Aviation Human Factors Industry News

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Hello all,

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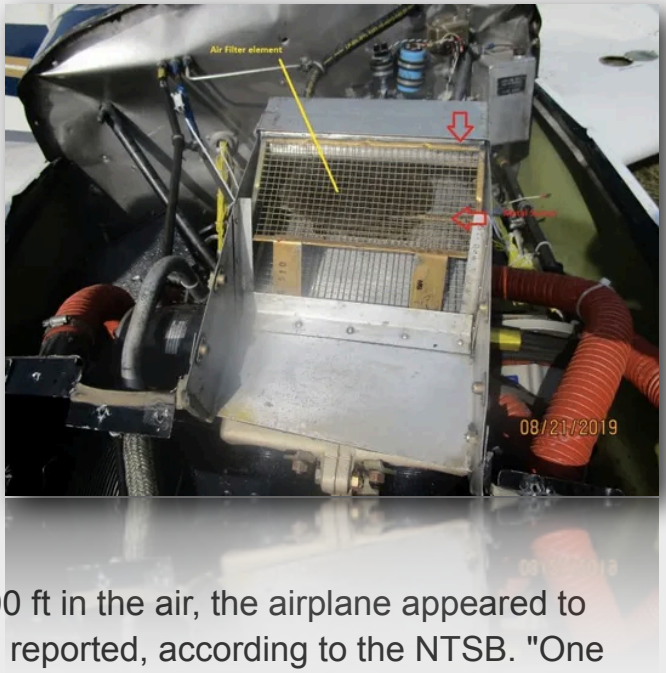
In this weeks edition of *Aviation Human Factors Industry News* you will read the following stories:

Air filter found displaced in fatal Livingston County plane crash

Investigators found that the plane's air filter got sucked into the engine, blocking air flow.



A dislodged air filter blocked the intake of a small plane that crashed, killing two, after departure from Livingston County airport in August, investigators report.

The National Transportation Safety Board did not release a probable cause of the accident, but its preliminary findings are consistent with a sudden stoppage of the engine after takeoff.

"When the airplane was about 200 to 300 ft in the air, the airplane appeared to stop its climb and was silent," witnesses reported, according to the NTSB. "One witness reported that it looked like the airplane tried to turn back to the runway, before entering a rapid decent.

The incident occurred at about 11:18 p.m. on Aug. 20. A single-engine, four-passenger Aero Commander 200 crashed at the Spencer J. Hardy Airport, officials said in a statement.

Authorities recorded that the airplane had recently undergone maintenance, including the installation of a new field overhauled engine and a three-bladed propeller. The purpose of the flight was for a maintenance test flight of the airplane, according to a National Transportation Safety Board Aviation Accident report.

On board was James Tafralian, 68, of Webberville and Philip Henry Colmer, 64, of Chelsea. Colmer piloted the plane and owned a similar airplane. Tafralian, in the right seat, was also a mechanic who had performed the recent work on the airplane, according to the report.

It was the second deadly crash involving pilots based in Livingston County in three months. Randy Dippold and a passenger died when their plane crashed in Lake Michigan in May.

The report indicated that the airplane was flown earlier in the day although no flight plan was filed for the maintenance test flight.

"It is unknown if any adjustments or maintenance items were accomplished before the second flight," the report stated.

The airplane came to rest about 600 feet beyond the departure end of the runway. Livingston County EMS director Jeffrey Boyd said the crash occurred at the north end of the airport. EMS headquarters is adjacent to the airport on Tooley Road.

https://app.ntsb.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20190820X22547&AKey=1&RType=HTML&IType=FA

Tips for that first flight after maintenance

As part of the FAA's #FlySafe campaign, the agency recently released some guidance on incorporating safety into that first flight after your plane comes out of maintenance.

Do you know how to properly preflight your aircraft after maintenance? According to FAA officials, many pilots secretly admit that they don't quite know what they are

looking for. As a pilot and aircraft owner, it is in your best interest to know and understand every component of your aircraft.

And you may think you have even less to worry about after your aircraft comes back from the shop. It should be in great shape, right?

Actually, aircraft just out of maintenance are more likely to have safety-of-flight issues than an aircraft in good condition flown on a daily basis, according to FAA officials.

Something simple shouldn't cause a problem, but work on multiple systems leaves the door open for more than a few complications.

For example, in-flight emergencies and accidents have occurred with incorrectly rigged flight control or trim systems. Loose bolts or a forgotten connector have led to other tragedies.

It's best to be on the safe side, know what work has been done, know what you are looking for, and perform thorough preflight checks.

Advanced Preflight Checks

Advanced Preflights go above and beyond the normal preflight checklist. Create your checklist by reviewing the maintenance history of the aircraft, and once you have that information, develop additional items checklist. Once you have made this list, you can use it in all future preflight inspections.

Find and review all aircraft records, including receipts, work orders, FAA Form 337s (Major Repair and Alteration forms) and approval for return to service tags (8130-3 Forms). Find any Supplemental Type Certificate (STC) data, including information on items no longer installed on the aircraft.

Some additional tips:

- Become familiar with all controls and systems before maintenance, and create a baseline. Having this information will make it easier for you to find any “abnormal” functions after maintenance.
- Coordinate with your mechanic to determine exactly what has been accomplished. Give those systems an extra look-over before flight.
- Pay particular attention to the aircraft components that were replaced or repaired. If you suspect a problem, ask your mechanic to recheck the aircraft.
- Be ready to abort takeoff if something doesn’t feel right.
- For the first flight, stay in the pattern within gliding distance to the runway.

“Your safety, and the safety of those who fly with you, depends on your vigilance. Check, ask questions, and recheck,” FAA officials note. “Your life may depend on it.”

https://www.faa.gov/news/search/?searchstring=flysafe

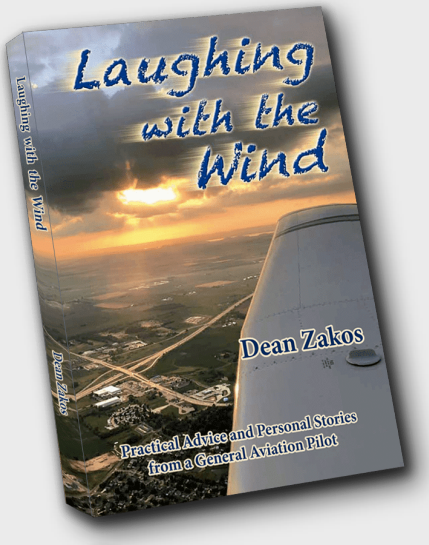
Long-time pilot releases book of practical advice and personal stories

New pilots are well-trained, but lack real-world experience until more flying hours are gained. A new book, “Laughing with the Wind, Practical Advice and Personal Stories from a General Aviation Pilot,” is meant to help fill that gap.

The book was written by Dean Zakos, who started flying in 1992.

He notes that early in his flying days, he and another pilot, flying together, nearly crashed a perfectly good airplane on a clear day due to an alarmingly all-too-common lack of communication and coordination.

In Part 1, Laughing with the Wind deals with less common emergencies and circumstances leading to emergencies. Part II invites the reader to pull up a chair and be a part of some “hangar flying.” “I wrote this book because when I was learning to fly and first starting out, I wished a book like this was available to pilots. It wasn’t — until now,” Zakos explained. “The book is filled with useful information and practical guidance that will benefit both seasoned and new GA pilots.”



The book is available from Square Peg Bookshop for $17.95

CASA releases Draft Part 91 Plain English Guide

CASR Part 91 *General Operating and Flight Rules* was completed in December 2018 as part of the "six-pack" suite of regulatory reform. The Plain English guide is designed to make the rules easier to understand.

The final version will incorporate all of Part 91 and the Part 91 Manual of Standards (MOS), which is still being worked on.

"The guide is primarily intended for general aviation pilots and flying schools," CASA has stated. "However, it is expected all pilots could find it useful as it contains the foundational rules for all flight operations."

CASA has created the guide in both print and interactive forms for comment by the aviation community, but points out that the new rules don't come into force until March 2021.

The Part 91 Plain English guide is CASA's first attempt to comply with the recommendation of the Aviation Safety Regulation Review (ASRR) that called for all regulations published also in plain English.

CASA is currently seeking feedback on the guide with the aim to having the final product released in the first half of 2020.

'Moxy' airline to launch with used Azul aircraft

The new airline planned by JetBlue founder David Neeleman is set to launch with a fleet of aircraft taken from Neeleman's other airline, Brazil's Azul.

The Los Angeles Times reports that the airline, which has a working name of 'Moxy', has 60 Airbus A220-300s on order, but the new planes won't be delivered until 2021.

As a result, the airline may launch with a fleet comprised of Embraer E195s - aircraft that are currently being replaced in Azul's fleet - and nine leased A320s.

Azul recently took delivery of the first Embraer E195-E2 jets slated to replace the older model aircraft.

Moxy has not yet determined whether the older Embraer jets would be leased or purchased from Azul.

The yet-to-fly carrier shares a name with Marriott's lifestyle hotel brand, so it's likely to change before the airline launches.

The airline, billed as low-cost but not austere, could take flight in 2020. It will compete with the big mainline US carriers as well as budget airlines.

In addition to JetBlue and Azul, Neeleman previously helped start Canada's Westjet.

Enhancing the Value of Safety Management Systems Metrics

When it comes to aviation metrics, “What gets measured gets improved.” While this is a seemingly simple statement, the big question is: Are your aviation organization’s safety management system metrics effectively measured against the entire organization’s performance?

IS-BAO-certified flight departments know that safety performance indicators measure operational and organizational data to fuel the aviation organization’s safety management system, >
and quarterly the safety manager reports the resulting data at leadership meetings or all-hands operations meetings. Sometimes the safety management data is accompanied by visual charts and diagrams.

In reality, the majority of these safety management presentations only reflect “what is” at a moment in time. Unfortunately, metrics without context are not deeply informative.

Instead, safety management reports weighed against the aviation organization’s operating metrics would provide context for deeply informative reviews and discussions.

How to Design a Comprehensive Aviation Metrics Package

There are several key points to keep in mind as you design a comprehensive aviation metrics package that includes safety management system metrics:

Organize the data

Make it manageable, understandable and, most importantly, meaningful.

Make it relative

The data you gather and report on must resonate throughout the aviation organization, so consider comparisons with respect to flight hours, duty days, operating results and industry benchmarking of your peer aviation organizations. Measure important activities such as the number of Safety Reports submitted, flights into non-controlled airfields at night and the recurrence of extended crew flight duty days. Then report these safety management metrics alongside flight hours, trip activity and personnel staffing levels.

Keep it simple

Any reporting of metrics must communicate with the reader quickly, succinctly and with sufficient clarity so that departmental achievement can be readily identified. With all this in mind, remember that the impact of quantifying value can be quite substantial and can help transform the way your group understands the overall company goals and how to achieve them. Reporting on maintenance results can be inspiring and energizing, helping the entire aviation team to strive for best-in-class performance.

Achieving “Next Level” Safety Management Metrics

Only after safety management metrics are related to both safety management systems and department wide operations can the next level of aviation metrics be achieved. We refer to these “next level” metrics as Level III Value Creation metrics.

Level IV metrics predict what future performance will bring at predetermined future intervals (e.g., month or quarter). They quantify and communicate the value that your safety management system creates by measuring and predicting recurring trends. A corresponding metrics package would display recognizable trends in the organization's operations tempo.

FAA Chief Stresses Need for Better Plane Design and Piloting

The top U.S. aviation regulator briefed his counterparts from around the world on the grounded Boeing Co. 737 Max, reminding them that improvements in both aircraft design and piloting are needed for safety.

Newly installed FAA Administrator Steve Dickson pledged in his opening statement Monday to continue sharing information as the agency assesses Boeing's proposed fixes for a flight-control system involved in two fatal crashes, off the coast of Indonesia and in Ethiopia.

"If we are to continue to raise the bar for safety across the globe," Dickson said, it will be necessary to "foster improvements in standards and approaches for not just in how aircraft are designed and produced, but how they are maintained and operated."

Dickson and other FAA officials were joined by a senior Boeing executive for more than an hour of meetings with more than 50 delegates from civil aviation regulators around the world at the Montreal offices of the International Air Transport Association. The FAA described the meeting as an "informal briefing," according to an invitation seen by Bloomberg.

The briefing came amid concerns that the 737 Max's global return to service could be disrupted as some regulators conduct their own independent verification of the jet's airworthiness following changes made by Boeing.

"As you make your own decisions about returning the Max to service, we will continue to make available to you all that we have learned, all that we have done, and all of our assistance," Dickson said.

Those concerns focused in particular on the European Union Aviation Safety Agency, after its top official earlier this month said the body was conducting its own review of Boeing's design changes to the jet.

When asked after the meeting if he still hoped the 737 Max could go back into service at roughly the same time in Europe as in the U.S., EASA Executive Director Patrick Ky said "that's what we are working on."

"We need a certain number of things, which were detailed by" the FAA during the meeting, he said. "I have nothing to add to what I said already."

The Canadian regulator, Transport Canada, released a statement saying it was "continuing its review."

"Transport Canada will not lift the current flight restriction" of the Max "until it is fully satisfied that all concerns have been addressed by the manufacturer and the U.S. Federal Aviation Administration, and that adequate flight crew procedures and training are in place," the agency said in the statement.

Earlier Monday, Dickson met with relatives of victims who died in the Ethiopian Airlines crash.

Paul Njoroge, who lost five family members, including three children, in the Ethiopia crash, and Chris Moore, whose 24-year-old daughter died in the tragedy, stood outside IATA's office holding a poster with pictures of the victims of Fight 302, which crashed March 10 outside Addis Ababa after pilots unsuccessfully battled the jet's malfunctioning maneuvering characteristics augmentation system, or MCAS.

"The big takeaway was that they would make sure the plane would not be un-grounded until all aspects of safety were addressed," Moore said.

Plane crash in Havana was due to “chain of errors”

The final report of the commission of inquiry, published by the Cuban Institute of Civil Aeronautics, indicates the "predominance" of the "human factor" in the accident.

The tragic plane crash that occurred in Havana on May 18, 2018 and that left a toll of 112 dead was due to a “chain of errors,” according to the final report on the accident just published by the Cuban Institute of Civil Aviation, which points to the “predominance” of the “human factor.”“

The most probable cause of the accident was the collapse of the aircraft as a result of its entry into abnormal positions immediately after liftoff during the takeoff, which led to the loss of control of the plane due to a chain of errors, with a predominance of the human factor,” indicates the commission of inquiry into the incident in the conclusions of the more than 100-page report.

Investigators also attributed responsibility in what happened in three “contributing factors”: “inconsistencies in crew training,” “errors in weight and balance calculations” of the aircraft, and “low operational standards manifest in the flight.”

The report says that no “proven evidence of traces of defects or malfunction of the aircraft—a Boeing 737-200—that could have contributed to the accident” was found, but does point out “failures in good practices to perform maintenance.”

However, it says that “in the maintenance records of the aircraft there was no evidence of previous technical problems, related to the controls of the aircraft,

which could have an incidence on the causes of this accident," which largely exempts the controversial Mexican Damojh Airline of responsibility.

DAMOJH AIRLINE'S PROBLEMS

JUL 15, 2010

A Damojh Airlines plane with Mexican athletes on route to Central American and Caribbean Games has to make a forced landing due to a turbine that started spewing black smoke a short time after takeoff.

NOV 4, 2013

Based on a report by Captain Marco Aurelio Hernández, it is decided to carry out an extraordinary mayor verification until November 8 of that year. One of the aircraft is suspended until January 10, 2014.

MAY 18, 2018

Boeing 737 with Mexican register XA-UHZ manufactured in 1979 (chartered by Cubana de Aviación) crashes shortly after taking off in Havana, with 113 persons on board. 110 died.

MAY 20, 2018

Captain Egbert Field, director of civil aviation of Guyana, states that in 2017 his country forbid that plane from flying over Guyanese airspace after discovering that the crew allowed excess baggage on flights to Cuba.

NOV 4, 2010

A Damojh plane makes an emergency landing in Puerto Vallarta due to a failure in its landing gear. The company is subject to an extraordinary verification; it includes the suspension of operations from November 11 to December 18 of that year.

NOV 16, 2010

Mexico's General Department of Civil Aviation (DGAC) suspends its operations for a month due to "serious irregularities" in the maintenance program.

2015

A Boeing 737-500 is impounded from the company in Ecuador for owing around 90,000 dollars in salaries and legal benefits for its employees.

MAY 19, 2018

Mexico's General Department of Civil Aviation (DGAC) announces extraordinary verification of the company.

MAY 21, 2018

DGAC notifies Damojh Airlines of the start of an extraordinary mayor verification and the temporary suspension of activities until the verification concludes.

It also states that "the actual take-off weight of the aircraft was greater than that used in the calculations" and that "the center of gravity was 10% further back than calculated." Both indicators, although "they were within the operational limits," do constitute "a contributing factor."

As for the crew, it ensures that it “was qualified for the flight in accordance with current regulations” and had “appropriate medical conditions and had rested enough for flight operations.” But “some deviations inherent to their training with respect to norms were detected.”

In addition, it includes the transcription of the conversations in the cabin of the plane and between it and the control tower before the accident took place, and also photographs and tables in its annexes.

The Boeing 737-200 chartered by the Cuban airline to the Mexican company Global Air for flight DMJ-972, which crashed on May 18, 2018 minutes after taking off from Havana bound for the city of Holguín with 113 people on board.

The report of the commission of inquiry includes detailed information on the background of the event, the status of the aerodrome, established communications and flight recorders, as well as on the damages suffered by the aircraft, assistance after the accident and the victims, among other aspects

Only one passenger survived, Mailen Díaz Almaguer, 19 at the time of the accident, in which 101 Cubans and 11 foreigners lost their lives: seven Mexicans—including the six crew members and one tourist—, two Argentines and two Saharawi residents on the island, one of whom also had Spanish nationality.

Last March 15 it was announced that the investigation had been completed and the report would start being written. The analysis of the two black boxes of the aircraft allowed for “exactly determining elements such as speed, height, turns, engine power and possible technical failures,” the authorities then said.

Later, in May, the Institute of Civil Aviation attributed to “human errors” the “most probable cause” of the accident, in a preliminary version of the report, which coincided with what was said earlier by the Mexican company, a conclusion that was dismissed as “premature” at that time by the commission of inquiry and the General Directorate of Civil Aviation of Mexico.

https://oncubanews.com/tag/accidente-aereo-en-cuba/

http://www.iacc.gob.cu/Documentos/seguridad/INFORME_FINAL_Accidente_B737_DMJ0972_18052018_HAV_CUBA.pdf?fbclid=IwAR1NQ2qRZWpfOUjUSM4lqgb6fp5ZcPqwRS9Xgt_M8Z7SC7vqf4JaOukyr3M

https://oncubanews.com/cuba/error-humano-es-la-causa-mas-probable-del-accidente-aereo-que-dejo-112-fallecidos-en-cuba/

The Global Air Cuban tragedy, a chronology

Unbelievable: Vietnam Airlines Plane Was One Minute from Touchdown Without Landing Gear Extended

Australian aviation safety investigators have started an urgent inquiry after a Boeing 787-9 Dreamliner operated by Vietnam Airlines nearly landed at Melbourne Tullamarine airport without its landing gear extended. The pilots aborted the landing during final approach, just 60 seconds from touchdown and only when an air traffic controller noticed the landing gear had not deployed as would be standard during this critical phase of flight.

It's not known why the landing gear was not extended during the first approach but after initiating a so-called go-around, the plane returned around five minutes later for a safe and uneventful landing. Investigators have not been drawn on whether the incident was caused by a technical problem or possible pilot error.

The near three-year-old plane had departed Ho Chi Minh City on Wednesday night and eventually landed just after 8.20am.

The airline has not yet confirmed how many passengers and crew were onboard the aircraft and has not provided any details about the flight crew. The plane has a capacity for 264 passengers.

“During approach to land, the crew was advised by Melbourne Air Traffic Control that the landing gear was not extended as is standard,” a statement released by Vietnam Airlines on Thursday night read.

“The crew initiated a missed approach, then circled the airport and landed safely,” the statement continued.

“Immediately after the flight, Vietnam Airlines representatives started working closely with the Australian Transport Safety Commission. Safety is the utmost priority of Vietnam Airlines and the airline is committed to supporting investigations into this matter.”

The ATSB confirmed it had opened an investigation, calling the incident an “incorrect configuration incident”. Investigators will publish a report once enquiries have been completed.

DGCA issues rules for alcohol testing of airside workers

The rules stated that "in case of second violation of the provisions, the license/approval issued by DGCA of the concerned personnel shall be suspended for a period of one year".

Aviation regulator DGCA on Monday issued rules for breathalyzer test which will be conducted at all airports by year end for airside workers, including those handling aircraft maintenance, air traffic control (ATC) and ground handling services.

According to the rules issued by the Directorate General of Civil Aviation (DGCA), if any personnel is tested positive for alcohol for the first time, >
or refuses to undergo the test, or attempts to evade it by leaving the airport premises, then he or she must be kept "off duty and their license/approval shall be suspended for a period of three months".

The rules stated that "in case of second violation of the provisions, the license/approval issued by DGCA of the concerned personnel shall be suspended for a period of one year".

The new rules cover more than 25,000 aviation personnel who are handling sensitive aviation services.

According to DGCA, the aviation personnel under the ambit of these rules include aircraft maintenance engineers, other technically trained person authorized to carry out maintenance of aircraft, vehicle drivers who drive fueling and catering vehicles, equipment operators, aerobridge operators, marshalers, personnel manning apron control, ground handling services personnel as well as ATC personnel.

The aviation regulator said that as per the rules, at least 10 per cent of the personnel "employed in their respective organizations(category wise)" must be randomly subjected to breathalyzer examination on a daily basis.

"The aerodrome management (airport operator) shall be responsible for the conduct of the BA (breathalyzer) test on the personnel of the ground handling agency and aerodrome operational personnel, while the airline operators, air navigation service provider, maintenance organizations for their employees," the DGCA said in its statement.

The regulator said that organizations have to use a scientifically valid method such as a random-number table or a computer-based random-number generator to select the applicable employees for testing.

Pilot destroys airplane control panel with spilled coffee

Who among us has never spilled coffee all over themselves while driving? It's a highly relatable error, which is why I'm certain that the passengers on a commercial flight were most definitely cool with their pilot frying the plane's control panel by spilling coffee all over it. Everyone makes mistakes.

The not-at-all concerning incident occurred in February as an Airbus A330-243 was soaring over the vast and extremely deep Atlantic Ocean, *Reuters* reports. It did not come to media attention, though, until an investigation into the incident appeared in an civil aviation safety report issued this week. According to that report, though the cockpit was equipped with cupholders—ostensibly installed to prevent accidents exactly like this one—the pilot chose to put his un-lidded cup up on a wobbly tray table, because he likes his sugar with coffee and cream....*and danger.*

Naturally, it spilled. After the control panel started billowing smoke and emitting the potent, unmistakable smell of an electrical fire, the plane was turned around, making an emergency landing. The report from the Air Accidents Investigation Branch (AAIB) did not mention the reactions of the 326 passengers aboard who'd boarded in Germany and expected to be stepping off the plane in beautiful, sunny Cancun, but instead found themselves on temporary holiday in a midsize airport Shannon, Ireland. It also did not name the airline, presumably to keep the pilot in question from public shaming.

Though there were no injuries, the AAIB has implemented rules that require all coffee to be served with lids. Crews will also be reminded why using lids are important, just in case they don't personally find this incident terrifying.

FORGIVE ME FOR ASKING

I've flown with many pilots of whom maybe a handful asked my weight before we flew—a triumph of diplomacy, perhaps, over responsible preflight preparation.

Maybe those pilots decided to just take a wild guess rather than "waist" our time with an awkward interrogation. In many lower-powered two-seaters, however, cockpits are cramped and useful loads not so useful.

Usually I would run the numbers myself by checking the aircraft's limitations and then raise the weighty issue.

In some four-seat aircraft it's possible to have the weight right but the center of gravity (CG) wrong—often forward of limits. A designated pilot examiner who long ago presided over this area's practical tests knew this, and he also knew that the calculation would catch some applicants by surprise. I recall one occasion when they solved the problem by taking a case of motor oil out of the DPE's pickup truck and placing it on the rear seat, normalizing the cg and allowing the check-ride to proceed.

Student pilots learn that an out-of-limit CG can affect aircraft controllability (and predictability), and an overweight condition can impede performance. For that reason, after many accidents the aircraft's weight-and-balance condition may receive scrutiny irrespective of other probable causes.

Reports filed with the Aviation Safety Reporting System reveal that some pilots tempt fate knowingly—such as a Cessna 182 jump pilot who attempted an overweight takeoff from midfield with parachutists aboard on a hot day.

During the abort the airplane overran the runway end. (Can you list the questionable decisions?)

Inadvertent flight planning oversights sometimes put flights at risk. A Piper PA–28 pilot who flew with three passengers while under the impression that the flight was "comfortably under gross" weight later realized that the calculations

had been based on generic-handbook numbers; the empty airplane actually weighed 100 pounds more than the figure used in planning.

As noted, if when acting as pilot in command you ignore weight-and-balance responsibilities and something subsequently goes wrong, you will have explaining to do. Accident investigators will run the numbers and decide whether exceeding weight or balance limits contributed to the mishap.

Your future passengers probably know nothing about aircraft weight-and-balance calculations. But they will expect you to cover all the safety bases before flight—so go ahead and ask the tough question, if in doubt.

Keeping Shift Workers Alert on the Job: New Study Finds How to Predict a Person's Body Clock

The researchers tracked circadian phase, light exposure and activity levels in 25 nursing and medical staff in a Melbourne hospital intensive care unit, reports The New Daily.

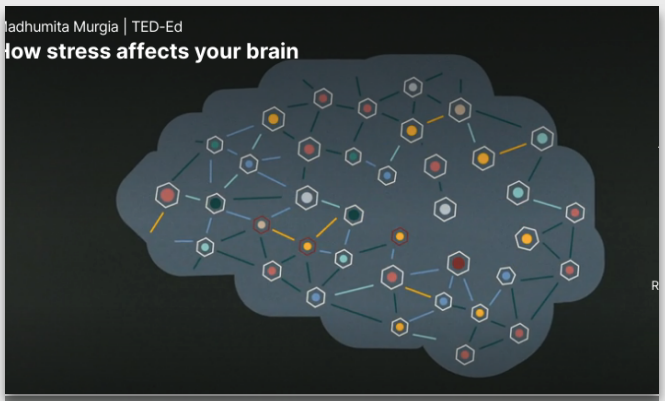
As expected, the timing of when the test subjects were exposed to light and when they were in the dark or dim light had the greatest impact on when their body clocks shifted from alertness to tuning out and drifting toward rest.

The net result was that, for the first time, the mathematical model – built over a long period of time by a succession of researchers – could be generalized to estimate the timing of the body clock in shift-working staff.

Get the full story at thenewdaily.com.au

TED TALKS: Ideas Worth Spreading

Stress isn't always a bad thing; it can be handy for a burst of extra energy and focus, like when you're playing a competitive sport or have to speak in public. But when it's continuous, it actually begins to change your brain. Madhumita Murgia shows how chronic stress can affect brain size, its structure, and how it functions, right down to the level of your genes.



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