

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

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

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Showing How Worker Fatigue Hurts the Bottom Line

With the economy in a downturn, companies may be tempted to try to cut costs by using fewer workers to do the same amount of work. But this strategy is likely to cost companies more in the long run. As safety coordinator, you need to be aware of the [dangers of workplace fatigue](#) and warn company management to consider the economic impact of driving workers too hard. But you'll need solid evidence to support your argument. There are two studies published in the [Journal of Occupational and Environmental Medicine](#) (JOEM) you can use: One is on the relationship between fatigue and health-related lost productive time and the other links weekly work schedules of 60 or more hours to health and safety problems. [Fatigue in the Workforce](#)



Workers suffering from fatigue—physical and mental—are not only less productive and more prone to illness but also more distracted and thus more likely to be involved in a safety incident. For example, studies show that fatigued workers are more than [twice as likely](#) to experience health-related lost productive time. One study found that 37.9% of U.S. workers experience fatigue, costing companies approximately \$136 billion in lost productivity.

Fatigue can be broadly defined as a feeling of weariness, tiredness or lack of energy. Fatigue is a common complaint but, medically speaking, it's recognized more as a symptom or cause of other conditions than as a condition itself. The best way to understand fatigue is along a continuum. On one end of the spectrum is the fatigue that most of us occasionally experience in the course of our lives when we get physically or mentally overburdened. This kind of fatigue isn't serious and can usually be resolved simply and quickly, such as by getting extra rest. On the other end is a [less common but more serious form](#) of fatigue that's symptomatic of a more chronic and disabling condition, such as major depressive disorder or chronic fatigue syndrome. This form of fatigue is an acute and/or ongoing state of tiredness that leads to mental or physical exhaustion and prevents people from functioning as usual.

Fatigue clearly impairs work ability. Studies have shown that workers with fatigue are significantly more likely to miss work and experience long-term work absences than workers without fatigue. But there were no studies on the prevalence of fatigue within the workforce (at least in the U.S.) and how fatigue affected productive work time.

THE FATIGUE STUDY

The JOEM fatigue study was the first to examine the relationship between fatigue and health-related lost productive work time (LPT) in U.S. workers. The researchers used data from the Caremark American Productivity Audit (the Audit), a random telephone survey of U.S. residents that measures the relation between health and productivity. The Audit used the Caremark Work and Health Interview (WHI) to gather information from workers about their:

- Self-reported employment status;
- Occupational characteristics;
- Health conditions and symptoms;
- Lifestyle factors;
- Health-related quality of life; and
- Demographic characteristics, such as annual salary.

The WHI measures LPT as the sum of self-reported hours per week absent from work for a health-related reason (absenteeism) and the hour-equivalent per week of self-reported health-related reduce performance while at work (presenteeism). The presenteeism analysis focused on five work behaviors:

- Loss of concentration;
- Repeating a job;
- Working more slowly than usual;
- Feeling fatigued at work; and
- Doing nothing at work.

The researchers interviewed a sample of 28,902 adults ages 18 to 65 who'd participated in the Audit and were employed in the week before the interview. To identify which individuals were suffering from fatigue, researchers posed the following question to participants: "Did you have low levels of energy, poor sleep or a feeling of fatigue in the past two weeks?"

The Study's Results

Based on the information gathered on the participants through the WHI and from the researchers own interviews, they concluded the following:

- The estimated prevalence of fatigue in the U.S. workforce for a two-week period was 37.9%.

- Fatigue was more prevalent in women, workers under age 50, white workers and workers earning more than \$30,000 per year in “high control” positions—that is, jobs with a lot of latitude in making decisions.
- Overall, 9.2% of U.S. workers with fatigue reported LPT specifically due to fatigue in the previous two weeks. Such workers lost an average of 4.1 productive work hours per week, most of which was reflected in reduced performance at work rather than absence from work, i.e., presenteeism rather than absenteeism. For these workers, fatigue affected their work performance primarily by **impairing their concentration** and increasing the time it took them to complete tasks. And distracted workers are naturally more likely to have safety incidents.

Bottom line: The researchers estimated that workers with fatigue cost U.S. employers \$136.4 billion per year in health-related LPT—\$101 billion more than workers without fatigue.

THE LONG WORK HOURS STUDY

A separate set of JOEM researchers set about to analyze the impact, if any, of long work hours on workers’ health and safety. The researchers relied on a database put together by a truck and engine manufacturer to gauge the impact of long work hours on its workforce. Working overtime at the manufacturer’s worksites was voluntary. But it was common practice for the company to ask workers to work more than 40 hours per week. In fact, company operations were, in large part, based on the presumption that many—if not most—workers would work overtime if asked. That assumption proved to be correct as workers averaged 43.79 hours per week.

The database included information on 2,746 workers who completed two surveys that covered a wide range of topics, including:

- Health status;
- Chronic disease;
- Presenteeism and absenteeism;
- Workplace incidents;
- Behaviors that pose a health risk; and
- Use of health services.

The database also included information on workplace incidents that adversely impacted worker health or safety, which was gathered from the manufacturer’s databases on:

- Workers’ comp and short-term disability claims;
- Group health claims and paid prescriptions; and
- Eligibility and absenteeism.

The Study's Results

Researchers found that for workers who worked less than 60 hours per week, the injury rate was negligible. **But at the 60-hour mark, the injury rate increased steadily, peaking at the 80 hours per week mark.** (Note that the only workers who reported averaging workweeks above 80 hours were salaried workers who performed sedentary jobs. So it's not surprising that the injury rate for this group was low.) In addition, working 60+ hours per week led to the onset of one or more diseases and to the greater likelihood of at least one acute or other work injury. In contrast, working moderate overtime (defined as 48.01-59.99 hours per week) didn't have any significant impact on workers' health or safety.

Conclusion

The JOEM fatigue study shows that fatigued workers cost their employers billions of dollars a year in lost productivity. Of course, **fatigue can be caused by many factors**—including ones that are unrelated to the workplace, such as family demands, health problems and financial pressures. But as the long hours study shows, fatigue can certainly be caused by working excessive hours. **When workers work 60 hours or more per week, they're more likely not only to get sick or injured and miss work but also to work less productively when they do show up for work.** And both forms of productivity loss—absenteeism and presenteeism—directly hit the company's bottom line.

So while pushing workers to work harder and longer may seem to make financial sense on its face, in reality, an overworked and overtired workforce **will ultimately cost the company money.** Instead, you should encourage senior management to take steps to address fatigue in the workplace. How? In August 2008, WorkSafe Victoria and WorkCover New South Wales published a guide called "Fatigue – Prevention in the Workplace," which provides information on how to:

- Identify potential work-related fatigue hazards;
- Determine work-related fatigue risks;
- Control work-related fatigue hazards and risks; and
- Monitor and review work-related fatigue control measures.
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The guide, which is available at www.workcover.nsw.gov.au, notes that preventing and reducing fatigue may lead to:

- Better health and safety outcomes;
- Fewer workplace incidents and injuries;
- Reductions in absenteeism and staff turnover; and
- Better performance and productivity.

Safety booklet for pilots takes off

The Australian Transport Safety Bureau (ATSB) has published a new booklet for pilots [highlighting the dangers](#) of flying into clouds or conditions of poor visibility. General Manager of Strategic Capability at the ATSB, Julian Walsh said some who were only qualified to fly when visibility was good - visual flights - remained exposed to significant risk of a fatal accident. Mr Walsh said to fly in cloudy or foggy conditions, pilots needed an instrument flight rules rating and the new booklet highlighted the dangers of pilots without an instrument rating flying into bad weather. He said with 14 fatalities in the past five years, general aviation accidents involving visual flights entering cloud remained a significant concern in aviation safety especially as such accidents were all the more tragic because [they were avoidable](#).



“We want to encourage pilots, no matter what their experience level, to develop the knowledge and skills to avoid unintentionally flying into bad weather,” he said. “If the weather starts to deteriorate, unqualified pilots should make an early decision to turn back or divert before they are caught in cloud.” Mr Walsh said before they take-off pilots needed to [carefully plan](#) their flights and get up-to-date weather forecasts. “[If there’s any doubt, don’t fly,](#)” he said. Mr Walsh said the latest report in the ATSB’s Avoidable Accidents series, presented case studies on the dangers of flying visual flight rules in deteriorating weather.

He said the booklet focused on the [key safety lessons](#) learnt from each case and described strategies for pilots to avoid the dangers of flying into adverse weather conditions including pre-flight planning; considering alternate plans in case of an unexpected change in the weather; making timely decisions to turn back or divert; and using a ‘personal minimums’ checklist to help control and manage flight risks, including marginal weather conditions.

The new booklet is available from this [PS News link](#).

<http://www.atsb.gov.au/publications/2011/ar2011050.aspx>

Aviation Safety Event Set for November in Charlotte

The best way to deal with transportation disasters is to prevent them. With that goal in mind, the NC Department of Transportation is co-sponsoring a safety event for [corporate pilots and airplane mechanics](#) this coming November in Charlotte. Here's the info: Statistics have shown that one of the safest means of transportation is by airplane. Aviation maintains a low accident rate compared to other transportation modes because the industry has taken a proactive stance on safety training programs. Safety is the No. 1 priority for the N.C. Department of Transportation's Division of Aviation. As a part of that priority, the NCDOT-DOA is co-sponsoring a corporate flight and maintenance aviation safety event at the [Duke Energy Corporate Hangar located at 4620 First Flight Drive in Charlotte on Nov. 15-16](#). The free event – also sponsored by Duke Energy, the Federal Aviation Administration Safety Team (FAASTeam) and aviation industry representatives – will provide logistical and certification renewal training credit for corporate jet pilots and aviation maintenance technicians (AMT).



A portion of this program will qualify for the FAA AMT Awards and Inspection Authorization Renewal Program via the Safety and Education Section of the Division of Aviation. Pilots will also be able to earn FAA "Wings" credit that qualifies for recurrent training requirements.

The evening program on Nov. 15 will focus on regional airline and corporate jet pilots. Well-known psychologist, aviator and humorist Dr. Jerry Cockrell will be the featured speaker discussing decision making, judgment and situational awareness. Dr. Cockrell is a former Boeing 737 captain with more than 20,000 flying hours who was one of the earliest developers of Crew Resource Management programs in 1977. He has worked with corporate, government and aviation groups including Mobil Oil, Arco, all branches of the military, the United States Coast Guard and the FBI.

On Nov. 16, corporate jet aviation maintenance technicians will take part in seminars on topics such as aviation law, [human factors](#), high-technology diagnostic/inspection systems and avionics maintenance interface tools. Dr. Cockrell will also present a seminar.

For registration and information, contact Katrina White of Duke Energy at (704) 280-1423 or via email at Katrina.White@duke-energy.com. For general information on aviation or aviation safety, contact Division of Aviation, Aviation Safety and Education Specialist Tom Freeman at (919) 840-0112 or via email at tfreeman@ncdot.gov.

Alaska's Governor Proclaims Aviation Safety Month

Gov. Sean Parnell's proclamation says the six fatal crashes and 12 deaths in 2010 **were higher** than the previous yearly average. Sean Parnell, governor of Alaska, asked his state's residents to pay particular attention to aviation safety this month. Parnell's [proclamation](#) of Aviation Safety Month during August 2011 asks "all Alaskans to be cautious, attentive, and safe as they enjoy the opportunities that aviation creates in our great state. "In it, the governor notes Alaska has **more private pilots than any other state**, and air travel is a daily mode for many Alaskans, with 82 percent of the state's communities not connected to a highway or road system, "making aviation essential to the Alaskan way of life and a vital link for access to food, mail, schools, medical services, and travel," the proclamation states. He writes that aviation contributes \$3.5 billion to the state economy and employs 47,000 people, which is about 10 percent of all jobs in Alaska.



"[P]er capita, there are more private pilots in Alaska than anywhere else in the nation. However, while air travel is a daily mode of transportation for many Alaskans, we must remember that **safe flying requires careful planning, attention to weather conditions, and knowledge** of Alaska's unique terrain," it states. "[A]ircraft crashes are the second leading cause of occupational deaths in Alaska. While crash and fatality rates have declined over the last decade due to **enhanced education efforts**, increased audits and training, and advanced safety equipment, in 2010 numbers were higher than the previous yearly average with six occupational fatal crashes resulting in 12 deaths."

The proclamation supports continued efforts to increase public knowledge and awareness regarding aviation safety. "By acknowledging frequent causes of aircraft crashes, [identifying risk factors](#), utilizing advanced safety equipment and training, and following aviation safety guidelines, we can continue to decrease the number of accidents in Alaska and make aviation safer for all," it says.

Be honest now!

This calculator developed by Northwestern Mutual Life, estimates your life expectancy. There are only 13 questions, but they predict how long you're likely to live.

<http://media.nmfn.com/tnetwork/lifespan>



Beating the Post-Vacation Blues

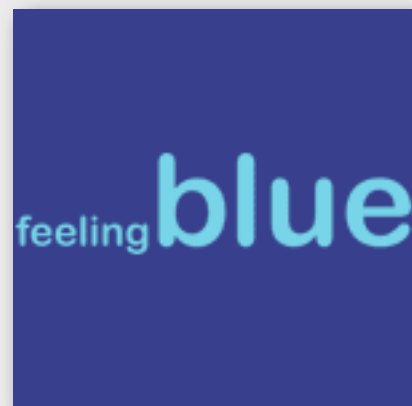
Although post-vacation blues is not officially recognized by the American Psychological Association, it is a condition that seems to affect many of us. Why? When we're on vacation – whether we travel or not – we escape our daily routines. We indulge ourselves and adapt a more a flexible lifestyle. [Returning to the reality of work is a shock](#). According to an experiment published in the Journal of Applied Psychology (August 1997), study participants returned to their pre-vacation burnout level just [three weeks](#) after returning from vacation. These 5 tips may help you postpone the stress:

1. [Return to an orderly desk](#)

Before you leave, create a first-day-back to-do list.

2. [Take an extra day off](#)

Tell people you're returning to work a day later than you actually are. This will give you a chance to catch up on emails and voice mails, and organize the paper that accumulated during your absence.



3. [Avoid Monday](#)

Return to work on a Tuesday. This will shorten your first week back and let you avoid the Monday blahs.

4. [Recover from your vacation](#)

If you're going out of town for your vacation, try to have at least one day home after your trip to ease back into your routines.

5. [Maximize your time off](#)

A survey conducted by Steelcase found that 43% of respondents still did some kind of work-related tasks while on vacation. Try to set some boundaries around the work that you'll do while away. Don't announce to your boss and co-workers that you're available at any time. And if you simply must check your email from the cottage, limit it to 30 minutes per day.

Note to self: Always put the paint in the trunk !

