

# Aviation Human Factors Industry News

*Volume XVI. Issue 04, February 16, 2020*



*From the sands of Kitty Hawk, the tradition lives on.*

Hello all,

To subscribe send an email to: [rhughes@humanfactorsedu.com](mailto:rhughes@humanfactorsedu.com)

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

★**Audit: FAA has not effectively overseen Southwest Airlines' SMS**

★**The Atlas Air Flight 3591 Accident: What Went So Wrong**

★**Towed plane hits aircraft tug, killing driver, at Don Mueang**

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★**2019 Report on Myths & Realities of Fatigue: What is Fatigue Costing your Company**

★**Flight 3407: Safety measures still lacking 11 years later**

★**Vectors for Safety**

★**Wire Chafing Checks Recommended After EMB 175 Crew Briefly Loses Pitch Control**

## **Audit: FAA has not effectively overseen Southwest Airlines' SMS**

The U.S. Department of Transportation's Office of Inspector General (OIG) concluded following an audit, that the FAA has not effectively overseen Southwest Airlines' [safety management system \(SMS\)](#).

On March 9, 2015, the Federal Aviation Administration (FAA) established requirements for air carriers to implement a formal, top down approach to identifying and managing safety risks, known as [SMS](#). However, recent events have raised concerns about FAA's safety oversight, particularly for Southwest Airlines, one of the largest passenger air carriers in the United States.

In early 2018, the OIG received a hotline complaint regarding FAA's oversight of Southwest Airlines and a number of operational issues at the carrier. Subsequently, in April 2018, Southwest Airlines Flight 1380 suffered an engine failure, killing one passenger on board. In June 2018, the OIG initiated an audit to assess FAA's oversight of Southwest Airlines' SMS.

### **Findings**

The audit found that Southwest Airlines continued to fly aircraft with unresolved safety concerns. For example, FAA learned in 2018 that the carrier [regularly and frequently communicated incorrect](#) aircraft weight and balance data to its pilots. Southwest Airlines also operated aircraft [in an unknown airworthiness state](#), including more than 150,000 flights on previously owned aircraft that did not meet U.S. aviation standards. In both cases, the carrier continued operating aircraft without ensuring compliance with regulations because FAA accepted the air carrier's justification that the issues identified were low safety risks.



Also, FAA inspectors [did not evaluate air carrier risk assessments or safety culture as part of their oversight](#) of Southwest Airlines' SMS. This is because FAA had not provided inspectors with guidance on how to review risk assessments or how to evaluate and oversee a carrier's safety culture.

The audit resulted in eleven recommendations to the FAA to improve its oversight of Southwest Airlines' SMS. The FAA concurred with all recommendations.  
More information:

- [OIG Audit report](#) (PDF)

## **The Atlas Air Flight 3591 Accident: What Went So Wrong?**



[A routine air cargo run](#) from Miami to Houston meets a tragic end, and information released by investigators paints the picture of a confused flight crew fighting desperately to regain control, and may also highlight ongoing concerns about [pilot training](#) within our industry.

Today, we examine the NTSB docket on the downing of Atlas Air 3591 and what lessons all pilots may draw from it.

## Participants:

- Phil Randolph (pseudonym), B767-300 captain
- Kipp Lau, pilot, aviation journalist and blogger for AIN on issues of flight safety and airmanship
- Rob Finrock, pilot, aviation journalist

## [LISTEN TO THE EPISODE](#)

### [Towed plane hits aircraft tug, killing driver, at Don Mueang](#)

A Nok Air plane hit an aircraft tug towing it to the passenger ramp at Don Mueang airport on Friday morning, [killing the driver and injuring another employee](#).

The accident occurred around 8am. Nok Air flight DD6458, scheduled to depart to Nakhon Si Thammarat at 8.40am, ran into the aircraft tug pulling it to the parking bay, Sumpun Kutranon, general manager of Don Mueang airport said.



[The connection between the tug and the plane became loose](#) and the driver had to stop the vehicle. The plane being pulled continued to move forward and collided with the tug.

The tug driver was severely injured and later died, Mr Sumpun said. Another employee was also hurt and rushed to hospital.

The aircraft involved was grounded and the flight delayed for about one hour. A replacement plane departed the airport at 9.50am with all passengers.

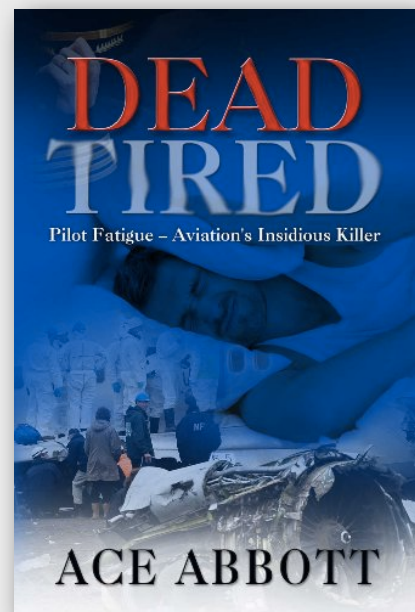
<https://www.facebook.com/onenews31/videos/865440427219586/?t=28>

## **Fatigue contributes to gear up landing**

The pilot in the retractable landing gear-equipped Cessna P210 reported that he had been flying an [instrument flight rules](#) cross-country flight for about [six continuous hours](#).

He added he felt fatigued and anxious to get out of the airplane, so he decided to refuel en route. He contacted a nearby tower, and, at that time, he was notified of two aircraft in the pattern at the airport in Jacksonville, Florida. He was able to identify only one airplane before he initiated the approach.

During the approach about 100' above ground level, the tower controller informed the pilot that he needed to go around, but did not say why. The pilot thought it unwise to abort the landing because he did not know the location of the second airplane in the pattern and continued the approach and landing.



He did not do the [GUMPS](#) (Gas Undercarriage Mixture Props) checklist because of the [distractions](#), and the airplane touched down with the landing gear retracted.

The airplane sustained substantial damage to the lower fuselage longerons and bulkhead.

The pilot reported that there were no mechanical malfunctions or failures with the airplane that would have precluded normal operation.

[Probable cause](#): The pilot's failure to extend the landing gear before landing. Contributing to the accident were [pilot fatigue and his failure to use the before landing checklist](#).

NTSB Identification: [GAA18CA174](#)

This February 2018 accident report is provided by the [National Transportation Safety Board](#). Published as an educational tool, it is intended to help pilots learn from the misfortunes of others.

## **2019 Report on Myths & Realities of Fatigue: What is Fatigue Costing your Company?**

This report reviews several [myths and realities](#) related to worker fatigue and its impact on 24/7 operations. Learn how to address shift worker fatigue with a proven model that incorporates a [Fatigue Risk Management System](#) industries are rapidly adopting.

Key Topics covered in this report include:

- Review **Myths & Realities of Fatigue** and business practices that **increase risk**



- Analyze the **consequences of fatigue** for industries with 24-hour operations
- Learn **proven solutions for mitigating the costs, risks, and liabilities** related to shift work
- Examine the **extensive research and statistics** related managing employee fatigue
- Understand why **governing bodies are mandating industry-specific Fatigue Risk Management Systems**



If you have any questions about how to drive down excess costs in your 24/7 operation, we'd be happy to help.

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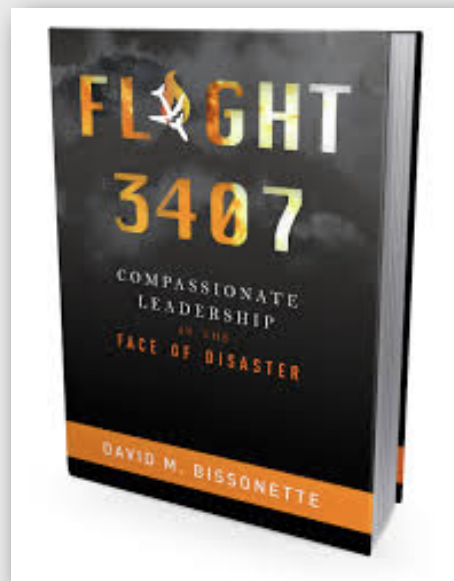
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## **Flight 3407: Safety measures still lacking 11 years later**

It's been 11 years since Flight 3407 crashed in Clarence Center, killing 50 people. The ensuing investigation uncovered major safety concerns in the aviation industry. While some issues have been addressed, [others have not](#).

"More than a decade later, we still anxiously await implementation of the [Pilot Records Database](#) to allow airlines to access records of pilots applying for jobs," Congressman Brian Higgins said on the House floor Tuesday.

"The National Transportation Safety Board determined that the crash was due to pilot error and [inexperience](#)," Higgins reminded his colleagues. The investigation and heightened media scrutiny brought attention to the realities of life for [regional pilots](#). Some [traveled long distances](#) and had little rest before settling into the cockpit. In some stunning instances, pilots received inadequate training. Despite bureaucrats dragging their feet and the lobbying efforts of aviation interests, many of the issues have been resolved.



Other inadequacies linger. The Flight 3407 crash has become entangled in investigations of the two international 737 MAX crashes. Questions have been raised regarding [pilot training and oversight](#) of those training rules, in the U.S. and internationally.

"I urge my colleagues to continue to strive for one level of safety and remain vigilant about aviation safety standards," Higgins said.

"Western New York will never forget Flight 3407 and neither should Congress."

## Listen

<https://cpa.ds.npr.org/wbfo/audio/2020/02/2-12airlinesafety.mp3>



## What's in this Issue?



In the Safety Initiative Update this month you can read about a new program to be premiered live February 29 in Syracuse, NY. It will then be presented at other live sites and also via live webinars in March. Also, a new higher-level online course is being rolled out in March. A link to a concept designed to [help prevent loss-of-control accidents](#) is included and there an update to [propeller safety](#) is included. There is also a link to the analysis of a recent fatal accident involving contact with a propeller.

Brandon has returned this month with his blog on operational issues and Shawn is back with more valuable aircraft maintenance information for pilots. Gene's blog of course features a look at another [human factor](#) that relates to the safety of flight. A related accident is also analyzed.

Click the button below to view the February 1, 2020 edition of "Vectors for Safety."

*Please be an "Evangelist for Safety" by forwarding this to other pilots or by posting a link on your social media.*

[Click Here for Vectors for Safety - Feb. 2020](#)

## Wire Chafing Checks Recommended After EMB 175 Crew Briefly Loses Pitch Control

The NTSB has issued recommendations to the FAA and National Civil Aviation Agency of Brazil to order checks for [wire chafing](#) on the pitch trim controls of Embraer E-series aircraft after an incident in Atlanta in November. The crew of a Republic Airlines EMB-175 lost pitch trim control shortly after takeoff Nov. 9. As the aircraft,

which had six passengers aboard, went through 2200 feet, the captain, who was flying, tried to engage the autopilot but it wouldn't activate. [He quickly diagnosed the problem](#) but the autopilot/pitch trim wouldn't disconnect. Both pilots had to use both hands to keep the nose down before the first officer's switch finally worked and they were able to re-trim the plane.



Investigators found a chafed wire in the captain's control column caused by contact with [an untucked safety wire pigtail](#). Republic inspected its other EMB-170/175s and [found nine other aircraft with similar chafing](#). At least one other airplane at another airline had similar damage. The NTSB says all aircraft in the series, including 190/195 models and Lineage business jets, should be inspected. The investigators of the Atlanta incident also discovered the [disconnect switch had been installed upside down](#). There are 667 U.S.-registered aircraft and more than 1,500 worldwide. The issue does not affect the new E2 generation of the aircraft, none of which are registered in the U.S.

## Are you a disciple?



Merriam-Webster defines disciple as “[one who accepts and assists in spreading the doctrines of another](#): such as a convinced adherent of a school or individual.”

I’ll add one more to the end of the definition... or flight.

For many of us, we live and breath aviation. Especially that segment of aviation where we are in control. No doubt that F-22s and 787s are cool, but few of us actually fly those aircraft.

I’m talking about 150s and Aeroncas and Cubs and Archers and, you know, [general aviation](#).

A new documentary titled, [The Disciples of Flight](#), is the latest reason my gears are turning about our unquenchable – and mutual – passion for aviation.

[The one-hour, thirty-four minute documentary](#) is beautifully shot and edited. In fact, many times I had to back up the film just so I could hear what Patty Wagstaff or Rod Machado or other interviewees said because I was lost in the imagery.

The film's roadmap touches on many of the high points we aviators – or disciples of flight – are familiar with. Why we fly, the freedom of flying, skill development, fun, broad experiences, building, accidents, risk management and more.

Many of us have experienced a deliciously deep conversation about flying. The time floats past and the conversation keep flowing along. Knowledge is passed on. Disagreements are settled or not settled. But everyone leaves more alive and energized.

The Disciples of Flight is that conversation put to video and music. One that you can play over and over. Or use as the starting point for a conversation. I suppose you could even cherry-pick the scenes to share with someone who many not share your zeal for aviation. Assuming you associate with such folk.

The film's description captures its essence nicely, "A full-length Documentary film celebrating flight, aircraft, and the passionate community of people who follow the dream of flying. Join us as we seek to understand what it feels like to fly a small airplane. Why people are so driven to aviation. The life long devotion some aviators feel toward flying and how it's changed their lives forever."

The documentary was a couple of years in the making and can be rented for \$4.99 (for 24-hours to stream) or bought for \$14.99 (to stream or download).

Either way, I believe it is worth the price of admission. Take a peak at trailer – or better yet, watch the entire film – and ask yourself... are you a disciple of flight?

<https://youtu.be/tynnj-2lySY>

<https://vimeo.com/ondemand/thedisciplesofflight>

## Distractions During Preflight

According to the Flight Safety Foundation (FSF), “**Interruptions and distractions** often result in omitting an action and/ or deviating from standard operating procedures (SOPs).” A task force assembled by the FSF to examine the impact of interruptions and distractions in the cockpit found that their primary impact was to “**break the flow pattern of ongoing... activities (actions or**

**communications)**” including SOPs, normal checklists, communications and problem-solving activities. The FSF says to reestablish situational awareness, we must: Identify the task being performed previously;



- Ask when during that task you were interrupted;
- Decide what's necessary to complete the task;
- Prioritize the steps required to complete the task;
- Plan the sequence for those steps; and
- Act.

[Read this article](#)

## Why Does FAA Still Rate Indonesia Category 1?

by John Goglia

I know the FAA is facing a lot of harsh criticism since the two Boeing 737 Max accidents less than six months apart: the Lion Air Flight 610 crash in Indonesia in October 2018 and the Ethiopian Airlines Flight 302 crash in March 2019. But those criticisms have focused on the FAA's certification of the Boeing 737 Max and its oversight of Boeing. Some of that criticism is justified, in particular, allowing the aircraft to be certified with just one angle-of-attack (AOA) sensor for its MCAS—flight control software—system. One sensor for a critical component is a design failure that Boeing and the FAA should never have allowed. But there are more questions that the FAA needs to answer as a result of these accidents and their aftermath.



While Boeing and the FAA made their share of mistakes in certifying the 737 Max, my review of the available public information shines an [even harsher light on Lion Air](#) and its operation of revenue service flying passengers. And it begs the question, why has the Indonesian government failed to take strong action in light of the [glaring maintenance and other errors revealed by its own accident report](#)? And, if the accident report wasn't enough, a New York Times investigation of the airline should be. If reporters could find these problems, one would hope the government agency entrusted with ensuring aviation safety in Indonesia could, as well.

## PRE-EXISTING ISSUES

First, the accident report prepared by the Komite Nasional Keselamatan Transportasi (KNKT)—the Indonesian equivalent of the U.S. NTSB—contains information that should call into question Lion Air’s qualifications to fly and Indonesia’s oversight of the airline.



Most troubling for me, [as a long-time airline mechanic and accident investigator](#), is the [history of maintenance problems](#) before the 737 crashed on October 29. Those problems, and the failures to properly document or correct them, indicate to me that the crew on the fateful flight was [assigned an unairworthy aircraft](#). And no crew should have ever been given that aircraft to fly, let alone a scheduled airline flight with paying passengers.

According to the accident report prepared by the Indonesian government, the maintenance issues with the AOA sensor began [almost a month before the accident](#). Thereafter, on multiple flights, there were indications of problems with this sensor, as well as with the flight control system. Maintenance actions based on these reported problems [were incomplete, inadequate, or non-existent](#). For example, in one case where maintenance was unable to rectify the problems, the crew was told to [just fly the aircraft—with paying passengers—to the next station](#). It is shocking that maintenance asked the crew to do this and even more shocking that the crew did this. And most of you have probably read of the problems on the flights immediately preceding the accident flight, with the crew fighting to control the aircraft.

In addition to the problems noted in the accident report, a subsequent investigative report by the NY Times found "based on interviews with dozens of officials and airline employees, including pilots and members of maintenance teams...that Lion Air [has a track record of working its pilots to the point of exhaustion, faking pilot training certification and forcing pilots to fly planes they worried were unsafe, including the plane that crashed](#)." The NY Times investigation further found that "just as the company does not seem pressed to adopt changes from the report... Indonesian officials were quick to defend a carrier that has had 11 accidents and incidents since its founding in 1999." The report concluded, "after a crash, a company and a government deny problems, deflect blame, and drag their feet on improvements." To date, there is no indication that Lion Air management or the Indonesian government are tackling the systemic problems that appear to exist at the airline.

## OUT OF ICAO COMPLIANCE

It seems to me that from these reports that Lion Air is not planning to take significant action to correct its safety issues any time soon nor does it appear that the Indonesian government will force the airline to make necessary changes or shut the airline down until it does. If that's the case, then Indonesia is not in compliance with its responsibilities as a member of ICAO, the International Civil Aviation Organization. [Under ICAO, member countries are responsible](#) for complying with international aviation safety standards and overseeing compliance with those safety standards by their air carriers.

Indonesia's apparent reluctance to take on safety problems at Lion Air should cause the FAA to revisit its Category 1 designation for Indonesia under its International Aviation Safety Assessment (IASA) program. Indonesia was upgraded to Category 1 in 2016 after being designated Category 2 from 2007. According to the FAA, "while under a Category 2 rating, the country either lacked laws or regulations necessary to oversee air carriers in accordance with minimum international standards, or its civil aviation authority...was deficient in one or more areas, such [as technical expertise, trained personnel, record-keeping, or inspection procedures.](#)" Until the Indonesian government shows a willingness to take on Lion Air's safety problems, it's hard to imagine that it deserves to be rated a Category 1 country.

Under IASA, the FAA determines whether a country's civil aviation authority maintains oversight of its air carriers consistent with international aviation safety standards developed by ICAO. And while those ratings may not seem important now since no Indonesian airliner is flying directly into the U.S., an airline like Garuda, the national airline of Indonesia that is majority-owned by the government, could begin service at any time. Also, travelers to Indonesia might well rely on the FAA's ratings in deciding whether to fly Indonesian airlines—like Lion Air—domestically, especially since the U.S. State Department notes Indonesia's FAA safety rating on its travel advisory page. "The U.S. Federal Aviation Administration (FAA) has assessed the Government of Indonesia's Directorate General of Civil Aviation as being in compliance with International Civil Aviation Organization (ICAO) aviation safety standards for oversight of Indonesia's air carrier operations." The FAA owes it to American travelers to reassess Indonesia's compliance with international safety standards.

## **True Stories of Air Traffic Control: ‘You Saved My Life’**



A video recently posted to [YouTube](#) by the FAA follows a VFR flight into IMC [that could have ended tragically](#), but instead ends in a safe landing for a general aviation pilot and his wife in their Mooney. It's a riveting four minutes as we watch how ATC takes this pilot under their wing.

<https://www.youtube.com/watch?v=sh8f3jYjnfl>

## **FAAST Blast**

### **[New FAA Video Series Aims to Reduce Runway Incursions](#)**

To help reduce the occurrence of wrong surface incidents, runway incursions, and other high-risk events at U.S. airports, the FAA has developed the “[From the Flight Deck](#)” YouTube video series that is targeted to GA audiences. Each 4-5 minute video will focus on approach, landing, and taxi scenarios at selected U.S. airports.

The videos will feature high definition footage along with professional graphics, animations, runway diagrams, and narration to help identify and illustrate airfield hazards and hotspots. All “From the Flight Deck” videos are available at [www.faa.gov/go/FromTheFlightDeck](http://www.faa.gov/go/FromTheFlightDeck). The first season of 10 airport videos is now available with more on the way.



<http://www.faa.gov/go/FromTheFlightDeck>

## **Helicopter crash that killed Kobe Bryant calls attention to a common mindset of pilots**

### **Get-There-Itis**

- In get-there-itis, personal or external pressure clouds the vision and impairs judgment by causing a fixation on the original goal or destination combined with a total disregard for alternative course of action. “I have to be in Houston by 7 o’clock.”

Condition called ["get-there-itis" and other human factors](#) play a part in 70 percent of aircraft accidents, FAA says

### **“Get-there-itis” might sound funny, but it’s no joke.**

It’s a very real condition, a mindset otherwise known as [“plan continuation bias,”](#) that can send aircraft pilots and their passengers plummeting to their deaths. It’s the [strong urge](#) to stay on course even as flight conditions deteriorate badly.

With questions swirling around the helicopter crash that killed Kobe Bryant and eight others, the National Transportation Safety Board will likely examine whether “get-there-itis” played a part on that foggy morning in Calabasas. Ara Zobayan, a veteran pilot for charter outfit Island Express, was at the controls of the Sikorsky S-76B helicopter that went down.

The chopper was en route from John Wayne Airport to Camarillo Airport on Sunday for a nearby girls basketball tournament at the Mamba Sports Academy founded by Bryant. Kobe’s daughter, Gianna, who also died, had a noon game.

One witness who heard the helicopter’s last moments said the pilot was “in the soup,” meaning the dense fog, before the chopper crashed in flames, leaving many to wonder why he did not fly another route or switch to instruments.

Bryant was not known as a pushy passenger and those who knew Zobayan said in published reports the pilot was a pro.

### **Factor in 70% of accidents**

No one can know whether Zobayan suffered from “get-there-itis.” But the Federal Aviation Administration’s [pilot handbook](#) says the condition and other human factors are primary contributors to more than 70% of aircraft accidents. [Special workshops are taught](#) on how to avoid the tendency to fixate on “getting there” or “getting home” and compromising safety.

[“This disposition impairs](#) pilot judgment through a fixation on the original goal or destination, combined with a disregard for any alternative course of action,” according to the handbook.

“Few pilots are immune to the pressure of ‘get-there-itis,’ which can sometimes induce a decision to launch or continue in less than ideal weather conditions.”

**Says General Aviation News:** “Once you get too far down the wrong road, the biases get stronger, task saturation kicks in, situational awareness goes bye-bye, and you are totally defensive, no longer thinking ahead of the airplane.”

### **Role of external pressure**

External pressure is one of the causes of “get-there-itis,” teaches the FAA.

The pilot may not want to disappoint an important passenger, may be trying to impress or may not want to appear cowardly, says the workbook. People may be waiting at the airport or there may be other demands on time schedules. There is also the pressure to avoid wasted time.

“The key to managing external pressure is to be ready for and accept delays,” the FAA says. “The pilot’s goal is to manage risk, not create hazards.”

James Davidson, president of the Professional Helicopter Pilots’ Association, said pilots have a difficult balancing act.

“You have to be able to say ‘no,’ and stand by your convictions,” Davidson said. “And it’s not that simple. Pilots are doing as best they can to please the customer.”

### **Tips from the FAA**

The best way to battle “get-there-itis,” experts say, is to make a plan before takeoff. Decide your go/no-go threshold beforehand.

More tips from the FAA: Seek advice from a co-pilot and manage expectations of everybody on the flight. Make sure passengers are primed for a late arrival.

“Let your passengers know that safety is your top priority,” the FAA says. “Show them your personal minimums, and tell them up front that you will not launch, or continue, in conditions that do not meet your pre-established minimums.”

Advise everyone that your plans are flexible. Allow time to make an unexpected landing and drive to the destination if possible. Be aware of fatigue, complacency and stress.

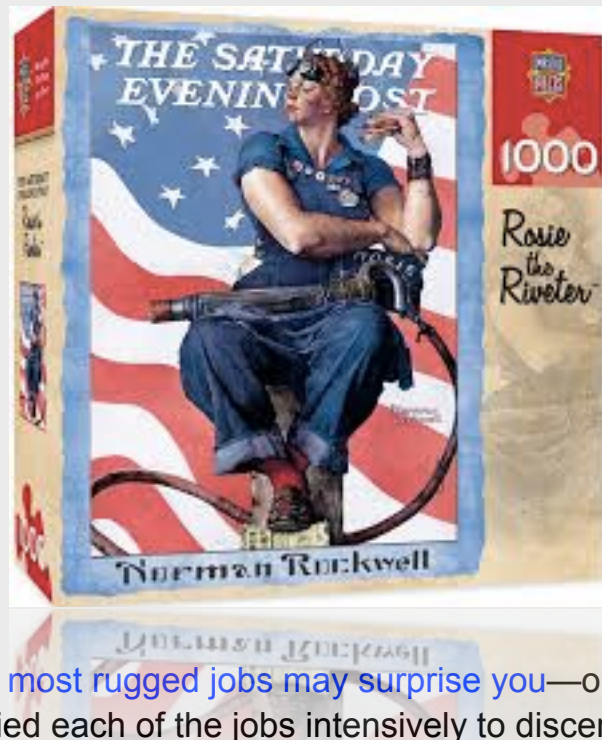


The FAA offers “3 Ps” as shorthand for avoiding the effects of “get-there-itis”: Perceive hazards. Process their impact on your safety. Perform by mitigating or eliminating the problem.

## **Dell Announces the Top 20 Most Rugged Jobs Out There**

*Computer technology company, Dell Inc., is recognizing those who work in the most extreme environmental elements and in some of the most labor-intensive settings.*

Not everyone goes to work at sitting desk or a quiet office every day. Many individuals [work in demanding, labor-intensive, exhausting environments for work](#). Some scale 20-foot trees, carry heavy machinery, dig deep into the group, or test a 15-foot electricity pole. David Plourde from Dell outlines the company’s analysis in a blog post on the company website, and the [top 20 most rugged jobs may surprise you](#)—or not. Dell’s Rugged testing lab team studied each of the jobs intensively to discern which were the most taxing. The testing lab even used a durability test on specialty to devices in the following elements:



- temperatures hot enough to fry an egg and cold enough to freeze an ice cube
- stormy winds up to 70 miles per hour and nearly 6 inches of rain per hour
- 40 mile-per-hour sandstorms

The evaluation of the jobs also took physical demands, injury risk, and environment into account.

Dell's Top 20 Most Rugged Jobs are the following, in no particular order:

- Oil & Gas Engineer
- Mining Machine Operator
- Construction Worker
- Electrical Line Technician
- Rescue Worker
- Geologist/Volcanologist
- Marine Biologist
- Pilot
- Police Officer
- Commercial Fisher
- Military Personnel
- Firefighter/EMT
- Demolition Expert
- Farmer
- Storm Chaser
- Warehouse Logistics Operator
- Insurance Claim Adjuster
- Manufacturing Worker

For a full report on the analysis and the Rugged Labs team, read Plourde's [blog post](#).