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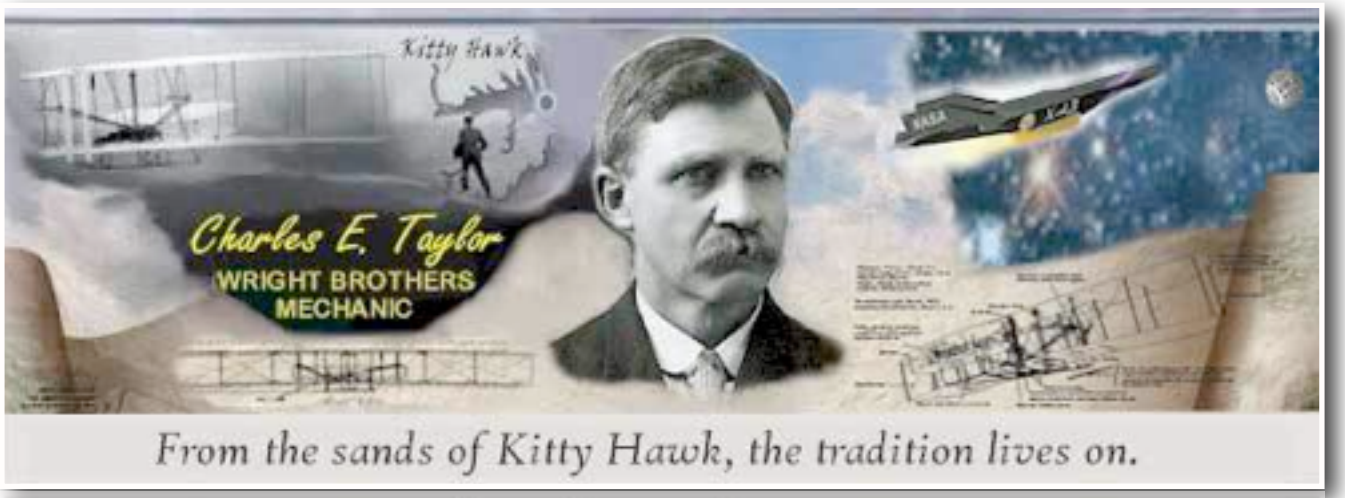

Hello all,

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

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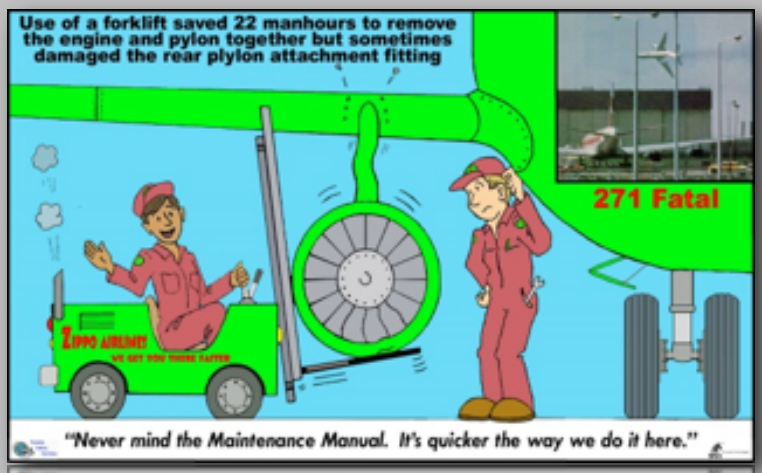
Norms – Unwritten rules that are dictated and followed by the majority of a group

Submitted by Gordon Dupont
With permission from *D.O.M. Director of Maintenance* magazine

While Norms is #12 on the Dirty Dozen list, that is not necessarily its order of importance.



But first I'd like to explain how the Dirty Dozen came to be. By 1993 I had been an accident investigator for seven excellent learning years. However, the Safety investigation work, while interesting, was also very reactive. First, you, the maintenance person, made a human error and the pilot, with perhaps others, had die so I could investigate as to why and determine means to prevent it from reoccurring. After many years I began to realize that all I had to do with some accidents was change the date, name, location, aircraft registration and I had the same accident. (Be aware that this is a strong oversimplification) Thus when the opportunity came to "jump ship" in order to develop a CRM (Crew Resource Management) for maintenance as a result of the 1989 Dryden accident in which 24 people lost their lives, I took it. I started with a clean slate and an Industry Advisory Committee that included the FAA and Canadian military. The Canadian military kept records of their maintenance error accidents and provided a box with 1,000s of errors on folded, holes on the side, paper, that was over a foot high. By reading each of these over many months, I developed the 12 contributing factors that are now known as the "Dirty Dozen." They are the basis of the Human Performance in Maintenance workshop and the posters were developed to help maintain the awareness that the training provided.

Norms is short for normal, as in the normal way we do things around here. They are all around us and are not necessarily bad. A norm is like a habit with the only difference being: a habit is done by one person, while a norm is done by a group of people.

If we look at habits, it will help us understand norms.

Habits are things that we have learned to do without thinking: (With the conscience mind at least) The habit gets easier each time we do it until you can do the task without even thinking about what you are doing. Norms are the same, as after a while you don't even think about just how Safe or legal the way you are doing a task is.

Habits usually enable us to do a task quicker. Norms are usually done for the very same reason.

Habits are easy to develop but hard to change. The same can be said for a norm unless it causes an accident.

As interesting study was done with five monkeys in a cage. In the middle of the cage was a ladder with bananas on the top.

Each time a monkey started to go up the ladder the others were soaked with cold water. After a while the wet monkeys would beat up anyone who tried to climb the ladder. In time, no one dared or tried to climb up the ladder.

The scientist then substituted a new monkey who tried to climb the ladder with the resulting beating occurring. Soon he knew not to climb the ladder, but not the original reason why (water soaking). The remaining four original monkeys were substituted one at a time with new monkeys with the same result. The new monkeys would participate in the beatings, What was left was a group of five monkeys that, even though they had never received a cold shower, continued to beat up any monkey who attempted to climb the ladder.

If it was possible to ask the monkeys why they would beat up all those who attempted to go up the ladder….. I bet you the answer would be….

"I don't know – that's just how things are done around here"

Does it sound familiar? A Norm is born. We humans use peer pressure instead of beatings, but the results are the same.

The Types of Norms

Positive. This is expected behavior condoned for the betterment of the group. What we are saying is while there is no law to order you not to do something, it is expected that you will not do it. The example I can think of for a positive norm is: you do not "pass wind" in church. A positive norm at work that I recall was a final walk-a-round by the person on the head set just before pushback. There was no requirement for it but we used to call it, "the beer can walk" to ensure that the "baggage smashers" had not left any beer cans in the engine intake or exhaust. Actually it was to ensure that all the doors were closed and there was nothing behind the aircraft. There are many positive norms that we sometimes call common courtesy. Always leave your workspace clean for the next guy etc.

Neutral. Neutral norms are neither positive nor negative but are done often from habit or courtesy. We would wave to the captain as he departed and they would often flash the landing light. I've seen where the ground crew stand to ridged attention as the aircraft departed. That could be a carryover from the military.

Negative. These are the norms that can become **"Killer Norms"** They are the norms that often enable things to be done quicker but increase the odds that a negative outcome will occur. The negative norm that I have mentioned before of pencil whipping the tire pressures in order to meet the departure time is a classic. While we never experienced any negative outcomes, the same norm in the true video "Death of an Airline" resulted in the loss of 261 lives and the death of an airline. We failed to see the danger in the short cut or accepted practice.

Negative norms all too often develop from what is called **Norm**alization of variance.

Normalization of variance occurs when something doesn't seem right but each time that there is success with the "something," it begins to become an accepted norm.

The classic example of a normalization of variance becoming a Killer norm occurred on January 28, 1986 when the space shuttle Challenger's O rings failed due to the colder than normal temperature and it blew up on take-off taking 7 lives with it. They had "failed to see the danger in the short cut or now accepted practice."

Fast focus to February 1, 2003 and the space shuttle Columbia reenters earth's atmosphere looking like a roman candle. The Killer Norm, responsible for 7 more lives, was the pieces of insulation foam that would come off the fuel tank and strike the shuttle during take-off.

It was not considered dangerous and 112 flights prior to the final Columbia flight served to **Norm**alize the odd piece of foam breaking off. This is no different than the **Norm**alization of skipping the odd tire pressure reading or when you feel that something doesn't seem quite right, but justify it by the fact that nothing has gone wrong up to date.

So what can we do about Negative norms, especially when they have not been a problem YET? The answer is relatively simple.

Just ask yourself this one important question:

Does what we are doing enhance or detract from an established Safety standard?

Thus you have to:

1. Look for norms where you work and also live.

2. Identify the positive from the negative

3. If you find that it's a habit (only you do it) and it's negative then work on it.

4. *You've got to*
   Accentuate the positive.
   Eliminate the negative
   Latch on to the affirmative
   Don't mess with Mr. In-between

(Song by Johnny Mercer 1945)

Johnny had it right with what to do with norms way back then because as a professional you must stand up for what you know is right.

This won't be easy but maintain your standard as a professional.
Failure to do so is like walking in a minefield knowing that perhaps an negative norm could explode at any time.

Standing up to a negative norm will call for assertiveness which will be the next Dirty Dozen topic to discuss. It will take "guts" (assertiveness) to stand up to something that is "not quite right." The fact that everyone is doing it does <u>not make it right</u>. Peer pressure is a strong motivator to go along with the group and as they will tell you, "Nothing has ever gone wrong by doing it this way YET." If it does not enhance an established Safety standard then as a professional, **do not do it**.

Professionalism is a future topic, but standing up for what you know is right is one of characteristics of a professional and **you are a professional.**

Ahead of the new EU Regulation 376/2014 in November 2015, we are pleased to unveil our new **Just Culture online courses**, to support industry in the transition to a proactive, evidence-based Just Culture

https://youtu.be/ugl9FaBOlKA

Fatigue, sickness involved in botched Qantas A330 approach

Qantas Airways has updated its training for visual approaches following an incident in which the crew of an Airbus A330-200 misjudged an approach into Melbourne airport, resulting in warnings from the aircraft's enhanced ground proximity warning system (EPGWS).

The incident occurred in daylight hours during the early evening of 8 March 2013, and involved the aircraft registered VH-EBV, says the Australian Transport Safety Bureau (ATSB).

The aircraft was inbound from Sydney with 11 crew and 211 passengers aboard at the time of the incident, which the ATSB categorizes as "serious."The captain and first officer were at the end of a five day roster pattern, and had flown a Perth-Sydney service earlier that day. After being cleared for approach, the captain set an altitude target of 1,000ft, selected gear down, and 180kts as the target speed. At the aircraft descended through 1,800ft, the first officer told the captain the aircraft was low.

The captain reduced the rate of descent, but then the EPGWS issued "Terrain" alerts followed by the command to "Pull Up." At this point the aircraft was at 1,400ft above sea level, but only 600ft above the ground – and 1,900ft below a normal three degree descent profile. The captain applied full power and conducted a go around before landing uneventfully.

"The ATSB found that during the visual approach the captain's performance capability was probably reduced due to the combined effects of disrupted and restricted sleep, a limited recent food intake and a cold/virus," it says. "The captain assessed the aircraft's flight path using glide slope indications that were not valid. This resulted in an incorrect assessment that the aircraft was above the nominal descent profile."

"In addition, the combination of the selection of an ineffective altitude target while using the auto-flight open descent mode and ineffective monitoring of the aircraft's flight path resulted in a significant deviation below the nominal descent profile. The flight crew's action in reducing the aircraft's rate of descent following their comprehension of the altitude deviation did not prevent the aircraft descending outside controlled airspace and the activation of the EGPWS."

Qantas responded to the incident by updating training materials for visual approaches, and added questions for check pilots to help gauge crew proficiency. Visual approaches were also included as a discussion topic during crew route checks between 2013 and 2015.

"The ATSB stresses the importance of continually monitoring descent profiles, irrespective of the type of approach being flown and the level of automation being used.

For flight crew, this occurrence illustrates the need to communicate their intentions and actions to ensure a shared understanding of the intended approach," it adds.

At the time of the incident, the captain had 21,900hrs of flight experience, of which 2,270 was on the A330. The first officer had 10,030hrs experience, with 1,000hrs on the A330.

Canada's TSB cites 'phraseology' as factor in near-collision

The Transportation Safety Board of Canada says non-standard air traffic control language contributed to a near-collision of an AgustaWestland AW139 helicopter and a FedEX Airbus A300 at Ottawa Macdonald-Cartier International airport in 2014.

The incident happened as the helicopter, operating a medical evacuation flight for a company called 7506406 Canada Inc, began taxiing north on Ottawa's Taxiway Echo at about 08:46 local time on 5 June of that year, says the TSB's final report, issued 15 July.

As instructed by controllers, the helicopter stopped short of Runway 25, an east-to-west runway that intersects Taxiway Echo.

At about the same time, controllers cleared the FedEx A300,inbound from Montreal, to land on Runway 25.

The pilots of the helicopter were unaware that the FedEx A300 was landing because they were monitoring the ground-control radio frequency.

Around 08:48, the airport controller contacted the AW139 to amend the aircraft's instrument flight rules (IFR) clearance.

"LF 4 Medevac roger, while we wait…," said the controller before providing the new clearance. The pilot-not-flying asked the controller to repeat the new clearance.

At the same time, the pilot flying the AW139 began taxiing across Runway 25.

Meanwhile, the FedEx A300 landed on Runway 25 and decelerated to about 10kt, at which time the airliner was about 240ft (73.2m) from the helicopter.

The TSB attributed the near-collision partly to “non-standard phraseology”. The pilot flying could have confused the non-standard phrase “while we wait” with the standard “line up and wait”.

But the report also cites “expectancy” as a factor, noting that the pilot flying the helicopter likely began crossing the runway because he was accustomed to being cleared for takeoff immediately after receiving an amended IFR clearance.

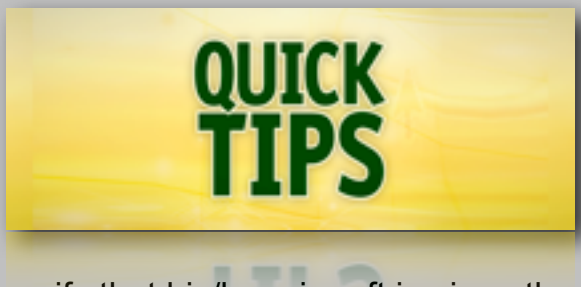
Canada’s TSB says there were 4,135 runway incursions, including those between aircraft and vehicles, between 2004 and 2013 in Canada.

“These instances are rare, but their consequences can be catastrophic,” says the report.

Logbooks Entries, A Pilot Responsibility?

It’s Not Just For Mechanics

Good old Part 43 of the FARs. Most pilots think of this is only an A&P/IA issue. Guess what, that thought process will eventually get you violated by the FAA. Why?



Patrick Phillips who sits on EAA's legal advisory committee, and Mike Bush, of Savvy Aircraft Maintenance Management, gave an enlightening forum here at AirVenture that addressed many issues that will “bite” an airman.

According to Phillips, the pilot in command is required prior to every flight to verify that his/her aircraft is airworthy. To be airworthy, all maintenance must be recorded in the aircraft maintenance logbook. This includes preventative maintenance performed by the pilot.Here’s the gotcha. Say you are on a cross country and require maintenance on you aircraft. After the maintenance is performed, the mechanic requires additional time to do the paper work. If you are in a hurry and don’t wait for the proper logbook entries before you take off, your airplane is not airworthy, ergo, if the FAA discovers this, gotcha!

They also suggested that squawks not be entered in the logbook. It should contain all the maintenance performed, e.g. simply state the maintenance performed, not a dissertation about running off the runway. It is a maintenance logbook, not a storybook.

Bush said that ferry permits are another issue pilots rarely think about. When your airplane is broken, i.e. not airworthy, how do you get it home to be repaired? This is perhaps the only time the FAA allows you, one time, to fly a non airworthy airplane. Your A&P will have to obtain the permit from the FAA for a one time flight. The A&P is certifying that the airplane can be safely flown one time in conformance with the restrictions imposed by the individual ferry permit. It is a one of and the aircraft must be operated in accordance with the ferry permit.

Another issue addressed was prebuy inspection. Prebuy inspections normally aren't "inspections" in a technical sense. All "real" inspections must be logged. Prebuy inspections vary all over the board.

My prebuy will be different from your prebuy. One word of advice is to be sure to have a clear contract with the person performing your prebuy so that if there is a problem down the road, it is clear what the prebuy inspection was to cover. One thing that needs to be entered in the log book is if any maintenance was performed or panels removed and replaced.

Bet you didn't know there are currency requirements for mechanics. Part 65.83 states that all certified mechanics must fulfill a currency requirement of 6 month activity every 24 months. Who would have thunk?

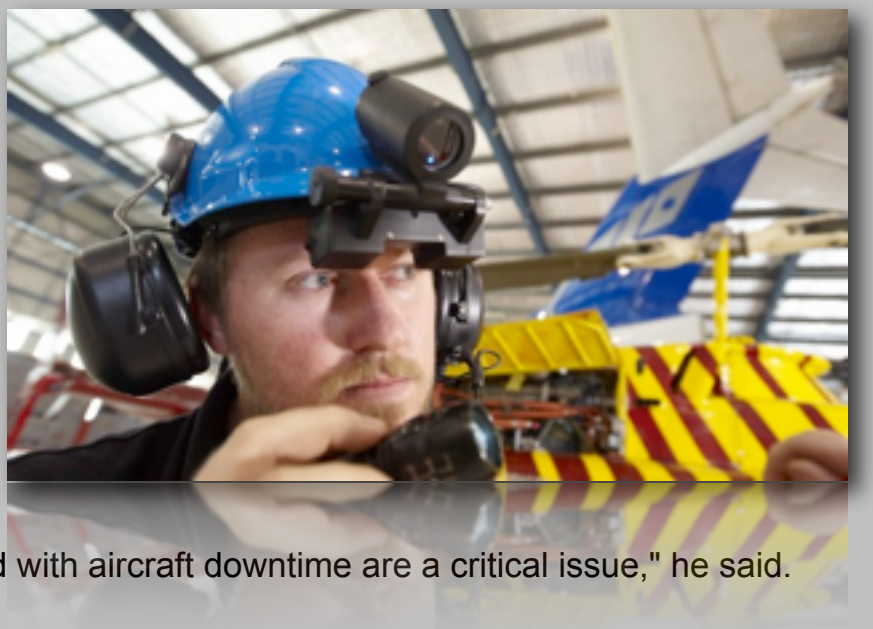
Bottom line, as a pilot or mechanic, logbooks are taken very seriously by the FAA. PICs are required to ensure his/her airplane is airworthy. Remember, the airplane isn't airworthy unless the logbooks say it is. Just being safe to fly isn't enough.

Wearable tech from CSIRO promises to end long airport delays

Aircraft operators will be able to reduce flight delays and maintenance costs soon, thanks to the commercialization of wearable technology from CSIRO.

The technology, known as Guardian Mentor Remote, comprises a connected headset and glasses, which connects onsite operators with expert mechanics elsewhere, so that real-time assistance can be provided for aircraft and engine repairs. Flight delays that were caused previously by flying in engineers to fix problems could therefore be avoided.

Australian aerospace company TAE will commercialize the product, making it available globally.



TAE managing director Andrew Sanderson said the wearable technology had huge potential, especially in regional areas.

"In the aerospace industry, costs associated with aircraft downtime are a critical issue," he said.

"If a plane's not operational, it can cost a company up to $12,000 per hour. Therefore, any technology that makes maintenance easier and helps bring down repair times is a valuable investment."
The GMR system has a helper station and an operator station, which both have a wearable computer with a helmet-mounted camera and near-eye display.

The off-site expert is able to demonstrate how to fix the aircraft using a virtual pair of hands in a shared visual space.

Mr Sanderson said the costing of the GMR was still to be determined but the aim was for it to be affordable for commercial, regional and defense aircraft operators and manufacturing companies.

"We're hoping to have it up and running in October ... It works now, we're just making it more robust," he said.

"Aerospace is one of those industries which leads the market. There's room to also expand into medical, mining and industrial repairs."

CSIRO Manufacturing Flagship's Dr Marcel Bick agreed that the technology could be used in many industries, such as the automotive, paper and pulp and rail sectors.

"It could even be used to provide remote medical assistance for field workers and emergency scenarios," Dr Bick said.

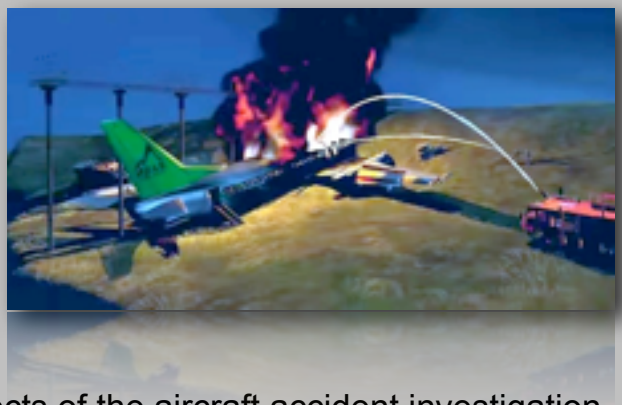
Such technology was creating more intelligent industrial environments, he said.

"The GMR prototype has already been trialled by Boeing and Aviation Australia. With TAE commercializing the technology, from later this year it will be available to aerospace companies around the world.

"As we have increased access to high-speed broadband, this makes the possibilities even more exciting."

Embry-Riddle Aeronautical U MOOC To Investigate Aviation

Embry-Riddle Aeronautical University Worldwide will be delivering a massive open online course (MOOC) on aircraft accident investigation at the end of the summer. Students will have the chance to try out their data collection skills in a virtual crash laboratory hosted by the Daytona Beach, FL-based institution.



The new course will cover various aspects of the aircraft accident investigation process, from initial field investigation to publication of the final accident report. The university said an emphasis will be placed on the study of human factors and survival investigative techniques and the application of accident investigation findings in industry and research. The class will analyze aircraft accidents and evaluate causal factors.Participants will be given the chance to practice data collection skills in Worldwide's Virtual Crash Laboratory. Launched in May 2014, the lab introduces students to an animated crash using a short video. They then choose a male or female avatar to be the National Transportation Safety Board (NTSB) investigator who walks through the crash site. They'll collect and export data that satisfies accident investigation criteria: survival factors, human factors, aircraft structures, aircraft systems, operations and maintenance.

The MOOC, which is limited to 2,500 students, runs August 17 to September 13, 2015 and is hosted on the Canvas Network. It's expected to take between four and eight hours of work per week.

All study materials will be provided within the course, and students who complete all four modules will receive a certificate of completion. There are no pre-requisites.

https://www.canvas.net/browse/erau/courses/aircraft-accident-investigation-2

http://worldwide.erau.edu/newsroom/spotlights/virtual-crash-lab.html

https://www.canvas.net/

Maintenance mishap leads to Mooney accident

The pilot was practicing instrument maneuvers about 1,500 feet mean sea level in a Mooney M20J near Leonardtown, Maryland, with a CFI on board, when the engine stopped responding to throttle control inputs and producing enough power to maintain level flight.

The CFI unsuccessfully attempted to restore engine power, and the pilots chose to conduct an off-airport landing to a field, which resulted in substantial damage to the fuselage and wings.Following the accident, one of the airplane's owners inspected the Mooney before the wreckage recovery. He removed the engine cowling and found a bolt and nut resting on the bottom of the cowling. He also noted that the throttle arm linkage was not connected to the throttle body arm.

He reported that the throttle linkage was found in the full-forward position and that the throttle body arm was found in the low-power setting. When the throttle control in the cockpit was moved, he noted the throttle linkage moved but that the throttle body arm did not move.

Review of maintenance logbook records revealed that the most recent annual inspection was completed on April 15, 2013. The mechanic who performed the inspection reported that all engine control cables were "checked" and lubricated and that the throttle linkage bolt, nut, and cotter key were in place.

The most recent engine maintenance was performed six days and one flight hour before the accident by the same mechanic. During the maintenance, the starter was removed, overhauled, and reinstalled on the engine, and no maintenance was conducted in the area of the throttle linkage and throttle body arm.

It is likely that, during maintenance at a previous undetermined time, the cotter pin was removed from the throttle linkage bolt and nut and not reinstalled. The nut then gradually loosened and fell off, which allowed the bolt to become loose. The missing cotter pin should have been detected during the most recent annual inspection or engine maintenance.

The NTSB determined the probable cause as the improper installation and inspection of the throttle linkage by maintenance personnel, which resulted in the throttle linkage coming loose and a subsequent partial loss of engine power.

NTSB Identification: ERA13LA342

This July 2013 accident report is are provided by the National Transportation Safety Board. Published as an educational tool, it is intended to help pilots learn from the misfortunes of others.

Two electricians accidentally sealed inside nuclear submarine

Accident report reveals the entombed workers had to bang on the hull with a drill to raise attention

Two workers were accidentally entombed inside the ballast tank of a nuclear submarine, it has emerged.

A pair of workers were sealed inside the ballast tank of a nuclear submarine in Plymouth and had to bang on the hull with a drill to raise attention.

The electricians who had been inspecting sonar equipment finally managed to get a weak signal on a mobile phone and get help to set them free.

The incident at Devonport Naval Base in Plymouth which saw the men accidentally sealed in by colleagues has been described as "extremely unpleasant".

The two were working on a submarine when it was in dry dock last December when a seal was placed over the hatch they were using.

A report reads: "In an attempt to raise the alarm they used the only thing they had to hand - a battery powered drill to hammer against the tank boundary but to no avail. "There was no-one in the dock bottom to hear them.

"They switched on their mobile phones but there was no signal at the bottom of the tank so they progressively climbed to the upper reaches of the tank until fortunately one phone managed to get a one bar signal."

The men were trapped for 20 minutes and were said to be "shaken but unhurt".

A spokesman for the union Unite said: "We feel for the men involved and what they had to go through because it must have been an extremely unpleasant situation.

"The incident was actually caused by poor management and poor communication.

"We are disappointed it was not in line with Babcock's normal standards."

Babcock said it was "continually focused on delivering and maintaining the highest standards of safety procedures and practices".

It said an internal investigation was carried out and "changes to work control arrangements have been made".

Skills Shortage Ahead for Aircraft Technicians

The additional staff will be needed to run a projected 38,000 new aircraft added to the global fleet over the next 20 years, Boeing said.

Commercial airlines will need to recruit and train 609,000 new aircraft maintenance technicians over the next 20 years to meet rising demand, according to a Boeing forecast released Monday.

The demand is similar for pilots: Boeing predicts there will be a need for 558,000 new pilots over the same time period.

Asia Pacific will see the largest growth, according to the report.

The additional staff will be needed to run a projected 38,000 new aircraft added to the global fleet over the next 20 years, the U.S. aerospace giant said. Boeing has 17 training campuses worldwide.
"The challenge of meeting the global demand for airline professionals will not be solved by one company alone," said Sherry Carbary, vice president of Boeing Flight Services.

"Aircraft manufacturers, airlines, training equipment manufacturers, training delivery organizations, regulatory agencies and educational institutions are all stepping up to meet the increasing need to train and certify pilots and technicians."

Compared with the company's 2014 outlook, demand for technicians rose about 5%, and pilot demand, 4%.

After Asia Pacific, North America was second as far as new technician staff needed with 113,000, followed by Europe (+101,000), Middle East (+66,000), Latin America (+47,000) and Africa and Russia/CIS (both +22,000).

Just Hearing Your Phone Buzz Hurts Your Productivity

By now we know that we're (mostly) not supposed to multitask- that we can't do two things at once very well and that it takes us a while to refocus when we switch from one task to another.

This is why we put our phones screen-side down and slightly out of reach when we want to focus on something or show someone that we're paying attention. But unless your phone is fully silenced or off, it's probably still distracting you. The familiar *buzz buzz* of a new notification is not as innocuous as it seems.This may sound intuitive. But many people (including myself) might not realize just how beneficial switching from vibrate to silent can be.

A new piece of research. "The Attentional Cost of Receiving a Cell Phone Notification," reports that the reverberations of new notifications can distract us, even when we don't look over to see what they could be. It found that just being aware of an alert can hurt people's performance on an attention-demanding task.

The authors, Cary Stothart, Ainsley Mitchum, and Courtney Yehnert of Florida State University, became interested in the impact of these notifications after noticing that they themselves got distracted by them.

"If we were driving and we felt a vibration for a phone call, that led us to think about the source of that call — who it could be, what the message was," Stothart told me.

They knew from the literature on distracted driving that talking on the phone causes a cognitive load, which means it requires a certain amount of mental effort and working memory. Multitasking, for example, imposes a heavy cognitive load and hurts performance on a task, because our mental resources are finite and have to be allotted to discrete tasks. That's why you're not supposed to talk on the phone or text while you're driving, and why many campaigns urge drivers to wait to respond until they're no longer behind the wheel.

This led the authors to think that an alert or notification could also cause cognitive load, because that buzzing might make you wonder about the content or source of the message. So even if you wait to respond until you finish what you're working on, the fact that you're aware of something waiting for you could be enough of a distraction to make you perform worse than you would had you not received a notification.

So basically, just having your phone near you can distract you and negatively affect your work performance. And this distraction-by-notification might even be comparable to interacting with your phone.

Stothart said that in terms of effect size, their results were consistent with those of the distracted driving literature, which has looked at the effects of texting or talking on the phone (interacting) while driving. But what they weren't able to pinpoint was what was actually behind the distraction.

"We think that the mechanism behind the distraction from knowing that you received a notification is mind wandering, but we haven't actually looked at that in our study," Stothart said. "It could just be prospective memory, or knowing that you need to do something in the future, that impacts performance. So the next step for us is to disentangle that — to actually determine if the mechanism behind our effect is mind wandering or something else."

Regardless, if you want to stave off distraction and be able to perform a task at your very best, the researchers say it couldn't hurt to put your phone on silent, or hide it so that you can't hear, feel, or see any notifications. Maybe this isn't that surprising. But digital distraction has been dubbed, "the defining problem of today's workplace,"and our phones lie at the heart of that. For how relatively nascent smartphone ubiquity is, the line of research devoted to understanding its effects is far-reaching. You can read about how phones destroy our productivity,how their mere presence distracts us, and how phantom vibrations are a thing. And as we start getting more and more notifications (they're the next big platform after all), we should be conscious of how the habitual *buzz buzz*ing of our devices affects our ability to concentrate at work.

http://psycnet.apa.org/psycinfo/2015-28923-001

Bad Sleep Habits Linked to Higher Self-Control Risks

Poor sleep habits can have a negative effect on self-control, which presents risks to individuals' personal and professional lives, according to Clemson University researchers.

In a study titled "Interactions between Sleep Habits and Self Control" published in *Frontiers in Human Neuroscience*, Clemson psychologists concluded a sleep-deprived individual is at increased risk for succumbing to impulsive desires, inattentiveness, and questionable decision-making.

"Our study explored how sleep habits and self-control are interwoven and how sleep habits and self-control may work together to affect a person's daily functioning," says June Pilcher, Clemson Alumni Distinguished Professor of psychology, one of four authors of the study, in a release.

Other Clemson researchers included Drew Morris, a human factors psychology PhD candidate; Janet Donnelly, a PhD candidate in industrial/organizational psychology; and Hayley B. Feigl, who has a Bachelor of Science in psychology.

Previous research has shown individuals working in today's 24-hour-a-day global economy often times sleep less or at irregular times, resulting in poor sleep and chronic sleep loss, which affects decision-making."Exercising self-control allows one to make better choices when presented with conflicting desires and opportunities. That has far-reaching implications to a person's career and personal life," Pilcher says.

Poor sleep habits, which include inconsistent sleep times and not enough hours of sleep, can also lead to health problems, including weight gain, hypertension, and illness, according to prior research. "Studies have also found that sleep deprivation decreases self-control but increases hostility in people, which can create problems in the workplace and at home," Pilcher says.

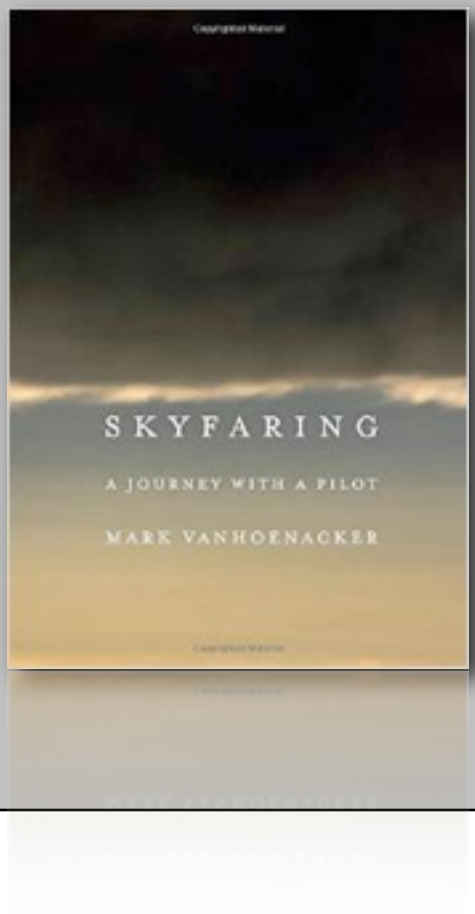
Better sleep habits can contribute to a more stable level of daily energy reserves, research has indicated. Availability of energy can refuel a person's ability to make more difficult choices rather than opting for the easier choice or the easier task.

"Many aspects of our daily lives can be affected by better-managed sleep and self-control capacity," Pilcher says. "Improved health and worker performance are two potential benefits, but societal issues such as addictions, excessive gambling, and over spending could also be more controllable when sleep deficiencies aren't interfering with one's decision making."

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4426706/

Book: Skyfaring: A Journey With a Pilot

. The twenty-first century has relegated airplane flight—a once remarkable feat of human ingenuity—to the realm of the mundane. Mark Vanhoenacker, a 747 pilot who left academia and a career in the business world to pursue his childhood dream of flight, asks us to re-imagine what we—both as pilots and as passengers—are actually doing when we enter the world between departure and discovery. In a seamless fusion of history, politics, geography, meteorology, ecology, family, physics, Vanhoenacker vaults across geographical and cultural boundaries; above mountains, oceans, and deserts; through snow, wind, and rain, renewing a simultaneously humbling and almost superhuman activity that affords us unparalleled perspectives on the planet we inhabit and the communities we form.



Want to be happy? Be grateful

The one thing all humans have in common is that each of us wants to be happy, says Brother David Steindl-Rast, a monk and interfaith scholar. And happiness, he suggests, is born from gratitude. An inspiring lesson in slowing down, looking where you're going, and above all, being grateful.

http://www.ted.com/playlists/204/slow_down_enjoy_life