

# 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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★**Solar Impulse To Visit U.S.**

★**Dangerous Lessons and Guardian Angels: An airline pilot's story**

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## Contract Maintenance NPRM Issued

The FAA has issued a Notice of Proposed Rulemaking covering aircraft with 10 or more passenger seats that will require much more comprehensive monitoring and record-keeping concerning contract maintenance. The new rule was by the recent reauthorization of the FAA but the FAA seems to agree there's a need.

"These changes are needed because contract maintenance has increased to over 70 percent of all air carrier maintenance, and numerous investigations have [shown deficiencies in maintenance performed](#) by contract maintenance providers," the NPRM says. Although the rule is aimed primarily at Part 121 operators, it will capture larger business jets and charter aircraft, too.

The FAA wants contract maintenance to be performed with [the equivalent level of operator oversight as in-house maintenance](#). That means maintenance manuals have to be rewritten and operators have "to develop policies, procedures, methods, and instructions for performing contract maintenance that are acceptable to the FAA." Affected parties have until Feb. 13 to comment.



## Solar Impulse To Visit U.S.

Solar Impulse, the record-setting solar-electric aircraft built by Bertrand Piccard and his team in Switzerland, will visit the U.S. next year, according to a 60 Minutes report that aired recently. The aircraft will launch from California and fly across the country to Virginia. No details have been released



about the planned itinerary or public displays. Piccard's team is on track to attempt an around-the-world solar-powered flight in 2015, according to the report. That flight will take [20 days and 20 nights](#), in a new second-generation aircraft now under construction.

Solar Impulse flew about 1,500 miles from Switzerland to Morocco in June, and in 2011 the aircraft visited the Paris Air Show. Sunday's 60 Minutes report, hosted by correspondent Bob Simon, stumbled over aviation minutiae in the opening remarks.

As all AVweb readers surely know, Charles Lindbergh was not "the first to fly over the Atlantic." Many also would dispute the statement that "the Wright brothers [were] the first men to fly," since that overlooks more than 100 years of lighter-than-air flights.

[http://www.cbsnews.com/8301-18560\\_162-57556663/solar-powered-plane-aims-to-fly-around-the-world/](http://www.cbsnews.com/8301-18560_162-57556663/solar-powered-plane-aims-to-fly-around-the-world/)

## **Dangerous Lessons and Guardian Angels: An airline pilot's story**

### **Book**

DANGEROUS LESSONS AND GUARDIAN ANGELS, AN AIRLINE PILOT'S STORY is an action packed, [true adventure book](#) that spans 35 years of airline flying. There are stories about transporting guns to Biafra in order to help the Nigerians, flying cargo up and down the Berlin Air Corridor during the cold war, as well as missions, deep into Russia. Many of the stories in this book will put you on the edge-of-your seat; for example when the (author) airline captain is to make a death defying landing of a four engine jetliner..... IN FOG. During that landing, the runway never seen until the airplane is brought to a complete stop. This exciting book also chronicles treasure diving with frightening visits by man-eating sharks, exploring the anchorages off dreamy Caribbean beaches, and fly-fishing for huge trophy trout high in the Andes of Argentina. These true adventures are [told in a series of fascinating short stories](#). Besides featuring dramatic and sometimes humorous tales of adventure, this information packed book also has a chapter on how to become an airline pilot and land that airline job. Finally, there is an inspirational message [to be persistent, focused and never give up, even when faced with overwhelming odds](#). The author's credentials include 21,000 hours of airline flying in four engine and wide bodied jets across the U.S., South America, North Atlantic, Europe, Asia, China and Russia..... when you've had many [DANGEROUS LESSONS](#), be sure you have at least one GUARDIAN ANGEL.

## Cold Conditions Demand Worker Awareness, Precautions

Unless one is fortunate enough to live in a climate of perpetual summer, or something close to it, working outdoors in inclement weather is a chilling reality for millions of people across North America. Employers and workers **need to take precautions** to prevent and treat health problems related to cold conditions, ranging from trench foot and frostbite, to potentially fatal hypothermia. Extreme cold weather can be defined as any



condition where temperature and wind, if any, combine to produce temperatures at or below  $-25^{\circ}$  Fahrenheit ( $-32^{\circ}$  Celsius). Without protective equipment such as hats, insulated gloves and proper footwear, workers are at great risk for both frostbite—especially to the ears, fingers, toes, cheeks and nose—and hypothermia, which kills an estimated 700 Americans every year. Employees who must work in  $20^{\circ}$  F ( $-6^{\circ}$ C) temperatures for prolonged periods should be given **frequent access** to heated break rooms or tents. Where possible, shields should be set up to protect them against wind exposure.

Since sweating can quickly make a bad situation worse, employees should be encouraged to bring additional layers of clothing to work so they can change if required. However, any work that causes profuse sweating in cold temperatures needs to be examined because it is likely too strenuous for those conditions.

Warning signs of **frostbite** include discomfort, pain and numbness. Hypothermia symptoms include uncontrollable shivering, a feeling of being unable to warm up, drowsiness and slurred speech.

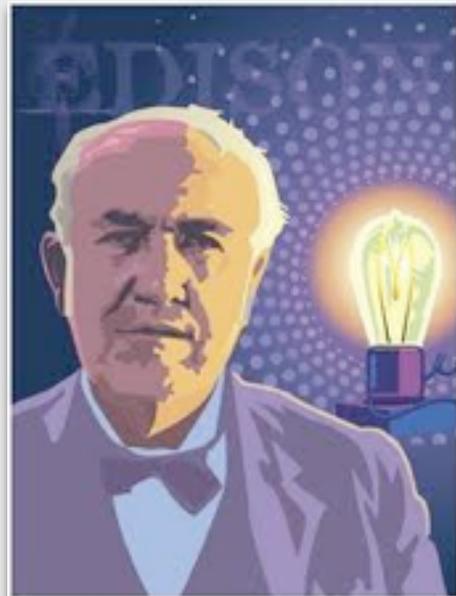
**Some tips from the stress cards are as follows:**

- Recognize various environmental and workplace conditions that may be dangerous.
- Learn the signs and symptoms of cold-induced illnesses and injuries and what to do to help workers.

- Encourage workers to wear appropriate clothing for cold, wet and windy conditions, including layers that can be added or removed as needed.
- During extreme weather conditions, allow employees to take frequent short breaks in warm, dry shelters, so that they can warm up.
- Try to schedule work for the warmest part of the day and try to avoid fatigue and exhaustion, because energy is needed to keep muscles warm.
- Where possible, have workers team up in pairs, so they can watch out for warning signs of cold-related health problems in one another.
- Avoid [caffeine](#) and alcohol, both of which interfere with the body's ability to regulate heat. Instead, drink warm, sweet beverages, such as heated sports drinks or sugar water.
- Eat warm, high-calorie foods such as hot pasta dishes.
- Remember that [workers face increased cold-weather risks](#) when they are in poor physical condition, have illnesses such as diabetes, hypertension or heart disease, or are taking certain medications.

## The Battle of the Bulb

When Thomas Edison tested the first light bulb in 1879, he most likely never imagined that his invention could one day be a contributor to a global obesity epidemic. Electric light allows us to work, rest and play at all hours of the day and a paper published in *BioEssays* suggest that this [might have serious consequences](#) for our health and for our waistlines. Daily, or circadian, rhythms, including the sleep/wake cycle, and rhythms of hormone release, are controlled by a molecular clock that is present in every cell in the human body. This human clock has its own built-in, default rhythm of almost exactly 24 hours that allows it [to stay tuned](#) to the daily cycle generated by the rotation of the Earth. This symmetry between the human clock and daily cycle of Earth's rotation is disrupted by exposure to artificial light cycles, and by irregular meal, work and sleep times.



This mismatch between the natural circadian rhythms of our bodies and the environment is called circadian desynchrony.

The paper by Cathy Wyse, working in the chronobiology research group at the University of Aberdeen, focuses on the [human clock struggles](#) to stay in tune with the irregular meal, sleep and work schedules of the developed world, and how this might influence health and even cause obesity.

“Electric light allows humans to override an ancient synchronization between the rhythm of the human clock and the environment, and over the last century, daily rhythms in meal, sleep and working times have gradually disappeared from our lives, Wyse says. “The human clock struggles to remain tuned to our highly irregular lifestyles, and I believe that this causes metabolic and other health problems, and makes us more likely to become obese. Studies in microbes, plants and animals have shown that synchronization of the internal clock with environmental rhythms is important for health and survival, and it is highly likely that this is true [in humans](#) as well.”

Wyse believes that circadian desynchrony affects human health by disrupting the systems in the brain that regulate metabolism, leading to an increase likelihood of developing obesity and diabetes.

“The reason for the relatively sudden increase in global obesity in the developed world seems to be more complicated than simply just diet and physical activity. There are [other factors](#) involved, and circadian desynchrony is one that deserves further attention,” she says.

[Shift work](#), artificial light and the 24-hour lifestyle of the developed world mean that circadian desynchrony is now an inevitable part of the 21st-century life. Nevertheless, [we can help to maintain](#) healthy circadian rhythms by keeping regular mealtimes, getting uninterrupted sleep in complete darkness and exposing ourselves to plenty of sunlight during daylight hours.

## **Compelling Advice.**

Powered-up safety training is about [effective communication](#). Here are 10 essential communication tips that can help make your safety meetings and messages more compelling:

- [Use everyday language](#). When you have to include technical terms, explain what they mean, and write them on a board or flip chart so that employees can see the words as well as hear them.
- [Take education and language proficiency into account](#). An employer must instruct its employees using both a language and vocabulary that the

employees can understand. For example, if an employee does not speak or comprehend English, instruction must be provided in a language the employee can understand. Similarly, if the employee's vocabulary is limited, the training must account for that limitation.

- **Keep your tone warm and friendly.** Talk normally. Don't lecture. **Maintain a comfortable pace and moderate volume.** Don't speed through or drag out your words. Speak loudly enough to be heard in the back row, but don't shout.
- **Speak with firmness and conviction.** Let your tone say that you believe what you're saying is important. Remember, you're trying to sell employees on the importance of the safety information you are communicating.
- **Be enthusiastic.** Use your voice and body language to show you are glad you have the opportunity to talk about an important safety topic. If you seem bored or indifferent—or as if you'd rather be somewhere else—trainees will be, too.
- **Create team spirit.** Use words like "we" and "our" rather than "the company," "management," and "employees," whenever possible. Position safety as a group objective that everyone pursues together.
- **Make eye contact.** Very important! Don't just read your notes. Look up and around the group as you talk. Try to make eye contact with each trainee several times during the session.
- **Combine words with demonstrations.** Point to the machine guard or container label. Show how to lift properly. Demonstrate the proper technique for fit testing a respirator.
- **Stay focused.** Keep on topic and on-track to ensure that you have time to cover your content and to prevent confusion about the real point of the training session.



### Why It Matters

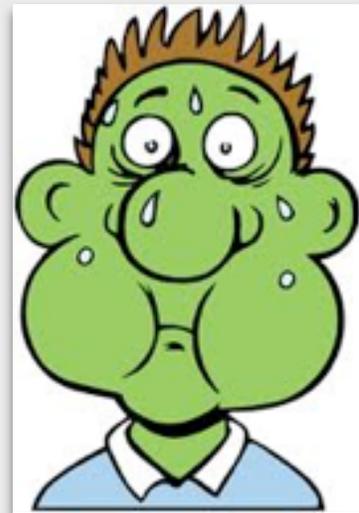
- Content is great, but if it's not transferred and retained, it is of no use to your employees.

- To be an effective trainer, you may need to spend as much time preparing your delivery as you do preparing your content.
- Contrary to the old cliché, those who can, teach. In other words, teaching [is a skill unto itself](#), so make sure you develop your training skills.

## **NASA Signs Agreement To Develop Nasal Spray For Motion Sickness**

### Deal Under Space Agreement Act Will Bring NASA-Crafted Product To The General Public

An agreement to develop and commercialize a NASA-crafted, fast-acting nasal spray to fight motion sickness has been signed between NASA's Johnson Space Center in Houston and Epiomed Therapeutics Inc. of Irvine, CA. Under the Space Act Agreement, Epiomed will formulate the drug, called intranasal scopolamine, or INSCOP. Astronauts often experience motion sickness in space. As a result, NASA has conducted extensive research into the causes and treatments for the condition. Scopolamine is effective and can be administered as a tablet or injected. With a precise dosage, the NASA spray formulation [has been shown to work faster and more reliably](#) than the oral form. "NASA and Epiomed will work closely together on further development of INSCOP to optimize therapeutic efficiency for both acute and chronic treatment of motion sickness which can be used by NASA, the Department of Defense and world travelers on land, in the air and on the seas," said Lakshmi Putcha, developer of the innovative treatment strategy at Johnson.



A gel formulation of INSCOP was developed and tested under a Space Act Agreement between Johnson and the Naval Aerospace Medical Research Laboratory in Pensacola, Fla.

Results from that trial were published in the journal *Aviation, Space and Environmental Medicine* in April 2010 that suggest INSCOP is a [fast-acting and reliable way](#) to prevent and treat motion sickness.

The U.S. Navy is working on an agreement with Epiomed to test the nasal spray. NASA and Epiomed will collaborate on clinical trials related to the Federal Drug Administration requirements. NASA is transferring sponsorship of future clinical trials and FDA approvals to Epiomed, which will supply the product for use by NASA and others.

FMI: <http://go.nasa.gov/RiKclM>

## Waging a Crusade Against Stinkin' Thinkin'

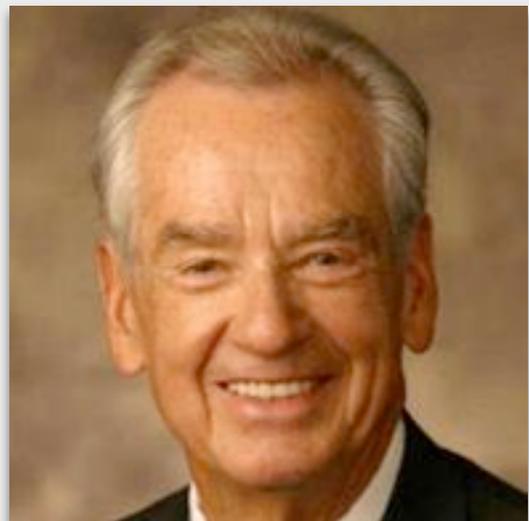
Zig Ziglar delivered his message of **positive personal transformation** for business success to millions of people and helped create the profession of "motivational speaker."

A traffic signal, to Mr. Ziglar, was a "go light," the morning alarm was an "**opportunity clock**" and every setback could be a steppingstone. Mr. Ziglar, who died earlier this month at age 86, preached in the tradition of American self-help that stretched back through Dale Carnegie and Norman Vincent Peale.

Mr. Ziglar reinforced his speeches and corporate seminars with dozens of books and tapes filled with his positive thoughts. "See You At the Top," published in 1975 and which he claimed sold well over one million copies, exhorted readers to **eliminate "stinkin' thinkin' "** and move from "**mediocrity to meteority.**"

The sequel was titled "Over the Top." If his hokey presentation sometimes inspired laughs, that was part of the "Zigmanship" package of keeping a positive outlook.

Seth Godin, a motivational speaker and new-media entrepreneur, credited Mr. Ziglar with professionalizing and expanding the motivational-speaking industry. "All of us do this professionally standing on the shoulders of Zig Ziglar," Mr. Godin said.



Hilary Hinton Ziglar grew up during the Depression in Yazoo City, Miss. His father died when he was young and he was raised by his mother, a devout Christian whose homey apothegms rubbed off on her son. "The person who won't stand for something will fall for anything," she told him.

If his books and tapes seemed repetitive, it was no accident.

"People often say that motivation doesn't last," Mr. Ziglar liked to say. "Well, neither does bathing—that's why we recommend it daily."

**Merry Christmas and a safe and healthy New Year!**

