

# 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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## Rhythm Of Our Effort

What you will see, is a video showing **air traffic around the world for 24 hours**, taken from a satellite.

The yellow dots are aircraft in the sky during a 24 hour period. Stay with the picture. You can see the light of the day moving from the east to the west, as the Earth spins on it's axis. Also you will see the aircraft flow of traffic leaving the North American continent and traveling at night to arrive in the UK in the morning.



Then you see the flow changing, leaving the UK in the morning and flying to the American continent in daylight. It is a 24 hour observation of all of the large aircraft flights in the world, condensed down to about 2 minutes. From space we look like a **bee hive** of activity.

You could tell it was summer time in the north by the sun's foot print over the planet. You could see that it didn't quite set in the extreme north and it didn't quite rise in the extreme south.

With this 24 hour observation of aircraft travel on the earth's surface we get to see the daylight pattern move as well.

Watch the day to night..... Day is over in Australia when it starts.

<http://www.youtube.com/watch?v=-9r8hgWulwA&feature=related>

## IMAX 3-D 'Legends Of Flight' Set For June Premier

### First Ever IMAX 3-D Aviation Film

"Legends of Flight," the first ever 15/70 3D IMAX aviation film, is set for to premier **June 8th** at the National Air and Space Museum's IMAX theater west of Washington, DC. Legends of Flight explores the relationships between natural flight, advanced design, innovative assembly techniques and operational technologies that have brought us to the dawn of a new era in aircraft design.

Profiling milestone aircraft having influenced later aeronautical design and performance criteria,

Legends of Flight is the latest Giant Screen feature film from acclaimed Canadian filmmaker, Stephen Low.



The film brings a new perspective to aviation through the use of advanced 3D technology and the personality of The Boeing Company's chief pilot for the 787 Dreamliner, Capt. Mike Carriker. Carriker serves as the audience's guide, interpreter, flight instructor and amiable companion. Moviegoers will soar engineless through **brehtaking** mountain passes, feel the wind in their hair barnstorming in a Stearman bi-plane, and will experience sheer flight exhilaration as a Harrier Jump Jet leaps into the sky at the pilot's command and then rockets to tactical speed.

The premier event will begin with a brunch and news conference at 1000 EDT at Reagan National Airport's (DCA) Historic Terminal A Lobby. The film will actually premier at 1300 at the Smithsonian National Air & Space Museum (NASM) IMAX Theater in Chantilly, VA.

\* FMI: [www.nasm.si.edu/visit/theaters/mall/](http://www.nasm.si.edu/visit/theaters/mall/)

## Interrupting a Nurse Makes Medication Errors More Likely

**We can learn from this!**

In hospitals, mishaps increase along with distractions, study finds.

**Distracting** an airline pilot during taxi, takeoff or landing could lead to a **error**. Apparently the same is true of nurses who prepare and administer medication to hospital patients. A new study shows that **interrupting** nurses while they're tending to patients' medication needs increases the chances of error. As the number of **distractions increases, so do the number of errors** and the risk to patient safety.

"We found that the more interruptions a nurse received while administering a drug to a specific patient, **the greater the risk of a serious error** occurring," said the study's lead author, Johanna I. Westbrook, director of the Health Informatics Research and Evaluation Unit at the University of Sydney in Australia.

For instance, four interruptions in the course of a single drug administration **doubled** the likelihood that the patient would experience a major mishap, according to the study, reported in the April 26 issue of the Archives of Internal Medicine.

Experts say the study is the first to show a clear association between **interruptions and medication errors**.

It "lends important evidence to identifying the **contributing factors and circumstances** that can lead to a medication error," said Carol Keohane, program director for the Center of Excellence for Patient Safety Research and Practice at Brigham and Women's Hospital in Boston.

"Patients and family members don't understand that it's dangerous to patient safety to **interrupt nurses** while they're working," added Linda Flynn, associate professor at the University of Maryland School of Nursing in Baltimore. "I have seen my own family members go out and interrupt the nurse when she's standing at a medication cart to ask for an extra towel or something [else] inappropriate."

Julie Kliger, who serves as program director of the Integrated Nurse Leadership Program at the University of California, San Francisco, said that



administering medication has become so routine that everyone involved -- nurses, health-care workers, patients and families -- **has become complacent.**

"We need to reframe this in a new light, which is, it's an important, critical function," Kliger said. "We need to **give it the respect** that it is due because it is high volume, high risk and, if we don't do it right, there's patient harm and it costs money."

About one-third of harmful **medication errors** occur during medication administration, studies show. Prior to this study, though, there was little if any data on what role interruptions might play.

For the study, the researchers observed 98 nurses preparing and administering 4,271 medications to 720 patients at two Sydney teaching hospitals from September 2006 through March 2008. Using handheld computers, the observers recorded nursing procedures during medication administration, details of the medication administered and the number of interruptions experienced.

The computer software allowed data to be collected on multiple drugs and on multiple patients even as nurses moved between drug preparation and administration and among patients during a medication round.

Errors were classified as either "**procedural failures,**" such as failing to read the medication label, or "**clinical errors,**" such as giving the wrong drug or wrong dose.

Only one in five drug administrations (19.8 percent) was completely error-free, the study found.

**Interruptions** occurred during more than half (53.1 percent) of all administrations, and each interruption was associated with a 12.1 percent increase, on average, in procedural failures and a 12.7 percent increase in clinical errors.

Most errors (79.3 percent) were minor, having little or no impact on patients, according to the study. However, 115 errors (2.7 percent) were considered major errors, and all of them were clinical errors.

Failing to check a patient's identification against his or her medication chart and administering medication at the wrong time were the most common procedural and clinical glitches, respectively, the study reported.

In an accompanying editorial, Kliger described one potential remedy: A "**protected hour**" during which nurses would focus on medication administration without having to do such things as take phone calls or answer pages.

The idea, Kliger said, is based on the U.S. Federal Aviation Administration's "sterile cockpit" rule. That rule, according to the Aviation Safety Reporting System, prohibits non-essential activities and conversations with the flight crew during taxi, takeoff, landing and all flight operations below 10,000 feet, except when the safe operation of the aircraft is at stake.

Likewise, in nursing, not all interruptions are bad, Westbrook added.

"If you are being given a drug and you do not know what it is for, or you are uncertain about it, you **should interrupt and question** the nurse," she said.

## **Six Ways to Avoid Misunderstandings**

Early in my career I found myself being involved in countless situations that resulted in misunderstandings. My natural reaction was to blame, rather than accept responsibility. I used to think it was the **other person's fault** if he or she did not understand something or explain something. After all, how could it be possible that I was at fault?



Then the day came when I made the decision that **I would accept 100% responsibility** for all misunderstandings in which I am involved. While there have been some painful, costly and frustrating lessons, I have learned something from every misunderstanding and it has made me a **better communicator**.

This decision to accept responsibility for all my miscommunications forced me to not only focus on clear communication, but it has also improved my ability to **identify warning signs** where there may be a breakdown in communication.

If you will **strive for excellence** and take pride in the clarity of your communications, your value to the market will increase, people's respect for you will grow and you will become a more effective leader.

Let me share with you **six lessons** I've learned about how to avoid misunderstandings.

**1. Make Sure Your Written Communications are Clear**—Always proof messages after you type them and ask, "How could this message be misunderstood?" This effort will require a little more time spent thinking

about each message, but I've learned the extra time is worth the investment in your brand. Like anything, the more you focus on the clarity of your communication, the better and faster you will become in the process.

**2. Evaluate The Clarity of Your Oral Communications**—Whether you're having a casual conversation with a friend, giving a dinner guest directions, leaving a voicemail message or providing instructions to a business colleague, focus on the clarity of your oral communications. I often have to remind myself, people aren't mind readers and they only know what I tell them.

**3. Write ALL Things Down and Repeat Them** —Make a commitment that from this day forward that you will write all instructions down which are given to you. Whether you are going to the grocery store for your parents or spouse, ordering take-out food for the family from your favorite restaurant or working on an important project, always write things down.

Writing things down helps you remember what was asked of you and reduces stress in the process. If you repeat the instructions back to the person who gave them to you, you'll avoid any misunderstandings. This extra effort is one of the things that distinguish those at the top of the pay scale from those at the bottom. It's one of the key differentiators between those who are responsible and irresponsible.

**4. Watch For Potential Misunderstandings**—If you choose to accept 100% responsibility for all misunderstandings, something interesting will happen. You will begin to see warnings signs that you have previously overlooked. It may be the look on someone's face, a comment they make, a distraction in the background or something else that will give you pause to wonder if there is a potential miscommunication brewing.

**5. Confirm All Details and Put Them In Writing**—When I am responsible for an event or task, I have learned to confirm all the details and put them in writing. As an example, if I have a call scheduled, I will confirm the date of the call, the time of the call, the time zone if appropriate, and who is responsible for initiating the call. Once it is confirmed, I put it in my calendar. Sure this requires a little extra effort, but if it avoids misunderstandings, I have found it to be worthwhile.

**6. Ask Others to Repeat What They Heard**—Another way to avoid misunderstandings is to ask people to repeat your instructions back to you. You might ask someone, "Bob, before we wrap up this call, can you please confirm your responsibilities as part of this project." When you ask people to repeat what they heard, not only does it force them to articulate what you said in their own words, but it also significantly reduces the risk of a misunderstanding.

I hope today's **lesson motivates you** to take notice about the clarity of your communications and the potential for misunderstandings. Watch for those red flags to avoid conflict or unpleasant situations. Consistent clearness of expression will have a lasting impact on all of your interactions.

## **Midnight Shift Nugget**

### **Lights Out for a Good Day/Night's Sleep**

How many times have you fallen asleep with the lights, or television on, or even stayed up late to use your computer right before going to bed? A key factor in **regulating sleep and your biological clocks** is exposure to light or darkness so falling asleep with lights on may not be the best thing for a good day/night's sleep. Exposure to light stimulates a nerve pathway from the eye to parts of the brain that control



hormones, body temperature and other functions that play a role in making us feel sleepy or wide-awake. Too much light, right before bedtime may prevent you from getting a good night's sleep. In fact, one study recently found that exposure to unnatural light cycles may have real consequences for our health including **increased risk for depression**.

Regulating exposure to light is an effective way to keep circadian rhythms in check. During the day, find time for sunlight, or purchase a light-box or light visor to supplement your exposure to light. At night, keep your sleep environment dark. Light-blocking curtains, drapes or an eye mask can also help, and if you find yourself waking up in the middle of the night or day, avoid as much light as possible by using a low illumination night light. For shift workers, who need get their zzz's during the day **wearing dark glasses** to block out the sunlight on the way home from work is another way to limit light before bedtime. Some research indicates that the body **may never fully adapt to shift work**, especially for those who switch to a normal weekend sleep schedule.

Establish a routine for sleep to avoid dozing with the television or lights on. According to Thomas J. Balkin, Ph.D., Chairman of the National Sleep

Foundation, "The hour before bed is an important time to relax and wind-down before going to sleep. For those who are having problems sleeping, it's a good idea to consider whether your bedtime routines may be too alerting." Before bedtime, limit television viewing and computer use, especially in the bedroom, as they hinder quality sleep.

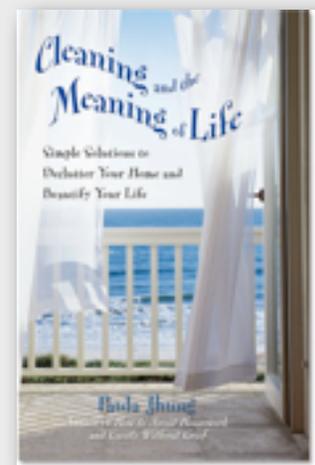
Setting **good sleep habits** is particularly important for infants and children, as it directly impacts mental and physical development. Circadian rhythms develop at about six weeks, and by three to six months, most infants have a regular sleep-wake cycle. Learning to work with your body is essential for good health, because every living creature needs sleep.

## **Book Section**

### **Cleaning an the Meaning of Life**

Between work and family and social obligations, cleaning is often the last thing we want to do. But keep in mind that numerous studies have taught us that **people are more happy and productive, both at work and at home their habitat is clean and organized**. In *Cleaning and the Meaning of Life* (Health Communications, Inc. 2005, \$12.95), author Paula Jung her LIFE philosophy: Lighten up, Invest in comfort, Forget perfection and Enhance flow:

This book provides both strategies for **organizing a home and tactics for cleaning up** in a way that does not take too much time. Tips range from cutting back on newspapers and assorted clutter, to creating quiet places in the home for rest and mediation, to paying attention to the environment created by lighting and scents. Jung's style is designed to be fun to read and make her strategies easy to implement.



## How Fast Can A Human Run?

Usain Bolt, the world-record holder in the 100-meter dash, sprints at a blazing **28 mph**. But humans are “nowhere close” to their potential top, new research says; in theory, the perfect runner could reach **40 mph**. beings’ top speed was thought to be limited by the maximum amount of force our legs could withstand as they hit the ground, which in elite runners approaches 800-1,000 pounds. Using specially designed treadmills, however, researchers at Wyoming University found that subjects can generate and withstand **30 percent more force**, at least while hopping forward on one leg. The study found that the real limitation on running speed is the rate at which muscles in the body can contract and propel limbs forward. By analyzing the muscle fibers, biomechanics specialists concluded that humans could reach 40 mph. A man running at that speed in the 100-meter would cross the finish line in 6.67 seconds, leaving Bolt 40 yards in their wake.

