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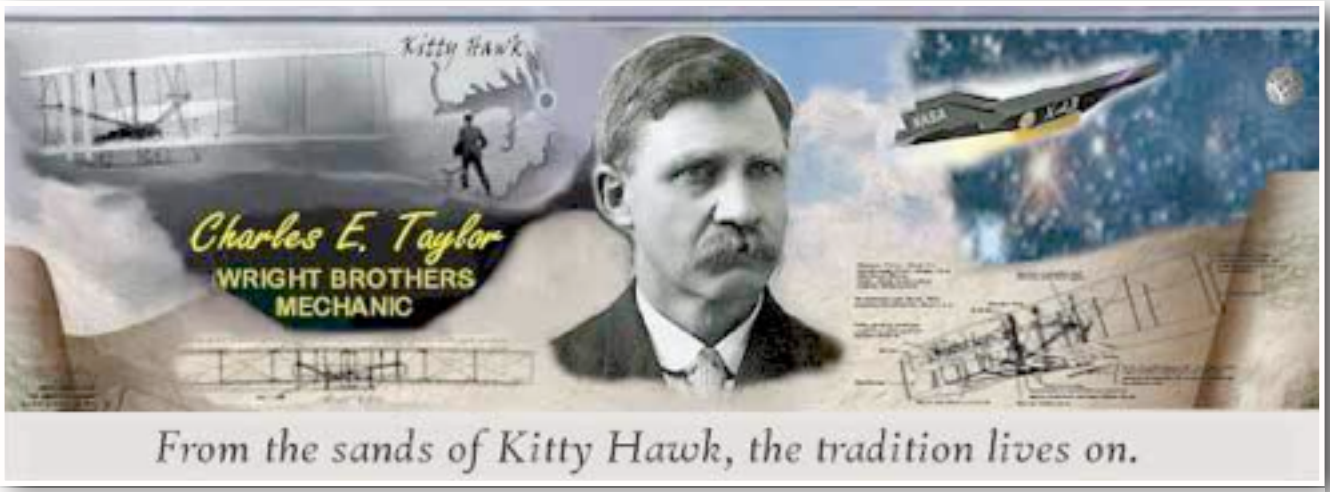

Hello all,

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

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★AIN's Human Factor Podcast Episode 12: Takeoff and Landing Assessments, Part 2

Chinese airliner makes emergency landing after cockpit window falls out nearly sucking co-pilot out of cabin

An airliner was forced to make an emergency landing in southwest China after part of the cockpit window fell out in mid-flight.

The Sichuan Airlines aircraft was flying from Chongqing to Lhasa on Monday morning when the incident happened.

Pictures shared online show the co-pilot's side of the windshield gone and it emerged that he was almost sucked out of the window by the sudden loss of pressure.

Flight 3U8633 landed safely at Chengdu Shuangliu airport at 7.42am, about 20 minutes after the accident happened.

The co-pilot was cut on the face and suffered an injury to the lower back. A cabin attendant also suffered a minor injury as the plane suddenly lost altitude.

Twenty-seven passengers received medical checkups in a hospital in Chengdu, but no injuries were detected.

The rest of the passengers resumed their trip at noon, according to statements by the airline.

Pilot Liu Chuanjian told the Red Star News, a local news portal, that the windshield had given way without warning around 150km from Chengdu, the capital of Sichuan province.

"The windshield cracked suddenly and gave a huge bang. I looked aside and found half of the co-pilot's body was already outside the window. Fortunately his seat belt was fastened," Liu said.

The pilot added that the cabin equipment malfunctioned as a result and it was so noisy he could not hear the wireless.

The aircraft was shaking vehemently and he could not read the meters.

"The sudden loss of pressure and low temperature made me very uncomfortable and it was very difficult to make a single move when the aircraft was flying at 900 kilometers an hour and at such a high altitude," Liu said.

Flying data showed the aircraft was on the cruising altitude of 9,750 meters (32,000 feet) but then dropped suddenly to 7,300 meters (24,000 feet).

Liu said he had to fly the aircraft manually because the automatic systems were not functioning.

"I have flown this route a hundred times and know everything very well," Liu said.

One veteran pilot who did not wish to be named said the crew had handled the incident masterfully.

"As pilots we receive such training twice a year, but it was one thing to train on a simulator and another when you are affected by the sudden loss of pressure and oxygen when the temperature drops to minus 40 degrees.

"The pilot stayed calm, responded quickly and correctly to drop the aircraft to an altitude where emergency oxygen is not needed and handled the situation with strong skills. That's very professional."

Passenger Zhao Shihai told the China Youth Daily that he was sleeping when he suddenly felt the strong turbulence.

"I was thrown up in the air and fell for several times. The oxygen masks on the plane all dropped out", he said.

Zhao, who was sitting in the middle of the aircraft, felt a draft of cold air and saw the cockpit door flew open several minutes later.

He added that several passengers had fallen over but the turbulence reduced after crew pushed the door closed.

NTSB Backs FAA's Closure Of Texas MRO Shop

Board's view seems to set new

8130-3 tag standard.

Three NTSB board members, in a 2-1 vote, have ruled that FAA's emergency revocation of a Texas-based repair station's certificate was justified, overturning an administrative law judge's (ALJ) opinion that FAA over-reacted. The shop, Arlington, Texas-based AeroBearings, filed an appeal.

AeroBearings has been cited for not having complete data on a key machine it uses, and falsifying return-to-service documentation--8130-3 forms--related to work done on the machine. FAA revoked the shop's certificate on March 1, citing findings during a May 2017 inspection. AeroBearings appealed, putting the matter before the ALJ, which is part of the NTSB. FAA then appealed the ALJ's ruling, sending the matter to the board.

AeroBearings uses an FAA-approved military specification, or mil-spec, to repair and overhaul engine bearings, and developed its own machine to use in the inspection process.

But some data on the machine's specifications were on a computer that belonged to the shop's now-deceased co-founder, and AeroBearings said nobody can access the password-protected files. The shop relies on previous results to verify the machine is working correctly, but FAA determined that the data needs to be available to support AeroBearings's approved ratings. NTSB agreed.

"The argument that the machines are working as designed because the bearings are repaired and inspected within acceptable ranges, is not persuasive," NTSB wrote.

NTSB also found justification for FAA's records-falsification findings, based largely on what it said was "missing information" on four 8130-3s cited by the agency. The 8130-3s indicated that AeroBearings performed work based on engine maintenance instructions, citing specific sections in CFM International, GE, and Pratt & Whitney manuals. But the forms did not explicitly state that some work was also done based on the mil-spec.

"The Federal Aviation Regulations (FARs) require the records to be clear on their face," NTSB wrote in its decision. "It should not be up to the end user to have to request whether the maintenance records they possess are the complete set of records--that is the reason for maintaining scrupulously accurate records."

Engine manufacturers do not recommend disassembling bearings for repair. Rather, bearings that do not pass inspections are sent back for full replacements. AeroBearings, seeing an opportunity to provide a service that costs less than replacement bearings, derived its repair process from mil-specs that the U.S. Air Force has used for decades. FAA signed off on AeroBearings's procedures in 2011.

NTSB's linking of 8130-3s to a "complete set of records" is likely to raise eyebrows in the MRO community. Repair stations are required to include 8130-3s along with parts they have inspected or repaired. The one-page forms are not complete maintenance records, and are not meant to provide details on what was done to parts--they simply verify that the work performed is airworthy.

NTSB's notion of an 8130-3's role as a complete set of records also appears to contrast with its view in a 1999 case against a mechanic who did not inspect work orders referenced on a return-to-service form. The mechanic believed the form itself, a yellow tag with hand-written notes including references to read work orders, signified the part was airworthy and installed it. But the work orders explained that the part would not comply with the manufacturer's specifications. NTSB faulted the mechanic for not referencing the rest of the maintenance records to see what was left off the form.

"Had [the mechanic] taken the time to look at the work order referenced by the yellow tag, even if it might have been inconvenient to locate it, he would have immediately seen that the yellow tag in this instance did not signify a useable part," the board said in its decision.

The board's dissenting vote came from NTSB Chairman Robert Sumwalt, who disagreed with the falsification charge as well as the decision to revoke the certificate.

Sumwalt argued that an incomplete statement is not the same as a knowingly false one.

"The majority would apparently find that any failure to be 'scrupulously accurate' in a mechanic's logbook would foreclose the ability of a respondent to subsequently argue that he or she did not knowingly make a false entry," Sumwalt wrote.

He also said that AeroBearings's certificated should be suspended until it can demonstrate compliance with the FARs by reproducing the missing data lost on the computer--something the repair station says it could do. The revocation penalty requires a more involved certificate-reapplication process if the shop is cleared.

FAA has not issued an official recall or safety-of-flight warning on bearings serviced by AeroBearings. But the agency confirmed that it is "advising operators to quarantine the parts that are still on the shelves" until further notice.

Wrong Hash Line

It started off like any other day, shift briefing, work assignments being handed out, just like most days. Though by the end of that shift things would be different. Our aircraft that we were going to work was a late arrival, so we had a little time before we had to get started, and busied ourselves with looking up AMM references and potential parts in the IPC for the work we had coming in, which was a service check and a couple routine cards.

When we were told the aircraft was arriving from the terminal we prepared to put the aircraft in the hangar. At this point in my career I had probably been involved in hundreds if not thousands of aircraft docking and de-docking procedures, and had a perfect record of not being involved in an aircraft damage. That was about to change. Just as with any move we ensured the envelope in the hangar was clear, opened the hangar doors (which in this hangar swung up and down vertically), put in the bypass pin, and hooked up the tow bar to the aircraft and tractor. I was wing walking the left wing for this docking, and we pulled the aircraft into the hangar uneventfully.

After the chocks were put in place I went to lower the hangar doors, and as they were moving down I looked up, just in time to see the hangar door about to contact the vertical stabilizer. I took my hand off of the control, but it was too late. The hangar door hit, and crushed, the top of the vertical stabilizer. When we looked at how this could have happened it turns out the nose tires were on the wrong hash line for that fleet type, so the aircraft was just a little too close to the hangar door arc. What drove this error? Complacency.

We had docked similar aircraft so many times in that bay, and it looked like the aircraft was completely in the hangar, but we were complacent in not double checking the line it was parked on.

Southwest 1380: “Flew Like a Rock”

In an interview with ABC’s 20/20 news magazine, the crew of Southwest Flight 1380 said the aircraft rolled sharply left and vibrated violently “kind of all at once” after it suffered an uncontained fan failure on April 17 near Philadelphia. Although the flight landed safely, one passenger was killed when engine debris pierced a window and she was partially ejected from the depressurized cabin.

“It was very disorienting to have all these things happen at once. And I actually couldn’t make heads or tails of what was going on,” First Officer Darren Ellisor told ABC in the interview that aired on Friday. “Your instincts kick in, you know, stuff that you've prepared for … ever since you started flying … and this training just takes over,” Ellisor added. Ellisor was the pilot flying but after the engine failure, Captain Tammie Jo Shults took over flying and radio work while Ellisor worked emergency procedures.

The cockpit was so noisy that Shults and Ellisor had to communicate with hand signals. “We had some switchology to do. Then it was really just back to flying. We had to use hand signals, a lot of nodding and pointing,” Shults said. When asked by a passenger later how the aircraft flew, Shults said “like a rock.” The 737 touched down in Philadelphia at about 162 knots, about 30 knots faster than normal.

Several passengers were interviewed for the report and said they remain traumatized. One, Hollie Mackey, was in the aisle seat in the same row as 43-year-old Jennifer Riordan who died after her upper body was pulled out through a debris-pierced window. Mackey said she and another passenger were unable to pull Riordan back into the cabin until the pressure equalized and the aircraft reached a lower altitude. Attempts to revive her were unsuccessful.

Shults told ABC that she traded the trip with her husband, who's also a Southwest Captain, so she could coach their son at a track meet. Interestingly, she also said passengers occasionally refuse to fly when they realize a woman is in the cockpit. "Every once in a while, a passenger would look at me and see the stripes and say are *you* flying?," she said. Shults was one of the pioneering women in military aviation and flew fighters in the Navy before leaving the service to join Southwest.

The NTSB continues to investigate the accident, which was Southwest's first fatality. The airplane was en route from New York to Dallas when a blade in the left CFM56-7B engine fan departed, essentially destroying the fragment containment systems meant to prevent debris from damaging the aircraft structure.

Scientists Examine Why Some Pilots Thrive Under Pressure, and Some Crack

A peek into the brain could help us train the pilots of the future.

Every commercial pilot would prefer nothing but uneventful flights, but sometimes the things go wrong and pilots have to both handle drastically shifting circumstances while maintaining the mental calm to process new information as it comes in.

It's a lot to ask of anyone, which is why scientists at Drexel University have begun measuring the brain activity of pilots in real-time.

Using technology called functional near-infrared spectroscopy, or fNIRS, the scientists are able to monitor pilot activity while they move about the cockpit and make decisions.
An fNIRS system keeps track of blood oxygenation changes in the prefrontal cortex, the part of the brain where problem solving, memory, judgement and impulse control are located.

When a person is learning a new skill, the prefrontal cortex is highly active. But as a task becomes a more learned trait, the brain is able to spread its resources out across other areas. This gives the prefrontal cortex space to breathe, so to speak, in the case of a split-second decision needed to be made.

"Unfortunately, many human-machine interfaces expose users to workload extremes, diminishing the operator's attention and potentially leading to catastrophic consequences," says Hasan Ayaz, PhD, an associate research professor at Drexel, in a press release. Ayaz and co-author Frédéric Dehais, of ISAE-SUPAERO in Toulouse, France have published their work in Frontiers in Human Neuroscience.

Researchers split 28 pilots into two teams. One team flew in actual planes and the other that stayed in flight simulators. With fNIRS systems monitoring their brain activity, the pilots began a series of memorization tests given to them by pre-recorded air traffic control instructions for flight parameters. These varied in difficulty and in how they were distributed to the pilots.

A clear trend emerged. Pilots in the real flight conditions had more errors and their brains had higher prefrontal cortex activation than the pilots in the simulator.

It's a testament to how the pressure of real-time flight differs from even the most advanced simulations. But going forward, Ayaz and his co-authors on this paper hope that this fNIRS measuring system could be a first step towards understanding why some pilots are strive and others crack under pressure.

Pilots like Sully Sullenberger, Tammie Jo Shults and Liu Chuanjian are rightfully lauded for their quick thinking under drastic circumstances. But not every pilot can make the right call, and tragedies like the one-in-a-million Germanwings Flight 9525 show how keeping track of a pilot's brain function could help save lives.

Someday perhaps the plane itself could monitor a pilot's activity and adjust itself to help the flight out. "We believe that this type of approach will open a whole new direction of research for studying parameters in an aviation setting and eventually designing better machines," says Dehais.

https://www.frontiersin.org/articles/10.3389/fnhum.2018.00187/full?utm_source=F-NTF&utm_medium=EMLX&utm_campaign=PRD_FEOPS_20170000_ARTICLE

Air Force Wants to Predict Aviation Accidents Before They Happen

The U.S. Air Force is using predictive analysis at its test centers to scrutinize data trends in an effort to stop the next aviation mishap, a top general said Tuesday.

The idea is to accumulate data and check for something that stands out on an aircraft's maintenance overhaul that may help predict or define a root cause for the next big incident, said Gen. Ellen M. Pawlikowski, commander of Air Force Materiel Command.

Her comments come as the service is conducting a one-day stand-down ordered by Chief of Staff Gen. David Goldfein on May 7 to give units "the chance to identify issues that they can work and elevate up to the [major command level] ... and the Air Staff if necessary," said Maj. Gen. John T. Rauch, chief of safety for the service and commander of the Air Force Safety Center.

Pawlikowski added that she has also ordered the service's test centers to "take a look at all of the data sources that we have that we use on a regular basis to look at the health of our weapons systems."

"We have a program called the Air Force Structural Integrity program, and that is an effort that we've been doing for 40 years, which uses predictive models and analysis to look at where we might have structural issues that we want to look at and >

do inspections or do repairs on before we get to an accident," Pawlikowski told reporters during a breakfast in Washington, D.C.

"I've asked that we do an 'out of cycle look' to see what has happened there, and ... I've asked the sustainment center [to report] on what they have seen as airplanes have come in," she said.

For example, if a KC-135 Stratotanker comes in for routine maintenance at Tinker Air Force Base, Oklahoma, Pawlikowski said the service is monitoring whether that aircraft stays a little longer due to "unplanned work," and whether other tankers going through the depot show a similar trend.

"So I ask them to go in and look at that data: Are there places where we've seen any spikes or unusual behavior?" she said.

The test and sustainment centers have until July to report their findings, she said, adding that the Air Force's approach has been "not to panic" amid a recent bout of aviation accidents.

The service recently said Class-A mishaps -- defined as involving fatalities, severe damage totaling $2 million or more, or a complete loss of the aircraft -- have declined in recent years, but Pawlikowski noted that a spike in accidents since January has "got our attention."

"We don't consider it a crisis, but we have elevated interest in making sure that we aren't missing anything," she said. "Safety is always first."

Pawlikowski said she is skeptical whether cuts under sequestration are directly linked to recent accidents.

The Air Force has lost 18 service members since November, including nine WC-130 aircrew in a fatal crash outside Savannah, Georgia.

As of May 2, manned aviation Class-A mishaps have increased 48 percent in fiscal 2018, officials said.

"Our systems are designed to failsafe, [meaning] if under sequestration we had to reduce the number of airplanes that went through the depot, which would mean some planes would be flying longer without their regularly preventive maintenance, we would not fly those airplanes in an unsafe mode," Pawlikowski said.

"We would ground that particular airplane until we were able to do that maintenance. So even though do we did take reductions in areas with respect to sustainment during sequestration, I would be surprised to find a direct correlation," she said.

Separately, lawmakers recently approved language in the fiscal 2019 National Defense Authorization Act that would require an independent national commission on military aviation safety.

The House Armed Services Committee on May 9 voted to include an independent legislative body to assess the spike in accidents between 2013 and 2018, as well as physiological episodes. The legislation will come before the Senate Armed Services Committee for markup later this month.

AIN's Human Factor Podcast Episode 12: Takeoff and Landing Assessments, Part 2

On January 19, 2011, a Citation X flying from Providence, Rhode Island, to Waukegan National Airport in Illinois slid off the runway. This was six years before TALPA, the Takeoff and Landing Performance Assessment initiative, was created.

According to the NBAA, TALPA incorporates the runway condition matrix that airport operators use to assign runway condition codes between zero and six for each third of the runway. However, TALPA is just the beginning. This episode of **AIN**'s *The Human Factor* further examines the dangers of runway contamination, the impact of TALPA, and how the aviation industry can work on improving runway safety standards.

Listen to the podcast

http://ea.ecn5.com/Clicks/LzlmcHJlUjg4U2l0MjhvSEJ0RENkSW5zQzcxWVp2bE1pQVlheTBYbzdDMjF3bUUxeEVNTXB1SW1PWDFsdVlNbUNLVlpkYS9ubkpMdXBpL2lyeHg1QWc9PQ%3d%3d

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NTSB Recaps Loss of Control Roundtable

More than 1,500 people have died in LOC accidents in the past 10 years.

Loss of control occurs when an airplane unintentionally departs from normal flight, usually with fatal consequences. LOC remains, in fact, the largest single source of fatalities in aviation. LOC remains at the top of the NTSB's 10 Most Wanted List of problems in search of solutions.

In an effort to mitigate LOC accidents the National Transportation Safety Board's Chairman Robert L. Sumwalt recently convened a roundtable in Washington D.C.

The NTSB's Director of the Office of Aviation Safety John DeLisi kicked off the discussion with 18 industry experts by reminding them that more than 1,500 people have died in the last 10 years from loss of control accidents. Sumwalt said in a statement about the event, "We achieved what we aimed to do, bring together leading experts in government, industry and academia to identify training and cockpit technology solutions that could make a difference, as well as dig into the challenges of implementing these solutions." The NTSB reports about 1,000 pilots and GA enthusiasts watched the day-long session online, with many receiving FAA WINGS credit.

Sumwalt added. "the statistics are trending in a good direction, thanks to the FAA's and industry's efforts to address LOC. However, from NTSB accident investigations, we know that much more can and should be done to accelerate the improvements in training and technology, because one death for what is largely a preventable problem is one too many."
After the event, Sumwalt organized the group's findings into three main categories of future focus.

Training . . .

- Address pilot weaknesses and skills requirements; pilots should always continue to improve their skills. • Reward pilots for additional training taken and ratings achieved, and incentivize new instructors to make sure pilots are taught correctly. • Teach students the importance of maintaining situational awareness during their initial training. The first 10 hours that new pilots spend with instructors can be some of the most important. • Recognize that technology is not a substitute for basic stick and rudder skills, nor can it compensate for poor training. • Incorporate more realistic scenarios into flight training regarding stalls. Ensure pilots have the confidence to complete a stall recovery. • Train for the startle factor so it doesn't happen at low altitudes. The stall warning might be too late to recover.

Technology . . .

• Find a responsible role for cockpit technology; it can make a big impact on safety. • Continue to responsibly innovate. • Reduce angle of attack (AOA); this is the key to recovery. AOA indicators can help. • Continue to quickly certify new technologies in a variety of aircraft types.

Other ideas . . .
• Use data to improve GA safety; data monitoring programs can help us standardize safety. • Establish mechanisms where industry and government can continue to collaborate to collectively find solutions. • Recognize that regulation and mandates aren't always the answer; education and outreach may be a better approach. • Utilize pilot social networks and type clubs to learn and grow. • Get involved in working groups; study best practices and incorporate outcomes. • Be aware of the limits of the airplane; pilots should not fear the capabilities of their planes. • Change the way we handle outreach by unifying around a single topic, like LOC.

https://www.ntsb.gov/safety/mwl/Pages/mwl5-2017-18.aspx

Sticking it to the plane

Ed Hill speaks to Invert Robotics about its innovative surface crawling robot now being used to carry out visual inspection tasks on aircraft.

In the highly competitive world of the aviation industry, aircraft time on the ground leaks money away from airline's increasingly tight profit margins. Any technology that can help speed up safety inspections is a benefit not only to airlines but also the MRO companies that support them and consequently passengers who avoid delays.

Now a New Zealand company is revolutionizing the way in which visual inspections are carried out on aircraft. Invert Robotics has designed an innovative new climbing robot that can adhere to a range of surfaces including aluminum, glass and carbon fibre, even when aircraft are wet or the surface requires upside down inspection.

Initially developed for the dairy/food and drink industry (a sector with lighter regulation) to inspect stainless steel tanks, the system uses a patented suction mechanism which enables it to crawl over almost every inch of an aircraft.

Neil Fletcher, managing director of Invert Robotics explains: “The aviation space was considered from the company’s inception but by focusing on an area with lighter regulation around inspection and maintenance Invert Robotics was able to grow whilst learning and developing the technology. Once it reached sufficient maturity, it caught the attention of the MRO industry.”

Quicker than the eye

The system uses high definition cameras and sensors to assess surfaces for flaws such as pits and cracks, whilst also recording the location and size of these defects. Inspectors are fed real-time video during the inspection and are able to identify and classify faults often unable to be picked up by the human eye. A full repair assessment report can then be provided within 72 hours.

The crawling robot also eliminates many of the health and safety risks associated with traditional inspection methods as it means the operators, rather than working at height from access systems such as cherry pickers or towers, can remain safely on the ground while inspections are being carried out.

Fletcher continues: “The suction methodology in use on Invert’s climbing robots is a world first and built specifically to climb on smooth (including curved) surfaces. Flat horizontal surfaces such as wings present no problem and the suction technology allows inspections with the robot upside down under a wing – an important consideration for close visual inspections at the height of wings on wide-bodied jets.

“The system is fully automated to enable operators to focus on the task at hand. Our robots can climb any smooth surface and can cross obstacles such as joins between panels, weld seams, edges of doors and other surface discontinuities. Our initial areas of focus are around difficult to access areas including crowns of fuselages and vertical stabilizers/rudders.”

As the robot tracks its way around the aircraft data is streamed in real-time to an engineer on the ground and/or recorded in industry standard formats. Operators can review all data in real-time during an inspection and following the survey an inspection a report is automatically generated that can then be sent wirelessly for review by other engineers, airlines or OEMs, for example.

The system is not only faster than manual inspection it is also safer with less opportunity for human error. It also frees up skilled aircraft engineer's time so they can attend to more complex tasks rather than spending time on the labour-intensive and tedious manual maintenance inspection processes. In turn, this further reduces the time and cost of aircraft maintenance.

Fletcher affirms: "Compared with traditional methods, our system provides faster turnaround and minimizes delays and disrupts from AOG (time airline is on the ground). The proper comparison is not always with a direct visual inspection – severe damage will usually be readily visible from the ground, but more often damage that requires closer inspection.

"Using our system with a 20-30-minute inspection time avoids aircraft being towed to hangars, or operators sourcing and setting up a cherry picker avoiding delays often of many hours. This flexibility of operation and time saving is enhanced by the ability to record and transmit the data for remote analysis at an MRO or OEM where the high definition images from the camera allow for much more accurate assessments of airworthiness."

Further NDT inspections

Invert Robotics is now developing ultrasound and thermographic sensors to help further expand the capabilities of the crawling robot.

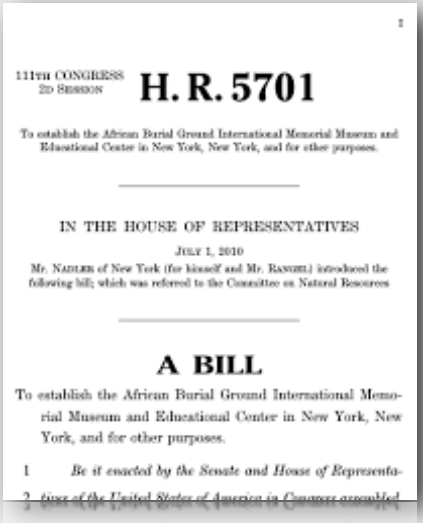
Fletcher says: "In the same way as our visual inspections have improved pre-existing workflows our ultrasonic thickness testing and thermographic inspection payloads now being tested will enable clients to work from the ground and deliver inspections utilizing those technologies at matching or increased quality. The robot can be deployed to conduct testing with these established technologies on most parts of the aircraft where they are already manually applied. Enabling personnel to work from the ground not only reduces the overhead of using height access equipment it also unlocks the opportunity to perform work in adverse weather conditions, including at the gate, avoiding expensive delays."

One MRO company that has teamed up with Invert Robotics to use the system is Zurich-based aircraft maintenance group SR Technics.

http://invertrobotics.com

New House Bill Aims To Boost Mx Workforce

A bipartisan group of House lawmakers introduced another bill to address the looming aviation maintenance technician shortage, highlighting the attention the issue has before Congress. The bill, the Aviation Maintenance Workforce Development Pilot Program Bill (H.R. 5701), is designed to encourage government, industry, and academia to work together to develop strategies to develop technical talent.



111TH CONGRESS
2D SESSION

H. R. 5701

To establish the African Burial Ground International Memorial Museum and Educational Center in New York, New York, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JULY 1, 2010

Mr. NADLER of New York (for himself and Mr. RANGEL) introduced the following bill; which was referred to the Committee on Natural Resources

A BILL

To establish the African Burial Ground International Memorial Museum and Educational Center in New York, New York, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled

The bill would create a pilot program that would offer $500,000 in grants for aviation maintenance workforce development activities. Applications must be jointly submitted by a business or labor organization, school, and government entity. The FAA would administer the program.Introduced last week by Rep. Sam Graves (R-Missouri) with co-sponsors Daniel Lipinski, (D-Illinois), Markwayne Mullin, (R-Oklahoma), and Brenda Lawrence (D-Michigan), the bill is similar to legislation that Sen. James Inhofe (R-Oklahoma) unveiled in the Senate in March. But the House bill differs in that it permits high schools to participate.

The legislation ranks among numerous workforce initiatives introduced or offered over the past year; several of those measures have been included in comprehensive FAA reauthorization legislation pending in Congress.

Graves noted that in four years, the industry is expected to experience maintenance technician shortage. “All of aviation, from general aviation to large commercial operations, will be affected if more people do not enter this vital field,” Graves said in introducing H.R.5701. “This legislation provides a viable path forward to address the skills gap and ensure the U.S. remains a world leader in the aviation industry.”

The bill will help recruit and train the next generation of mechanics, added Lipinski. “It is imperative that we ensure there is an adequate supply of trained and qualified individuals in this field,” he said.

The legislation has received nearly universal support from a cross-section of industry. Twenty associations representing business and general aviation, repair stations, commercial and regional airlines, cargo carriers, and state aviation agencies, among others, jointly wrote the lawmakers endorsing the bill.

“The U.S. aviation industry is facing a technical worker shortage that threatens to undermine the growth and competitiveness of one of the most important sectors of our economy,” the letter states. “Given the scale of the challenges facing companies around the country, the legislation could not be timelier.”

The letter points to a Boeing study estimating a need for 118,000 new maintenance technicians in North America over the next two decades, and a separate Oliver Wyman study projecting that 30 percent of the current workforce is approaching retirement age, positioning the industry for a shortage by 2022.

"The shortage of qualified maintenance workers touches all aspects of our industry, and we must all work together to find effective solutions,” said NBAA president and CEO Ed Bolen.

"The Aircraft Electronics Association strongly endorses this legislation to provide a viable pathway for training our next generation of avionics technicians and aviation maintenance technicians," added AEA president Paula Derks. The bill “will instigate the creation of thousands of high-paying jobs employing skilled workers in the future,” she said.

TED TALKS

What's up at SpaceX? Engineer Gwynne Shotwell was employee number seven at Elon Musk's pioneering aerospace company and is now its president. In conversation with TED curator Chris Anderson, she discusses SpaceX's race to put people into orbit and the organization's next big project, the BFR (ask her what it stands for). The new giant rocket is designed to take humanity to Mars -- but it has another potential use: space travel for earthlings.

https://www.ted.com/talks/gwynne_shotwell_spacex_s_plan_to_fly_you_across_the_globe_in_30_minutes