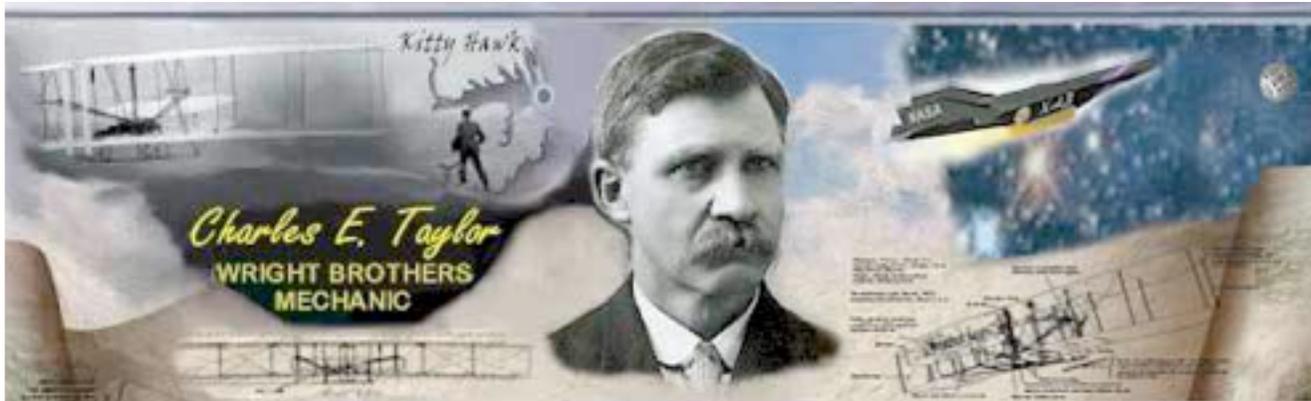


# Aviation Human Factors Industry News

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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](mailto:rhughes@humanfactorsedu.com)

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

★NIAR, NCAT To Host Online FAA-Sponsored Composites Course

★FAA adds anti-hacking conditions to Boeing 747-8

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## NIAR, NCAT To Host Online FAA-Sponsored Composites Course

### Content Will Cover Maintenance And Repair Of Composite Materials

Wichita State University's National Institute for Aviation Research (NIAR) and Wichita Area Technical College (WATC) ... through the National Center for Aviation Training (NCAT) ... will host an **on-line Composites Maintenance Technology course** that will focus on critical composite materials maintenance and repair safety issues beginning March 1.



This course will provide students with an awareness of composite materials technology principles with a focus on repair and maintenance of composites and associated safety issues. The course can also be used to provide an introduction to other skill-building courses which are beyond the scope of this class. Sponsored by the FAA, the course was created through the collaboration of experts and composite materials organizations, assuring it is relevant to industry needs.

The course is hosted online, and students can participate in case study discussions at their convenience with various experts in the field. The typical student **time commitment averages 70 hours over the eight-week period.**

Upon completion of the online course, the principles learned can be applied in an optional three-day laboratory course, held at NIAR.

#### **Course topics include:**

Overview of the technology of composites used in aerospace

Teamwork and disposition of damaged composites

Damage detection and characterization:

Damage types and sources

Damage and repair inspection procedures

**Bolted composite repair**

**Bonded composites repair**

The course is developed and instructed by Charles Seaton, who has more than 30 years of experience in aircraft design, manufacturing, and aircraft modification. Seaton received a Master of Science degree in Materials Science from the Massachusetts Institute of Technology, a Master of Business Administration from Stanford University and a Bachelor of Science degree in Ceramic Engineering from the University of Washington. He has taught and developed undergraduate on-line courses with Wichita State University, Edmonds Community College and DeVry University. He has also taught graduate-level management courses at the University of Dallas.

Additional aircraft composites maintenance experts will also participate in course discussions.

FMI: [www.niar.wichita.edu/webcourse](http://www.niar.wichita.edu/webcourse)

## **FAA adds anti-hacking conditions to Boeing 747-8**

The first Boeing 747-8 leaves the paint hangar.

Following up on its 2008 directive that Boeing must ensure the 787 Dreamliner isn't vulnerable to hackers, the Federal Aviation Administration made the same demand regarding Boeing's 747-8.

The 747-8 "will have **novel or unusual design features** associated with the architecture and connectivity capabilities of the airplane's computer systems and networks, which may allow access to external computer systems and networks," the FAA wrote. "Connectivity to external systems and networks may result in security vulnerabilities to the airplane's systems. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for these design features."



Therefore, the FAA added special conditions it deemed "necessary to establish a level of safety equivalent to that established by the existing airworthiness standards."

The conditions?

The applicant must ensure electronic system security protection for the aircraft control domain and airline information domain from access by unauthorized sources external to the airplane, **including those possibly caused by maintenance activity.**

The applicant must ensure that electronic system security threats from external sources are identified and assessed, and that effective electronic system security protection strategies are implemented to protect the airplane from all adverse impacts on safety, functionality, and continued airworthiness.

## **NBAA Releases Safety Management System Overview**

Applicable To Commercial And Non-Commercial Aircraft



The NBAA released "**Twelve Steps to an Effective Safety Management: A Review of the Fundamentals**" Thursday, which outlines the basic steps necessary to prepare a comprehensive and effective Safety System (SMS). With a formalized SMS, any commercial or non-commercial aircraft operator can **proactively** identify and **mitigate** potential safety risks.

This is just one in a series of resources NBAA makes available to help operators comply with the new International Civil Aviation Organization (ICAO) SMS requirements for large and turbo-jet operations. However, "NBAA advocates that aircraft operators of all sizes implement an SMS - even those only flying domestically," said Doug Carr, NBAA Vice President, Safety, Security and Regulation. "That is why we are making these guidelines available to all members of the aviation community, not just NBAA Members."

The International Standard for Business Aircraft Operations (IS-BAO) incorporates a full SMS system scalable to operations of all sizes that

conform to private or commercial regulatory structures. IS-BAO is the only business aviation industry standard recognized internationally for meeting SMS requirements.

"Twelve Steps to an Effective Safety Management System: A Review of the Fundamentals" is based on ICAO SMS requirements and **industry best practices**, and shows how an organization can fly more efficiently and safely.

"Implementation of an SMS will help aircraft operators meet global operating standards," Carr said.

FMI: [www.nbaa.org](http://www.nbaa.org)

## **Air Methods Exits Level 1 FAA Safety Management System Status**



Air Methods Corporation recently was informed by the Federal Aviation Administration (FAA) that it successfully exited Level 1 Safety Management System (SMS) status and is currently working toward achieving Level 2 status. Air Methods believes it is currently the only helicopter air medical operator to participate in the FAA's **SMS voluntary implementation program**, and one of only six commercial air operators (including Part 121 major commercial U.S. airlines) in the nation **to earn an SMS status acknowledgement letter**. To date, there are 68 commercial air operators nationwide enrolled in the FAA SMS program.

"Air Methods is extremely proud to have successfully earned this status and to pioneer the FAA's SMS program in the air medical industry," stated Paul Tate, Chief Operating Officer. "This is a unique acknowledgement from the FAA that Air Methods possesses many of the systems and programs critical in a successful SMS. While this is a defining moment for us and the industry, we will not rest on our laurels and continue to work diligently to pursue the highest SMS level."

Air Methods' SMS is a result of the voluntary [2006 FAA Advisory Circular 120-92](#) that encouraged commercial air operators to embrace a fully comprehensive SMS. The FAA SMS follows the International Civil Aviation Organization (ICAO) standard as a quality management approach to controlling risk by providing the organizational framework to support a sound [safety culture](#). It also provides the company's management with a detailed roadmap for monitoring safety-related processes.

In 2008, Air Methods entered the FAA SMS voluntary implementation program, which is overseen and evaluated directly by the FAA. The intent of the "Level Status" is to allow aviation service providers to implement an SMS in a standardized manner and to allow recognition of each level of accomplishment.

The "Level Status" is part of the SMS maturity model which includes five phases: [Level 0: Orientation & Commitment](#); [Level 1: Planning and Organization](#); [Level 2: Reactive Processes](#); [Level 3: Proactive Processes](#); and [Level 4: Continuous Improvement](#).

In 2009, Air Methods established several FAA voluntary safety programs and SMS initiatives including an Aviation Safety Action Program (ASAP) and Line Operations Safety Audit (LOSA) program. Each of these allows for greater communications from its field operations and earlier identification of areas of concerns so resources and attention can be devoted on a proactive basis.

## [Doctors' skill checks need upgrade, says Burnham](#)

Doctors should have their skills checked as often as airline pilots to ensure they can [perform under pressure](#) as well as the US airline captain who saved his passengers in an emergency landing on the Hudson river off York, said the health secretary. Andy Burnham said the [airline industry's safety culture](#) should act as a beacon of good practice that should be applied to medicine. Pilots are assessed around 100 times during their careers.



A new system of appraisals is to be tested by around 3,000 doctors, which will see their skills assessed every five years to ensure they are still competent to practice.

Doctors' decisions "quite often spell the difference between life and death", just like Captain Chesley Sullenberger who saved all his passengers after his plane apparently collided with a flock of birds.

Through a process called revalidation, doctors **will now have to prove their competence every five years**. The system was called for during the inquiry into the mass murders of GP Harold Shipman.

It was an anomaly that airline pilots will be assessed about 100 times during their careers, but doctors have no formal assessment of their competence or performance from the point of entering practice to retirement, said Mr Burnham.

"Many people will be surprised to hear this, and most would agree this needs to change," he said.

Stronger assessment **will improve safety and boost public trust** in doctors, and give doctors the structure to develop and improve their skills, he said.

## 10 Ways to Prevent Painful Burn Injuries

February 7 to 13 was National Burn Awareness Week, which is recognized each year during the first full week in February. According to the American Burn Association, every year: \* **500,000** burn injury victims receive medical treatment

- \* **40,000** burn injury victim are hospitalized
- \* **4,000** fire and burn injury victims die

Between 1995 and 2005:

- \* 70% of patients admitted to burn centers were **male**
- \* Over 1/3 of patients admitted to burn centers had received burns **exceeding 10%** of the total body surface area



- \* 46% of the burns were caused by [fire/flame](#)
- \* 32% of the burns were caused by [scalding](#)
- \* 43% of the burns occurred [at home](#)

A serious burn is about the worst kind of injury you can receive. It's incredibly painful and can take years of rehabilitation.

Share with your workers [these 10 ways to prevent burn injuries](#) in the workplace and at home.

In the workplace, burn hazards include hot surfaces, hot liquids, vapors and solids, fires and explosions, compressed gases such as nitrogen and propane, and chemicals that cause burns on contact with the skin. To prevent burns in the workplace:

1. Practice good housekeeping; scattered debris is a likely place for a fire to start.
2. Keep sparks and open flames away from combustible and flammable materials.
3. Maintain and use electrical equipment in a safe manner to prevent fires and electrical burns.
4. Store and handle chemicals correctly and according to directions. Read labels and the MSDS for any chemicals you work with.
5. Place oily or solvent-soaked rags in approved, covered metal containers.

#### **To prevent burns at home:**

6. Keep your house fire-safe. Make sure it is well-maintained to reduce the chance of fires caused by electrical malfunctions and accumulations of combustible debris.
7. Use chemicals safely. For instance, many home and hobby projects involve the use of solvents. Be sure to use and store them correctly to prevent fires and explosions. Some chemicals such as household cleaners can cause chemical burns, so be sure to follow the directions for handling and storage. Keep these materials in the original containers with labels.
8. Keep tap water at a safe temperature by setting the thermostat on the hot water heater to no more than 130 Fahrenheit (55 Celsius). Children and elderly persons are particularly at risk of injury caused by scalding hot tap water.

**9.** The kitchen is a common scene for burn injuries. Keep pot handles turned inward on the stove and don't leave cooking unattended. Use insulated mitts and pot holders for handling hot pots.

**10.** Microwave cooking can cause foods to become extremely hot, even to the point of exploding. Use caution when removing items from the microwave.

## "Remember Charlie" Safety Video

A must see video!"Remember Charlie" takes a look back at the amazing life of Charlie, who faced death during a refinery explosion. From an injured employee to his current position, a world's leading presenter, Charlie shows us why we should pay attention to all safety procedures on the job.

<http://www.charliemorecraft.com/index.asp?gclid=CLiFoYqw858CFRBM5QodjhniJQ>



## Here are 10 small steps to get you on the road to better health in 2010.

- 1. Take a 10-minute walk.** If you don't exercise at all, a brief walk is a great to start. If you do, it's a good way to add more exercise to your day.
- 2. Give yourself a lift.** Lifting a hardcover book or a two-pound weight a few times a day can help tone your arm muscles. When that becomes a breeze, move on to heavier items or join a gym.



3. **Eat one extra fruit or vegetable a day.** Fruits and vegetables are inexpensive, taste good, and are good for everything from your brain to your bowels.
4. **Make breakfast count.** Start the day with some fruit and a serving of whole grains, like oatmeal, bran flakes, or whole-wheat toast.
5. **Stop drinking your calories.** Cutting out just one sugar-sweetened soda or calorie-laden latte can easily save you 100 or more calories a day. Over a year, that can translate into a 10-pound weight loss.
6. **Have a handful of nuts.** Walnuts, almonds, peanuts, and other nuts are good for your heart. Try grabbing some instead of chips or cookies when you need a snack, adding them to salads for a healthful and tasty crunch, or using them in place of meat in pasta and other dishes.
7. **Sample the fruits of the sea.** Eat fish or other types of seafood instead of red meat once a week. It's good for the heart, the brain, and the waistline.
8. **Breathe deeply.** Try breathing slowly and deeply for a few minutes a day. It can help you relax. Slow, deep breathing may also help lower blood pressure.
9. **Wash your hands often.** Scrubbing up with soap and water often during the day is a great way to protect your heart and health. The flu, pneumonia, and other infections can be very hard on the heart.
10. **Count your blessings.** Taking a moment each day to acknowledge the blessings in your life is one way to start tapping into other positive emotions. These have been linked with better health, longer life, and greater well-being, just as their opposites — chronic anger, worry, and hostility — contribute to high blood pressure and heart disease.