Aviation Human Factors Industry News

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Hello all,

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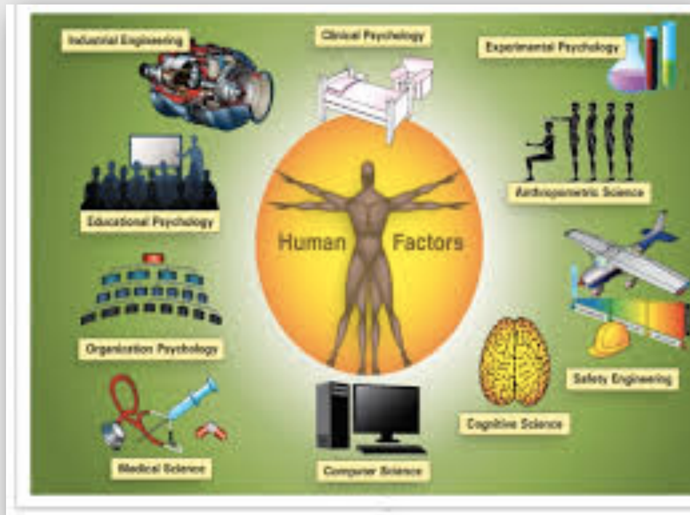
In this weeks edition of *Aviation Human Factors Industry News* you will read the following stories:

Implementing a Fatigue Management Program: A Human Factors Dimension to Your SMS



Chapter 11 of ISBAO centers on a Fatigue Management program. Introduced as its own chapter in 2016, the section emphasizes the need to have a Fatigue Management Plan (FMP), which is often viewed as a daunting task for operators of all sizes and complexities. In reality though, if seen as an extension of your existing SMS, the challenge is not as big as you might think. And, an FMP delivers many benefits with minimal impact to your business workflows.

Consider the basic tenets of the FMP: Policies, Education and Training, Flight and Duty limits, Deviation and Risk Management processes, Reporting, and Tracking trends. These are very similar to your existing SMS framework. Fatigue is simply another form of risk, and an FMP provides a framework to manage it—just like you are already managing all the other forms of risk in your existing SMS.

Your company's safety culture is supported in the safety policy of your SMS, and fatigue risk is a legitimate threat to safety. In fact, stating this seemingly obvious point is a key purpose of the fatigue policy in an FMP. The fatigue policy should also set forth the roles and responsibilities of relevant staff in managing fatigue risk, and affirm management support by being signed and dated by an accountable executive.

Just as an SMS relies on sound procedures, a fatigue risk management process is bookended by sound flight and duty limits. These limits are grounded in scientific principles and substantiated by industry bodies; in general aviation, they are typically defined in terms of the Flight Safety Foundation Duty Rest Guidelines of 2014.

Depending on the nature of your operation, you may be continuously within those limits, or you may need a deviation from time to time. In any case, the fact remains that it is common to be operating within the guidelines and yet be experiencing high levels of fatigue risk. It is also possible to be operating under a deviation from the guidelines with a low level of fatigue risk. A central function of the risk management process of an FMP is to quickly identify to what degree fatigue risk is an issue for each flight in your operation. Knowing where the high risk zones are is an essential first step to planning appropriate countermeasures. Biomathematical tools provide the analytical engine for evaluating risk mitigation options on the fly. They also serve to objectively substantiate the prescriptive limits and/or mitigation options you've been using.

Your FMP should provide a means for everyone in your operation to report fatigue issues or fatigue statuses throughout their work shifts. A good reporting tool affords the safety personnel a view of the portions of their operation where fatigue issues appear to be the worst. Supplementing your existing Hazard Report forms with sections for fatigue considerations is an efficient approach that can also shed light on potential relationships between fatigue and specified hazards. By monitoring the feedback and data from these reports and performing root cause analyses, you can evaluate mitigation options for future consideration.

Fatigue risk is a "we" issue. Everyone works together to promote safety per your SMS, and the same holds true for managing fatigue risk. From the decisions made by the operational team scheduling duties and flights, to the personal responsibility of individuals to report to work fit for duty, everyone has a proactive role to play in keeping fatigue risks to a minimum.

Usually, fatigue countermeasures are negligible to the operation. Real-world examples include small shifts of flight departure time, power naps, extra breaks on shift, or a cup of coffee at just the right time. Simply making everyone aware that elevated fatigue levels may occur during an upcoming flight plan can galvanize the team: the sense of personal responsibility will motivate flight crew to plan ahead and get more sleep leading up to the shift/flight.

You will find that incorporating a Fatigue Management Plan in your existing SMS is not that daunting a task. And, you will quickly find it gives a significant boost to your efforts to promote a culture of safety in your air operation.

Aviation Fatigue Meter Fleet Insight Intro - Pulsar Informatics

Monitor and manage fatigue risk across your aviation operation. [Watch Video](#)

Turbine blade corrosion caused Jet ATR engine fire

Investigations into an engine fire on a Jet Airways ATR 72-500 have been traced back to undetected corrosion of a power turbine blade in the aircraft's right-side Pratt & Whitney PW127M engine.

The aircraft, registered VT-JCL (MSN 791), was operating flight 9W-2839 on 15 June 2016 from Bangalore to Mangalore, when shortly after take-off at 09:59 local time the master caution warning light flashed for about one second when at 4,500 feet.The cabin crew noticed smoke in the passenger cabin as the aircraft climbed to 6,000 feet, and the flight crew decided to return to Bangalore. Shortly before landing, fire was seen in the right-hand engine. The engine was shutdown and a May-Day call given. The aircraft landed at 10:23 local time. Emergency evacuation was carried out on the runway.

Of the 67 passengers and four crew on board, only three passengers suffered injuries. In its final investigation report, India's Aircraft Accident Investigation Bureau has classified the incident as 'serious'.

The AAIB says that failure of a power turbine blade likely resulted in heavy vibration of the engine. This damaged the air and oil seals of the turbine shaft bearings and impeller bearings, allowing engine oil to contaminate the bleed air of the right-hand engine, which led to the smoke in the cabin.

The original power turbine blade failure was likely due to corrosion. This would probably have been spotted if specific inspection protocols - that were not required for the engine in question prior to the incident - had been in in place.

Following the incident, the AAIB has recommended that Jet Airways update its routine inspection regimen for its ATR fleet.

Flight Fleets Analyzer shows that VT-JCL is currently in service. It is of 2008-vintage and managed by Aergo Capital.

NTSB: Fan Blade Separation Led To United B777 Cowling Loss

Preliminary Report Offers Few Other Details

The NTSB has released a preliminary report on an incident which occurred on a United Airlines flight from San Francisco to Honolulu February 13.

According to the report, at about 12:00 PM HST, United Airlines flight 1175, a Boeing 777, N773UA, experienced an in-flight separation of a fan blade and subsequent loss of the inlet and fan cowls of the right engine, a Pratt & Whitney PW4077 during descent into Daniel K. Inouye International Airport (KHNL), Honolulu, Hawaii.

Shortly after initial descent, passing through about flight level 327, the flight crew received warnings of an engine compressor stall, and shut down the engine. The crew declared an emergency and proceeded to KHNL without further incident.

There were no injuries to the 363 passengers and 10 crew members and the airplane received minor damage. The airplane was operating under 14 CFR Part 121 as a regularly scheduled passenger flight and had originated from San Francisco International Airport (KSFO), San Francisco, California.

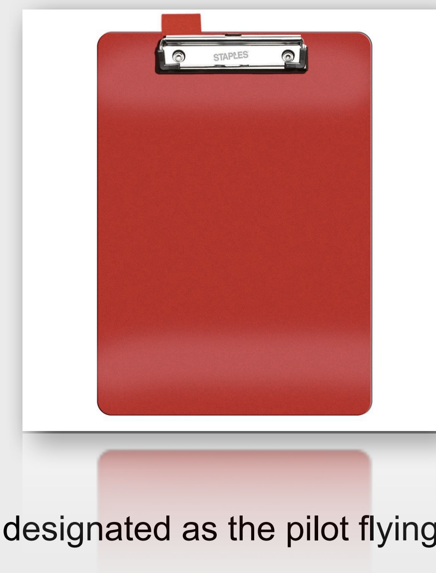
In a statement released at the time of the incident, United Airlines said its pilots "followed all necessary protocols to safely land the aircraft."

FMI: app.ntsb.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20180213X95634&AKey=1&RType=HTML&IType=IA

Jetstar Ramp Worker Leaves Clipboard On Engine Cowling

Mistake Caused The Flight To Return To Auckland Airport

A clipboard left on the right engine cowling of a Jetstar Airways A320 by a ramp worker caused the flight return to the Auckland, NZ airport when the mistake was brought to the pilot's attention.



According to an ASTB report on the incident, on October 27, 2017 at about 1900 Coordinated Universal Time, the Jetstar Airways Airbus A320 aircraft, registered VH-VGY, was being prepared for a scheduled passenger service from Auckland International Airport, >

New Zealand to Sydney, Australia. The captain was designated as the pilot flying and the first officer was the pilot monitoring.

At about 1909, the leading hand had finished loading the last container into the aircraft hold and was organizing his paperwork. As it was raining, he decided to put the clipboard in the right engine (No. 2) cowling to stop his paperwork from becoming wet and blown by the wind, with the intention to retrieve it later.

The leading hand went to the flight deck, gave some paperwork to the flight crew, and returned to the ground to organize the aircraft's push back.

At about 1919, the dispatcher cleared the ground and servicing equipment from the aircraft and conducted the 'duty of care' walk-around. During the walk-around, she noticed the clipboard in the right engine and thought that the leading hand would return for it, so she continued with the walkaround. Soon after, the engines reportedly started normally.

At about 1925, when the aircraft was taxiing, the leading hand realized his clipboard with the paperwork was missing and thought the dispatcher had the paperwork. The leading hand asked the dispatcher about the clipboard and she mentioned she saw it in the right engine during the walk-around. The ground crew returned to where they were preparing the aircraft and noticed paper debris on the ground. The ground crew organized for their operations area to contact the flight crew.

At about 1937, the aircraft departed. Shortly after, when on climb through flight level 150, the flight crew received a radio call from the Auckland Approach air traffic controller to contact the surface movement controller. The captain handed control of the aircraft to the first officer and contacted the surface movement controller who advised that the ground crew had lost their paperwork and it may have been placed on the engine. The captain requested further information about the paperwork, specifically whether the paper was on top of the engine or inside the inlet. The flight crew checked the engine instruments and there were no abnormal indications. The surface movement controller confirmed that the paperwork was placed within the inlet and paper debris was found on the tarmac. The captain then contacted the company engineer at the airport and asked whether it was just paperwork or a clipboard with a metal clip. The engineer advised that a piece of sheared metal had been found. The flight crew decided to return to Auckland.

After landing at about 2048, the engine was inspected by engineers and paper was found throughout the engine. They also found minor damage to an engine fan blade and attrition liner.

The leading hand stated that, due to the wind and rain, he felt the need to shelter the paperwork. Normally, staff use the pushback tractor for shelter during adverse weather and to prepare paperwork for the flight. There is a metal box on the loader to store the folder.

However, as the pushback tractor was not yet present at the bay, he used the engine cowling. He recalled that he did not feel pressured to rush the departure.

The dispatcher stated that she did not view the clipboard as a foreign object as it belonged to the leading hand and had the paperwork for the flight. She assumed that the leading hand would retrieve it later, prior to engine start-up.

The captain stated that, to obtain more information about the incident, numerous calls were made to other agencies, which took considerable time. Further, due to poor communications, he was unable to contact the operator's maintenance controller to discuss the engine's status.

The internal investigation into the incident by the ground handling operator, Aerocare, noted that the Jetstar Airways operational manual detailed the responsibilities of the dispatcher when conducting the 'duty of care' walk-around and provided a table of the steps involved for this process. While there was no specific requirement to check the engine cowlings/intakes for foreign objects, the manual stated that all staff operating near the aircraft were to be constantly observant for abnormalities and to report these to the leading hand or supervisor prior to the aircraft departing.

The investigation also noted that there was no procedure for the ground crew to establish communications with the flight crew in the event of a non-normal or emergency situation, either prior to or after the aircraft had departed. Further, there was no guidance on how paperwork was to be prepared and managed by ground crew during adverse weather conditions.

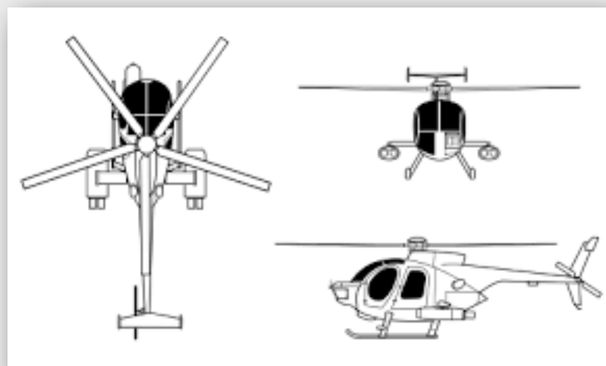
As a result of this incident, Jetstar Airways released an updated aircraft dispatch procedure, which included:

- a specific warning about not placing items in the engine cowling
- improved detail around checks and responsibilities
- a section on emergency and non-normal procedures
- detailing methods for re-establishing communications between ground crew and flight crew such as visually gaining the attention of the flight or contacting them via radio

FMI: Report

MAIN ROTOR DAMAGE LINKED TO MISSING CABLE

McDonnell-Douglas 369E, Oct. 4, 2016, Waimea, Hawaii—Damage to the main rotor system that forced an emergency landing was caused by an unsecured lift cable stowed inside the helicopter, according to the NTSB's final report on the accident. Following the completion of external load operations, the pilot had jettisoned the 20-foot cable, which ground workers then recovered and placed in the rear of the cabin but did not tie down. The helicopter was being operated without its cabin doors.



As the helicopter was climbing through 75 feet at an airspeed of between 20 and 25 knots, the pilot felt “a significant vertical vibration” and noticed “a substantial blade spread” in the main rotor track. He made a a successful emergency landing, after which about nine inches was found to be missing from the tip of one main rotor blade. That damage and scuff marks on two of the four other blades were consistent with their having struck a metallic object that was not recovered at the scene. The lift cable was not in the wreckage and could not be located.

There were no injuries to the pilot or two ground crewmen on board. Impact damage to the helicopter included the fuselage and instrument panel, tail rotor, tailboom, and horizontal and vertical stabilizers.

FAA Revokes AeroBearings’ Repair Station Certificate

The U.S. Department of Transportation’s Federal Aviation Administration (FAA) has issued an Emergency Order of Revocation against Kornitzky Group LLC, doing business as AeroBearings LLC, of Arlington, Texas, for improperly overhauling and repairing turbine engine bearings.

The FAA alleges that AeroBearings routinely disassembles, inspects and overhauls turbine engine bearings without possessing the data necessary to perform key aspects of this safety critical work. The FAA further alleges that the repair station intentionally falsified documents certifying that these repairs were accomplished in accordance with appropriate data and federal safety regulations.

The FAA began its investigation of AeroBearings in 2016 after receiving two Administrator's Hotline complaints from customers who reported quality problems with bearings overhauled by the company. During its investigation, the FAA found that AeroBearings conducted work that exceeded their available data on bearings for a variety of aircraft engines, including those manufactured by General Electric Co., Pratt & Whitney, and CFM International.

The FAA alleges that AeroBearings disassembled engine bearings for overhaul, even though some manufacturers specifically prohibited disassembly. The FAA also alleges that during these overhauls, AeroBearings removed material from critical internal bearing surfaces without having the requisite design data to verify the overhauled parts would fit and function together as designed.

The FAA further alleges that because AeroBearings did not possess the necessary approved data to determine that the overhauled engine bearings met original manufacturers' design specifications, AeroBearings could not determine they were airworthy.

Due to the seriousness of the alleged violations, the FAA has determined that enough evidence exists to immediately revoke AeroBearings' Air Agency Certificate. The company's willingness to make intentionally false statements on airworthiness certifications shows it cannot be trusted to maintain the integrity of aviation's trust-based record keeping system.

AeroBearings has 10 days from the issuance of the FAA's Emergency Order of Revocation to file an appeal.

GULFSTREAM CAPTAIN KILLED BY CABIN DOOR

Gulfstream G150, Jan. 4, 2018, Kittilä, Finland—The German captain of an Austrian-registered Gulfstream G150 was killed opening the cabin door after his preflight inspection. The Kittilä airport, Finland’s fourth busiest, is located north of the Arctic Circle, and the airplane’s auxiliary power unit was reportedly operating to provide heat for the flight attendant. Cabin pressurization had apparently also been activated, causing the door to blow open violently when unlatched. There were no other injuries. Aircraft damage was limited to the door and its frame and described as “minor.”

PILOT INEXPERIENCE, UNSTABLE APPROACH CITED IN FATAL MU-2B CRASH

Mitsubishi MU-2B-60, March 29, 2016, Iles-de-la-Madeleine, Quebec—The accident was the result of poor energy management during an unstable instrument approach caused by the pilot’s lack of make-and-model experience, >

according to the final report issued by Canada's Transportation Safety Board. All seven on board died when the twin-engine turboprop crashed 1.4 nm short of its destination airport in the sparsely populated archipelago in the Gulf of Saint Lawrence. High winds, low ceilings, and the high-performance qualities that have made the MU-2B subject to stringent model-specific training and currency requirements contributed to the accident sequence.

The flight departed from the Montreal/St. Hubert Airport at 10:31 a.m. with a filed alternate of Charlottetown, Prince Edward Island. The CVR captured the airline transport-rated pilot briefing the GPS approach to Runway 07 with his front-seat passenger, a commercial pilot and flight instructor with no prior MU-2B experience. He delayed descent from FL 210 to save fuel, then began descending at just 800 fpm instead of his planned 1,500 fpm. The descent rate subsequently reached 2,500 fpm, but the airplane crossed the initial approach fix (9.7 nm from the runway threshold) 1,500 feet high and 100 knots faster than its recommended approach speed, overshooting the final approach course before correcting.

It crossed the final approach fix nearly 800 feet high and 50 knots fast as the pilot made increasingly aggressive attempts to lose altitude and slow the airplane. At 600 feet above the ground it was less than five knots above stall speed but still descending at 1,500 fpm. “The pilot rapidly advanced the power levers to their full forward position,” causing the airplane to roll 70 degrees to the right. He was able to level the wings at 150 feet, too low to recover the aircraft.

A safety evaluation of the MU-2B led the U.S. FAA to issue Special Federal Aviation Regulation No. 108, which imposes specific experience and currency requirements to operate or teach in the airplane. Unlike most other U.S.- and European-made airplanes, its engines turn counterclockwise, giving it a tendency to roll right when most pilots would expect it to turn left.

The 2,500-hour pilot had completed the requisite training but flown just 125 hours in the MU-2B, 100 of them under the supervision of SFAR 108-qualified instructors. The TSB concluded that he lacked the proficiency necessary to make the flight under that day’s conditions, and that his inadequate make-and-model experience led to “task saturation” in which immediate demands absorbed his attention at the expense of longer-term planning.

Despite the rushed descent and a weather report including 24-knot gusts and ceilings more than 400 feet below approach minimums, the pilot never discussed performing a missed approach.

In addition to the two pilots, the casualties included former Canadian Transport Minister Jean Lapierre, his sister and two brothers, and his wife.

Challenges of Eliminating Loss-of-Control Accidents

by John Goglia

The FAA and NTSB have done commendable jobs focusing on the prevention of loss of control in general aviation flights. Both agencies have engaged general aviation alphabet groups and pilots themselves in a sustained effort to decrease GA crashes, in particular fatal crashes caused by loss of control in flight (LOC). According to the NTSB, nearly half of all GA accidents are caused by loss of control in flight. LOC remains the biggest killer in GA accidents, according to the NTSB's data of accidents from 2008 to 2014. The FAA's data shows similar results regarding the impact of LOC on GA fatalities. In-flight loss of control—mainly stalls—accounts for the largest number of fatal GA accidents.

While fatal GA accidents are trending down, there were still 209 fatal accidents in Fiscal Year 2017 that resulted in the deaths of 347 people.

Part of the FAA's focus on preventing loss of control in flight has been a focus on emphasizing to GA pilots the importance of establishing and maintaining a stabilized approach and landing.

In addition, the FAA has emphasized the importance of a go-around if factors for a stabilized approach are not met. These factors are worth repeating:

- *maintain a specified descent rate*
- *maintain a specified airspeed*
- *complete all briefings and checklists*
- *configure aircraft for landing (gear, flaps, etc)*
- *be stabilized by 1,000 feet for IMC; 500 feet for VMC, and*
- *ensure only small changes in heading/pitch are necessary to maintain the correct flight path.*

The FAA warns that if these factors are not met, a go-around should be initiated or "you risk landing too high, too fast, out of alignment with the runway centerline, or otherwise being unprepared for landing." In short, you risk losing control of the aircraft.

I'm thinking of all this as I'm reading an accident report prepared by the Transportation Safety Board (TSB) of Canada, the equivalent of the U.S.'s NTSB, on the crash of an N-registered, Mitsubishi MU-2B-60 en route to a remote island in the Gulf of St. Lawrence in Quebec, Canada. The crash garnered a lot of media attention in Canada because a former Canadian cabinet minister was killed in the crash along with four members of his family. The pilot and a "pilot passenger" were also killed. The pilot held both a U.S. private pilot certificate and a Canadian airline transport pilot certificate. He had fulfilled all special FAA requirements for flying an MU-2 as pilot-in-command. Although the aircraft is certified for single-pilot operations, it was this pilot's practice to fly with an additional pilot referred to as a "pilot passenger." The "pilot passenger" held both U.S. and Canadian commercial pilot certificates with multi-engine IFR ratings.

FDR YIELDS USEFUL DATA

This accident investigation is notable for a tool available to investigators that is not usually available in general aviation accidents. While there was no flight data recorder (FDR) or cockpit voice recorder—and none were required by law—the aircraft was equipped with a General Aviation Safety Network Wi Flight FDR system. According to the accident report, "The Wi-Flight GTA02 FDR is based on a smartphone, with extensive software customization options.

Although this system was not designed or marketed to meet the requirements of [Canadian aviation regulations], it does record cockpit ambient sound, complete cockpit voice audio from the radio microphones, GPS information, and acceleration data. The system can automatically generate alerts after the flight, when certain parameters of the recorded flight are exceeded by either pilot inputs or unsafe flight conditions." Investigators successfully extracted data from the Wi-Flight system.

Because of this equipment, investigators had a unique insight into what exactly happened in the aircraft in the minutes leading up to the accident. (Under Canada's privacy laws, the cockpit voice recorder data can be used for accident investigations but not released to the public.)

The TSB did find that the pilot's lack of experience in the MU-2B likely had an effect on his inappropriate reaction to the aircraft speed falling within a few knots of the stall speed. But I believe the series of events that led to the crash can be viewed separately from the type of aircraft flown. In other words, I believe that the pilot's decision-making and the failure to do a go-around when the approach became unstable is applicable to pilots of any aircraft. And it is for this reason that I'm writing about this.

This is a summary of the sequence of events minutes before the crash according to the accident report:

> *At 1227:14, the aircraft crossed DAVAK on a heading of 114 degreesM at 4500 feet ASL—1,500 feet higher than the published procedure crossing altitude. The aircraft was descending at 1,600 fpm and at an airspeed of 238 knots—about 100 knots above the recommended approach speed of 140 kias. This resulted in the aircraft deviating significantly from the inbound course of 072 degrees and subsequently proceeding on a meandering flight path.*
>
> *At this point, the pilot's workload had increased significantly. There was no time available during the approach to carry out the approach checklist or the before-landing checklist.*

At 1227:36, the airspeed was 226 knots—about 85 knots above the recommended approach speed of 140 kias. The power levers were then reduced to idle, causing the gear warning horn to activate. The pilot then cancelled the gear warning horn.

At about 7 nm from the runway, as the aircraft descended from 3600 feet asl [above sea level] to 2800 feet asl, the wind shifted from a southerly wind component to a headwind component of approximately 20 to 25 knots.

At 1228:23, at 5.8 nm from the runway, the aircraft reached about 3,000 feet asl, and the pilot advised the passenger-pilot that, because the aircraft was very high, the rate of descent would have to be increased.

At 1228:45, the pilot indicated he was going to slow down to reach the flap and gear extension speed; otherwise, the aircraft would not be able to land. The pilot also commented that the aircraft was too high.

Almost immediately afterwards, the aircraft crossed IMOPA—the final approach waypoint, 4.2 nm from the runway—at 2,200 feet asl, which is 790 feet above the published crossing altitude of 1,410 feet asl. The aircraft was descending at 1900 fpm, the speed was 188 knots—about 50 knots above the recommended approach speed of 140 kias—and the power levers remained at idle.

At 1229:22, when the aircraft was 2.7 nm from the runway, the airspeed had decreased to 175 knots—35 knots above the recommended approach speed of 140 kias—and the descent rate had been reduced to 1,200 fpm. At this time, the landing gear was lowered and the flaps were set to 5 degrees. The aircraft continued to descend, and the airspeed continued to slow.

At 1229:34, the aircraft was at 1,250 feet asl; six seconds later, it was at 1,000 feet asl. The pilot indicated that the rate of descent had to be further reduced and noted that the aircraft radio altimeter was set at 600 feet agl.

At 1229:58, when the aircraft was 1.6 nm from the runway at approximately 600 feet agl, the passenger-pilot indicated he could see the ground on the right side of the aircraft. Although the pilot acknowledged this, he did not indicate that he had visual contact with the runway environment. Four seconds later, the pilot stated that he would continue the approach and fly the aircraft manually.

It was at this point that the pilot disconnected the autopilot, 500 feet above the ground and at an airspeed close to the stall speed of the aircraft. He applied power and the aircraft experienced an upset which the pilot was not able to recover from.

According to the report, during the approach the pilot never discussed the possibility of executing a go-around.

What I would like to leave you with, especially the pilots but also those who fly with them as passengers, are a few questions to consider. Have you ever found yourselves too high, too fast or in an other otherwise unstable approach and continued the landing anyway? Do you see any point in these two minutes and 44 seconds when you would have made a different decision than this particular pilot did?

Most of all, I would like to hear your recommendations for how to get pilots to stop this sequence of events. The accident report discusses different cognitive biases that affect pilot decision-making. Plan continuation bias—"the deep-rooted tendency of individuals to continue their original plan of action even when changing circumstances require a new plan"—is one that I have seen as a factor in many accident investigations and I believe is frequently a factor in the decision not to go around even when the approach is clearly unstable.

The TSB also prepared a video of the accident sequence.

https://youtu.be/H20855X5-rI

https://www.ainonline.com/aviation-news/business-aviation/2018-01-10/unstable-approach-led-2016-mu-2b-accident-quebec

http://www.bst-tsb.gc.ca/eng/rapports-reports/aviation/2016/a16a0032/a16a0032.asp

NTSB To Address Loss Of Control

Loss of control continues to be the leading cause of general aviation fatalities, and the NTSB is working to change that. On April 24, the board will host a meeting of experts to discuss the problem and explore solutions. The program, set for April 24 in Washington, D.C., will comprise three roundtable sessions on pilot training, cockpit technology and the next steps needed to address the challenges identified. The event is open to the public and also will be webcast live online, from 8:30 a.m. until 3 p.m. Speakers will include airshow pilot Patty Wagstaff and Foreflight CEO Tyson Weihs, as well as staff from AOPA, EAA, Embry-Riddle, the FAA, the NTSB and more. The program will be moderated by NTSB chairman Robert Sumwalt. NBAA also recently cited loss of control as the top "safety focus area" on its 2018 list of the most critical safety-related risks facing operators of business aircraft. Other risks listed by NBAA were operations with a single pilot, distraction management, runway excursions, procedural compliance and more. "The identified focus areas represent the most critical safety-related risks facing business aircraft operators in 2018," said David Ryan, chairman of NBAA's Safety Committee. The committee aims to not only identify potential hazards, Ryan said, but also "to provide the business aviation community with the most effective mitigation tools and strategies."

http://ntsb.capitolconnection.org/

https://www.nbaa.org/news/pr/2018/20180216-016.php

FSF: Pilot Experience Is More Than Just a Number

The Flight Safety Foundation (FSF) is calling for a "pragmatic, data-driven approach" to pilot training to continue driving improvements in aviation safety. Specifically, the foundation wants national civil aviation authorities to have the flexibility "to adopt competency- or evidence-based training methods that target real-world risk and ensure a progressive and satisfactory performance standard."

According to FSF, "It cannot be assumed that critical skills and knowledge will be obtained only through hours in the air. Although…the number of accumulated flight hours has been the baseline for determining experience, what is often overlooked in the pilot experience equation is the quality of flight time." This includes such things as operational experiences, multi-crew operations, and weather-related flight experience, it said.

Thus, the foundation is recommending an improved pilot screening process; a renewed focus on the competency and quality of pilot training providers; pilot training programs that are competency- or evidence-based and not solely hours-based; pilot training programs that maximize the use of simulation; data-driven training programs that are continually updated, based on pilot task-level performance; development of a worldwide quality/performance criteria that is universally recognized; and pilot proficiency/qualification standards that cannot be compromised, among others.

http://ea.ecn5.com/Clicks/ZUYvR2lrbFRTVElVQWdlOUpyQU5nS2k4YTVlNkREYmRldlNJb3Fka1dhWUk3WTBMbHdHVzY5bnl5TnhsMXNlaldZZlRkZ2QrMTlPaFAxdHFmbkw1WVE9PQ%3d%3d

AOPA Aviation Curriculum Free To Teachers

AOPA has developed a curriculum for ninth-grade students that uses aviation to teach science, technology, engineering and math, and is offering it free to schoolteachers. Teachers will be introduced to the program through a professional development workshop offered June 26 to 28, which can be attended at AOPA headquarters in Frederick, Maryland, or taken online.

The course has been tested with more than 700 students in nearly 30 schools over the last year, AOPA says. The program includes lesson plans, presentations, assignments, student activities and other learning experiences. The deadline for applying to use the aviation STEM curriculum during the 2018-19 school year is April 19.

The ninth-grade curriculum is the first in a four-year program that will comprise three career and technical education pathways — pilot, aerospace engineering and drones. The 10th-grade program will be available next year, and the 11th- and 12th-grade programs will follow in the next two years. Schools can decide to select individual courses to use as stand-alone electives, or implement one or more complete pathways. “This is a major step in our work to help young people learn more about the engaging and well-paying careers in aviation, and it gives schools the tools they need to teach our children skills that will last for a lifetime,” said AOPA President Mark Baker. The program is funded by the AOPA Foundation.

https://youcanfly.aopa.org/high-school/high-school-curriculum?_ga=2.227640605.1689060531.1520542385-549966931.1441027697

Why Power Napping Can Improve Your Productivity

Here's how your productivity can benefit from power napping –plus how to do it right, according to *Inc.*

Our culture has some serious misconceptions when it comes to napping.Most adults associate naps with childhood: They're something kids do and eventually grow out of. Once you reach adulthood, you're expected to stay awake throughout the entire day–even if you're so sleepy that you can't get anything done.

But as more and more research proves, there are some serious holes in that logic. The reality is that a quick power nap can make you a better thinker, worker, and all-around human being. Far from being kids' stuff, naps are serious business.

Get the full story at www.inc.com

TED TALK: Ideas Worth Spreading

X Prize founder Peter Diamandis talks about how he helped Stephen Hawking fulfill his dream of going to space -- by flying together into the upper atmosphere and experiencing weightlessness at zero g.

https://www.ted.com/talks/peter_diamandis_on_stephen_hawking_in_zero_g#t-202078