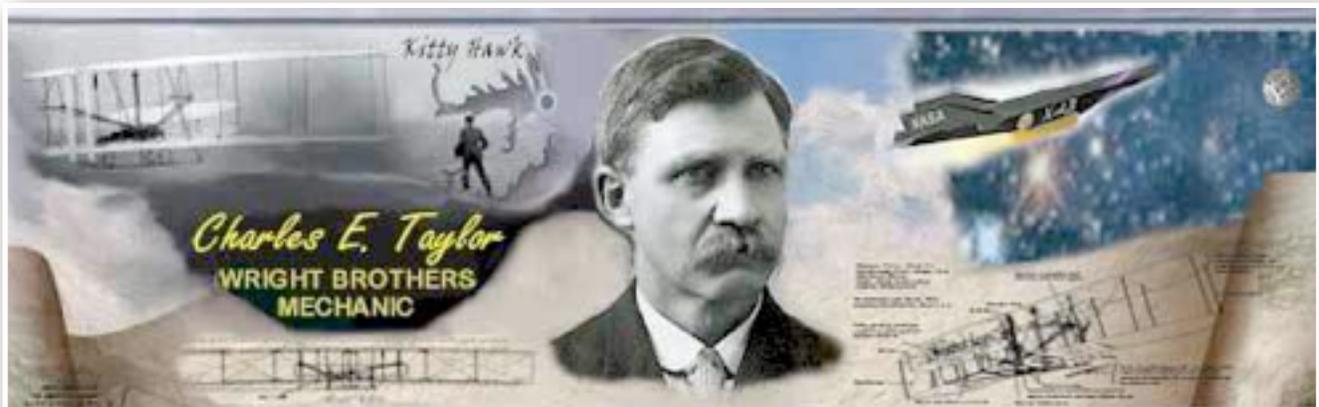


Aviation Human Factors Industry News

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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:

★2017 was the safest year in aviation history; though caution urged on remarkable figures continuing

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★

★NTSB: FAULTY FUEL GAUGE, WASP NEST FACTORS IN PAIR OF RECENT PLANE CRASHES

★And Much More

2017 was the safest year in aviation history; though caution urged on remarkable figures continuing

New figures released in separate reports by the Aviation Safety Network and Dutch aviation consulting firm To70 reported that 2017 saw not a single commercial passenger airplane fatality, making it the safest year for aviation ever. With only two fatal accidents to passenger airliners, both involving small turbo-prop planes, 2017 was much better than could reasonably (and statistically) be expected, and was again better than [last year's remarkable performance](#). To70's report puts the fatal accident rate for large commercial passenger flights at 0.06 per million flights, or [one fatal accident for every 16 million flights](#). The Aviation Safety Network

(ASN) also reported there were no commercial passenger jet deaths in 2017, but 10 fatal airliner accidents resulting in 44 fatalities on-board and 35 persons on the ground, including cargo planes and commercial passenger turbo prop aircraft.

The ASN's statistics are based on all worldwide fatal commercial aircraft accidents (passenger and cargo flights) involving civil (not military) aircraft of which the basic model has been certified for carrying 14 or more passengers. Consequently, the June 7 accident involving a Myanmar Air Force Y-8F transport plane that killed 122 is not included. Though even when including military transport aircraft as well as non-commercial flights, the total number fatalities would be 230 in 24 fatal accidents. [Still the lowest numbers in modern aviation history.](#)

The low number of accidents comes as no surprise, according to ASN President Harro Ranter: "Since 1997 the average number of airliner accidents has shown a steady and persistent decline, for a great deal thanks to the continuing [safety-driven efforts](#) by international aviation organizations such as ICAO, IATA, Flight Safety Foundation and the aviation industry."



To70 are keen to point out that even with so few fatal accidents to examine, there were several serious non-fatal accidents in 2017, most pressingly a number of [engine related accidents](#) occurred, including the spectacular loss of the engine inlet fan and cowling on an Air France A380

In addition to the non-fatal accidents, there are a number of notable events that have been excluded from the statistics. [Examples of these accidents include:](#) the fatal injury to a person caused by jet blast when standing close to the airport fence at St Maarten's airport, and a cargo airplane accident at Bishkek, Kyrgyzstan, when the airplane overran the runway and ended up in a village close to the airport, killing 35 on the ground.

Expert View from To70, other risks:

"Not all of the safety risks are related to aviation technology. The increasing use of [lithium-ion batteries](#) in electronics creates a fire risk on board airplanes as such batteries are difficult to extinguish if they catch fire. Airlines worldwide are training their crews to fight any fires in the cabin; the challenge is keeping such batteries out of passenger luggage.

Despite the good news, a note of caution needs to be sounded. Whilst the safety levels of modern civil passenger airplanes remain high, the extraordinarily low accident rate this year must be seen as a case of good fortune. Statistically speaking, in a dataset that starts with over thirty million flights, there is little difference between two accidents and ten accidents. That this year's accidents only resulted in 13 fatalities is even greater fortune.

[There is no room for complacency.](#) Civil aviation, whilst an industry with a very high level of safety, does still carry very large risks.

Looking at the programs for the first few safety conferences planned for 2018, we see a number of areas requiring attention. The application of new technologies in design, construction and operations is timely [in relation to maintenance issues](#) that have arisen on the engines used on the 787 Dreamliner. [Human factors](#) are, understandably, high on the agenda. Mental health issues and fatigue are central to this topic. Another prominent theme amongst safety professionals in the coming year is airline business models and how the industry runs itself."

<https://news.aviation-safety.net/2017/12/30/preliminary-asn-data-show-2017-safest-year-aviation-history/>

<http://to70.com/to70s-civil-aviation-safety-review-2017/>

Canada's Revised CRM Rules Take Effect in January 2019

Transport Canada has introduced so-called “contemporary” crew resource management (CRM) training standards applicable to commercial aircraft operations, including air taxis and aerial work. Outlined in [AC 700-042](#), the new requirements go into effect on Jan. 31, 2019. Transport Canada has



replaced the current CRM standard found in subsection 725.124(39) with the contemporary application following a recommendation from the Transportation Safety Board (TSB), which determined that “[human factors are the primary cause in a large percentage of aircraft fatalities](#), especially under Subpart 703 operators [air taxis] and 704 operators [commuter airlines].”

Contemporary CRM integrates technical skill development with communications and crew coordination training and operational risk management by applying [threat and error management](#) (TEM) concepts. TEM “advocates the careful analysis of potential hazards and taking the appropriate steps to [avoid, trap, or mitigate threats and manage errors](#) before they lead to an undesired aircraft state.”

According to TSB figures, the number of accidents by air taxis has decreased from a high of 63 in 2006 to 24 in 2015 and airliner and commuter operations combined decreased from 11 in 2006 to six in 2014. But airliner and commuter accidents climbed back to 11 in 2015.

https://www.tc.gc.ca/media/documents/ca-opssvs/AC_700_042.pdf

Eurocontrol Updates Plan to Prevent Runway Incursions

Version 3.0 of the [European Action Plan for the Prevention of Runway Incursions](#) (EAPPRI) contains new guidance and modifications to existing recommendations to [refocus and re-energize ongoing action](#) across the aviation industry to prevent runway incursions. Nevertheless, the number of runway incursions has remained steady, despite widespread implementation of the recommendations contained in the two previous versions of the action plan, Eurocontrol says.

“It is shown that there continues to be a minimum of [two runway incursions every day](#) in the European region,” Eurocontrol said. “Findings from those incidents and accidents have been used to determine new recommendations and associated guidance materials.”

In particular, EAPPRI v3.0 challenges the aviation industry to review the effectiveness of systemic runway incursion risk reduction activities associated with safety management systems and national airport runway safety teams.

Added recommendations range from new measures to enhance the safety of [airside vehicle drivers](#) who need to access runways; to improving air traffic controllers’ visual scanning so they can maintain a continuous watch of airport ground operations. Furthermore, there are recommendations for the industry to move toward graphically displaying safety-critical airport information to pilots to [improve their situational awareness](#).

<https://www.skybrary.aero/bookshelf/books/4093.pdf>

Saab 340B - Ground Damage during Towing, Fatality (Japan)

A male mechanic of Japan Air Commuter received **fatal injury** when a Saab 340B of Japan Coast Guard, JA8952 named 'Umitsubame (stormy petrel)', tilted left during a tow back to a hanger for maintenance. The left main landing gear was retracted, and the head of the mechanic was caught between the left wing and the ground. Japan Air Commuter undertakes periodic inspections of Saab 340B's of Japan Coast Guard at Kagoshima Airport.



<https://youtu.be/fNoF9n2EEvY>

Tool bag may have caused Ontario helicopter crash that killed 4: Transportation Safety Board

Though their investigation is still considered **preliminary**, the Transportation Safety Board says a **cloth tool bag** was blown off a platform attached to the side of the chopper during mid-air power line maintenance work and hit the helicopter's tail rotor. Mark Carcasole reports.



An improperly secured tool bag hit the rear rotor of a helicopter before the aircraft crashed in eastern Ontario, killing four people on board, the Transportation Safety Board said Thursday, as it issued a warning on the risks of unsecured cargo.

The board said its preliminary investigation into the Dec. 14 crash near Tweed, Ont., suggested the tool bag being carried on a platform outside the Hydro One helicopter was the main cause of the deadly incident.

Shortly before the crash, the helicopter's pilot picked up three linemen at the base of a high-power transmission tower and was transporting them to a nearby staging area, the TSB said.

A few bags used for tools and supplies were being carried on the platform extending out of the right side of the helicopter. The bags are normally secured with double-lock carabiners, the TSB said.

"While nearing the staging area, one of the bags ... blew off the platform and along with its attached carabiner struck and damaged the tail rotor," Peter Rowntree, a senior TSB investigator told reporters on Thursday.

"A heavily-damaged carabiner, a damaged bag along with the tip of a tail rotor blade were found approximately 600 meters away from the crash site."

Investigators also found that two of the three seatbelts in the helicopter's passenger area were unfastened, Rowntree said.

"All three passengers became separated from the helicopter while it was still airborne," he said.

Rowntree said the TSB investigation into the crash continues and will examine helicopter maintenance records, pilot training, operational policies and previous occurrences involving the helicopter model involved.

Weather is not being considered a factor in the crash, he said.

The TSB issued a safety advisory Thursday in light of the crash, saying cargo must be adequately secured at all times and warning that passengers who don't wear seat belts risk serious injury or death in an emergency.

The men killed in the crash were identified by Hydro One as 39-year-old James Baragar, 27-year-old Kyle Shorrock, and Jeff Howes and Darcy Jansen, both 26.

Hydro One has said Baragar, the pilot, had been with the company since 2009.

Greg Kiraly, Hydro One's chief operating officer, said Thursday that the utility is treating the matter with "the utmost seriousness."

"We are pleased that the TSB has been able to release this preliminary information and we will be incorporating today's safety bulletin into our own review of our operating practices and procedures," Kiraly said.

The helicopter did not have a cockpit voice recorder or a flight data recorder, but the TSB has said it recovered a GPS, which will help in the investigation

EVA 777 followed wrong taxi line before pole strike

Canadian investigators have disclosed that an EVA Air Boeing 777-300ER crew followed an **incorrect taxiway line** before striking a pair of light poles.

The aircraft had been taxiing at Toronto for departure to Taipei on 2 December.



Transportation Safety Board of Canada says the aircraft had been cleared to taxi to runway 33R after de-icing, via taxiways V, E and D. While passing through a pad on the airport's main de-icing facility, the 777 followed the southern taxi line marked '**1S**' rather than the central line '**1C**'. The two are parallel and separated by around 30m.

As a result the aircraft's right wing struck two light poles, one of which broke off at its base and fell.

The 777 (B-16718) sustained substantial damage to the leading edge of its wing and outboard slats.

No fuel leak or fire occurred and none of the 240 passengers and 22 crew members was injured.

NTSB: FAULTY FUEL GAUGE, WASP NEST FACTORS IN PAIR OF RECENT PLANE CRASHES

National Transportation Safety Board investigations show a **faulty fuel gauge** and a **wasp nest** may have been key factors in a pair of plane crashes this fall in southeastern North Carolina, including one that killed a pilot. According to a preliminary report, a bad fuel gauge may have been a key factor in a fatal crash in Columbus County on Halloween. That morning a 1966 Beechcraft BE-35 Debonair flying from Lake City, FL, to Westerly, RI, crashed as it approached Columbus County Municipal Airport. Highway Patrol said the pilot, George Chartress, III, 62, died in the crash. The passenger, Richard Shawn, 58, suffered minor injuries.



According to the report, the plane had flown most of the way using its right fuel tank before switching to the left. Before take off, Chartress switched back to the right, because it showed it had a higher fuel level.

Shawn pointed out that could not be possible because they had flown on the right tank so long. The plane then lost power before crashing into trees near the airport. The investigation so far found that there was only [0.5 gallons of fuel in the right tank](#). Tests showed the gauge for that tank showed [incorrect levels](#).

A plane crashed near the airport in Bladenboro on Nov. 18, 2017.

A [wasp nest](#) may have led to a problem before a plane crash landed into a Bladen County field last month. The Piper PA28-140 was forced to land in the field near the Bladenboro Airport on Nov. 18. Neither of the two people on board were hurt.

According to a preliminary report, the pilot told investigators he lost some power as he tried to circle the airport. He turned on the carburetor heat, but it did not restore power to the engine. The NTSB found [a nest of mud daubers, a kind of wasp, in the carburetor heat control box](#). Investigators say that prevented the carburetor heat valve from fully opening.

<https://app.nts.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20171031X10138&AKey=1&RType=Prelim&IType=FA>

<https://app.nts.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20171118X25754&AKey=1&RType=Prelim&IType=LA>

Remarkable there were no fatalities in Fond-du-Lac crash, says aviation expert

Jock Williams identifies eight factors that must go just right to survive

All 25 people on board the ATR-42 survived when it crashed shortly after takeoff near Fond-du-Lac, Sask., on Dec. 13.

The Dec. 13 plane crash near Fond-du-Lac, Sask., in which [everyone on board survived](#) is remarkable, says a retired fighter pilot.

Jock Williams, a retired Royal Canadian Air Force pilot and aviation expert, says **many factors** must go right for a plane crash to end with as little damage as possible.



In addition to being a former fighter pilot, Williams also crashed his friend's plane into a forest back in September, escaping with minor injuries.

"The [Fond-du-Lac] plane was probably ... still in the, let's say, 120- to 150-mile-an-hour range," Williams told CBC Radio's *The Morning Edition* from Toronto.

"If that [speed] were doubled, the chances of fatality would be quadrupled."

Plane plowed through trees

The West Wind Aviation ATR-42 crashed shortly after takeoff from Fond-du-Lac. All 22 passengers and three crew members survived the crash, though there were serious injuries.

There are eight factors that must go just right for no fatalities to occur, according to Williams: speed, terrain, stop distance, descent speed and angle, obstacles, rescue equipment and time, fire and control.

The plane plowed through about 800 feet of trees before coming to a stop.

Dozens of locals responded to the crash in its immediate aftermath, including Canadian rangers. Though the plane had been shredded by the crash and there was jet fuel leaking all over, there was no fire.

Plane likely flew 'into' the crash

"If they'd run into a cliff and decelerated to zero knots in a matter of six inches, believe me, everybody on that plane would be deceased," Williams said.

Williams said it's likely the plane crew flew "into" the crash and kept control throughout the ordeal. Williams spoke of his own crash — which was slower — into trees.

Williams said there was an engine failure on takeoff. It didn't fail entirely, but stopped generating enough thrust to get lift off or accelerate. He said the forest began at the end of the runway.

Williams stayed as level as he could a few feet off the ground and it worked.

"I was taught early on to fly the plane as much into the crash as you can. ... I'll tell you it's hard to make yourself try to fly into a forest," Williams said.

"The temptation is to try to climb — and, of course, the higher you go, the worse the plane is going to fall down when it finally stops."

Chilling last words of pilots on doomed flights

The unimaginable horror of being at the helm of a crashing plane has been revealed through the last words of doomed pilots.

What goes through a pilot's mind the moment they realize their plane is doomed?

Chilling recordings of the final seconds before some of the world's major plane crashes reveal the sheer terror of those at the helm.

Screams, sobbing, expletives and messages to loved ones have all been captured on cockpit recorders, meaning these last moments are etched in time.



‘GOODNIGHT, GOODBYE, WE PERISH!’

LOT Polish Airlines’ flight 5055 was headed for New York in 1987 when an engine shaft exploded [due to faulty machinery](#). The pilots lost control and the plane crashed in the Kabaty Woods just outside Warsaw in Poland. There were no survivors and the last words heard from the crew were alleged to have been, according to one English translation: “Goodnight, goodbye, we perish!”

‘DON’T DO THAT’

Sometimes a pilot’s final words reveal more than just his state of mind, like those of the pilot of the 2016 FlyDubai flight that crashed during severe wind and rain just short of the runway in the southern Russian city of Rostov-on-Don. After investigations began into what had caused the disaster, Russia’s Rossiya-1 channel revealed in an exchange between himself and his crew the pilot said: [“Don’t do that.”](#) Moments later, the Boeing 737 exploded into a fireball, killing all 62 people on board.

‘FK, WE’RE DEAD!’**

In 2009, the pilot of Air France flight 447 shouted “F**k: we’re dead!” before the aircraft plunged into the Atlantic, killing all 228 people on board. The doomed jet’s flight recorders were not recovered from the sea floor until two years after the crash.

‘THAT’S ALL GUYS! F*!’**

Vladivostok Air flight 352 lost control on its approach to Irkutsk airport in Russia in 2001. The 136 passengers and nine crew members on board were killed. According to the [planecrashinfo.com](#), the pilot’s last words were: [“That’s all guys! F***!”](#)

‘ACTUALLY, THESE CONDITIONS DON’T LOOK VERY GOOD AT ALL, DO THEY?’

In 1979 Air New Zealand flight 901 was en route for a sightseeing trip of Antarctica. The aircraft crashed into the slopes of Mount Erebus in Antarctica after a technical error directed the flight the wrong way. A transcript from the black box recorder reveals the crew were [inexperienced](#) with the continent’s harsh weather conditions.

One of the last things the captain said was: “[Actually, these conditions don't look very good at all, do they?](#)” All 257 on-board were killed.

‘AH, HERE WE GO’

After struggling with a jammed stabilizer, Alaska Airlines flight 261 nosedived into the Pacific Ocean en route to San Francisco in 2000. Control was lost before an emergency landing could be made at Los Angeles International Airport and all 88 on board were killed. According to a transcript, published on planecrashinfo.com, the pilot's final words were: “[Ah, here we go.](#)”

‘MA, I LOVE YA’

Pacific Southwest Airlines flight 182 collided with a private light aircraft in 1978, killing all 135 people aboard, as well as seven people on the ground, including two children. Both aircraft — the passenger jet and the private plane — crashed into North Park, a neighborhood in San Diego, California. Just seconds before the captain said “Brace yourself” before another crew member said: “[Ma, I love ya.](#)”

‘GOODBYE EVERYBODY’

According to pilot Richard Paul, Swiss pilots have an informal agreement to say “[goodbye everybody](#)” if they know they're about to crash. According to his post on Quora, they were allegedly the last words spoken by Captain Karl Berlinger on Swissair flight SR 330 from Zurich to Tel Aviv in 1970. The plane crashed at Zurich Airport after a terrorist bomb exploded on board.

U.S. Maintenance Training Standards Poised for Major Overhaul



From composites to onboard connectivity, aircraft technology has advanced significantly in the past several decades. The required training standards used to develop mechanics in the U.S., however, [have not kept pace](#).

[But that is about to change](#).

The FAA is in the late stages of a major revamp of its Part 147 regulations, which set standards for the 170 aviation maintenance technician schools (AMTSs) that supply approximately 60 percent of the industry's certified airframe and powerplant (A&P) mechanics. (The rest are trained by their employers or the military.) A parallel effort to develop Airman Certification Standards (ACS)—a detailed list of what an A&P candidate must know and do to earn a license—might end up being integrated with the new rule. The result would be [sweeping changes](#) in how new mechanics are developed and tested.

The general consensus in the industry is that change is [long overdue](#). The last major revision to Part 147 came in April 1970, the same year that Garrett began testing the TFE731. The changes included increasing curriculum requirements to the current 1,900-hour standard and further defining subjects, placing them in four appendices.

Aside from minor revisions in 1992, the appendices, which cover basic curriculum requirements and list the general, airframe, and powerplant subjects that must be covered, have remained unchanged.

The FAA proposed major revisions in 1994 and 1998, issuing notices of proposed rulemaking (NPRMs) that included curriculum updates, [but strong resistance from industry stalled both efforts](#).

Meanwhile, aircraft and engine technology marched on, with once-futuristic concepts such as all-composite primary structures and Internet-connected aircraft becoming commonplace. The FAA, prompted in part by a 2003 Government Accountability Office (GAO) report that called on the agency to update maintenance training curriculum, established a working group to recommend changes. The working group issued its report in 2008. Seven years later, in October 2015, the FAA released another draft rule, acknowledging its late arrival and incorporating many suggestions from the working group's report.

WANT MORE PRODUCTIVE WORKERS? GET THEM TO STOP WORKING!



6 strategies to help employees recover and refuel.

What do Facebook, Google, and Bain & Company have in common? They all are recognized as *Best Places to Work in 2017* by Glassdoor, and they all offer their employees opportunities [to recover from work](#).

We don't think this is a coincidence. In fact, one of the most important things organizations can do to boost productivity is actually to get their employees [to stop working](#).

Thanks to modern technology, many employees work around the clock. One [study](#) conducted by the Center for Creative Leadership (CCL) found that, on average, professionals, managers, and executives are connected to their work [72](#) hours a week. While it might seem like these extended hours result in a more productive workforce, this is not the case. In fact, the inability to “[switch off](#)” has been linked to lower productivity and higher health risks.

Human beings [aren't meant to work continuously for lengthy periods of time](#) without rest. We function best cyclically, shifting between periods of work followed by rest.

Modern tools, such as smartphones, that extend the workday interrupt that natural cycle, compromising effectiveness. Without sufficient downtime, productivity declines, no matter how much effort is expended.

Overworked employees aren't a benefit; they are a cost. It is estimated that the cost of lost productivity due to lack of sleep alone is approximately **\$63 billion per year**. Employees who are overworked are likely to be unfocused and poor at making decisions. An overworked employee is also **more likely to make mistakes** that have to be fixed afterward, creating even more work by him or herself, or another employee.

Helping employees learn how to recover from their work can improve a company's return on investment (ROI). Here are some strategies used by today's top companies to help employees recover and refuel:

1. **Encourage disconnecting from work.** While disconnecting from work used to happen naturally at the end of the workday, today's workers need help disconnecting from the 24/7 work culture. Leaders can do this by letting employees know they are not expected to check e-mails after work hours. Companies such as Volkswagen actually have shut down servers so employees can't receive e-mails off-shift. Financial investment agency Motley Fool encourages disconnection by entering all its employees into a monthly raffle to win a two-week vacation, plus \$1,500—if they vacation within the month and have no contact with work during their time off. This policy normalizes disconnection, as employees must be prepared to disconnect—and have their colleagues disconnect—at any time.
2. **Let people sleep.** Helping employees get adequate sleep is a straightforward way to reduce the damage incurred by overwork. Leaders can cultivate a culture in which getting adequate sleep is seen as part of workplace professionalism. HR professionals can encourage this cultural shift by explaining that exhausted employees make mistakes and bad decisions, and are less able to adapt to changes, and that sleeplessness is linked to **serious health issues, such as heart disease and strokes**. Companies such as Google have established a pro-napping culture, encouraging employees to literally sleep on the job (and even providing nap pods) if they need to rest during business hours.

3. **Create opportunities to move.** While exercise may seem counterintuitive as a method of fueling rest and recovery, it can do just that. The majority of today's workforce is sedentary—a lifestyle linked to lower energy and higher health risks. Physical activity can boost energy, burn off stress, and clear people's minds. Organizations can incorporate movement into the workplace by offering standing desks, walking meetings, showers and changing rooms, free exercise programs, and group fitness challenges. For example, Bain & Company has its own "Bain World Cup," which brings together employees around the world for an annual three-day soccer tournament.
4. **Introduce contemplative activities.** Mounting scientific evidence confirms that contemplative practices such as mindfulness, meditation, and yoga improve mental and physical health. These opportunities to take a "[time in](#)," as referred to by Dr. Dan Sigel from the UCLA School of Medicine, can help workers de-stress, renew focus and attention, and feel refreshed throughout a long workday. HR leaders can provide mindfulness training programs, offer contemplative retreats, and provide online resources for employees to engage in mental wellness practices. Many companies offer such programs, including Facebook, Google, Aetna, and General Mills.
5. **Spark social connections.** Humans are social creatures and being able to connect with others on a personal level has been shown to lower stress levels and elevate mood, both of which help with recovery. HR leaders can improve the chances of social connections in the workplace by creating opportunities for employees to interact socially—especially across workgroups. Occasions that allow people to connect on a deeper level (e.g., beyond simple "shop talk"), are particularly useful. Motley Fool has a "professional connector"—a person whose job it is to get to know different people in the organization, and connect them to employees with common interests. The "Bain World Cup" (mentioned above) is another great example of getting people to connect socially, while building trust and teamwork.
6. **Savor and celebrate the positives.** Recent findings in the field of positive psychology have shown that positive emotions increase energy, creativity, and resilience—but they also fade more quickly than negative emotions. This, coupled with the fact that exhaustion tends to exacerbate negativity, makes a long-hours work culture a breeding ground for pessimism.

To counteract this, leaders should look for ways to help their employees celebrate and soak in the positives. Some ways to do this include having awards ceremonies or parties to celebrate good news or creating positivity initiatives that leverage kindness and altruism. Warby Parker, an online prescription glasses company, offers many mood-boosters—such as “photo mash-ups” (funny mash-ups of employee headshots), a crowdsourced office playlist, and a tradition of bursting into random, spontaneous applause, all of which contribute to a positive workplace culture.

Many recovery initiatives reflect more than one strategy. For example, a company-wide party might include aspects of positivity, social connection, and physical exercise. Learning and Development professionals should consider what types of initiatives might work best within their culture.

Research indicates that helping employees learn how to recover from work is arguably the most important learning and development initiative a company can undertake. After all, no other initiatives matter [if workers are too drained to do their jobs](#).

<http://www.ccl.org/wp-content/uploads/2015/04/AlwaysOn.pdf>

http://journals.lww.com/joem/abstract/2010/01000/the_cost_of_poor_sleep_workplace_productivity.13.aspx

<https://www.health.harvard.edu/heart-health/sleep-problems-heart-disease-often-in-bed-together>

TED Talks: Ideas Worth Sharing

After hitting on a brilliant new life plan, our first instinct is to tell someone, but Derek Sivers says [it's better to keep goals secret](#). He presents research stretching as far back as the 1920s to show why people who talk about their ambitions may be less likely to achieve them.



https://www.ted.com/talks/derek_sivers_keep_your_goals_to_yourself

Wishing Everyone and Safe and Joyful New Year!

