

# Aviation Human Factors Industry News

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

Hello all,

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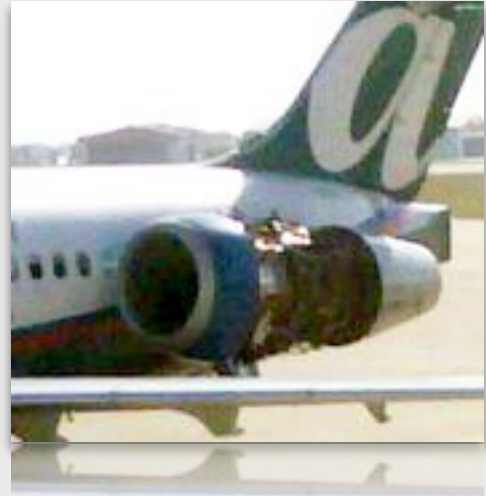
## Plane Loses Engine Cover After Indianapolis Takeoff

### *Pilot Not Sure Where Debris Fell*

A plane that left Indianapolis for Baltimore last Thursday morning **lost the cover of its engine** somewhere east of the airport, officials said. AirTran flight No. 807 left at 8:10 a.m. A few minutes after takeoff, the pilot that the cowling of the plane's second engine cowling was missing.

"The aircraft was immediately directed to Dayton, Ohio, as an emergency diversion," said Susan Sullivan, Indianapolis International Airport spokeswoman.

The B717 plane can seat about 110 passengers, but 48 passengers and five crew members were on board at the time. The plane was **flying at 19,000 feet near New Castle when the problem was noticed**, but officials aren't sure when the cover fell off. "No ... debris has been found on the airfield at IND," Sullivan said. "Our ops crews have searched the airfield thoroughly." Sullivan said there were no issues in a visual inspection of the plane before it left. A missing engine cover doesn't affect the plane's ability to fly properly. However, it does leave it vulnerable should the craft encounter another object.



## Remember To Check The Cowl Latches (Updated)

### **C**rucial **K**nowledge

The NTSB, The FAA and Transport Canada continue to **hammer out defenses** against the ongoing problem of in-flight fan cowl loss incidents due to **latches being left unlatched**. Since 1992, there have been 15 engine cowl loss incidents involving single aisle Airbus aircraft. Since 2001, there have been 33 fan cowl loss incidents involving Bombardier CL-600 aircraft, with six incidents in 2007 alone. Now the Boeing 717 will be added to the

list if the investigation determines the engine cowl latches weren't properly latched.

This 15 minute video provides methods and techniques to **help all people remember** the importance of assuring that the latches are closed. Includes student guide in pdf format, and a test with 'proof of training; and test results emailed to an address of your choice.

Time allotment: 15 minutes.

This email contains the username and password for individuals to take the online course. "Remember to Close the Latches."

Enter the following username and password:

**Username: Latch**

**Password: Latches**

Speakers are required.

I'd like to thank Gary Burch who is the program manager of "Crucial-Knowledge

He can be reached at: 301-412-5966.

To take this course, click onto: <http://www.crucialknowledge.info/latch>

## **Maintenance Hangar**



### **Special Projects**

The FAA Safety Team (**FAASafety**) has put together four initial maintenance training products that will assist the individual Aviation Maintenance Technician in recognizing **risk hazards and situations in their personal life and work environment.**

The recognition of these risks and the subsequent mitigation or elimination of them will make the technician personally safer and allow them to accomplish their work in a safer, more productive manner.

These products include:

1. The [Risk Management Powerpoint](#) which will train the Aviation Maintenance Technician in ways to Transfer, Eliminate, Accept or Mitigate those risks.
2. The [Dirty Dozen-Human Error in Aircraft Maintenance](#) on-line course which will help Aviation Maintenance Technicians recognize human factors that commonly interfere with work. It introduces the concept of safety nets to mitigate some common causal factors thus improving safety in their work environment.
3. The [Risk/Hazard Identifier Wheel Powerpoint](#) that explains how the Aviation Maintenance Technician will use the Risk/Hazard Identifier wheel.
4. The [Risk/Hazard Identifier Wheel](#) that will be used by the individual Aviation Maintenance Technician to determine his/her immediate personal risk factors. (Available soon.)

The goal of the FAAS team is to help train you to **become a safer technician** with the end result being a safer aviation industry.

<https://faasteamreps.org/AMT/pub/SpecialProjects.aspx>

## **Bad Maintenance Is a Drag - A Lesson From The U.S. Navy**

We were one day out after a port call in Yokosuka, Japan. I was a CDI on **night check**. Everyone on the shift **was tired**, and most of us wished we were still in port. Work was the last thing on our minds. After telling a few in-port stories, we got down to the business of preparing aircraft for the next day's flight schedule.

One of the night's tasks was to install a station-8 SUU-79 pylon on aircraft 102. After our maintenance meeting, we checked out our tools and pubs

and headed down to the hangar bay.

Aircraft 102 was our first priority. It had been the “hangar queen” for a few weeks, and Maintenance Control wanted it up for the next day’s flight. In addition to the pylon installation on station 8, we had to install a few pylons and bomb racks on other stations.



We started by placing the pylon underneath the station. An SUU-79 weighs approximately **360 pounds**—light enough for four people to carry, but only for short distances. I told the crew to position themselves so that two lifted the front and two lifted the back. I then told them to lift the pylon evenly onto the aircraft-wing station. After a few tries, the crew had positioned the pylon correctly on the wing. I locked the forward hook on the pylon and screwed in the safety lock.

Next, we installed the aft pin. As I observed, one of the crew members lifted the aft section of the pylon, while another installed the aft pin. We then checked the pylon by shaking the front of it and by tightening the pylon sway-pad. I then mated the pylon electrically to the wing of the aircraft. All doors were secured, tools were checked, and the crew went to the shop to sign off the MAFs.

Aircraft 102 flew the next day. Shortly after launch, during a G-awareness maneuver, the **station-8 pylon came loose** at its aft attachment point and pivoted on the forward attachment point. As a result, the aft end of the external fuel tank hit the LAU-116 installed on station 7, and the nose hit station 9.

The pylon’s rotation severed the electrical, fuel and air connections between the pylon and the aircraft, preventing the transfer of fuel and making it impossible to jettison the tank. The position of the tank (perpendicular to normal airflow) also increased the drag of the aircraft beyond the scope of the bingo performance charts, placing the aircraft in a configuration that never had been flight-tested.

The outcome could have been catastrophic; the pilot easily could have lost control. Fortunately, the pilot was **extremely skilled** and diverted to an

airfield 150 miles away. Superb crew-resource management between the aircrew and squadron representatives aboard USS Nimitz (CVN-68) allowed for a safe recovery ashore.

Based on the way the pylon shifted during flight, there was only one possible cause: The aft pin hadn't been installed. Looking back at the maintenance work the night before, I realized that when I had "observed" the pin installation, **I hadn't verified the installation and security before securing the door.** As a CDI, you are taught to pay close attention to detail and to check everything. **I failed in this regard.** This incident could have killed two people. I knew that everything I did as a CDI was very serious. But, the possibility of losing two lives **shocked me to my core.**

As CDIs and **maintainers**, we have a responsibility to the aircrew to complete every task (no matter how simple or redundant it may be) with attention to every detail and vigilance to any deficiency. This incident has changed my career and life forever. Before, work was just work. Now, **there's a face on every job I do.** I am more dedicated to doing the very best I can on every task.

## **Engineers: Passengers' survival was miracle by design**

When an airliner slammed onto a rainy Caribbean runway early Monday and split into three shredded pieces, passengers called it a miracle that no one died in the impact.

To the engineers and accident investigators who pushed for decades to improve airliner safety, the outcome was by design.

"I cringe when I see these headlines that this was a miracle," said John Hickey, the **Federal Aviation Administration's (FAA)** deputy safety chief. "We as engineers and scientists don't believe that this is a miracle. We are totally convinced that the work that we did in the 1980s has proven its value."



At that time, a crash severe enough to break a jet into pieces was almost certain to kill passengers. Since then, the FAA — pushed at times by federal crash investigators — has required tougher seats, better emergency lighting, more accessible exits and numerous protections against fire.

## New Guidelines Tell Co-Pilots to Speak Up

India's aviation regulator DGCA has been trying to improve the country's air safety.

**“Approach not stabilized! Go around Captain!”**

That is what a co-pilot **needs to shout** to the commander when there is a problem landing. The co-pilot has to speak loudly and be ready to take over controls if needed.

More than two months after an [Air India jetliner crash](#) killed 158 passengers in the southern city of Mangalore, India's aviation regulator has new operational guidelines. The new procedures, which were issued Tuesday, emphasize **the importance of co-pilots** during emergencies.

Under the **new procedures** from the Directorate General of Civil Aviation, or DCGA, the co-pilot needs to shout two warnings to the commander if aircraft is in danger during its approach to the runway. **If the commander doesn't listen**, then the co - pilot has to take charge of all operational functions.

Cockpit mutiny was recommended only in the most extreme cases though. The DGCA circular noted the new actions would happen “only in the case of total or subtle incapacitation of the commander... and also when the aircraft is at least 500 feet from the ground.”

Aviation experts said most airlines already manage their cockpits this way so the new guidelines are unlikely to improve air safety.

“The DGCA, stating the same facts through a written advisory, won't make any difference to air-safety,” said Y.N. Sharma, chief operating officer at New Delhi-based Chimes Aviation Academy.



After the tragedy in Mangalore, India's aviation regulator has been trying to improve the country's air safety.

The Directorate General of Civil Aviation created [an advisory council](#) in May to help investigate the accident. The panel is supposed to provide recommendations on air navigation, monitoring of flight operations and airports.

On Aug. 3 India's aviation minister Praful Patel [talked to Parliament](#) about the safety problems faced by airline industry in the country.

"The challenge before DGCA is to manage phenomenal growth of air traffic without compromising on aviation safety," Mr. Patel said.

The new guidelines come after the initial probe into the Mangalore crash revealed [failures by pilots to follow basic safety rules](#) during the final approach. Their problem was then compounded by [cockpit confusion](#) after touchdown.

## [Aircraft design linked to crash that killed 265 people in New York](#)

Federal officials say a plane crash that killed 265 people [was caused in part by a rudder system design](#) featured in various Airbus models.

American Airlines Flight 587 crashed in a residential area of Belle Harbor, New York, soon after taking off from John F. Kennedy International Airport on November 12, 2001. All 260 people onboard died, along with five people on the ground.

According to a recommendation issued last week by the National Transportation Safety Board, the plane's vertical stabilizer likely separated because of "the first officer's unnecessary and excessive rudder pedal inputs. "But those inputs were likely caused in part by ["characteristics](#) of the Airbus A300-600 rudder system design."

Two families of Airbus planes use a system design that limits available rudder pedal deflection as airspeed decreases, according to the safety board.

"Consequently, at high airspeeds require lighter pedal forces ... to obtain maximum available rudder than at low speeds," the safety board wrote.





The safety board notes the circumstances of flight 587 are similar to a 2008 accident involving an Airbus Industrie A319. Air Canada Flight 190 experienced "in-flight upset" and landed in Calgary. Three passengers suffered serious injuries.

The popular Airbus A320 family could also be affected. The European-based company's website says it sold more than 3,200 A320 planes worldwide.

"The Airbus 320 family is also susceptible to **potentially** hazardous rudder pedal inputs at higher airspeeds," the safety board wrote.

Safety board officials recommended the European Aviation Safety Agency review options for modifying some Airbus planes "to provide increased protection from potentially hazardous rudder pedal inputs."

## **Poor Risk Management**

### **Aircraft Parts Plant Cited for 44 Violations in Connecticut**

OSHA has cited Whitcraft LLC for **44 alleged serious violations** of workplace standards at its Eastford, Conn., aircraft parts manufacturing. The company faces a total of \$139,680 in proposed fines for fire, explosion, chemical, mechanical, and electrical hazards identified during comprehensive safety and health inspections of the plant begun in January of this year.



"These sizable fines reflect the breadth and gravity of the hazardous conditions identified during our inspection at this workplace, conditions which should not have existed in the first place," said Paul Mangiafico, OSHA's acting area director in Hartford, Conn. "**For the safety and health of the plant's workers**, Whitcraft must address these issues promptly and comprehensively to eliminate them and prevent their recurrence in the future."

**The serious citations address numerous instances** of unguarded or inadequately guarded moving machine parts that exposed workers to the risk of laceration, amputation, or crushing injuries; electrical hazards

including misused electrical equipment, lack of safe electrical work practices, and personal protective equipment, and employees working on live electrical equipment; fire and explosion hazards stemming from combustible dust in improperly designed processing equipment and dust collection systems; combustible materials stored next to a heated press adjacent to an exit route; flammable liquids used in close proximity to ignition sources, and improper disposal of rags and swabs soaked with flammable liquids.

Additional hazards included **inadequate fall protection** and not conducting initial monitoring to determine employees' exposure levels to hexavalent chromium. OSHA issues serious citations when death or serious physical harm is likely to result from hazards about which the employer knew or should have known.

Whitcraft has 15 business days from receipt of its citations and proposed penalties to comply, meet with OSHA's area director, or contest the findings before the independent Occupational Safety and Health Review Commission. The inspection was conducted by OSHA's Hartford Area Office.

## **FAA ARC Publishes SMS Recommendations**

The Safety Management Systems Aviation Rulemaking Committee (ARC) published its final report to the FAA regarding suggestions for the implementation of SMS in the United States.

**MAJOR HIGHLIGHTS:** Overall, the ARC believes the FAA should issue regulations on SMS. However, it was noted that several SMS concepts already are covered by existing regulations to various degrees.

The ARC recommended organizations certificated pursuant to 14 CFR Parts 21, 119, 121, 125, 135, 141, 142 and 145 as listed in the ANPRM should be included with any SMS mandate. The ARC also recommended 14 CFR Part 91, Subpart K operators be included.

There were a significant number of considerations the ARC also recommended, which the **FAA must resolve prior** to promulgation of any rule, including:

- Protection of SMS safety information and proprietary data



- Alignment with ICAO SMS framework and international acceptability
- Phased promulgation of SMS regulations
- Phased implementation of SMS requirements
- Recognize existing systems and processes
- Recognize existing regulations/requirements
- Scalability and flexibility
- Consistency in requirements for holders of multiple certificates
- Alternative strategies for SMS implementation
- SMS does not change existing regulatory standards

**AEA COMMENTARY:** The ARC recommendation is the first step in the rulemaking process, and it is clear the FAA has a lot of work to do before a proposal can be initiated. For example, the cost/benefit analysis required for all rulemaking will be difficult to achieve, as well as the requirement for evaluation of alternative approaches for small businesses to achieve the same outcome. In each of these cases, the federal agency must define a quantifiable problem that alternative solutions can be measured against. To date, the FAA has not identified a quantifiable problem.

The current status of SMS and how the AEA will assist its membership in implementation of whatever the final rule requires will be a topic of discussion at this fall's AEA regional meetings.

Click [www.aea.net/governmentaffairs/pdf/SMS-ARC\\_Final-Report-03-31-10.pdf](http://www.aea.net/governmentaffairs/pdf/SMS-ARC_Final-Report-03-31-10.pdf) to view final report.