical circuits.
  - Block fluid (gas or liquid) flow in hydraulic or pneumatic systems.
  - Block machine parts against motion.

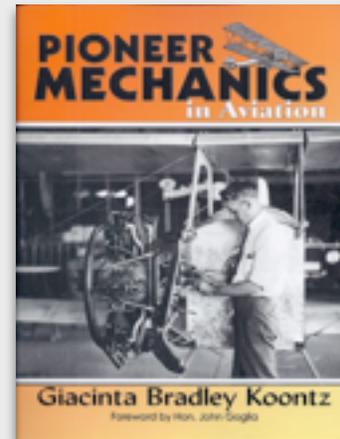
#### Manufacturers:

- Consider designing equipment that requires fewer and more easily accessible disconnect points to facilitate the use of safe lockout/tagout procedures for maintenance and repair.

Go to <http://www.cdc.gov/niosh/docs/wp-solutions/2011-156/pdfs/2011-156.pdf> to view the entire document.

## The first book written entirely about America's earliest aircraft mechanics

Director Of Maintenance magazine columnist, Giacinta Bradley Koontz (Gia), has written an excellent book about the [unsung heroes of aircraft maintenance](#). illustrated with vintage photographs and aviation advertisements, this paperback contains more than 20 fact-filled stories of aircraft mechanics prior to WWII. This is a must-have book for anyone in the aircraft maintenance industry.



[http://r20.rs6.net/tn.jsp?llr=zjwqasdab&et=1105687269613&s=2780&e=001DI5Rw9OIWf2tbRpSrLgBGVf6Oju3P5x0ZXZfgpD9xoh-lwczIHR7UzMk4qMRxugsWSr3oIIVWX1EMbkMGOLTGFh7uiDtQ\\_urvr8sYJ0enbIRecvA\\_wH3Guk8B-re5pNhCawmRo\\_vtr\\_Ztu0homAJA==](http://r20.rs6.net/tn.jsp?llr=zjwqasdab&et=1105687269613&s=2780&e=001DI5Rw9OIWf2tbRpSrLgBGVf6Oju3P5x0ZXZfgpD9xoh-lwczIHR7UzMk4qMRxugsWSr3oIIVWX1EMbkMGOLTGFh7uiDtQ_urvr8sYJ0enbIRecvA_wH3Guk8B-re5pNhCawmRo_vtr_Ztu0homAJA==)

## What every leader can learn from “The King’s Speech”

In the movie “The King’s Speech,” England’s King George VI turns to Lionel Logue, an unorthodox Australian speech therapist, to overcome his stammer. The two men become friends as they work together, and after his brother abdicates the British throne, the reluctant king relies on Logue to help him make a radio broadcast at the beginning of World War II. [We also see the movie as a parable](#) — a story about a leader healing from the wounds of broken trust. King George VI had to heal from childhood betrayal before he could “find his voice” and become the leader his country needed at the brink of war. The king, however,



found it extremely hard to ask for — and accept — support that he, as that would-be leader, needed.

If you're like most leaders, you, too, struggle with asking for, and accepting, support — support you might need to perform, such as King George VI, to your most powerful potential. You probably think you should be able to go it alone, to have all of the answers. Yet, in failing to receive support, odds are you are depriving yourself — and your organization — of your true greatness. Accepting support isn't a sign of weakness; **it's a sign of courage and strength**. Only strong, self-aware leaders can size up a situation and see, realistically, what they can or cannot face alone.

Working with leaders, we find that there are at least three common, instinctive reactions to the idea of receiving support. Here is advice and insight for how to deal with them:

**"I'm the leader here. I can't let on that I need help."**

Sure, you can. People expect you to lead, and if accepting support from others will help you be an even better leader, it's your best course of action. What's more, by example, you're letting your leadership team, among others, know that it's OK to receive support, embrace their human-ness and to learn and grow through and with other people. That awareness can deepen their connection and commitment to one another and to the organization. It also builds trust and respect.

**"I don't know whom I can trust. I don't want to open myself up to be vulnerable."**

Make a wise choice — and take the risk. Playing it close to the vest might be your default, but that doesn't mean it's the smartest thing to do. Also, ask yourself whether you're really concerned about trust or, more likely, about letting others in. During highly stressful periods, you might unreasonably question everyone's intentions. Resist those doubts and fears. They can — and will — hold you back.

**"I want to be the best leader I can be for my organization. That has nothing to do with my personal life."**

Really? You're a whole person, and your success comes from the sum of your experiences. Additionally, as a leader, your ability to build and rebuild trust with others has a lot to do with how you've dealt with — or haven't dealt with — situations of broken trust in your life. If you don't want to "go there" with someone within your organization, look for someone on the outside — your Lionel Logue.

## Picture This

Don't Worry, I'm Not Inhaling

