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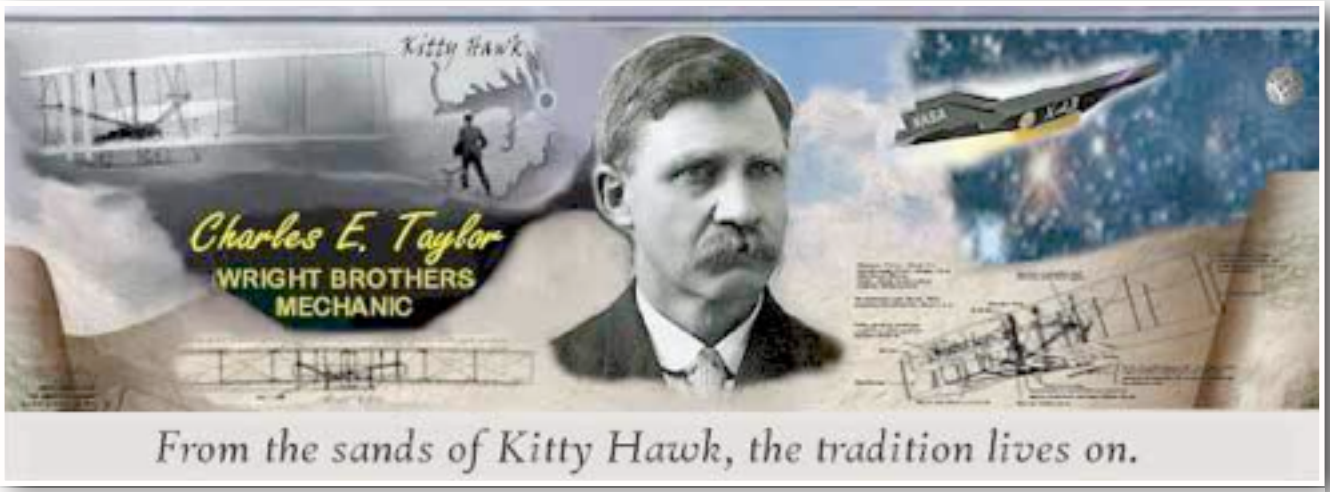


Hello all,
To subscribe send an email to: rhughes@humanfactorsedu.com
In this weeks edition of *Aviation Human Factors Industry News* you will read the following stories:

Distraction Kills

Distractions are a serious public safety issue with deadly consequences. The number of injuries and deaths caused by individuals using attention-robbing electronic devices is alarming. A grave concern is that the use of personal electronic devices (PEDs) has become so prevalent in our society that it has outstripped our ability to safely coexist with this technology. These "smart" devices have made a subset of our population really "dumb," and simply regulating the use of PEDs won't fix the problem. It's a behavioral issue that requires a deeper understanding of human limitations and the related vulnerabilities.

Here's where we stand. Irresponsible individuals are hurting, maiming, and killing people daily. The stats are pretty scary—the National Safety Council (NSC) reports that cellphone use while driving leads to 1.6 million crashes each year. Nearly 390,000 injuries occur each year from accidents caused by texting while driving; on average, nine deaths occur each day. One out of every four car accidents in the U.S. is caused by texting and driving. Other studies suggest that texting and driving is three to four times more dangerous than operating a vehicle under the influence of drugs or alcohol.

Eliminating distractions is on the NTSB "Most Wanted" list. According to the NTSB, "In transportation, distraction kills. Drivers and operators in all modes of transportation must keep their hands, eyes, and minds focused on operating their vehicles. Ultimately, eliminating distractions in transportation will require changes in regulations, as well as in driver and operator thinking and behavior."

Regulators at all levels, including the FAA, have enacted laws that make it illegal to operate vehicles while using a PED. In 2014, the FAA amended the "Sterile Cockpit" rule (FAR 121.542) to include a prohibition on the use of personal electronic devices on the flight deck.

The rule prohibits airline flight crews from using a “personal wireless communications device or laptop computer for personal use while at their duty station on the flight deck while the aircraft is being operated.” According to FAA, the rule is “intended to ensure that certain non-essential activities do not contribute to the challenge of task management on the flight deck or a loss of situational awareness due to attention to a non-essential task.”

Recognizing that the perils of multitasking affect all flight crews, the NTSB recommends a similar regulation for Part 91K and 135 pilots. Focusing on the human factors element, the NTSB stated, “The increased prevalence of PEDs has only expanded the potential ways a pilot can be distracted; however, the consequence remains the same: a loss of situational awareness with potentially catastrophic consequences. Because people have limited attention and many transportation tasks are multidimensional and complex, reducing the distractions that pilots and operators voluntarily bring into the task environment can maximize the attention resources.”

The root of this discussion is based on very real cognitive limitations of humans. According to a NASA study, “Pilots are highly vulnerable to errors of omission when they attempt to interweave two or more tasks.” Cognitive research indicates that people are able to perform two tasks concurrently only in limited circumstances, even if they are skillful in performing each task separately.

Humans have two cognitive systems; one involves conscious control, while the other is largely automatic. Conscious control is slow and requires effort performing one step at a time, in sequence. Automated cognitive processes develop as we acquire skill—these processes are specific to a task, operate rapidly and fluidly, and require very little effort.

Texting is an example of a novel activity that requires active conscious processing. Each written exchange is unique and each individual has to formulate an appropriate and different response. Driving a car on a familiar route is largely automatic. Mixing or combining conscious and automated processing tasks will challenge the driver’s cognitive capabilities.

Like many other human factors issues; the effects of cognitive limitations are often very subtle and, when unchecked, contribute to errors. This, combined with extended periods of being “head down,” creates a truly deadly combination.

To eliminate distractions, some forward-thinking companies clearly define when the use of a PED is prohibited. As an example, one Canadian helicopter company requires its maintenance technicians to place their cell phones in a secure box before working on the shop floor. Another prohibits the use of PEDs in company vehicles.

Individuals must also take some responsibility in eliminating the distractions from the use of PEDs. One concept is to establish a “gate” for entering the “no phone zone.” Personally, I turn off my phone when I pick up my flight release from dispatch. At that point, I become just a pilot. I am no longer available to be a dad, husband, homeowner, union rep, sports fan, shareholder or whatever—all of that can wait. If some flight-related issue arises, then I turn my phone back on to communicate with the company. What’s your plan?

Better understanding the cognitive limitations and vulnerabilities of humans should go a long way towards eliminating distractions caused by PEDs. The challenge is to educate those who are unaware of the dangers, feel invincible, or just simply do not have a clue.

Fly the Aircraft First

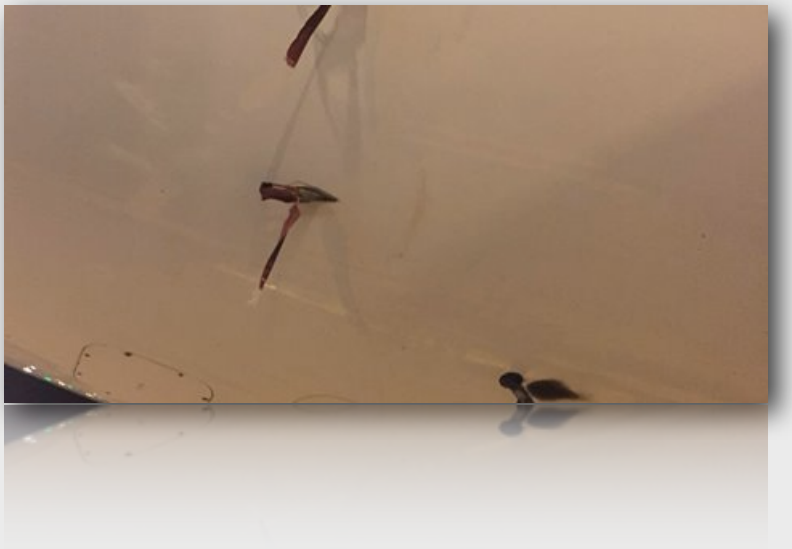
NTSB data suggests that distraction is a significant cause of aviation accidents. These accidents can be avoided. We remind you to maintain aircraft control at all times. This might mean a short delay in responding to ATC communications or passenger requests.

In other words, Fly the Aircraft First.

For more information, check out our fact sheet here: bit.ly/2lRRapB. You can also view an accompanying video here: youtu.be/lWLCsLH40fQ.

Malaysia Airlines Airbus A330 returns to Brisbane Airport, reportedly with two pitot tubes still covered

Malaysia Airlines flight MH134, an Airbus A330-200, returned to land at Brisbane International Airport, Australia after the airspeed indicators failed during takeoff.
The aircraft took off from runway 01 at 13:31 UTC (23:31 LT, July 18). The flight crew circled and landed back on runway 01 at 14:33 UTC (00:33, July 19).



7 News Brisbane reported that the aircraft took off with several pitot tubes still covered. A photo has surfaced online, purported to be of the A330 after landing, showing covers on the captain's and standby pitot tubes.

Airlines cover pitot tubes during turnaround at Brisbane Airport to prevent obstruction by mud wasps. This measure was taken following an incident in November 2013 when an Etihad Airbus A330 returned to Brisbane Airport with airspeed indication anomalies. It appeared that the captain's pitot probe was almost totally obstructed by an insect nest, consistent with mud wasp residue, during the 2 hour and 3 minute period while the aircraft was in transit on the ground at Brisbane.

JCAB raps Nippon Cargo over maintenance lapses

The Japan Civil Aviation Bureau has ordered Nippon Cargo Airlines (NCA) to improve a number of its maintenance and record keeping practices, after discovering discrepancies in its records in June that led to the grounding of its fleet.

Parent company NYK Group says in a stock exchange disclosure that the "business improvement order" covers seven areas relating to its safety management systems, appropriate reporting for maintenance records, and appropriate maintenance to aircraft structures.
The disclosure also acknowledged that the carrier had deliberately falsified maintenance records, and that "inappropriate operations of aircraft maintenance" had occurred. It also admitted that it had delayed reporting the discovery to the transport ministry.

In a separate statement, NCA says that it has engaged a third-party company to evaluate the root causes of the failures and recommend measures to prevent it happening again. The results of that review will be reported to the transport ministry.

Two aircraft - a Boeing 747-8F registered JA18KZ and 747-400F JA05KZ - have re-entered service, but two 747-400Fs and seven 747-8Fs remain grounded.

"All aircraft currently operating have been confirmed to be airworthy and safe. The remainder of the fleet is undergoing the same inspection, and we will inform the schedule updates as soon as it is decided," NCA add

FAA Safety Briefing News Update

New Runway Safety Pilot Simulator

The FAA's Runway Safety Group is pleased to offer a new online simulator tool that can help pilots brush up on their taxi techniques. This online simulator is an interactive, self-guided resource designed to assist with teaching pilots surface safety best practices. It gives pilots the opportunity to practice navigating on airport surfaces while communicating with ATC. There are three increasingly difficult scenarios that test a pilot's ability to follow ATC instructions and correctly acknowledge signs and markings at decision points while taxiing.

Whether you're a student pilot or a seasoned aviator, try it today and see if you're cleared for departure: www.runwaysafetysimulator.com.

How A Missed Checklist Item Led To An Airspace Incursion

Accidents and incidents start with a chain of errors nearly every time. The NASA safety report below is a perfect example of how a series of mistakes on the ground led to a problems in the air.

One Missed Checklist Item

I did a thorough preflight inspection and engine run up at U42 using a checklist. I also calculated the weight and balance of the aircraft and the aircraft was within limits but closer to the max than I usually fly. I am also typically flying out of airports at lower elevations.

After completing run up I struggled a little bit to find the taxi ways to runway 34 which the winds were favoring. I tried to find an airport diagram for U42 in advance of the flight but none was available. This struggle had me a bit flustered as this was an unfamiliar airport to me with a more complex taxi system than I am used to.

I approached the runway, checked for traffic, made a radio call and took off. The aircraft struggled more than usual to take off which I attributed to the higher altitude and higher load than I normally carry. However, after takeoff the climb was extremely slow. Normally I climb out at 88 mph (approximately Vy), but I was forced to climb out at about 80 mph (approximately Vx) in order to gain altitude. And the altitude gains were maybe 1/5th the normal rate.

I started to panic and tried to determine what was wrong. Had I grossly miscalculated the load? Was the density altitude far too high than I am used to? Were my flaps mis-configured? Did my plane have the wrong type of fuel? Had the tanks been compromised with rain water that day? Where would I make an emergency landing if my engine was failing?

I remembered my training and focused on "flying the plane." I knew I needed to keep from stalling as this would likely be deadly this close to the ground. I had to keep my airspeed above Vx and fly the plane straight and level without turning. I remembered that trying to turn back to the runway in this situation is often fatal. I had to focus on flying the plane at the expense of navigation or other concerns while determining what was wrong.

My GPS started warning that I was nearing SLC Class B airspace. I believed this was the airspace above me and focused my attention on my airspeed and trying to gain altitude. Suddenly my GPS indicated that I had entered the SLC B airspace. I knew I didn't have permission and I realized what had happened. I was so focused on flying the plane that I hadn't turned left as I had planned and runway 34 was pointed directly at the SLC class B airspace all the way to the ground.

I had gained enough altitude that I was comfortable with a careful turn to the left to get my plane out of the airspace as quickly as possible without stalling the plane.

Once clear of the B airspace, I continued to search my instruments and flight controls for the source of my engine's poor performance. Mixture was good, throttle was full, primer was in and locked. But carb heat was set to hot! I pushed the carb heat control to cold and my engine roared with new life. My airspeed and climb improved instantly and dramatically. I realized what must have happened. During my engine run up I make sure the engine would idle and turned on carb heat to prevent icing. But I had left the carb heat on by mistake and missed the check during the pre-take off checklist.

What contributed to the mistake was the lack of airport diagram for U42 and lack of familiarity with the airport which caused me to become flustered and miss a critical item on the check list. Also, I would have liked to connect with Flight Following from the ground but wasn't sure how to do this at U42. Was I supposed to call clearance? SLC Approach? SLC Center? Had I been on Flight Following a Controller might have warned me I was heading directly for [Class] B or I could have explained what was going on when I experienced engine trouble.

What Went Wrong

The error chain in this incident started during taxi. The pilot was unfamiliar with the airport, and the taxi to the runway had him flustered. That led the pilot to miss a critical takeoff checklist item: carb heat.

At any airport, carb heat robs your engine of power, because it introduces hot, low-density air into the carburetor. Add in the fact that this takeoff was at a 4,600' airport, and carb heat was taking away a significant percentage of takeoff climb power.

The slow climb and engine troubleshooting led the pilot to his final mistake: inadvertently entering Salt Lake's Class B airspace without a clearance.

What Went Right

Out of the things that went wrong, there was one thing that went very right: the pilot kept flying the airplane. He kept the wings level, climbed the best he could, and continued troubleshooting the engine problem.

And even though he entered Class B, he was able to find the problem, resolve it, and land safely.

Complete The Checklist, Every Time

This incident's error chain could have been broken at the runway hold-short line.

When you're feeling like thing's aren't quite "right", or you're uncomfortable, you should take *extra* time to make sure you're ready for takeoff.

Had that happened in this case, with the pilot running through the takeoff checklist one more time before departure, the incident most likely would have never happened.

NTSB Hosts Loss of Control Forum at Big Wisconsin Air Show

"People are always quick to blame the pilot in every crash, but I think [LOC] is a training system error," aerobatic performer Patty Wagstaff said in her keynote address. She cited endemic lack of stick and rudder and upset recovery training as accident factors.

The National Transportation Safety Board hosted a forum on loss of control (LOC) in flight on July 24 at EAA AirVenture Oshkosh 2018, a major air show taking place through Sunday, July 29.

The forum was part of NTSB's General Aviation Safety Road Show and addressed one of the top > problems facing the general aviation community; preventing loss of control in flight for general aviation is on NTSB's Most Wanted List of safety improvements.

"Almost half of the fatalities (in aviation) are due to loss of control," NTSB Chairman Robert Sumwalt said in welcoming attendees to the forum. "That's why we're having the first-ever road show right here at Oshkosh."

Several safety experts discussed technologies, training, education, and other potential solutions to what EAA's news release called "the LOC epidemic."

"People are always quick to blame the pilot in every crash, but I think [LOC] is a training system error," aerobatic performer Patty Wagstaff said in her keynote address. She cited endemic lack of stick and rudder and upset recovery training as accident factors, according to the release. "The good news is, we don't need more regulations, we don't need a lot of acronyms or a degree in theoretical physics" to fix the problem -- just better initial and recurring training.

A panel discussion moderated by Tim LeBaron, NTSB's deputy director for regional operations, highlighted current efforts and evolving solutions for reducing LOC accidents. Sean Elliott, EAA's vice president of advocacy and safety, cited the benefits of a "culture of safe operations" the association fosters through its chapters and their activities as helping to prevent LOC incidents, and NTSB board member Earl Weener discussed work being done at the General Aviation Joint Steering Committee, a public-private partnership, to combat LOC.

https://www.ntsb.gov/safety/mwl/Pages/default.aspx

https://pattywagstaff.com/

Four Ways to Champion a Positive Safety and Quality Culture

Over the past decades, aviation businesses have made major investments into state-of-the-art safety and quality management systems, including commitment of substantial financial, technical, organizational, and human resources.

Often, these efforts have gone significantly above and beyond the level of minimum regulatory compliance.In many cases, however, returns on investment in the areas of safety and quality management are significantly lower than they could be. Some aviation businesses inadvertently undermine the effectiveness of their safety and quality management systems by failing to put in place credible signaling mechanisms that highlight their commitment to a positive safety and quality culture.

The present article suggests four ways via which leaders of aviation businesses can champion their commitment to safety and quality within their organizations.

Importance of Signaling

Sometimes, effectiveness of aviation safety and quality management systems is primarily viewed as a function of making available adequate financial, technical, organizational, and human resources. Indeed, without any doubt, under-resourcing is not a viable approach to safety and quality management. However, adequate resourcing should be viewed as a necessary, but by no means as a sufficient, precondition for achieving excellence in aviation safety and quality management.

Implementing and sustaining successful safety and quality management systems is as much contingent on credible leadership commitment as on adequate resourcing. Credible leadership commitment, in turn, is a function of highly visible, consistent, sustained, and thereby effective signaling on the part of the leadership team vis-à-vis its rank-and-file workforce.

Effective signaling is far more than – actually the opposite of – token gestures. Effective signaling works when aviation leaders walk the talk and set the right tone in areas that count. I suggest the following four ways – the "Four Ps" – to champion safety and quality management and to signal in a credible and effective manner commitment to a positive aviation safety and quality culture: Proximity, Priority, Personnel, and Promotion.

Proximity

Have you ever had the experience of joining an organization in one of its most "important" functional areas, inquiring about your new office, and after a long search locating such at the end of a corridor in the basement of a building at the edge of the corporate campus far away from the C-suite building? If so, what was the first thought that came to mind? "Wow, great to be here! This must be a truly important and powerful function!" Or "What on earth did I get myself into? Why is an "important" group located in mushroom farming territory?"

In most corporate organizations, perceptions of importance and power of a given functional area are subject to the same mantra as the real estate business: Location, location, location. Geographic proximity to the center of power, usually the CEO's office, matters greatly, both in terms of internal perceptions and in terms of tangible advantages such as greater opportunities for informal face-time at a shared water cooler. In general, the closer a team is located to the C-suite, the higher it ranks in the internal pecking order and status hierarchy. The further it is away from the C-suite, the less important it tends to be perceived.

Locating safety and quality management functions on prime corporate real estate in proximity to the C-suite – at the very least in the same building and ideally on the same floor immediately adjacent to the CEO's office – is one of the easiest and most visible ways of sending a very strong positive signal regarding an organization's commitment to safety and quality. Exiling them to mushroom farming territory does the opposite.

Priority

Have you ever been part of an organization that has declared itself to be safety driven yet features a regular agenda for leadership team meetings that relegates safety and quality to the last agenda item?

And that regularly pushes safety and quality issues to a subsequent meeting while overrunning time slots for other “more important” agenda items?

In most professional contexts, those issues that command the greatest management priority, attention, and time are perceived to be of the highest importance. If discussion of a specific issue always takes center stage at meetings of the senior leadership team, such issue tends to be perceived as important throughout the entire organization. If an issue is either allowed to be crowded out by other matters or only addressed in a cursory pro forma manner, the organization as a whole is unlikely to take serious such issue.

Putting safety and quality at the very top of the agenda of regular senior leadership team meetings – and of lower level team meetings as well for that matter – sends a strong positive message regarding the importance of safety and quality management. Relegation to last position on the agenda as an afterthought of sorts speaks volumes in its own right.

Personnel

Have you ever worked for an organization of which the safety or quality boss was widely considered to be a weak leader or was seen as being sidelined after having been pushed out of another more important leadership role? If so, what did such HR choice tell you about the value that the organization puts on safety and quality management and about the internal power and influence of the safety and quality management function?

Leadership choices are some of the most important decisions any organization can make. Filling a leadership role with a star performer who is widely respected throughout the organization sends a very strong signal regarding the importance of the function that such star performer is tasked to lead. It also positions this function to exercise power effectively and to get things done within the organization at large. Star performers can come in different types such as recognized early-career high-potentials who are groomed for larger future leadership roles, well-established mid-career stars, or widely admired end-of-career wise women or men.

Choosing a star performer to lead an organization’s safety and quality function sends a clear positive signal regarding its importance.

Equally significant, it empowers safety and quality management within the organization and maximizes credibility vis-à-vis key external stakeholders such as regulatory authorities and customers. Putting an under performer in charge sends an equally clear yet opposite signal.

Promotion

Have you ever wondered why in a self-proclaimed safety- and quality-driven organization, promotion decisions are made without consideration of a candidate's commitment to safety and quality? Have you ever wondered why such factors are not an integral part of the organization's HR system?

An organization that claims a specific set of values as its DNA needs to align its HR standards and procedures accordingly. If promotion practices do not reflect the proclaimed values of an organization such proclamation is likely to be met with incredulity at best. Sustaining a safety- and quality-driven organization without safety and quality orientation as key criteria for assessing employees for promotion – and hiring for that matter – is likely to be impossible. This applies to rank-and-file team members and even more so to members of the leadership team.

A candidate's commitment to a positive safety and quality culture should be an integral part of the hiring and promotion process of aviation businesses across all functional areas, and not just for the safety and quality management team. Foregoing promotion of an otherwise qualified candidate in the absence of appropriate commitment to safety and quality has positive symbolic – and substantial of course – significance. Prioritizing HR performance indicators other than safety and quality makes a strong, albeit opposite, statement as well.

Conclusion

Despite committing significant financial, technical, organizational, and human resources to safety and quality management systems, many aviation businesses fail to realize the full returns on these investments. In many cases, this shortfall is driven by a lack of appreciation that these investments are a necessary but not a sufficient precondition. Adequate resource allocation needs to be combined with effective and credible signaling that an organization and its leadership are truly safety and quality focused.

The Four Ps – Proximity, Priority, Personnel, and Promotion – are ways for championing a positive safety and quality culture and for signaling leadership commitment to safety and quality management. Locating the safety and quality management team offices right next to the C-suite, giving highest agenda priority to safety and quality issues during leadership team meetings, assigning a star performer to lead safety and quality management, and making dedication to safety and quality a non-negotiable performance indicator for all promotion and hiring decisions sends as clear a signal as possible.

Obviously, aviation business leaders need to beware of the perils of a substance-signaling gap. Loudly championing safety and quality in the absence of genuine managerial commitment and resource allocation is likely to be counter-productive and to engender cynicism. The Four Ps are not a substitute for substance. However, they can be a force multiplier in order to maximize an aviation business' return on investment in safety and quality.

How safe is flying? Here's what the statistics say

Accident Overview

	2012	2013	2014	2015	2016	2017	Average 2012 - 2016
Yearly Flights (Millions)	35.4	36.1	37.1	37.9	39.9	41.8	37.3
Total Accidents	77	86	77	67	67	45	74.8
Fatal Accidents	15	14	12	4	9	6	10.8
Fatalities	416	178	641	136	202	19	314.6

Source: IATA

It's estimated 70 per cent of plane passengers fear flying. Should they?

How safe is flying?

Statistically speaking, flying on a commercial airliner is the safest form of transport there is, according to the US National Safety Council.

There are a range of estimates out there, but based on its analysis of US Census data, it puts the odds of dying as a plane passenger at 1 in 205,552. That compares with odds of 1 in 4,050 for dying as a cyclist; 1 in 1,086 for drowning, and 1 in 102 for a car crash.

That's because alongside technological improvements to aircraft over the decades, the whole system of international air travel is carefully regulated.

Are most accidents fatal?

The deadliest plane crash in history happened in 1977 in Tenerife, the largest of Spain's Canary Islands. Two planes collided on the runway and 583 people were killed.

The Canadian-based International Air Transport Association (IATA) represents 290 airlines (or 82 per cent of global air traffic). It says the five-year average from 2012 has been 75 accidents a year, (almost 11 of them with fatalities) per 37.3 million yearly flights. That's an average of 315 people dying a year in plane crashes over the past five years. But in 2017, there were only 19 deaths.

What causes plane crashes?

Dr Ron Bartsch, the Sydney-based chair of aviation safety consultancy firm AV Law said 85 to 90 per cent of accidents these days are caused by human error.

“Accidents are usually human factor related,” he told SBS News.

“It is 680-fold safer to fly in an aircraft now then what it was after World War II. Nearly all of those advances, up until round about the mid-90s, were due to technological development. The jet engine was more reliable, the development of radar, anti-collision systems, ground proximity warning systems, advanced simulator training. All those things have led to an incredible reduction in the number of accidents.”

In fact, it’s more accurate to consider contributing factors rather than causes of crashes, said Ms Negroni.

“No accident has just one cause. In the air safety world, we always say that an accident is the result of an unbroken chain of events. One break in that chain and the accident would not happen,” she said.

NTSB Uses 3D Models to Investigate Incident

In the process of investigating a Feb. 2018 accident involving an air tour helicopter colliding with terrain while landing at Quartermaster landing zone in the Grand Canyon, the engineers with the National Transportation Safety Board required a 3-D digital model of the accident site and surrounding terrain.

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required a 3-D digital model of the accident site and surrounding terrain. The main effort involved using a FARO laser scanner, but the NTSB small unmanned aircrafts systems (sUAS) team also supported the investigation with their ability to collect imagery via sUAS and photogrammetry, according to an NTSB blog post.

The NTSB has used drones to create orthomosaic maps of accident sites and 3D digital models of terrain and vehicles for investigators to use, and the drone team has worked on a variety of incidents, including rail accidents, highway crashes, and aviation accidents.

The Grand Canyon mission, however, presented new challenges, such as obtaining permission for drone operations from various entities and planning for flight based on battery power and no wireless Internet connection. The mission was successful, though, and in just over an hour of drone flight time, the team was able to create a detailed 3-D model of the canyon and its terrain, with data that are currently being analyzed by staff on the investigation team.

The NTSB sUAS team continues to explore the applications of the sUAS imagery collection method as related to the agency's mission.

https://safetycompass.wordpress.com/2018/07/20/3d-modeling-a-valuable-investigative-tool/

Boeing projects nearly 800,000 pilot demand globally

There will be a huge need for pilots for aircraft operators globally, according to Boeing's 2018 Pilot and Technician Outlook forecasts released recently morning.

Boeing said it is projecting a demand for 790,000 pilots over the next 20 years due to a predicted doubling of the global commercial airplane fleet, record-high air travel demand and a tightening labor supply.

The demand numbers include data collected from the business aviation and civil helicopter sectors, Boeing said.

"Despite strong global air traffic growth, the aviation industry continues to face a pilot labor supply challenge, raising concern about the existence of a global pilot shortage in the near-term," said Keith Cooper, vice president of Training & Professional Services, Boeing Global Services.

Although there is a forecasted need for pilots, the aerospace giant said demand for maintenance technicians decreased slightly from 648,000 to 622,000.

The decrease is reported to be because of longer maintenance lulls for new aircraft.

Almost an additional 300,000 pilots and technicians are expected to be a part of the demand for business aviation and civil helicopter sectors, Boeing officials said.

FAA Hits 100K Remote Pilot Certificates Issued

Drones have really taken off! As of today, more than 100,000 enthusiasts have obtained a Remote Pilot Certificate to fly a drone for commercial and recreational (not qualifying as “model aircraft”) use since the Federal Aviation Administration’s (FAA) small drone rule went into effect on August 29, 2016.

Under Part 107, the person actually flying a drone – formally an “unmanned aircraft system” (UAS) – must have a Remote Pilot Certificate, or be directly supervised by someone with such a certificate. The majority of drone pilots get certified by studying online materials(PDF) and then passing an initial aeronautical knowledge test at an FAA approved knowledge testing center (PDF). You should have no trouble if you study – the exam success rate is 92 percent.

If you already have a Part 61 pilot certificate, and have completed a flight review in the previous 24 months, you have the option to take a small UAS online training course provided by the FAA to obtain your certificate.

It’s important to remember that a Remote Pilot Certificate is valid for two years from the date of issue. Anyone who earned their certificate at the end of August or in September 2016 should review the certification renewal requirements and prepare to take recurrent training or testing. You can find all the information you need to renew your certificate on our website.

http://links.govdelivery.com/track?type=click&enid=ZWFzPTEmbXNpZD0mYXVpZD0mbWFpbGluZ2lkPTIwMTgwNzI2LjkzMDIxOTMxJm1lc3NhZ2VpZD1NREItUFJELUJVTC0yMDE4MDcyNi45MzAyMTkzMSZkYXRhYmFzZWlkPTEwMDEmc2VyaWFsPTE3Mjg0MDI4JmVtYWlsaWQ9cmh1Z2hlc0BodW1hbmZhY3RvcnNlZHUuY29tJnVzZXJpZD1yaHVnaGVzQGh1bWFuZmFjdG9yc2VkdS5jb20mdGFyZ2V0aWQ9JmZsPSZtdmlkPSZleHRyYT0mJiY=&&&106&&&https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/media/remote_pilot_study_guide.pdf

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TED TALK: Ideas Worth Sharing

Russell Foster is a circadian neuroscientist: He studies the sleep cycles of the brain. And he asks: What do we know about sleep? Not a lot, it turns out, for something we do with one-third of our lives. In this talk, Foster shares three popular theories about why we sleep, busts some myths about how much sleep we need at different ages -- and hints at some bold new uses of sleep as a predictor of mental health.

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