

Aviation Human Factors Industry News

Volume V. Issue 30, October 09, 2009



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

Hello all,

To subscribe send an email to: rhughes@humanfactorsedu.com

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

★Poor maintenance caused F-16 failure

★NTSB Probable Cause Report Released In 2008 California Accident

★Cockpit chatter cited in six crashes

★Maintaining Awareness

★Helios accused plead not guilty

★FAA orders retesting of 1,400 mechanics

★FAA Warns Against Painting Pitot Tubes, Static Vents

★Runway Safety Summit

★And More

Poor maintenance caused F-16 failure

The malfunction of an Israel Air Force F-16I fighter aircraft that necessitated an emergency landing On September 3 was apparently caused by **human error in the maintenance of the engine**. The pilot narrowly averted a crash by executing a rarely used maneuver to glide the plane to a landing.



Shortly after takeoff from the Ramon Air Force Base, on a routine training flight, the pilot of the jet - the IAF's most advanced model - discovered that he was unable to reduce the engine speed because it **remained in after-burner mode** after takeoff.

Together with the squadron commander the pilot decided to shut down the engine and glide to a landing. The pilot and the navigator were uninjured.

Following the incident all F-16Is were grounded for 24 hours and IAF commander Maj. Gen. Ido Nehushtan ordered a probe.

The reason for the malfunction was quickly ascertained and the no-fly order was rescinded.

The probe revealed that a technician at the Ramon base had made a **mistake** in the course of normal maintenance of an **engine part connected** to the throttle. Supervision of the technicians **may also have been faulty**. The IDF Spokesman's Office said the investigation is continuing.

NTSB Probable Cause Report Released In 2008 California Accident

Student Pilot Killed When He Walked Into A Spinning Prop

The NTSB has concluded that 26-year-old Wei Jin **did not see a spinning**

propeller into which he walked, killing him on November 15th 2008. Jin was a student pilot at the Sierra Academy of Aeronautics, and had ridden with his roommate, Jia Li , also a student at SAA, on a cross-country flight. In the report, Li is referred to as 'first pilot', and Jin 'second pilot'.



The the **probable cause report states**: On November 15, 2008, about 1750 Pacific standard time, the student pilot associated with the operations of a Cessna 152, N45994, was killed **after exiting the airplane and inadvertently contacting the propeller**, at the Atwater/Castle Airport (MER), Atwater, California. The airplane was registered to KS Aviation, Inc. and operated by Sierra Academy of Aeronautics under the provisions of Title 14, Code of Federal Regulations (CFR) Part 91. The first student pilot, who was seated in the left seat and manipulating the controls at the time of the accident, was not injured. The airplane was not damaged. Visual meteorological conditions prevailed for the cross-country flight that originated from Visalia Municipal Airport (VIS), Visalia, California, at 1625, with an intended destination of MER.

For the purposes of this report, the student pilot manipulating the flight controls at the time of the accident is referred to as the first pilot; the student pilot that exited the airplane (deceased) is referred to as the second pilot.

In a written statement provided to the National Transportation Safety Board, the certified flight instructor (CFI) of both students reported scheduling the second student pilot for a solo cross country the morning of the accident. Before the flight, the CFI met with the second student pilot at the airport to check weather and endorse his logbook. The CFI watched the second student pilot walk to the ramp to preflight the airplane and then left the airport premises.

In a written statement, the first pilot stated he waited on the first floor of the air traffic control tower while the second pilot was dispatched the airplane. When the flight instructor left the airport premises, the first pilot walked onto the ramp and joined the second pilot for the cross-county flight. When departing MER the second pilot was positioned in the left seat and manipulating the flight controls. After landing at VIS, the student pilots switched seats for the return flight to MER.

After landing, the second student pilot taxied the airplane toward the ramp. The first pilot stated that prior to reaching the parking area, the second student pilot, **concerned about being seen** by flight school personnel, instructed him to taxi the airplane to the designated parking area, and then he exited the airplane. The first pilot reported that after exiting the airplane, the second student pilot **ran toward the front** of the airplane and was struck by the turning propeller.

According to U.S. Naval Observatory data, sunset occurred at 1652.

Cockpit chatter cited in six crashes

Airline pilots **regularly violate** federal law by chit-chatting or joking during critical phases of flight — the kind of **distractions** that may have played a role in two recent fatal crashes that killed a total of 62 people, according to government records. The National Transportation Safety Board (NTSB) has cited violations of the **"sterile cockpit rule"** in six crashes since 2004, a USA TODAY review found. In addition, the pilots of a commuter plane that crashed Feb. 12 near Buffalo were **casually talking** minutes before the accident that killed 50 people.



More than half — 11 out of 20 — of the cockpit recording transcripts released in serious accidents during the past decade contain evidence of violations, USA TODAY found.

Comments that range from mimicking a chicken to expletive-laced jokes were captured on cockpit recordings. Since 1981, federal law has barred such banter while taxiing and flying below 10,000 feet.

Pilots **need to improve their discipline**, according to some safety advocates.

"It is sending a signal that following the regulations are not necessary," said NTSB board member Robert Sumwalt, a former airline pilot.

"We're seeing too many of these slips," said Federal Aviation

Administration chief Randy Babbitt.

Among the examples in NTSB records:

- Pilots on a Great Lakes Airlines flight into St. Louis were making chicken noises and talking in character as they taxied on Sept. 7, 2008. The plane suffered substantial damage to the tail when it struck a building, but the four passengers were not injured.
- The pilots of a Comair jet talked about other people applying for piloting jobs for 30 seconds as they taxied in Lexington, Ky., on Aug. 27, 2006. The plane crashed while trying to take off on the wrong runway, killing 49 of the 50 people aboard.
- The pilots of a Corporate Airlines commuter plane approaching Kirksville, Mo., on Oct. 19, 2004, joked they should tell passengers "you people should all shut the (expletive) up." The pilots descended too low and struck the ground, killing themselves and 11 of 13 passengers.

Edwin Hutchins, a University of California, San Diego professor who has studied pilot behavior, cautioned that most violations are minor, and research hasn't shown a threat to safety.

Maintaining Awareness

Regulations may mandate duty-time limits for aviation maintenance, but they cannot fully mitigate the risk of **fatigue**. Education raises awareness, and **human-factors training programs** at airlines and independent maintenance organizations are now placing increased emphasis on fatigue **and its consequences**. The FAA dedicated an entire module to fatigue management in its ***Operator's Manual for Human Factors in Aviation Maintenance***.

Aviation industry studies have pointed to an increase in maintenance errors during times when technicians are most prone to fatigue, says Wilma Miller, Delta TechOps general manager for training and development. One such study by NASA of fatigue-related



incidents among maintenance personnel, based on data from the agency's Aviation Safety Reporting System (ASRS) reports from the previous 18 years, **determined that over 50% of the mistakes occurred from 1 to 6 a.m. and from 6 p.m. to midnight**, says Miller. Most of the incidents identified in the ASRS were discovered prior to serious aircraft damage or personnel injury, she notes.

One way to mitigate fatigue is through **continual education**, Delta TechOps focuses on fatigue awareness during the initial training and employees receive a second round of education on the topic as part of the organization's **human-factors recurrent training**, says Miller. During its initial human-factors class, TechOps addresses fatigue awareness in its human performance and limitations module. Miller says instructors define fatigue and its symptoms, and emphasize throughout how to manage fatigue, such as **arranging workloads** to avoid task during hours when people are most prone to fatigue.

Sometime it's easy to dismiss the effects of fatigue, especially when there is a prevalent **"can-do: attitude in the workplace,"** says Miller. "Combating fatigue requires technicians to have a great level of **self-awareness** when monitoring their own performance levels. We know we are getting the **message right** when technicians approach us on the hangar floor and tell us of a recent experience they have had where they stopped a job to get extra help or time when they sensed fatigue becoming a factor.

<https://hfskyway.faa.gov/hfskyway/opsmanual.aspx>

Helios accused plead not guilty

THE HELIOS trial earlier this month adjourned to late November after the five defendants **pleaded not guilty to the charges of manslaughter** and of causing the death of 119 people through a reckless act.

The defendants are: Andreas Drakos, **chairman of the board** of Helios; Pantazis, **chief executive officer**; Ianko Stoimenov, (former)



chief pilot; Giorgos Kikidis, **operations manager;** and Helios Airways as a legal entity.

Each faces a total of 238 counts, consisting of the 119 victims aboard the ill-fated plane (minus the two pilots) times the two charges.

The trial resumes November 27 at the Nicosia criminal court. The new date is the result of a deal struck between the defense and the prosecution in court.

Drakos, Pantazis, Stoimenov and Kikidis remain free on bail.

The defendants stood poker-faced in the courtroom as the charges were read out, **making no eye contact with Helios relatives** seated inside.

The case of the prosecution (the Attorney-general's office) hinges on demonstrating that the company and its officers are liable for employing, and continuing to employ **"inadequate and unfit" pilots**, as state prosecutor Eleana Zachariades said in court.

But legal circles are already voicing doubt over the prosecution's approach, which they see as flimsy at best. Under Cyprus law, manslaughter is defined as **"causing death through an illegal act"** – begging the question of what an illegal act in this case would constitute. Could operating or flying an aircraft be considered an illegal act, for example?

In short, the Attorney-general's office's angle is that the accident was caused by **mistakes/omissions** made by Captain Hans-Jurgen Merten and his co-pilot Pambos Charalambous, that they **were unfit to fly**, and that therefore it is the **airline's fault** for allowing them to do so.

There is also the matter that the two pilots were fully licensed.

Among relatives of the Helios victims resentment over delays in starting the trial (it has been four years since the accident) has now been mixed with criticism of the prosecution's handling of the case. Many are not at all happy with how things are going.

A trial is also set to get underway in Greece (the location of the accident), with reports recently of possible legal barriers and jurisdiction complications in the case of an individual being set to appear before trial in two different countries for the same case.

The Greek indictment **also** features Pantazis, Kikidis and Stoimenov, as well as **chief mechanic** Allan Irwin, who has not been charged in Cyprus.

It is said the trial in Cyprus could be threatened should Greece not cooperate in handing over evidence germane to the case. Latest reports, however, say a deal has been struck between the two countries.

“Justice? What justice? They’re going to lay all the blame on the pilots... it’s so obvious,” said Elena Georgiou, who lost her brother, his fiancée Christiana and six other friends on the doomed flight.

And she wondered why it took the Attorney-general’s office “four whole years to ask for the evidence in Greece, when they knew all along that this would come up.”

On the morning of August 14, 2005, a Boeing 737-300 jet operated by Helios Airways out of Larnaca smashed into hilly terrain 40 km outside Athens after running out of fuel. **All 121 people** on board were killed, making this the worst aviation disaster in Cypriot history.

A subsequent fact-finding probe on the accident primarily blamed the two pilots, but **also cited shortcomings within the airline** as well as Cyprus’ Civil Aviation as latent, or underlying, reasons for the crash.

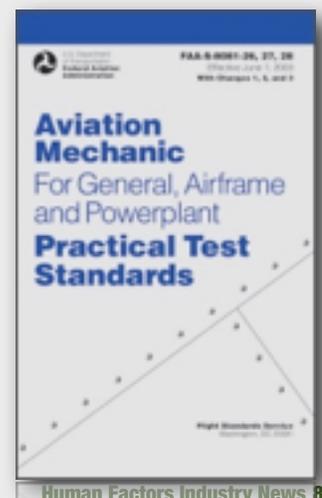
The crash report found that the airflow valve was set at a 14-degree angle from the **manual position**, allowing for partial pressurization. For this type of Boeing, it should have been set on auto before takeoff.

According to the report, on the **night before the accident, airline engineers left the switch on manual**, but on the fateful day the pilots apparently omitted to conduct the pre-flight checks.

FAA orders retesting of 1,400 mechanics

The FAA has decided to require a **retest for 1,400 mechanics** who used Aerospace Services, an FAA-approved airplane mechanic testing facility. The agency shut down the San Antonio operation last fall and pulled owner Bryan Tobias’s designated mechanic examiner rating when it **became suspicious** of an “unusually high success rate and volume of mechanics tested and certified” by Tobias.

Over an eight-year period Tobias averaged 150 to 250 exams a year, with students traveling to the facility



from as far away as Asia, Latin America and South America.

"Because it was impossible to determine which mechanics received substandard tests, the FAA is requiring all of the approximately 1,400 people who used Tobias's testing facility to take a new written and oral test that will be administered directly by the FAA," said Mike Zenkovich, manager of the agency's flight standards division for the southwest region. "Each of the affected mechanics is being notified by letter and will have 30 days to contact the FAA to arrange a testing time. The FAA **will revoke the certificates** of those who fail to comply."

FAA Warns Against Painting Pitot Tubes, Static Vents

CFI Candidate Was Unaware Of Any Potential Problem During Evaluation

A certified flight instructor applicant recently arrived for his evaluation with aircraft with **a painted pitot tube**. As part of the applicant's evaluation, he was asked to explain the purpose of the preflight and airworthiness requirements of the aircraft. When questioned about the painted pitot tube, the applicant **was unaware** of any potential for malfunction due to the paint application.



The incident has prompted the FAA to issue a Information for Operators (InFO) advisory informing aircraft operators of the potential for pitot-static system malfunctions **after an aircraft is repainted**.

Manufacturers typically deliver aircraft with unpainted pitot tube(s) with the expectation that the pitot tube(s) will remain as delivered. Painter's and/or maintenance personnel **may not be aware** of the affects of inappropriately applied paint to critical orifices and/or the performance of the system.

Painting these instruments may possibly cause unreliable instrument readings or other hazards. Persons performing maintenance or preventive

maintenance should be aware that the application of paint to surfaces received unpainted from the manufacturer, may be an alteration to the aircraft type design, requiring further evaluation.

Persons engaged in repainting of aircraft and/or return to service of aircraft after painting **should follow the manufacturers' recommendation** concerning painting of pitot tubes and/or any other component delivered from the manufacturer unpainted. If uncertain, the manufacturer should be contacted for information about a specific aircraft or component.

Runway Safety Summit



The premier FAA International **Runway Safety Summit** (IRSS) will be held December 1-3, 2009, at the Omni Shoreham Hotel in Washington, D.C.. Co-sponsored by the American Association of Airport Executives (AAAE) and The MITRE Corporation, this three-day event focuses on one of aviation's most critical challenges worldwide - **Runway Safety**.

The IRSS' agenda over two and half days comprises discussions, analyses and reviews of runway safety's most critical issues including **human factors**; airport geometry, signs, markings, and lighting; technology today and tomorrow; cockpit and ATC procedures; and **SMS systems**. Each panel, whether assessing runway safety progress to date, initiatives underway, or plans being made for future environments, will thoroughly examine what's going on both in the United States and around the world.

<http://email03.secureserver.net/webmail.php?login=1>

New Runway Safety Tool Kit Released

IATA and the Flight Safety Foundation have released a new **Runway Excursion Risk Reduction tool kit**.

The tool kit is designed to **reduce the number of runway excursions**, which are instances when an aircraft unexpectedly leaves the runway during takeoff or landing.

IATA safety data for 2004-2008 identifies runway excursions as a **contributing factor in 27% of all accidents**. Flight Safety Foundation data confirms that this amounted to an average of 30 accidents per year over the last 14 years.

“Safety is our number one priority,” said Giovanni Bisignani, IATA’s Director General and CEO. “Our safety record is constantly improving. Getting on a plane is about the safest thing that anybody can do. And we are determined to make it even safer. Data drives safety improvements. This toolkit **analyses the major causes of runway excursions and provides practical solutions**.”

The new tool kit provides an in depth analysis of runway excursion accident data, a compilation of significant risk factors, and provides recommendations for operators, pilots, airports, air traffic management, air traffic controllers and regulators to assist in addressing this challenge. The toolkit also contains considerable **training materials and best practices** for all operators.

“Safety is the responsibility of everyone in the industry. The tool kit provides solutions for airlines, airports and regulators - from training to on-the-job implementation,” Bisignani added.



<http://www.asiatraveltips.com/news09/119-RunwayKit.shtml>

Aircraft technician pits himself against world's best

An **aircraft technician** from Peterborough is gunning for gold as he uses his engineering skills to take on some of the **world's most talented** people in a competition.

Stewart Wright (25) who is based at RAF Wittering and serves with the Royal Navy is currently taking part in the WorldSkills Calgary 2009 in Canada.

Mr Wright, who has completed two operational tours of Afghanistan and served at sea aboard HMS Illustrious, was chosen for Squad UK following a tough three-day selection process where he completed **six demanding tasks** including carrying out an **aircraft inspection**.

He also made parts for the aircraft and inserted a Boroscope into the engine to check and analyze any problems.

He said: "The event is an opportunity to test myself against the best people in the world and **to push myself to the limit** to find out what I can really achieve."

WorldSkills events are held every two years with 51 countries competing in more than 40 different vocational skills.

The competition enables talented young people from across the globe to demonstrate **standards of excellence** in their chosen professions. Competitors compete for gold, silver, and bronze medals and strive to excel in world-class standards in 45 skill categories ranging from cabinet-making to web design.

