

# Aviation Human Factors Industry News

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

Hello all,

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

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## Our Subtle Safety Enemy: “Drift”

Serious pilots all embrace a commitment to the concept of safety and I hope no one –except perhaps our recent Seattle Q400 thief– wants to end up in a “smoking hole”. But despite this commitment and embracing best practices, we are constantly challenged by the subtle “drift” of normalizing.

“Procedural drift” is the result of our built-in human process of adaptation, driven by our urge to achieve greater efficiency and utility. Adaptation has made us the most successful species on earth, happily inhabiting every corner of the globe from the arctic to the slums of Mumbai. But it does not serve us well in maintaining safety in aviation.



The forces and adjustments that lead to “drift” are incremental, subtle and subconscious. As pilots, we are all self-selected, aggressive optimizers and we value the efficiency and utility of getting the job done (mission mentality). But in almost every case, this natural drive is opposed to our better angels of managing the risks and assuring safety. This dynamic process of “drift” starts with any non-standard procedure or short cut often very small. Let’s say that by “pushing the edge” a little, we are blessed with success. This may be a result of skill or entirely due to luck, but either way, with each “success” becomes a neurological and social “win” in our brain. Each success makes us feel good and reinforces the new behavior (see: brain chemical dopamine). With this change we start to “drift” and never assess “luck or skill.” Each success subtly transforms our personal standards and we subconsciously accept a new procedure that may add a risk.

The GIV disaster a few years ago was a perfect example of professionals who had drifted over years into a very unsafe operation. This crew was literally an “accident waiting to happen” and never through a conscious decision. This very same process fooled a very smart bunch of engineers and managers at NASA and brought down two US space shuttles! This process is built into our human software.

*The normalization of deviance is defined as: “The gradual process through which unacceptable practice or standards become acceptable. As the deviant behavior is repeated without catastrophic results, it becomes the social norm for the [person or] organization.” Seven years after Dr. Vaughan’s book was published, it struck again. The shuttle Columbia came apart due to damage in its heat shield as it was re-entering the earth’s atmosphere, and seven more astronauts died. NASA had fallen prey to the normalization of deviance for a second time. Shuttles returning with damaged heat shields had become the norm.*

Especially in the vacuum of personal flying, with no additional training or any outside objective comparisons, a “**personal standard**” can develop into some very unique procedures quite contrary to safety. This is why the simple addition of hours does not create safer pilots; it may instead create a very weird and dangerous pilot. (And this is one reason professional pilots revisit the mother ship every six months). Without a supporting professional organization and regular critique, drift and normalizing are almost inevitable in piloting. That is why frequent training and an affiliation to a professional organization (yes- SAFE) with a strong Code of Ethics are essential.

Dr. Bill Rhodes, an Air Force Academy Instructor, has studied pilot personalities extensively and points out lots of warning signs. Almost every time the biggest talker in the room with the “fifty mission jacket” is exactly the person to avoid and ignore. Their personal belief in their own abilities and skills, with no objective standard or verification, has led them to become a dangerous and “creative” aviator (often with the biggest ego).

Especially if you are a new pilot or instructor and value professionalism and excellence in aviation, seek out a proven, professional mentor to guide your growth as you explore and develop your new skills. This is especially important if you are a new aviation educator, in the business of teaching even more pilots. We can only sustain a professional standard as a group **if we are professionals bonded together; its the human condition**. For more on this fascinating process of normalization and drift, see Sidney Dekker’s book “Drift Into Failure” (As a professor he even became a professional pilot to study this process in at work in aviation) It turns out the more errors we expose and talk about the safer we are — not by ignoring the problem. Join SAFE, we are here for you-fly safely (and often).

Please “follow” our SAFE blog to receive notification of new articles. Write us a comment if you see a problem or want to contribute an article. We are always seeking more input on aviation improvements and flight safety. There are many highly qualified aviation educators out there! Please Join support our mission SAFE and of generating aviation excellence in teaching and flying. Our amazing member benefits alone make this commitment worthwhile and fun. Lastly, use our FREE SAFE Toolkit App to put pilot endorsements and experience requirements right on your smart phone and facilitate CFI+DPE teamwork. Working together we make safer pilots!

<https://innermammalinstitute.org/>

<https://blog.aopa.org/aopa/2015/12/07/the-normalization-of-deviance/>

<https://www.safepilots.org/about-safe/code-of-ethics/>

<https://www.slideshare.net/Slitrep/dr-bill-rhodes-warning-signs-in-pilots>

<https://www.safepilots.org/programs/mentoring-program/>

<https://safeblog.org/2018/10/13/faa-has-minimums-we-need-more/>

<https://youtu.be/pmZ6wtOmTZU>

<http://savvycfi.com/>

## **Report: Boeing Warns Airlines of Potential 737 MAX Glitch After Lion Air Crash**

Boeing has reportedly warned airlines operating its new 737 MAX aircraft of a [potential technical problem](#) that could cause the plane to enter into a dangerous dive. A source cited by Bloomberg late Tuesday said the company is preparing a service bulletin about the issue which stems from faulty readings from a flight-

monitoring system. The warning is said to be [based on preliminary findings](#) from the into the Lion Air jetliner crash last week that left 189 people dead. The Lion Air 737 Max 8 lost contact with air traffic controllers shortly after takeoff and then plunged into the Java Sea. Bloomberg later reported that the bulletin had been delivered, which directs operators to "existing flight crew procedures to address circumstances where there's erroneous input from an AOA sensor."



## **Error during assembly of P&W engine led to GoAir aircraft**

An error during assembly stage of a Pratt & Whitney engine led to in-flight engine shut down of an A320 neo plane, operated by GoAir, in February last year, says a probe report.

According to the report, the [misinterpretation of the MEL \(Minimum Equipment List\)](#) by the operator regarding flight hours for the release of aircraft with chip warning caused the engine to fail in-flight is a contributory factor.



The plane, flying from the national capital to Bengaluru, had 193 people on board, including six crew members.

In recent times, there have been various instances of A320 neo aircraft, powered by P&W engines, facing glitches. IndiGo and GoAir had grounded some of their A320 neo planes due to the engine issues.

"The cause of the incident was an [error during assembly stage as the PMA Rotor was incorrectly installed on gear shift](#) which over the period of time generated FOD (ForeignObject Damage)," the official probe report said.

It resulted in chip warning and subsequently engine shut down, it added. PMA refers to Permanent Magnetic Alternator.

The incident involving the GoAir flight happened during take off at Delhi. The investigation report, dated June 15, 2018 and made public this week, said that the DGCA may direct all operators to ensure that their certifying staff to follow the regulator's requirements strictly during certification work.

"During assembly the PMA rotor was installed out-of-position axially and circumferentially on the PMA gear shaft which was observed during strip examination of the engine.

"DGCA may take up the matter with P&W regarding the error during assembly stage of the engine," the report said.

In August this year, the Directorate General of Civil Aviation (DGCA) said the engines are being continuously monitored and safety issues are addressed adequately.

## **Aircraft Mechanic Facing Theft Charges**

A Florida aircraft mechanic has been charged with multiple counts of theft for [allegedly removing serviceable parts from aircraft, selling them](#) and charging his customers to replace them with new parts.

Joseph Lippo, who operates J.L. Aircraft Services in Deland, was arrested on recently and has since been released on a \$15,000 bond.

The investigation began with a complaint from the owner of an old Gulfstream II, that the owner claimed had been "gutted" by Lippo.

According to the Daytona Beach News Journal, Lippo told investigators he had permission to scrap the plane by one of the owners and by the Department of Homeland Security, which he claimed had seized the plane.

Besides the Gulfstream, Lippo is [accused of charging other customers](#) for work that wasn't done to the tune of tens of thousands of dollars. "During the investigation, it was discovered that the owner and operator had been removing functional parts from planes, installing them in other planes and charging the owners for replacement parts in the original planes," the paper quoted a police statement as saying. Daytona police are asking for any other potential victims to come forward as they look into exactly how many aircraft and operators are affected.



## TP 185 - Aviation Safety Letter



Government  
of Canada

Gouvernement  
du Canada

The Aviation Safety Letter (ASL) is published quarterly and is only available online.

The ASL includes articles that address [aviation safety from all perspectives](#), such as safety insight derived from accidents and incidents, as well as safety information tailored to the needs of all holders of a valid Canadian pilot license or permit, to all holders of a valid Canadian aircraft maintenance engineer (AME) license and to other interested individuals within the aviation community.

## **Want to stay healthy while flying? Follow this advice from an aviation doctor.**

Quay Snyder flies more than 130 times a year on commercial flights. As an aerospace medicine specialist, pilot and flight instructor, he feels perfectly safe in the air. But after each flight, to put his wife's mind at ease, he'll call her to say he has arrived without incident. "I joke with my wife," he says. "I give her a call and I say: 'I'm starting the most dangerous part of my journey — I'm driving home.'"



His point: Commercial airline travel is rarely dangerous. One person has died in the U.S. on a commercial airline in the past nine years, [compared with nearly 40,000 a year who die in vehicle crashes in this country](#). Snyder's job, in the field of aviation medicine, is to help people stay healthy while flying. As president and CEO of Aviation Medicine Advisory Service, based in Centennial, Colo., he assists pilots with health problems, advising them on how to be in top condition while in the air and on how to maintain their FAA medical certification. He also consults with professional pilot and aviation safety organizations on [optimizing human performance](#) and enhancing safety. He shared this advice for travelers on how to make wellness a priority while flying.

**Separate fact from fiction when it comes to contagion.** Snyder is quick to point out that travelers are not more likely to get sick on an airplane than they are in other spaces. In fact, he says, they may be less likely to catch a virus. That's because air is exchanged more frequently on the plane than it is in typical offices and school buildings, and filters on airplanes remove about 99 percent of germs from the air. To catch a virus, he says, you need to be sitting pretty close to someone who is sick.

“They really need to be within about one or two rows of someone who is actively coughing and not actively suppressing that cough to be at risk for respiratory transmission,” he says. “The risk is actually higher in the airport and even in the lines or the jetway or the restaurants at the airport.”

**Choose a window seat.** Snyder opts for the inside seat, when possible. He says that’s because airplanes are designed so that the air flow comes down from the top of the cabin and exits from vents on the floor by the window, so when you choose the window seat you benefit from that air flow. “That’s a relatively safer place, even though the overall environment is safe,” he says.

**Wipe down flat surfaces.** Germaphobes cringe at the idea of touching a tray table that’s been touched by countless passengers before them, and for good reason. Snyder advises travelers to pack wipes (with at least 62 percent alcohol) and use them to wipe down tray tables, arm rests and seat belt buckles.

**Keep your medications — and a list of those drugs — handy.** Your carry-on is the best place for toting any medications you might need during your trip. That way, even if your plane is delayed or your luggage is lost, you still have them close at hand. Snyder also suggests carrying a list of the medications you’re taking along; on long flights, you may want to carry notes about your medical history. The information will be accessible to medical professionals should you become sick or unable to communicate.

**Get moving.** Deep vein thrombosis can happen when a blood clot forms within a vein. While airplane travel itself doesn’t cause deep-vein thrombosis, sitting in one place for a long period of time can contribute to it. “If you were on a train for eight hours, you’d have the same risk,” Snyder says. On long flights, he suggests walking up and down the aisle or doing exercises in your seat to move your toes up and down and flex your calf muscles.

**If you’re sick or recently underwent surgery, visit a travel medical professional before flying.** A number of health problems can be exacerbated by altitude, including lung, heart and intestinal ailments. Those who struggle to breathe on the ground may find it more difficult in the air. Same goes for heart problems. And the plane’s pressure changes can cause gas and bloating, which might be a problem for someone who has recently undergone gastrointestinal surgery. Snyder says it’s a good idea to make an appointment with a travel medicine specialist to address any potential concerns before flying. He or she will probably know more about the topic than your family doctor. “I would say the overwhelming majority of physicians don’t take the physiological challenges of altitude into consideration,” he says.

**Drink lots of liquids (except alcohol and coffee).** Snyder says that the humidity level on an airplane is low, which is why travelers sometimes become dehydrated. Counteract it by increasing your water intake, and avoid drinking alcohol and caffeine, which are diuretics. He points out that dehydration isn't the only reason to avoid those little bottles of liquor on the plane. Altitude makes alcohol go to your head quickly, because less oxygen is getting to your brain. Alcohol can also disrupt sleep and worsen jet lag, Snyder says. "Just put it in the vernacular: you're stupider when you're on alcohol at altitude," he says.

**Use common sense.** Before you travel, get a good night's sleep. Eat a healthy meal. Drink lots of water. Exercise. Manage your stress. All of the tips that physicians — and moms — give year-round are also the kind of advice you should heed before hitting the skies.

Snyder also advises all travelers to wear their seat belts, listen to flight attendants during the safety briefing and read the safety card. He says that's something he does whenever he flies. "I probably irritate people by pulling out the safety card every time," he says. But just as he goes through a safety checklist when he's in the pilot seat, he says he wants to make sure, as a passenger, he's ready and able to do what he needs to do to stay safe.

## **Airport Workers Deserve a Living Wage**

by John Goglia

A recent *New York Times* editorial highlights the stagnation and even decline of wages for many low-paid airport workers. These workers include baggage handlers, ticket agents, cleaners, fuelers, drivers, and others who work on the ramps and within the secured areas of airports around the country. The particular focus of this editorial was the **three major airports** in New York area operated by the Port Authority of NY & NJ—JFK, LGA, and EWR—and advocated for a raise in the minimum wage at these three airports.



[According to the editorial](#), “Real wages for the men and women who do much of the work at airports declined by 14 percent between 1991 and 2011, according to a study by the Center for Labor Research and Education at the University of California, Berkeley. While airline profits have become robust since that period, airport worker pay has stagnated, like the wages of so many low-paid Americans. And the decline was even sharper since the days before airline deregulation, when unionized workers also got paid vacations and days off as well as medical benefits.”

Many of these jobs are physically demanding jobs; I’ve worked loading bags both as an airline mechanic helping out on the ramp and when I ran my own FBO at Logan International Airport, so I know the physical exertion involved and danger of personal injury from lifting and moving bags. Cleaners, too, don’t have it easy; with the pressure to make short turn-around times and the high load factors, airplanes are dirtier than ever and the time to clean them shorter than ever. But regardless of the physical exertion involved, working a full-time job should not require food stamps to put a family’s meals on the table [as the editorial points out](#). Nor should these workers have to take on multiple jobs to make ends meet.

Of course, working people deserve a living wage. But when it comes to aviation, it’s not just that they deserve a living wage. To me, [it’s also that air safety](#) (and security) require it. The consequences of low wages include frequent employee turnover as workers leave a job to make even a small amount more per hour and employees working multiple jobs to make ends meet. The former results in employees being improperly trained and lacking the on-the-job experience that benefits both safety and security. [As far as working multiple jobs, clearly this frequently adds up to sleep deprivation and chronic fatigue and can lead to worker injuries, as well as incidents and accidents both on and off the airport](#). Both the NTSB and the FAA have highlighted the aviation safety consequences of fatigue, especially chronic fatigue.

### **TRAINING AND EXPERIENCE MATTER**

Lack of experience and improper training of airport workers, such baggage handlers, has led to accidents. While the probable causes of the ValuJet crash in May of 1992 were properly placed on SabreTech, ValuJet, and the FAA, better trained and more experienced baggage handlers working ValuJet Flight 592 [would likely](#) have noticed that the cargo they were loading contained oxygen canisters and at least questioned their carriage, since ValuJet was not authorized to carry hazardous materials. We all know how that ended.

A fire in the DC-9's cargo compartment was started by the actuation of one or more of these improperly carried oxygen generators. In just a couple of minutes, the airplane was engulfed in flames and crashed in the Everglades, killing all 105 passengers and five crewmembers.

And, of course, while it's not always obvious to those who haven't worked on the ramp, baggage handlers don't just throw bags on and off aircraft. They're responsible for the proper load distribution of bags and cargo. If done improperly, this can—and has—[caused weight-and-balance issues for the aircraft and can result in a dangerous shift in the center of gravity and loss of control of the aircraft.](#)

From a damage perspective, drivers on the air operations area probably cause the greatest recurring dollar loss from incidents and accidents with other vehicles, aircraft, and even terminal and hangar buildings. While I'm not aware of a specific study correlating driver turnover and accidents, it's clear in my experience that so much turnover—I'm aware of facilities with 50 percent annual turnover—will result in poorly trained, low-experience drivers. These include drivers of tugs, lavatory trucks, water and catering trucks, fuel trucks and even stair and jetway drivers. Sometimes it seems that every day brings a report of ground damage at an airport somewhere in the country, so it's not surprising that ground damage consistently exceeds billions of dollars worldwide.

[In fact](#), there have been a number of recently reported fuel and other truck crashes at airports around the country: in July, a fuel truck hit a United Airlines 777 as it was parked at a gate at Dulles International Airport; in May, a fuel truck flipped over on the general aviation ramp of Bozeman Yellowstone International Airport in Montana; in March, a fuel truck crashed into a fence at Buffalo Niagara International Airport in New York, spilling 2,000 gallons of fuel. And it's not just property that gets damaged. A passenger van and fuel truck collision a year ago at Denver International Airport injured 11 people, five of them seriously.

Of course, not every incident gets reported. How many of these are caused by [inexperienced, under-trained or fatigued drivers](#) is hard to say definitively without data, but in my experience investigating accidents on the ramp, these are frequently the leading causes.

Another area of concern with inexperienced and/or fatigued workers is fueling. While the industry and the FAA have taken significant steps over the last 30 years to prevent fueling errors, they still happen. A 2017 NTSB accident report of the fatal crash of a February 2015 Piper PA 46 Mirage in Spokane, Washington, states: “Post-accident interviews revealed that, when requesting fuel from the fixed-base operator (FBO), the pilot did not specify a grade of fuel to be used to service the plane. The refueler mistakenly identified the airplane as requiring jet-A fuel, even though the fueler ports were placarded “AVGAS [aviation gas] ONLY.” The fuel truck had an improper nozzle installed; fuel nozzles for jet-A and avgas are different to help prevent these types of errors. A similar refueling error occurred in 2014 in New Mexico, resulting in the crash of an air ambulance flight that killed all four on board.

These incidents and accidents can't be tied directly to low pay, but they illustrate what some of us may sometimes forget: every job at an airport can have an impact on safety.

<https://www.nytimes.com/2018/07/02/opinion/airport-worker-wages.html>

## **Pharmacists need a formulary for the aviation industry**

Those working in community pharmacy may be familiar with the same faces and camaraderie, but those working in an airport pharmacy will have a different set of customers and patient groups to consider.



One such group is airline pilots, [who have very specific needs](#) — in particular, the need to operate an aircraft safely. The aviation industry has led the way in safety, with the introduction of automation, standard operating procedures, checklists, and training and development — all of which have been extrapolated to other disciplines, such as pharmacy and medicine. [The study of human factors and fatigue in aviation](#) is now attracting research; do pharmacists also need to consider the effect of medicines — prescribed or over-the-counter — on a pilot's ability to do their job safely?

Aviation authorities have dedicated medical teams that regulate medication use. Pilots should contact an aeromedical examiner (AME) for any medical condition. However, pilots do not always contact their GP or AME for minor ailments. Could pilots be reluctant to expose their condition and risk the possible consequences for their license?

In 2015, the General Aviation Joint Steering Committee [noted that 40% of the 200 fatal air accidents they studied involved the pilot taking some form of drug](#). Pharmacists must consider not only the side effects of the medicines they supply, but also their interactions with other medicines that the pilot may be taking. Pilots should be made aware that some medicines can [cause cognitive impairment](#), even if the pilot feels normal. And pilots should not fly until a set period of time has elapsed after taking over-the-counter medicines, such as sedating antihistamines, pain medicines, certain dietary supplements and decongestants.

A study by Kingston University, which investigated pharmacist and pilot perceptions of each other's roles in aviation medication safety, highlighted that [more needed to be done to improve awareness and safety](#). Before flying, nearly one-third (31%; n=48) of pilots surveyed had used pseudoephedrine, which may have affected performance, given the drug's potential to cause insomnia and dizziness.

The study also highlighted [a disagreement](#) about who was responsible for ensuring that the pharmacy consultation is tailored to the patient's profession. Pharmacists stated that they were not aware of pilots' needs; and both pilots and pharmacists agreed that guidelines for pharmacists would be helpful.

Pharmacists need a formulary to guide them on the specific medicines that pilots can and cannot take. This formulary could also apply to other professions requiring high levels of safety and concentration.

## Canada Campaigns to Prevent Aviation Mechanic Shortages

Canada's Minister of Transportation, Marc Garneau, has launched an effort to alert the public to [a looming projected global shortage of skilled aviation personnel](#) (particularly aircraft mechanics). Today he published an editorial in *The Hill Times* stressing the need to train and recruit candidates to fill aviation industry positions vacated by the [rapidly graying Baby Boom generation](#). He argued society cannot afford to allow critical shortages to develop in this significant transportation sector. His words echo an alarm sounded previously by the aviation, aerospace, and defense firm Oliver Wyman.



The company's website forecasts the development of a worldwide need for [more skilled aviation mechanics](#). It surmises a combination of expanding airline travel and demographic shifts in the work force will create a critical shortfall in the labor market. The international crisis will impact the USA in 2022, peaking here in 2027 as a record number of experienced airplane mechanics retire.

### **Promoting Gender Equality**

The **shortage issue** has perhaps contributed to interest in hiring more female and minority aviation job applicants. For instance, the Association of Asia Pacific Airlines, a prestigious industry body representing 15 companies, recently passed a resolution about the shortage. It asked governments to ramp up their investment in training and recruiting aviation personnel.

The members urged impacted governments to increase the available opportunities [for women within the industry](#). A steep disparity between the numbers of men and women employed in aviation fields exists today. In Australia, Swinburne University recently launched an aviation scholarship specifically for women.

### **Motivating Students**

Educators in the United States have already noticed both gender employment and pay inequalities in technical fields and a perceived need for society to encourage more students to pursue “STEM” subjects: Science, Technology, Engineering, and Math. Massachusetts and several other states began celebrating “STEM week” on Monday. Aviation firms may eventually become one of the first beneficiaries of this intensive public relations effort.

For example, concerned about predictions the United States will require [an additional 180,000 aircraft maintenance technicians within the next 19 years](#), Cape Cod Community College will open the doors of its Aviation Maintenance Technology Program to the public on Thursday. The open house will showcase its facilities. Sponsors hope to stimulate student interest in the training program for aviation mechanics.

<https://www.hilltimes.com/2018/10/22/172663/172663>

## **7 Flying Decisions You'll Feel Pressured To Make**

[If you're a pilot, you've probably been pressured by these 7 decisions](#). Whether you've felt these pressures from passengers or yourself, holding yourself to personal standards is critical.



### **1) Taking Off In Marginal Weather**

Making a go/no-go decision when you need to get somewhere with passengers is never fun. I once had a passenger pull out a Weather Channel app and try to explain that the weather looked just fine to him.

In the end, your decision should always be the safe road out, and you'll be most respected for that in the end.

### **2) Flying Over Maximum Weight**

Has someone ever told you: *"Don't worry about being a little overweight, the plane was certified with safety margins, so it can fly much heavier than published."*

While this may be true in some circumstances, that doesn't change the legal airplane limitation you're breaking. If anything happens, knowingly flying overweight will fall on your shoulders as PIC, leading to some serious consequences.

### **3) Busting Weather Minimums**

Remember flying through those "scattered" clouds? Weather minimums are established to keep you and the IFR traffic around you safe.

### **4) Flying When You're Sick**

There's nothing worse than preflighting on a wet day outside when you have a cold. Before you even leave for the airport, ask yourself: "Am I 100% on my game to fly today?"

If you've ever gotten a sinus block mid-flight from being sick, you probably remember saying to yourself that you'd never do that again.

### **5) Rushing A Departure**

If you're running late, remind yourself to slow down. A few extra minutes isn't going to change a whole lot when it comes to scheduling. Take your time to get all information prepared and reviewed before your flight.

### **6) Flying Lower Than You're Comfortable**

Has a friend pushed you to fly lower and lower so they can see their house better? Have a personal minimum in mind and always take into account safe landing areas around you. Never break FARs when flying over congested areas. You're putting yourself at risk for getting a violation if someone on the ground reports you.

## 7) Flying Un-Airworthy Aircraft

Not so sure about the airworthiness of the plane you're about to fly? Take extra time to review the maintenance logbooks and do a thorough preflight check. Whether you notice a mistake or not, flying an un-airworthy airplane rests on your shoulders as PIC.

## Inadequate weather planning fatal for pilot

The private pilot was conducting a personal cross-country flight in the Ryan Navion.

The pilot's friend reported that he provided weather information to the pilot about an hour before the flight. **No record was found** indicating that the pilot or the friend obtained a formal weather briefing before he departed for the night cross-country flight.



A review of weather information revealed that, about an hour and 20 minutes into the flight, as the airplane was nearing the destination airport, it encountered a strong cold front boundary with associated severe wind shear and turbulence.

Review of radar data revealed that, during the following 13 minutes, the flight completed numerous course deviations, including three complete left circuits and two right circuits, before hitting wooded terrain near New Gretna, New Jersey. The pilot died in the crash.

A review of the last three minutes of radar data revealed that the airplane's altitude oscillated between 2,100' and 200' mean sea level (msl) as it completed the two right circuits and one of the left circuits before it hit terrain.

The last target was recorded about 2,000' southeast of the accident site at an altitude of 525' msl.

Examination of the wreckage did not reveal any pre-impact mechanical malfunctions or failures that would have precluded normal operation.

**Based on the evidence**, it is likely the airplane encountered wind shear and turbulent conditions upon encountering the strong cold front boundary and that the pilot subsequently lost airplane control.

**Probable cause:** The pilot's **inadequate preflight weather planning** and in-flight weather evaluation, which resulted in an encounter with a strong cold front and the pilot's subsequent loss of airplane control.

NTSB Identification: [ERA17FA052](#)

This November 2016 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.

## **FAA Safety Team | Safer Skies Through Education**

### **Pilots and Medication**

Notice Number: NOTC8111

**Impairment from medication**, particularly over the counter (OTC) medication, has been cited in a number of accidents in general aviation. In a 2011 study from the FAA's CAMI Toxicology Lab, drugs/ medications were found in 570 pilots (42%) >

from 1,353 total fatal pilots tested. Most of the pilots with positive drug results, 511 (90%), were flying under CFR Part 91.

[Download Fact Sheet](#)

[57 Seconds to Safer Flying - Pilots and Medications](#)

[Topic of the Month - Pilot's and Medication](#)

## **BOOK: FLY**

In 2010, thousands of feet in the air above Singapore, the 469 passengers aboard QF32 found themselves in a crisis that no one could have anticipated when the A380 in which they were flying suffered a catastrophic explosion.

Captain Richard de Crespigny and his crew confronted extraordinary challenges over the next four hours, with only three partially working engines, and a potentially explosive plane facing an imminent emergency landing. Even experienced crash-investigators later revealed they **thought recovery in such circumstances was impossible**. Yet in the end all aboard walked away safely.

Why was there a seemingly miraculous outcome to what could so easily have become one of the world's worst aviation disasters? And how did the captain and his crew remain so calm in such a stressful situation? The answer is leadership, teamwork and skill. In *Fly!*, Richard de Crespigny shares the insights and techniques he built up over decades in the high-pressure world of military and civilian aviation.

