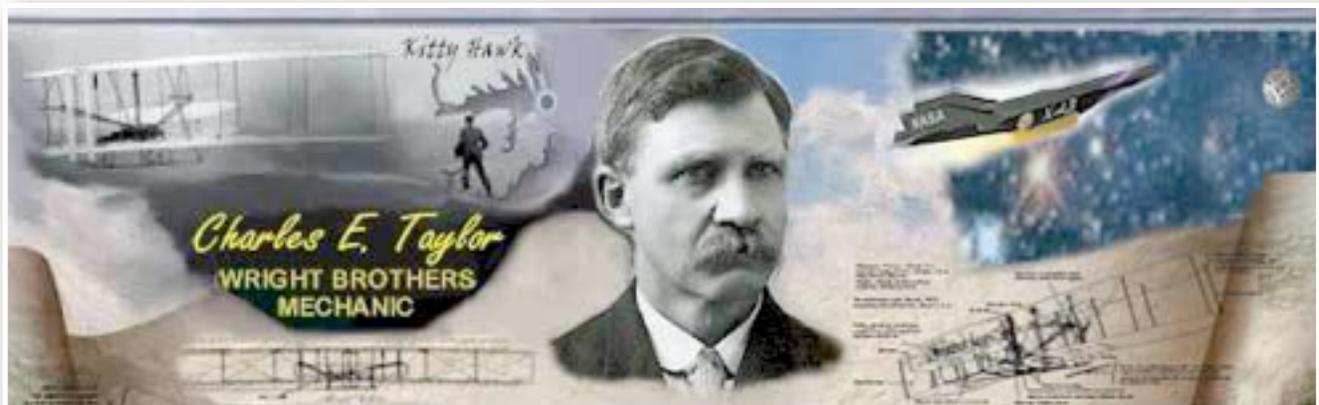


# Aviation Human Factors Industry News

*Volume IX. Issue 09, May 05, 2013*



*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:

★Pilot Involved In Accident Admits To Alcohol Use

★Collings Foundation ME-262 incident update

★Incorrect specification caused EC225 emergency lube fault

★Pilots sleep as flight attendant turns off autopilot on Bangkok-Delhi flight

★Dark Lightning Zaps Unknowing Airline Passengers with Radiation During Flight

★Connectivity, Human Factors Drive Next-Gen Cockpit

★Aren't We All Professionals? The cult of self-esteem is getting people killed.

★And Much More

## Pilot Involved In Accident Admits To Alcohol Use

### **Plane Struck Power Line Near Dayton, OH, After Running Out Of Fuel**

The pilot of a Mooney M20E which **ran out of fuel** and struck a power line during an emergency landing just outside Dayton, OH, on March 11 admitted that he had consumed alcohol before initiating the flight. Neither the pilot or his passenger were fatally injured in the accident.

The Dayton Daily News reports that the pilot of Middletown, OH, who reportedly hangared his airplane at Hook Field (KMWO) in Middletown, which is south of Dayton. According to a factual report released by the NTSB, the pilot and passenger departed the airport for a local flight at night. During an approach to land at another airport, the pilot attempted to activate the runway lights via the push-to-talk radio switch in the cockpit; however, he reported the lights would not activate. The pilot then attempted to locate another airport in which he flew into class C and class D airspace without clearance.

At several points in the flight, the pilot entered instrument meteorological conditions without clearance. Subsequently, the airplane ran out of fuel, and the pilot executed a forced landing. During the forced landing, the airplane impacted power lines and brush covered terrain. The airplane sustained substantial damage to the fuselage and both wings. Examination of the airplane did not reveal any pre-accident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

According to the FAA inspector, the pilot **did not hold a current medical certificate** or flight review, and the **airplane's annual inspection was not current**. The pilot admitted to emergency first responders that **he had been consuming alcohol before the flight**. Numerous attempts to obtain a completed Pilot/Operator Accident Report (NTSB Form 6120.1) from the pilot were unsuccessful.



## Collings Foundation ME-262 incident update

Midland Airport incident update!

The Me 262 operated by the Collings Foundation was not involved in a crash. The aircraft did not have the rear canopy properly secured by the pilot occupying the rear seat. This was **an oversight caused by** his closing the canopy early due to wind and cold temperatures while securing himself in the aircraft. Due to the **latch not being secured** the rear canopy did depart the aircraft on takeoff.



The pilot in command aborted the takeoff and the aircraft never left the ground. The aircraft has no damage aside of superficial damage to the canopy and a scratch on the fuselage. Both pilots are uninjured. Again it is important to stress that this was not a crash, but an incident involving a canopy departing the aircraft while it was still on the ground.

## Incorrect specification caused EC225 emergency lube fault

Incorrect specifications supplied to a company manufacturing the pressure switches used in the emergency lubrication system of certain Eurocopter EC225s resulted in **an erroneous failure message** being displayed to two crews, who subsequently ditched in the North Sea.



The latest update on the incidents in May and October last year issued by the UK's Air Accidents Investigation Branch reveals that the crews of both helicopters - G-REDW and G-CHCN, respectively - received the warning message indicating a failure in the main gearbox emergency lubrication system around 30s after it was activated.

Although the primary lubrication system had ceased operating in both cases due to a fractured drive shaft, the back-up system was working correctly, the AAIB says.

However, standard operating procedure mandates an immediate landing if the emergency system fails. [This was safely performed in both cases.](#)

The AAIB says the fault, introduced when Eurocopter modified the system in 2010, was "[the most likely cause](#)" of the incorrect warning displayed during the accidents. It also identified an issue with the crash position indicators fitted to both aircraft, with the manufacturer now taking action to resolve this, it says.

Eurocopter is yet to identify the root cause behind the fractures of the bevel gear vertical shaft at fault in both accidents.

As a result, over-water flights of the type are still restricted in both the UK and Norway, with operators elsewhere taking a similarly cautious view.

Although a third campaign of testing on the component has been completed, the manufacturer is yet to release the results.

The airframer could also still face compensation claims from EC225 operators struggling with disruption to their services as a result of the effective groundings in force.

## **Pilots sleep as flight attendant turns off autopilot on Bangkok-Delhi flight**

Two Air India pilots put the lives of 166 passengers on a Bangkok-Delhi flight in danger by taking a 40-minute break [from the cockpit](#) and getting two flight attendants to operate the plane in their absence. Their stunt almost ended in disaster after one of the flight attendants [accidentally](#) turned off the autopilot, forcing the pilots to rush back to their seats. The incident took place 33,000 feet in the air on Air India flight AI 133 (an Airbus 321) from Bangkok to Delhi on April 12, which took off from Bangkok on schedule, at 8.55 am.

Thirty minutes later, First Officer Ravindra Nath excused himself from the cockpit for a bathroom break and got flight attendant J Bhatt to occupy his seat in his absence.



"According to the guidelines it is a standard procedure to ensure the presence of second person in the cockpit so that if the pilot is not able to operate the aircraft for some reason, the other crew member in the cockpit can immediately call for the other pilot. But what actually happened after [this made a mockery of air safety](#)," said a source in Air India, who did not wish to be named.

Minutes after his co-pilot left the cockpit, Captain B K Soni called another flight attendant, Kanika Kala, and asked her to take his seat. Captain Soni did not leave the cockpit immediately; instead, he spent a few minutes teaching the two flight attendants how to operate the aircraft.

He left the cockpit after putting the plane on auto-pilot, leaving the flight attendants to operate the flight by themselves for the next 40 minutes while he and his co-pilot [took a nap](#) in business class.

Putting an aircraft on auto-pilot does not exempt pilots from remaining in the cockpit; their presence is required to monitor the flight's status and turn off auto-pilot if required. This was illustrated perfectly when Captain Soni and First Officer Nath were forced to rush back to their seats after one of the flight attendants accidentally switched off the auto-pilot, endangering the lives of everyone on board.

"A senior cabin crew member witnessed the entire drama unfold and brought the matter to the notice of the airline's management. All four were de-rostered and later suspended for this violation," added the Air India source.

Director General Arun Mishra of the Directorate General of Civil Aviation (DGCA), confirmed that all four employees had been suspended. "Following a safety violation, the airline has already suspended the people in question. We are conducting an inquiry into the matter," Mishra told Mumbai Mirror.

## **Dark Lightning Zaps Unknowing Airline Passengers with Radiation During Flight**

You may not have seen it, but you may have been exposed to it. Dark lightning, the flashes of gamma rays that occur at altitudes at which aircraft fly, can zap unknowing passengers with radiation during thunderstorms.

Yet how much radiation that passengers and pilots are exposed to has remained a mystery--until now. New research has pinpointed the amount of radiation that dark lightning produces and how much airline personnel may experience. Researchers first discovered dark lightning about a decade ago. That's when they found that thunderstorms could generate brief but powerful bursts of gamma rays with the ability to blind sensors on satellites hundreds of miles away, according to Discovery News. Yet while they're bright to the satellites, [they're barely noticeable to humans](#). It's unlikely that many people flying have even noticed the faintly purple flashes.



The new study used computer models in order to find out exactly how this dark lightning discharges. More specifically, the physics-based model was able to pinpoint the exposure dose that someone on a plane would likely receive during one of these dark lightning events.

So how much do passengers receive? At the top of thunderstorms at about 40,000 feet, radiation doses are comparable to about 10 X-rays, or the same dose that people receive from natural background sources of radiation over the course of an entire year. In the middle of the storms at about 16,000 feet, radiation doses could be about 10 times larger and comparable to some of the largest doses received during medical procedures--such as a full-body CT scan.

While these doses could be large, though, there's currently no data on exactly how often these storms actually occur. Because the bursts of dark lightning are so brief, they are usually undetected.

This makes it more difficult to calculate exactly how often they occur. However, researchers estimate that dark lightning bursts occur anywhere between 1/100th to 1/1000th as often as normal lightning bursts.

The new findings could allow researchers to better understand how dark lightning [can impact flight personnel](#) that are more likely to be exposed to these types of storms. In addition, it could prompt airlines to develop planes that can better resist this type of radiation. Currently, researchers recommend that pilots do what they already do: avoid major thunderstorms while in flight.

## Connectivity, Human Factors Drive Next-Gen Cockpit

In September 2012, Rockwell Collins gathered 18 airline, business aviation and owner-operator pilots in its Cedar Rapids hometown for some straight talk on the automation problems with today's integrated cockpits. What they learned could help the avionics company create next-generation flight decks that are safer and more mission-efficient. “Mode surprises are a real problem today—they happen nearly daily,” says Geoff Shapiro, senior systems engineer in Rockwell



Collins's advanced technology center. Shapiro had assembled the group to gather input on an advanced technology project to simplify the autopilot or “autoflight” modes that accompany flight management systems. A legacy airliner or business jet can have nearly 40 distinct autoflight modes for lateral, vertical or airspeed maneuvers.

“Pilots are busting altitudes. They have unintended stalls because the auto-throttle trips off and they don't know why,” Shapiro says. “The aircraft has a mind of its own and it's not really talking about why it's doing what it's doing.”

Mode confusion is one of many high-priority items on the to-do list of avionics makers like Rockwell Collins, Honeywell, Thales, Garmin and others that are striving to build cockpits of the future that will balance existing and emerging technologies such as fly-by-wire controls, broadband connectivity and increasingly complex automation.

From weather to traffic to pilot and aircraft performance and health, those flight decks will have unprecedented amounts of data that the avionics must transform into clear and concise information pilots or automation systems can use to take action—or perhaps not.

Pilots for their part will become more tightly coupled to their aircraft via a growing number of man-machine interfaces, known in human factors circles as “modalities.”

Included are interactions with increasingly complex automation systems, larger displays complete with touchscreen capability, voice-recognition systems and visual systems that will soon be capable of “seeing” the real world through practically any weather. Farther out could be brain or heart activity monitors that pilots might use for taking actions.

“The next frontier is the connectivity of everything,” says Carl Esposito, vice president of marketing and product management at Honeywell Aerospace. “Most of the aviation systems we've designed to date have been relatively self-contained with little communication to the outside world.” He says the change is being driven by what we've come to expect in the consumer electronics market, where anyone with a smartphone and a connectivity plan can pull data from multiple sources and use applications to aggregate that data into useful information.

[Read more](#)

[http://www.google.com/url?sa=X&q=http://www.aviationweek.com/Article.aspx%3Fid%3D/article-xml/AW\\_04\\_22\\_2013\\_p42-568400.xml&ct=ga&cad=CAEQAhgAIAAoATAAOABA8ovIiwVIAVgBYgVlbi1VUw&cd=IXvjq2MFgk8&usg=AFQjCNGlqTR1ftTjcljhrILA3ys31U6Y-g](http://www.google.com/url?sa=X&q=http://www.aviationweek.com/Article.aspx%3Fid%3D/article-xml/AW_04_22_2013_p42-568400.xml&ct=ga&cad=CAEQAhgAIAAoATAAOABA8ovIiwVIAVgBYgVlbi1VUw&cd=IXvjq2MFgk8&usg=AFQjCNGlqTR1ftTjcljhrILA3ys31U6Y-g)

## **Aren't We All Professionals? The cult of self-esteem is getting people killed.**

By Dr. Tony Kern, Ed.D

Recently, a pilot buddy in a position of authority shared a story of what occurred when he tried to provide constructive feedback to an airline captain following a rough flight. The captain did not welcome the unsolicited feedback and responded defensively, “C'mon now, aren't we all professionals here?” My colleague countered, “Obviously, your definition (of professional) and mine are somewhat different.” My friend's honesty and forthrightness probably hurt a few feelings, [but hopefully saved a life at some point in the future.](#)



Far too many fragile egos have been constructed over the past few decades by a cultural drift that has [valued self esteem above true competence.](#)

In a society where every Little Leaguer gets a trophy and grade inflation has made over half the kids in many middle schools honor roll students, true excellence has been devalued to the point where few recognize it and fewer still think it is even important.

This situation results in a state of affairs where individuals in positions of immense responsibility (pilots, emergency responders, etc.) are left to “roll their own” when it comes to vague or nonexistent standards of professionalism, sometimes with tragic and irreversible results. In the aftermath of these often fatal events, the white flag of “the inevitability of human error” is typically hoisted. It need not be so, or at least not so often.

The ability to differentiate between levels of performance is one of the most telling attributes of an expert in any field. Some high performers intuitively develop this skill, but in the absence of agreed-upon standards, most are left to guess or debate words like excellence and professionalism as matters of opinion. Our industry simply cannot afford this type of political correctness.

### In Praise of Elitism

Elitism has a place in aviation. There is nothing wrong with people who seek to stand above the crowd. I’m not talking about the egocentric jerks with self inflated egos, but rather the quietly confident expert who has earned the right to be considered in the top 1% of their respective field. If we hope to reverse the decline of professionalism we are witnessing in our industry, we will need more, not less, of this type to lead the way.

The fact that most industries, including ours, haven’t (yet) defined the standards to identify this group does not alter the fact that these high performers exist.

They are not known to the world, and may not hold prestigious positions of authority, but they are known to their peers.

### Hard Opposition From the “Comfortably Mediocre”

While these elite intuitively grasp the nature of true expertise and voluntarily follow the path, the comfortably mediocre despise refined standards of performance. It doesn’t allow any wiggle room for claiming greatness through volume, job title or type rating.

When the NTSB added professionalism to their “Top Ten” list, it took less than a day for multiple bloggers to attack their ideas of “monitoring performance” and “holding pilots and air traffic controllers accountable.” I stand foursquare behind the NTSB and their efforts, but industry should drive the new standards and there is considerable work to be done before we can ask anyone to monitor or hold people accountable for acts of unprofessionalism. First, we must create and share new standards.

Standards measure with discrimination, standards rank order, and standards expose posers. In a world without shared standards of professionalism, everyone is free to stake their claim. Everyone gets a trophy. All the kids are on the honor roll. I'm OK, you're OK—and the death toll rises.

So the tough question becomes, how can we begin to turn the ship of mediocrity toward higher levels of professionalism in a culture where it has been devalued for so long?

Six months before he was struck down by an assassin's bullet, President John F. Kennedy told the 1962 graduating class at Yale, "We must move on from reassuring repetition of stale phrases to a new, difficult, but essential confrontation with reality." Those of us in professional aviation would do well to heed this advice. To do so, we begin by challenging the assumption that "we are all professionals."

## Stop Trying to Create a Safety Culture

You already have one, but is it as effective as it could be?

Safety culture has become the new catch phrase, program focus, and desire of global executives, verbalized in the often expressed, "We need a safety culture!" **Safety culture is not new.** Stop trying to create it.

Safety practices, risk perceptions, and mitigation techniques have been and always will be a part of human conversation, probably more so among those who are more successful in navigating life's risks and able to pass this knowledge to their offspring and descendants. **Safety is a part of every culture.** Everyone to some degree has, or is influenced by, multiple safety cultures.

Organizational safety goals should not be focused on the creation of safety culture, rather on improvement to the existing and ranging cultural foci that already exist in the many influencing groups to which your employees are exposed. Rather than questioning, "Do we have a safety culture?" ask, "**Are we managing our safety culture or being managed by it?**" According to cultural anthropology and now common knowledge, safety has played an integral role in group norms since the beginning of documented mankind.



As we developed into societies, what to do and what not to do contributed to the longevity of life and was passed from one generation to another. Every organization has a safety culture. Moreover, every culture has a safety focus. Similar to the English joke, "You can't have your cake and eat it, too," we all want a safety culture of excellence, and we all want it aligned on the most important areas of focus. [Therein lies the challenge.](#)

Misunderstanding the existence of safety cultures contributes to the desire for "wanting one." Moreover, this often results in the program of the month, flash-in-the-pan, or management fad. Cultures are the ultimate sustainability mechanism. Programs and processes all work because of, or in spite of, the culture.

Cultures are not a program; they are the [interconnectedness](#) that explains why efforts work, don't work, succeed, and fail. Safety cultures need to be considered, leveraged, and managed just as importantly as contractors, projects, and key performance indicators. Organizations are either managing the safety element of the culture or are being managed by it. Stop searching to create a safety culture. You already have one, but is it as effective as it could be?

Your culture is one of the primary contributing factors to [why initiatives fail or succeed](#) and why you are able to achieve basic compliance or are still struggling to create obedience with rules, policies, and procedures. Your culture is your most effective sustainability mechanism, working hard to maintain status quo and, if leveraged properly, the most effective tool available to a leader.

### How to Begin Cultural Evolution

Ten questions to consider:

1. What is the necessary focus for evolving or enhancing our existing safety culture?
2. Aside from perception surveys, what data determined the necessary cultural focus?
3. What percent of the population can recite from memory this desired focus?
4. What is the current focus within our safety culture?
5. How wide is the gap between the desired and existing cultural focus?
6. Once alignment is established, how would this benefit the cultural beliefs and behaviors?
7. What is the individual (not organizational) value-add to the employee to obtain the cultural focus?
8. How will achieving a culture of safety excellence benefit the employee off the job?
9. Who are the individuals at each level that can help carry the message forward?

#### 10. How will you measure progress, rather than activities and results?

Consider prompting group conversations with these 10 questions. Research and experience has provided extensive validation that beginning cultural evolution starts with [questioning the strategy and status quo](#). Leaders at all levels must move from the desire to create a safety culture to the realization that one already exists. Then, focus on how to strengthen the cultural beliefs, decisions, behaviors, and stories that influence the individual decisions carried out when no one is watching -- the most important part of cultural reality, safety or otherwise.

### **Man who set fire to nuclear submarine gets 17 years**

A shipyard worker who [set fire to rags](#) aboard a nuclear submarine because he wanted to go home was sentenced to a little more than 17 years in federal prison Friday for the blaze that transformed the vessel into a fiery furnace, injured seven people and caused \$450 million in damage.

Casey James Fury also was ordered to pay \$400 million in restitution.

The judge imposed the 205-month sentence under a plea agreement.

The 25-year-old Fury, formerly of Portsmouth, N.H., pleaded guilty to setting the May 23, 2012 fire while the submarine was undergoing a 20-month dry dock overhaul at Portsmouth Naval Shipyard in Kittery.

The civilian painter and sand blaster told authorities that [he needed to go home because he was suffering from an anxiety attack and had no more vacation or sick leave](#). He said he never envisioned such extensive damage when he used a lighter to set fire to a plastic bag of rags that he left on a bunk in a state room.

The blaze quickly grew into an inferno spewing superheated smoke that billowed from hatches. It took 12 hours for more than 100 firefighters to save the submarine. Seven people were hurt, the Navy has said.

Eric Hardy, a shipyard firefighter who suffered back and shoulder injuries fighting the blaze, called it the worst fire he had ever seen.

"The best way I could describe it, sir, is fighting a fire in a wood stove and climbing down a chimney," Hardy told the judge.



Fury, who had been working in the torpedo room, fled to the safety of the pier and watched as firefighters went down hatches and into the burning Los Angeles class-attack submarine, staying inside for only minutes at a time because of the blistering heat.

Hardy said the smoke inside the sub was so thick he couldn't see more than a foot and his flashlight was virtually useless. Firefighters had 20-minute air packs, but it was so hard to get aboard sub and move around inside that they were limited to two to three minutes of actual firefighting.

"From the bottom of my heart, I'm truly sorry for what I have done."

— Casey Fury

About three weeks later, Fury set a second fire outside the crippled sub, again because he wanted to go home because of anxiety. That fire caused little damage. He pleaded guilty to two counts of arson in November.

Prosecutors said it was telling that he tried to set a second fire after the extensive damage caused by the first one.

But the defense contends Fury suffered from depression and anxiety and that he never intended to harm anyone.

Fury spoke briefly Friday, apologizing to the people who were hurt and saying he meant no disrespect to the Navy.

"From the bottom of my heart, I'm truly sorry for what I have done," he said.

The first blaze damaged forward compartments including living quarters, a command and control center and the torpedo room. It did not reach the rear of the submarine, where the nuclear propulsion components are located.

The fire's intensity raised concerns about the integrity of the hull, which must withstand intense pressure at extreme underwater depths. Metallurgists who examined the hull found no major damage and the Navy determined it was cost-effective to repair the vessel with a goal of returning it to service in the middle of 2015.

But its future is now uncertain. Repairs have been postponed under mandatory budget cuts known as sequestration.

Rear Adm. Richard Breckenridge, a submarine group commander, said the ship's extensive damage had ripple effects around the Navy, delaying repairs on other vessels and leading to longer deployments for thousands of sailors.

## Switch: How to Change Things When Change Is Hard

Why is it so hard to make lasting changes in our companies, in our communities, and [in our own lives](#)?

The primary obstacle is a conflict that's built into our brains, say Chip and Dan Heath, authors of the critically acclaimed bestseller [Made to Stick](#). Psychologists have discovered that our minds are ruled by two different systems—the [rational mind](#) and the [emotional mind](#)—that compete for control. The rational mind wants a great beach body; the emotional mind wants that Oreo cookie. The rational mind wants to change something at work; the emotional mind loves the comfort of the existing routine. This tension can doom a change effort—but if it is overcome, change can come quickly.

[In Switch](#), the Heaths show how everyday people—employees and managers, parents and nurses—have [united both minds](#) and, as a result, achieved dramatic results:



## Simon Sinek: How great leaders inspire action

### Four Star Video ++++

Simon Sinek presents a simple but powerful model for how leaders inspire action, starting with a [golden circle](#) and the question "Why?" His examples include Apple, Martin Luther King, and the Wright brothers -- and as a counterpoint Tivo, which (until a recent court victory that tripled its stock price) appeared to be struggling.



TEDTalks is a daily video podcast of the best talks and performances from the TED Conference, where the world's leading thinkers and doers give the talk of their lives in 18 minutes. TED stands for Technology, Entertainment, Design, and TEDTalks cover these topics as well as science, business, development and the arts.

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## **The Future-Tense Effect**

Grammar puts English speakers at a distinct disadvantage when it comes to saving money or **practicing health habits**. A new study suggests that people who speak languages that use different verb tenses to distinguish between the present and the future - for instance, saying "I'm going to" or "I will" when an action they'll take later - **are much worse at planning** than people who speak languages that blur the present and the future.

Yale Business School researcher Keith Chen examined the planning skills of people in 76 countries and found that those whose language contains strong **"future markers,"** including speakers of English, Korean, and Russian, were 30 percent less likely to save money than were speakers of languages that use **weaker future markers**, such as Mandarin, Japanese, and German. In those languages, speakers can use the same verb forms to refer to the present and the future, relying on the context of their conversation to clarify what time they're referring to. That makes them feel that the future is closer, Scientific American reports, causing them to save more for retirement, **smoke less, and exercise more** than people whose grammar firmly separates now from later.



## Red Light Increases Alertness During “Post-Lunch Dip”

A new study from the Lighting Research Center (LRC) at Rensselaer Polytechnic Institute shows that exposure to certain wavelengths and levels of light has the potential to **increase alertness during the post-lunch dip that typically occurs from 2 to 4 pm.**

The research was a collaboration between Mariana Figueiro, LRC Light and Health Program director and associate professor at Rensselaer, and LRC doctoral student, Levent Sahin. Results of the study, titled "Alerting effects of short-wavelength (blue) and long-wavelength (red) lights in the afternoon," were recently published in *Physiology & Behavior* journal. During the study conducted at the LRC, participants experienced two experimental lighting conditions in addition to darkness. Long-wavelength "red" light ( $\lambda_{\max} = 630$  nanometers) and short-wavelength "blue" light ( $\lambda_{\max} = 470$  nanometers) were delivered to the corneas of each participant by arrays of light emitting diodes (LEDs) placed in  $60 \times 60 \times 60$  cm light boxes. Participant alertness was measured by electroencephalogram (EEG) and subjective sleepiness (KSS scale).

The team found that, compared to remaining in darkness, exposure to red light in the middle of the afternoon significantly reduces power in the alpha, alpha theta, and theta ranges. Because high power in these frequency ranges **has been associated with sleepiness**, these results suggest that **red light positively affects measures of alertness not only at night, but also during the day.**

Red light also seemed to be a more potent stimulus for modulating brain activities associated with daytime alertness than blue light, although they did not find any significant differences in measures of alertness after exposure to red and blue lights. This suggests that blue light, especially higher levels of blue light, could still increase alertness in the afternoon. It appears that melatonin suppression is not needed for light to have an impact on objective measures of alertness.

"Our study suggests that photoreceptors other than the intrinsically photosensitive retinal ganglion cells respond to light for the arousal system," said Figueiro. "Future research should look into the spectral sensitivity of alertness and how it changes over the course of 24 hours."



The collaboration between Figueiro and Sahin lays the groundwork for the possible use of tailored light exposures as a non-pharmacological intervention to increase alertness during the daytime.

<http://www.sciencedirect.com/science/article/pii/S0031938413000644>

## **Nuts for a Healthy Diet**

The five most nut-ricious nuts for your diet

If you're looking for a nut that's also a nutritional powerhouse, don't let those popular peanuts fool you — they're not nuts, but legumes. Instead, consider cracking open these five protein-rich tree nuts to nosh your way to a healthier you.

### **Almonds**

These teardrop-shaped nuts, both sweet and raw, are all-stars in the nut kingdom. Delivering delicious flavor and a favorite of fitness and beauty devotees, these gluten-free kernels are

jam-packed with B-complex vitamins, like riboflavin and folates, that boost cellular growth. Add heavy doses of monounsaturated fatty acids and fiber and you also can lower your "bad" (LDL) cholesterol, prevent coronary heart disease, as well as colon cancer and constipation.

Beauty devotees swear by almond oil's ability to rejuvenate skin and hair by combating damaging oxygen-free radicals. Read more at [www.mayoclinic.com/health/health-foods/MY01108&slide=2](http://www.mayoclinic.com/health/health-foods/MY01108&slide=2).

### **Walnuts**

Did you know there are 30 varieties of these all-natural snacks? Yet there is only one universal truth: antioxidant walnuts contain the highest level of omega-3 of all nuts. These essential fatty acids as are known to reduce the risk of dementia, cardiovascular disease and inflammation. Walnuts also receive props in the medical community for their ability to boost cognitive functions.



It's no wonder, then, these unshelled nuts look a little like the human brain. Learn more at [www.walnuts.org](http://www.walnuts.org).

### **Pistachios**

Frequently found in Mediterranean diets, these green-hued nuts are a go-to for diabetics because they stem a tissue-damaging process called glycation. For the rest of us, pistachios' beta carotene, just like carrots, improves your vision function. Dieters beware: these seemingly harmless nuggets are high in calories (more than 550 calories per half cup). However, that may be good news for underweight folks looking to tack on an extra pounds. For more information, visit [www.webmd.com/cholesterol-management/news/20100520/pistachio-nut-good-for-your-heart](http://www.webmd.com/cholesterol-management/news/20100520/pistachio-nut-good-for-your-heart).

### **Chestnuts**

Strengthen your teeth and respiratory health with these low-calorie, starchy nuts, best known for roasting on an open fire. Chestnuts, an antioxidant high in vitamin C, also help repair tiny tears and leaks in blood vessels. European and Asian recipes frequently draw on these nuts, jam-packed with minerals, like iron, calcium, zinc and potassium, which thwart anemia and high blood pressure while boosting bone metabolism. Read more at [www.livestrong.com/article/470050-what-are-the-health-benefits-of-eating-chestnuts](http://www.livestrong.com/article/470050-what-are-the-health-benefits-of-eating-chestnuts).

### **Hazelnuts**

Need some sleep? Crunch a handful of magnesium-rich hazelnuts, also known as filberts, to catch a little shuteye. These natural sleep inducers also rank number one among tree nuts for their high folate content, which helps prevent neural tube birth defects. Also, complex nutrient compounds, called proanthocyanidin, reduce the risk of urinary tract infections and blood clots. Discover more benefits at [www.oregonhazelnuts.org/health-benefits](http://www.oregonhazelnuts.org/health-benefits).

Remember, even these super foods can be turned into a dietary sabotage. Consume nuts that are raw, unsalted and not drenched in cooking oil to achieve maximum health benefits.

## Driven To Distraction

More than 8 percent of full-time U.S. workers commute an hour or longer to work, and 61.1 percent of those with long commutes drive to work alone.

The U.S. Census Bureau reports about 8.1 percent of U.S. workers have commutes of an hour or longer, and more than 586,000 full-time workers have "megacommuters" -- meaning they travel at least 90 minutes and 50 miles. The [average one-way daily commute for all workers](#) is 25.5 minutes, and 23 percent of workers with commutes of an hour or more use public transit, versus only 5.3 percent of all workers, the bureau reported March 5. The numbers come from the bureau's annual American Community Survey. "The average travel time for workers who commute by public transportation is higher than that of workers who use other modes. For some workers, using transit is a necessity, but others simply choose a longer travel time over sitting in traffic," said Brian McKenzie, a Census Bureau statistician.



## Sense of a Goose

--Author Unknown

When you see geese flying along in "V" formation, you might consider what science has discovered as to why they fly that way:

As each bird flaps its wings, it creates an uplift for the bird immediately following. By flying in "V" formation, the whole flock adds at least [71 percent greater flying range](#) than if each bird flew on its own.



People who share a common direction and sense of community can get where they are going more quickly and easily because **they are traveling on the thrust of one another.**

When a goose falls out of formation, it suddenly feels the drag and resistance of trying to go it alone, and quickly gets back into formation to take advantage of the lifting power of the bird in front.

If we have **as much sense** as a goose, we will stay in formation with those people who are headed the same way we are.

When the head goose gets tired, it rotates back in the wing and another goose flies point.

It is sensible **to take turns doing demanding jobs**, whether with people or with geese flying south.

Geese honk from behind to encourage those up front to keep up their speed.

**What messages do we give when we honk from behind?**

Finally ... and this is important ... when a goose gets sick or is wounded by gunshot, and falls out of formation, two other geese fall out with that goose and follow it down to lend help and protection. They stay with the fallen goose until it is able to fly or until it dies, and only then do they launch out on their own, or with another formation to catch up with their group.

If we have the sense of a goose, **we will stand by each other like that.**



# Pilots Aren't the Only People Who Get Tired...

*Make sure your maintenance personnel receive the same consideration.*



**Proper rest, and he's ready;  
not enough rest, and nobody's ready.**

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