Aviation Human Factors Industry News

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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:

Report: Failure Of Two-Inch Bolt Caused Fatal Japanese AH-64 Crash

The Japanese AH-64 attack helicopter that crashed into a home north of Nagasaki in February was brought down by a damaged main rotor-head bolt.

Both pilots aboard the aircraft died Feb. 5 when the Boeing AH-64D crashed into a private home in a residential area of Kanzaki, Saga Prefecture. An 11-year-old girl who lived in the house escaped with injuries, according to Japan's *Asahi Shinbun*. The newspaper originally reported the results of a report by the Japanese defense ministry published May 28.

A bolt in the main rotor head was damaged several seconds before the crash, according to the Japanese defense ministry's report. One of the four main rotor blades then separated from the rotor head, resulting in a catastrophic loss of lift, according to the report.

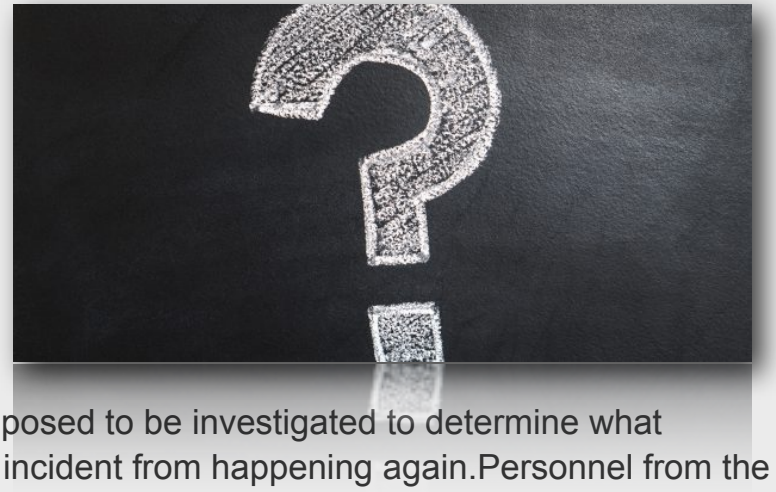
A second rotor broke from the main hub and smashed into the cockpit before the aircraft spiraled to the earth. The report diagnoses a failure to the "cylindrical precipitation hardening stainless steel bolt," which is about two and a half inches long and a third of an inch thick, according to the report. Investigators found a 6-mm crack in the middle of the bolt.

The Japanese government keeps the same rotor head as a spare part for its Apache fleet and has decided to keep all 12 of its AH-64Ds grounded until it has completed preventive maintenance to avoid similar future mishaps.

Flight recorder data shows no abnormality in the operation of the aircraft, nor does the voice recording taken for about five seconds before the data ended, according to the report.

Neither pilot error nor lax maintenance caused the crash, according to the report.

U.S. Navy: Where are the Supervisors?



All commands are required by the Navy and Marine Corps Mishap and Safety Investigation, Reporting and Record Keeping Manual (OPNAVINST 5102.1D/ MCO P5102.1B) to report all mishaps, hazards and near misses.

In addition to reporting they're supposed to be investigated to determine what happened and how to prevent the incident from happening again.Personnel from the Naval Safety Center review all Web Enabled Safety System and a majority of the Enterprise Safety Application Management System reports.

What has been learned over time is that both military and civilian personnel know how to get injured. There are no new ways to get injured. Most of the time a generic write-up can be used and all that would be required is to change the name.

Why is this occurring? The words that come to mind are **SUPERVISION** and **ACCOUNTABILITY**.

Supervisors own the process and employees are accountable to follow the process. If an employee is not performing a defined process properly, why is the process not being followed? What should be done to ensure the process is followed? Did the supervisor or another employee witness a violation and not correct the action? The majority of injuries can be categorized as compliancy, but what is the cause?

Here is an example of improper supervision and improper personal accountability: An employee is using a 6-foot ladder when an 8-foot ladder is necessary. The employee stands on the top rung. Not authorized. The thought process is "I'm only going to do this one time." A supervisor or another employee witnessed the employee not following the process. Nothing was said. The employee did not fall; no injury.

Behavioral science would show this as a sure certain positive. If an individual accomplishes a task without regards to personal safety and does not get injured; the individual has convinced him/herself that this behavior is satisfactory. The more the task is accomplished without regards to safety the higher the chance of a mishap.

The supervisor or employee who witnessed the violation should have stopped the job on the spot. The process should be reviewed and the proper ladder brought to the job site. What usually happens is finish the job and try to remember to bring the proper ladder next time. Did the employee using the ladder know the top two rungs should not be used to stand on? If properly trained he/she should know. Did the supervisor or other employee know? The supervisor should know, the other employee may or may not know. If the process looks unsafe it usually is.

How are dilemmas like this solved? Supervisors are not always around and when the job needs to get accomplished and personnel accountability usually falters when the job needs to be done now.

If the employee's lack of accountability caused a personal injury what else is counted besides the injured employee? Depending on the injury, a trip to the hospital is required. If during working hours another employee may take them (more lost time) or emergency services are called. Either way the project is stopped. Time is lost.

If the proper ladder was brought or the project delayed until the proper ladder arrived the chance of an injury is greatly reduced. Time was delayed, not lost.

During this time of fiscal restraint employees may hear "you need to do more with less." No such luck. With less, what is going to be sacrificed?

Is safety culture needed? Yes, safety should always be included into the command culture or command climate.

Honor, courage and commitment are the current core values, but another should be added – Safety!

When using operational risk management (ORM), you must decide whether the risk overrides the result. There are very few items in everyday tasks that the risk overrides the result. Everyone who sees a Safety violation should say something.

If you think it is unsafe most likely it is. Bottom line, Supervisors should supervise and review processes. Employees should be accountable to report processes that are not working or outdated.

Chaos at 34,000 Feet

On a routine night fight from San Juan, everything suddenly went haywire.

In 2007 the author and crew relied on his 15 years in the DC-8, and their checklists, to survive a night of mishaps. Many DC-8s still remain in service as freighters.

About a decade ago, I was a DC-8 captain with ASTAR Air Cargo, flying a route between Wilmington, Ohio, and San Juan, Puerto Rico. One of the most challenging episodes of my career happened late into the flight. I had been with the airline for 24 years. I flew seven years as a captain on the Boeing 727 before transitioning to the DC-8 in 1993. Experience, I'm convinced, is what enabled my crew and me to survive a December night flight that I have referred to in the years since as "the ambush."It was a beautiful winter evening when we reported to the cargo terminal at Luis Muñoz Marín International, San Juan's primary airport. The first officer and I went through the usual flight release paperwork including flight plans, weather forecasts, reports of winds at cruising altitude, and other details. The second officer, our flight engineer, handled the cockpit and exterior inspections.

As usual, I hated the thought of yet again leaving the balmy Caribbean city for a gray Ohio winter. But the weather at our Wilmington destination was behaving itself. The forecast was for clear skies, with visibility greater than six miles. The only thing out of the ordinary regarding our dispatch was that our airplane had arrived from its long oceanic flight over-fueled. The flight crew had been told to prepare for bad weather that didn't materialize. But the weight of the fuel plus our cargo did not exceed our max allowable takeoff weight, so there was no reason to remove the excess fuel.

At 7:30 p.m. we pushed back and took off on Runway 8. I'd always loved the view of San Juan by night, and I took it in again as we climbed over the dark ocean. (I haven't seen the city since the devastation of Hurricane Maria and hope it can recapture its former beauty.)

After we raised the landing gear, we had an indication that one of our main gear doors was not latched. We radioed our company operations dispatch to advise them of our problem. Because of the latch failure, we would have a max cruise speed of Mach .65, not the normal .80, delaying our arrival. When we completed our climb, we put some meals in the oven and settled in for what we expected would be a five-hour flight. "Captain?"

I turned to look at the second officer.

"We have a main boost pump inoperative light," he said. "I'm getting out the checklist."

In some aircraft, the loss of a fuel pump can result in fuel being trapped in a tank. If that engine were to fail, that fuel becomes unusable. It can also create a weight imbalance. Because of the DC-8's multiple fuel pumps, this was not a serious problem. We knew how to handle minor mechanical problems, and the company did a good job of keeping those old DC-8s airworthy.

As we continued northwest at 34,000 feet, we encountered stiff headwinds that had not been in the forecast. This, too, was of small concern. Our meals were great, an assortment of Caribbean dishes with lots of fresh fruit. After dinner, our warm Caribbean memories began to be overwritten by images of freezing airport parking lots and cars difficult to start in the brutally cold weather.

By the time we were ready to begin our descent, the Wilmington visibility had dropped to one and a half miles in mist. This, too, had not been in the forecast.

The unexpected headwinds had left our fuel supply lower than projected, but because we had taken off over-fueled, we were still within legal requirements. We were vectored for the Instrument Landing System approach for Runway Four Left. “Flaps 12,” I said. The first officer selected the 12-degree flap position with the flap handle.

“Flaps 23,” I said as we slowed to the max 23-degree flap speed.

The first officer took the handle with his left hand when it suddenly snapped forward, catching his little finger between the handle and a device called the gate. He winced, but managed to wiggle his hand free without losing the finger. The flaps were stuck between 18 and 23 degrees and had deployed asymmetrically. The autopilot kicked off. I was now hand flying, which was fine, except that it added to the physical and mental workload. Because of the flap problem, the airplane was trying to turn to the right, requiring my constant correction. We could not continue the approach like this. “We’re going to break off from the approach now, recalculate approach speeds, and look at runway lengths,” I told the crew. “Let air traffic control know what we need to do.”

“Captain,” I heard the second officer say, with more alarm than before. I turned. “We’re losing hydraulic fluid,” he said, pointing at the gauge.

We all knew from years of studying National Transportation Safety Board reports that many airplanes have crashed because several individually survivable problems had overloaded their crews. Our fuel situation was becoming borderline, but every other airport in range had reported lowering visibility so there was no point in going elsewhere. We worked the checklists.

At this point, we had four “abnormals”: low fuel, marginal weather, stuck flaps, and a palpable tension starting to seep into the cockpit. I asked the crew, “Are we missing something here? Is there a common fault causing all of these problems?” We couldn’t think of an explanation for our multiple failures.

“Landing gear down,” I ordered. The first officer lowered the gear handle. Three green lights lit up on the panel.

I joined the final approach course for Runway Four Left, the longest runway. I advanced the thrust levers simultaneously to offset the drag from the landing gear extension. To my astonishment, the number-four engine did not accelerate, adding to the turning problem caused by the asymmetrical flaps. Worse, we were now in “manual reversion,” with no hydraulic boost to the flight controls. I was working the yoke hard, sweating and feeling muscle fatigue.

The surprise of another abnormal factor left me almost mute. I shook my head, pointed to the number-four engine gauges, and said “No acceleration.” My voice sounded higher than I thought it should.

In about 12 minutes we had gone from a routine arrival to a cascade of problems that now threatened the safety of the flight. I felt like we were soldiers on a routine patrol, caught in a full-blown ambush. I remember thinking, Is this how it happens? Is this what it looked like to all those other crews in the accident reports who didn’t make it?

At 600 feet, I announced “We have no spoiler pressure.” I told the flight engineer to move the ground spoiler switch to the alternate position, which would redirect hydraulic pressure to the spoilers—if we had any fluid left.

It worked. “Continuing,” I said. The airplane was determined to roll over to the right. My hands were slippery with sweat and the first officer was backing me up on the yoke. I was looking at the runway now, imagining invisible arms and hands extending out through my eyes, clutching the ground, pulling it toward us, willing this flight to be over.

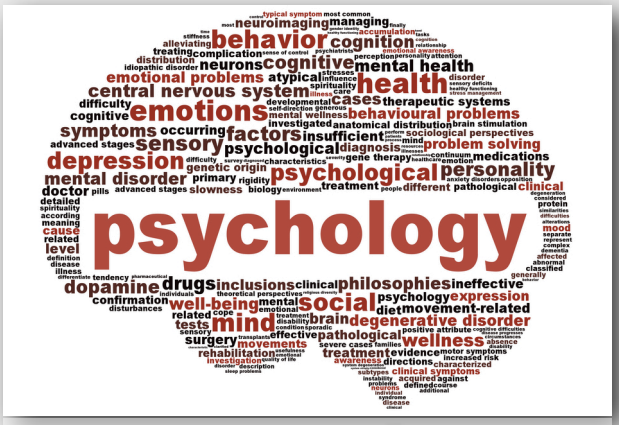
Then it was over. With no reverse thrust and no spoilers, we managed an utterly ordinary-looking landing and rollout, exactly six hours after pushing back from the gate in San Juan.

After a few days, I called maintenance to ask about the status of our aircraft. None of our systems failures were related, they told me. We’d had a run of extraordinarily bad luck. I still ask myself whether 15 more minutes of it might’ve killed us.

A few months later, I recounted the events of that night to a Delta Airlines captain friend of mine. I felt a sudden lump in my throat. The fear I'd kept tamped down that night had finally surfaced. In the more than 1,500 flights I've made since, nothing has rattled me like that rapid onslaught of mechanical failures. But our training kept us alive.

Psychology of Pilot Responses

As pilots, each time we read an accident review we often evaluate the pilot's response relative to the developing chain of events. If the chain is slow in evolving, there is a tendency for the pilot to either not recognize the link or to downplay or ignore it.



Knowing the end result, and then replaying the events, we can often see the chain emerging and wonder why the pilot didn't recognize and respond to each link to defuse the problem. Yes, it is often easy to criticize or pass judgment from a position of hindsight.When a serious event suddenly occurs that had not been foreshadowed, such as an engine failure, the mind does a rapid search for immediate remedies (typically those for which training has been received and internalized). This recall is often referred to as Primacy or Recency Effect—recalling tasks that are first learned or at the beginning of a check list, or those for which you most recently experienced or received training. Over the past few issues of *IFR Refresher* we have used the expression Startle Effect to categorize this type of event.

When Time Is A Critical Factor

If the event occurs at altitude where time is available to allow a mental search for remedies or to use the checklist, the pilot may work themselves out of a critical situation. If the malady happens at a perilous junction, >

such as an engine failure after takeoff, then there are immediate and perhaps fatal consequences to inaction or incorrect action—and, more than likely, the pilot realizes this.

When an event produces a Startle Effect, if the first remedy applied does not produce an immediate and positive response to the situation, the mind may shut down and inaction follows. The pilot has become a passenger and is no longer an active participant. Panic, the "sudden uncontrollable fear or anxiety, of-ten causing unthinking behavior," may occur. It is interesting that the new FAA Instrument ACS deleted *IR.VII.B.R1 1. 321B Startle response during unexpected events.*

The Mental Response Stream

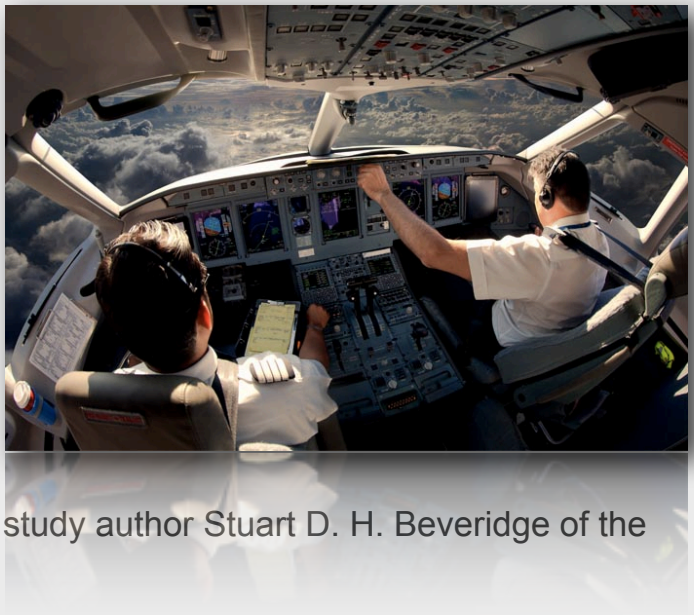
There is also an interesting analogy between the reaction to the Startle Effect and the grieving process. When a critical event occurs for which the pilot has no immediate response, they may move through the following five emotional stages: denial, anger, bargaining, depression and acceptance.

How long the pilot spends in each stage is dependent on the individual's emotional makeup. Thus, it may be a few seconds of denial, a moment of anger, perhaps some bargaining with a higher power for help, a period of depression, and then either acceptance of a fateful outcome, or the realization that only their own action will bring about a resolution—and they apply their knowledge and experience. Interviews with those few who have experienced this sequence of emotions (and survived), along with some cockpit voice recordings, have confirmed this basic premise.

While the actual occurrence of such a catastrophic event is statistically small, most pilots have contemplated the thought process and wondered about their own reactions. For airline or corporate pilots, periodic and intensive training is critical to keeping the edge on a wide variety of situations, which must be handled rapidly and without error. For those for whom piloting is a periodic endeavor, flying simpler air-craft allows the mind to cope with-out a myriad of complexities to work through when problems occur.

We should be able to identify the critical events that could overtake us in the cockpit for the aircraft we fly, and to be prepared, by training and periodic review, for rote responses to the Startle Effect.

Airline captains should do more supervising and less flying, according to new aviation research



It may be better for airline captains to act more like the captains of ship. A new scientific review article published in *Aviation Psychology and Applied Human Factors* suggests flying is safer when the captain supervises the flight crew rather than taking active control of the aircraft.

“My interest stems from my 11 years of experience as an airline pilot, having been both a captain and first officer,” said study author Stuart D. H. Beveridge of the University of New South Wales.

“During initial training at my very first airline position, an instructor explained to me the philosophy of an airliner captain ideally being in the position of Captain Kirk on the bridge of the Starship Enterprise: the strategic overseer and decision-maker of the operation that delegates tasks to the crew.”

“That piece of advice I received wasn’t the only time I encountered a discussion along these lines. It has actually been informally proposed by experienced captains and industry practitioners, touched on by a number of academic researchers, appears to be almost commonplace in military aviation, and even made its way into practice in some isolated cases decades ago but has since fallen by the wayside for reasons that are unclear.”

“In spite of this undercurrent of wisdom, and the analogies in other complex domains such as a ship’s bridge, a battlefield, or a control center, the status quo in airline operations does not support and in some cases even actively opposes this being put into action by the flight crew.”

“In many cases the captain is obliged to be the pilot flying (consequently delegating the supervisory monitoring task to the first officer), or at the very least strongly feels that this is the safest course of action. The potential that the use of this philosophy (or lack thereof) has very real and significant implications for aviation safety made me want to formally investigate exactly what evidence supported it, so that research may guide any necessary policy and/or cultural changes in the industry.”

For their study, the researchers reviewed reports about crew role assignment from conferences, peer-reviewed studies, technical documents, and dissertations. Beveridge and his colleagues found evidence that flight crews had better monitoring, situational awareness, and decision-making when the captain was not assigned to flying duties.

In other words, it appears it is better for captains to monitor the flight management and aircraft control actions of first officers, rather than the other way around.

For example, the researchers found that a lack of assertiveness or status concerns could prevent a first officer from reporting important information to a captain who was acting as the flying pilot. This factor was cited in a number of accident/incident studies.

“During my research I found that it wasn’t only the commercial airline industry that at least occasionally put a leader or supervisor in an engrossing control task with possible adverse effects on safety; doctors at an operating table and first responders such as police and firefighters were other such examples,” Beveridge told PsyPost.

“Historical and cultural paradigms may be putting these professionals in these positions, but there may be a deeper psychological drivers that equate managing a task to doing it yourself. Classical management and leadership principles teach us to delegate subordinate tasks to keep the big picture in mind, yet in these high risk domains we do the opposite; this may need a re-think.”

The study — like all research — includes some caveats and limitations.

“A large portion of the evidence was from accident and incident data, so are only really looking at the small segment of airline operations where things go wrong, rather than when things go right,” Beveridge explained.

“The few studies that observed normal operations had some interesting implications for the research, so I believe more of this kind of data could really guide us as to how and when a captain should be stepping back and delegating the flying task to the first officer. It’s very likely that this will not be a binary answer with a degree of judgement required, so it is really important to find when this is most helpful so that any guidance and policy can have the best effect in practice,” he told PsyPost.

“Also the research was time-limited, so the scope was very specific to airline operations and demonstrable safety outcomes. The small number of studies found likely shared a common heritage of research, and it is apparent that there are more general historical, cultural, and psychological factors that are relevant and could be examined in a broader scope review.”

Some of the reasons airlines keep first officers away from flying don’t make much sense, he added.

“One of the more common criticisms of the captain delegating the flying I have heard have been: ‘In our airline we have really inexperienced first officers, we can’t be giving them the controls.’ This just raises two more concerning questions: why do we have a pilot in the flight deck that by admission is not able to do the most basic function of the job which is flight path management?” Beveridge said.

"Furthermore, why are these inexperienced first officers therefore considered more capable at supervising the other pilot to do that same task, arguably requiring even more skilled judgement? Airlines who claim this position need to reconsider what they deem as essential competencies of a first officer and invest in better training for them so that flying the aircraft is not their weakness."

The study, "Command and control: The influence of flight crew role assignment on flight safety in air transport operations", was authored by Stuart D. H. Beveridge, Simon T. Henderson, Wayne L. Martin, and Joleah B. Lamb.

http://psycnet.apa.org/buy/2018-18904-001

FAA UPDATES AIRMAN CERTIFICATION STANDARDS

Student pilots and especially flight instructors will want to pay attention to new revisions to the FAA's airman certification standards (ACS) for Private Pilot—Airplane, Instrument Rating—Airplane, Commercial Pilot—Airplane, and Remote Pilot—Small Unmanned Aircraft Systems, effective June 11.

The revisions, initially developed by the Aviation Rulemaking Advisory Committee Airman Certification System working group, include some new regulations, such as those accommodating Part 68 BasicMed privileges and limitations. Additional changes include edits to account for the FAA's recent reorganization, different types of hypoxia, and giving the evaluator discretion to ask for a full aerodynamic stall on a checkride, to name a few.

"The enhancements to the standards are clearly laid out in the beginning of each document," said David Oord, AOPA senior director of regulatory affairs and chair of the ACS working group. "The integrated standards incorporate all the knowledge, risk management, and skill elements needed for a certificate or rating—clearly defining what an applicant is expected to know, consider, and do in order to pass and to also be a safe pilot."

The working group consists of experts and stakeholders from both the FAA and industry, working together on a system that connects the certification standards to FAA advisory handbooks, test questions, and the practical test. "The working group's motto of 'continuous improvement' is reflected in the effort to provide predictable, regular updates to the standards," said Oord. Processes have been established to identify and coordinate any changes to regulations, policies, and/or technologies that will need to be accounted for and incorporated into the standards.

With this set of foundational standards in place, the ACS working group continues its development of the next set of certificates and ratings, including ATP, Commercial Pilot—Military Competence, Aviation Maintenance Technician, Rotorcraft, Powered-lift, and Instructor. Recommendations for those standards and other components of the certification system will be channeled through the Aviation Rulemaking Advisory Committee for its review and submittal to the FAA, Oord said.

https://www.faa.gov/training_testing/testing/acs/

OVERSTUFFED CARRY-ON BAGS ARE CAUSING A SERIOUS SAFETY HAZARD, SAY FLIGHT ATTENDANTS

When it comes to air travel, we're living in the age of the carry-on. More and more airlines are rolling out basic economy tickets, while more and more travelers are stuffing as much as they can into their carry-on luggage before they board the plane.

This raises a safety issue:

Heavy bags can cause injuries, particularly when they fall out of overhead bins and onto people's heads—particularly during the baggage shuffle that occurs before and after takeoff. Most frequent fliers can probably attest to witnessing or being involved in a near miss or two over the years.In 2017, a passenger on an Air Canada flight sued the airline, claiming it had a responsibility to mitigate the risk of another passenger dropping a bag on her head. A US court agreed. But while it may be a minority of passengers who meet the same unlucky fate, flight attendants are acutely aware of the risks that carry-on bloat causes on board an aircraft.

In fact, the Association of Flight Attendants (AFA-CWA), the union that represents the profession in the US, has been lobbying on the issue of "carry-on crunch" for decades. They say the no-checked-bag era has made things demonstrably worse. According to Sara Nelson, AFA-CWA's international president, the organization thinks that regulation and enforcement can't be left up to the airlines.

"Excess bags in the cabin lead to injuries, slower boarding times, and passenger altercations. Flight attendants manage these safety issues often under the pressure of on-time departures and during a critical period for ensuring the overall security of the flight," Nelson told Quartz. "AFA continues to urge Congress and the Federal Aviation Authority (FAA) to establish standardized carry-on limitations in the interest of crew and passenger safety."

One of the obstacles in getting this safety issue addressed is that there is little data to track how often it occurs. Spokespeople for the FAA, Transportation Safety Administration, and National Transportation Safety Board each confirmed for Quartz that their agency does not track or hold any statistics about injuries caused by cabin baggage in the US. The International Air Transport Association (IATA), >

which represents 280 member airlines, doesn't do so globally, either. IATA also declined to comment on whether or not it is responsibility of airlines to further protect passengers against the risk of falling baggage.

One commonly-cited statistic—included in a 1997 Wall Street Journal article which quaintly describes an era of air travel where "boxes of wine, bowling balls, boom boxes, [and] jars of jam" were things you could take in the cabin—says 4,500 incidents (PDF) happen in the US each year. But even that figure was limited by the fact that airlines aren't required to report these injuries to authorities. What's more, passengers might not even realize they've been seriously injured until they get home.

In 2010, the AFA-CWA conducted a survey of more than 1,200 of its members regarding the issue of carry-on-induced injuries. Nearly half of respondents said they'd observed a passenger being struck by an item falling from an overhead bin in the previous 60 days, while 35% of respondents had been struck themselves. Furthermore, 80% of respondents who'd been struck said they did not report their own injuries to the airline they work for. Respondents cited the fact that "reporting injuries and taking time off for a … [compensation] claim also puts disciplinary points in the flight attendants' record. At a time when jobs are hard to find … it is better to just not report."

The FAA told Quartz that while they do not track incidents or injuries caused by carry-on baggage, they do approve the carry-on requirements put forth by individual airlines. But as the AFA-CWA points out in the aforementioned survey, while many airlines may regulate the number of bags brought on board, few actually keep tabs on the size and weight of those bags. (That said, low cost carriers like Norwegian Air are now known to do this.)

As one respondent to the AFA-CWA survey put it, the carry-on era has created a self perpetuating cycle, one that potentially puts both fellow passengers and flight attendants at risk. The more airlines charge for baggage—the more luggages will likely wind up in airplane cabins potentially causing even more in-flight injuries.

“Flight attendants’ focus on safety and security of passengers during boarding has been shifted to handling passenger carry-on items: repositioning, bringing bags to the front of the aircraft and giving the passengers a free checked-bag opportunity, which encourages them to keep repeating it, instead of checking the bag and paying at the ticket counter, thus making a mockery of airline policies.

https://www.wsj.com/articles/SB879112846832468000

https://flightsafety.org/ccs/ccs_nov_dec97.pdf

Employees in These Industries Admit to Sleeping at Work

Tech workers. Construction workers. Government workers. What do all these employees have in common?

Many of them are falling asleep on the job.

One in 5 employees reported sleeping at work, according to a recent survey of more than 1,000 employees across various industries conducted by Amerisleep, a mattress company based in Scottsdale, Ariz.

Seventy percent of tech workers—the highest percentage of all workers surveyed—admitted to sleeping during work hours and reported spending more than 11 percent of their workday sleeping.

The construction industry had the next highest percentage of workers who reported sleeping on the job—68 percent, even though 66 percent of them admitted that sleeping while at work is prohibited.

Other industries where more than 50 percent of employees reported sleeping at work were government and public administration, finance and insurance, information services and data processing, manufacturing, transportation and warehousing, and medical and health care.

Reasons for Being Tired at Work

Stressful jobs may be causing sleepiness at work.

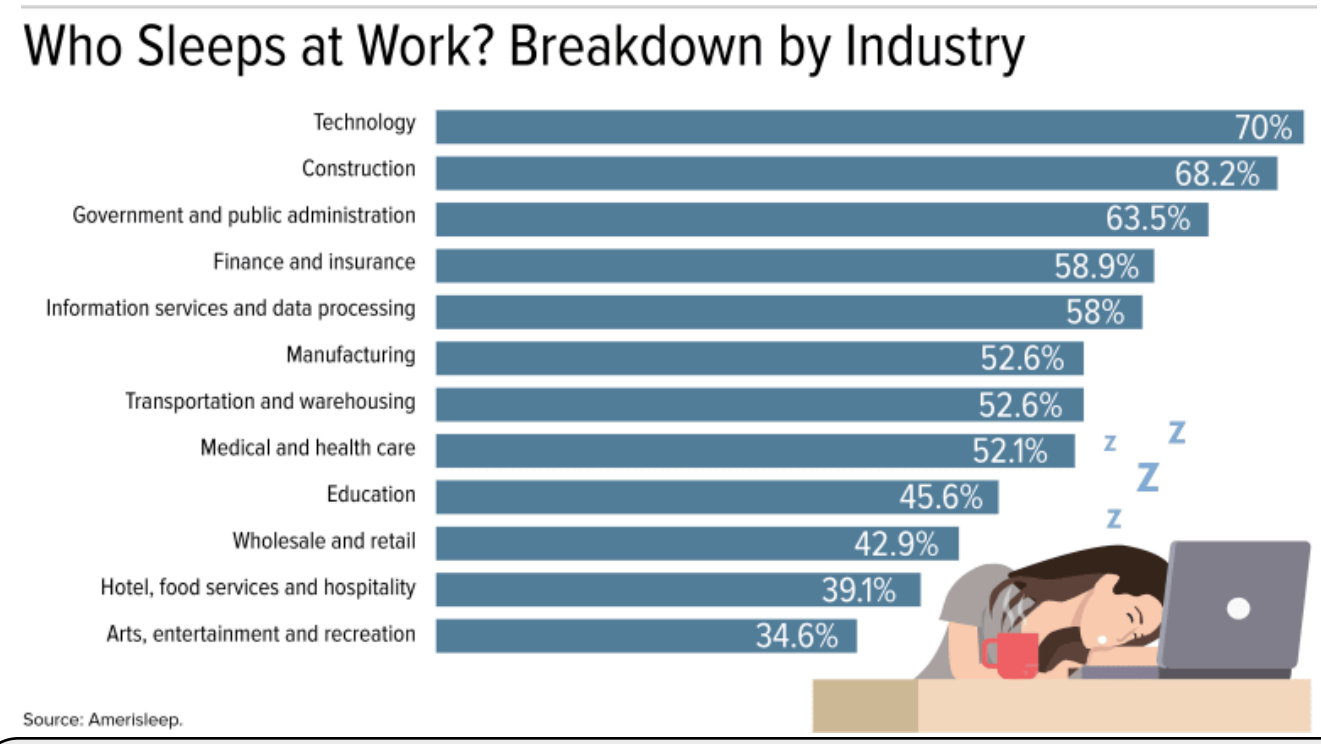
"While most people associate tiredness and fatigue with exercising the body, it can also be caused by exercising the mind," explained Steve Wang, an HR consultant based in Chicago. "Certain jobs that require heavy critical thinking and technical expertise exhaust the human brain. As a result, employees [who are] constantly put in these types of scenarios are more prone to falling asleep at work."

A 2017 Gallup report showed that 70 percent of U.S. employees are disengaged at work, which also might contribute to workers falling asleep on the job.

"I'm sure there are employees who fall asleep because they are disengaged or not into their work," Wang said.

But, Wang said, most of the time employees are prone to falling asleep at work because they simply aren't getting enough rest. People in the U.S. in general tend to be sleep-deprived, according to the National Sleep Foundation.

"Probably the primary reason people are falling asleep in the workplace is related to sleep deficiency or sleep deprivation," said Richard Gillum, a dentist and sleep apnea expert in Greenwood, Ind. "When you have sleep apnea, you don't sleep well, so you're tired."



Is Sleeping on the Job OK—or Not?

There are instances when sleeping at work is permitted. For instance, an employee may make a request under the Americans with Disabilities Act to nap periodically during the workday because of a medical condition or treatment, according to Aaron Tandy, partner and head of the employment law section of Pathman Lewis LLC in Miami.

But if a crane operator on a construction site falls asleep while on the job, HR professionals need to talk with the employee and assess whether there's a safety risk involved, Tandy said.

"You should also have a conversation about whether their sleeping is part of a larger issue that needs to be addressed by a doctor and therefore might ultimately need to be accommodated," Tandy said. "I know of a company where one of the employees was found sleeping. It turned out that they were suffering from migraine headaches. It turned out that those headaches were caused by an inflammation on their brain. And, by having the conversation and confronting them and actually sending them to the doctor, the employer, I think, contributed to their being still alive."

Using Nap Time at Work to Rejuvenate Employees

Some employers encourage sleep as a way for employees to recharge.

Jim Angleton, president for Aegis FinServ Corp., a financial firm based in Miami, decided that providing a benefit for employees to nap at work was good for productivity and morale.

In 2014, he purchased a sleeping pod for his employees; 60 percent of his employees take advantage of it.

"Employees use it during lunch hours to reserve a 20-minute nap and relaxation period. It refreshes their eyes and resets their body clock," Angleton said.

Angleton said his employees working the night shift love the sleeping pod.

"Every company that is open 24/7 should offer this option," he said.

"We understand that working while tired generally decreases productivity, short-circuits creativity and increases the frequency of careless mistakes," Wang said. To combat this, he noted, some companies have a place where employees can go to take midday rests and breaks.

When to Discipline, When to Accommodate

When an employee sleeps on the job, a manager's first task is to ascertain the reason for the fatigue: Is the worker hung over because of late-night partying or a second job? Is he suffering from a medical condition such as narcolepsy or sleep apnea? Does she use prescribed drugs or undergo medical procedures that leave her tired? Is he experiencing unusual stress or anxiety that makes it hard to sleep? Perhaps life events—like a newborn—mean the worker is pulling all-nighters.

Once a manager has identified the reason for the sleepiness, the next task is deciding how best to address it—whether that means discipline, support for the worker or something else.

https://www.amerisleep.com/blog/sleeping-at-work/

http://news.gallup.com/reports/178514/state-american-workplace.aspx?g_source=link_NEWSV9&g_medium=tile_1&g_campaign=item_187865&g_content=State%2520of%2520the%2520American%2520Workplace

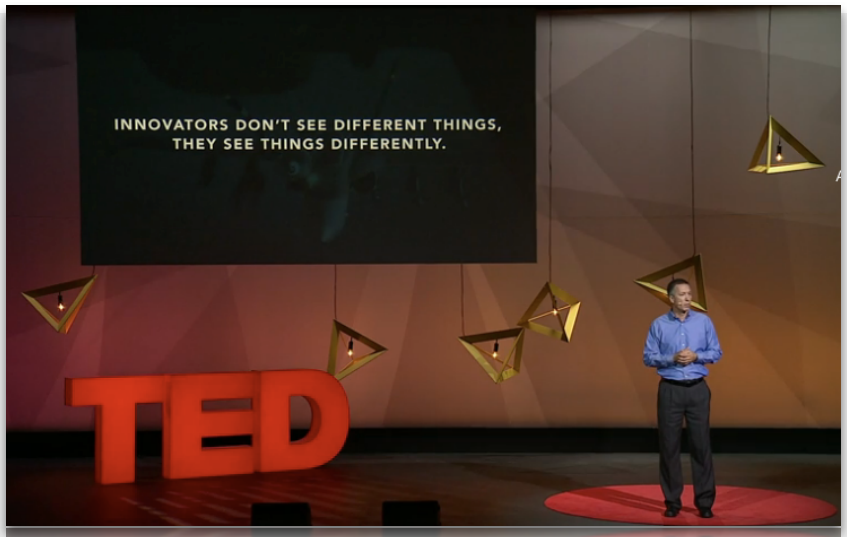
https://www.shrm.org/resourcesandtools/hr-topics/employee-relations/pages/sleeping-on-the-job.aspx

TED: Ideas Worth Spreading

Lessons from a former Air Force pilot on counterintuitive thinking

Editor's note: *This talk was recorded at a TED-curated event in partnership with UPS.*

Former Air Force Reserve Colonel Jeff Kozak once saved his company $500,000 in just 10 days by approaching a jet fuel problem with a seemingly backwards strategy. Kozak's success resulted in the development of a new, optimized process for mid-air refueling that was initially resisted by many in his industry. On the TED@UPS stage, he explains why the secret to innovation lies in embracing ideas that may initially cause friction, but ultimately should be given a chance.



https://www.ted.com/talks/jeff_kozak_lessons_from_a_former_air_force_pilot_on_counterintuitive_thinking#t-419433