



## Aviation Human Factors Industry News

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### *Colliding With Death at 37,000 Feet, and Living*



Associated Press

The wing and tail of the Embraer Legacy 600 were damaged in what seems to have been a collision with a Boeing 737 in Brazil on Friday.

### *'Human error suspected in Brazilian plane collision'*

Two different air controllers, one working a Brazilian Gol Airlines 737-800, the other handling an Embraer Legacy 600, **evidently assigned both aircraft to the**



same altitude... possibly leading to what appears to be a fatal midair collision last week.

There were conflicting reports in the Brazilian media that while the Gol aircraft was cruising at 37,000 feet, that the Embraer may have been cleared to climb from FL350 to FL390, **crossing the path of the airliner.**

As ANN reported, the two aircraft collided Friday -- but the smaller twin-engine Embraer was able to make an emergency landing at the nearby Para military airfield. The larger 737 plummeted in a near vertical dive into the Amazon with the loss of 155 lives.

The Brazilian news agency O Globo reported an anonymous Brazilian controller admitted that the two planes were being controlled from two separate towers in the state of Para in the Amazon. **Evidently, the two controllers did not communicate and both assigned the aircraft to fly at the same height.**

The airspace is believed to have **spotty** radar coverage, according to experts quoted in the Associated Press.

Both aircraft were equipped with the latest TCAS (Traffic Collision Avoidance System) equipment and it is reported that the pilot of the Embraer claimed that he heard no alarm from the TCAS before the collision.

A business reporter for the New York Times, Joe Sharkey, was on assignment reporting on the Brazilian aircraft industry. He was aboard the Embraer and recounted in the Times, "Without warning, I felt a terrific jolt and heard a loud bang, followed by an eerie silence, save for the hum of engines."

Sharkey continued, "I was lucky to be alive -- and only later would I learn that the 155 people aboard the Boeing 737 on a domestic flight that seems to have clipped us were not... investigators are still trying to sort out what happened, and how our smaller jet managed to stay aloft while a 737 that is longer, wider and more than three times as heavy, fell from the sky nose first."

The Embraer suffered severe damage to the leading edge of the wing which had started to peel back, and also damage to the tail.

Cockpit and data recorders have been recovered from the wreckage and the American NTSB has been invited to investigate. The Seattle Post-Intelligencer reported that this was the first crash involving the latest model Boeing 737-800.

## [Legacy jet transponder off in Brazil crash-report](#)

SAO PAULO, Brazil, Oct 4 (Reuters) - Brazilian authorities believe two pilots may have shut off the transponder in their business jet, rendering its anti-collision system useless, before crossing paths with a commercial airliner that crashed last week in the Amazon, killing all 155 people on board.



Passports of the two American pilots, Joe Lepore and Jan Paladino were confiscated on Tuesday and will remain with Brazilian Federal Police during the investigation, said Judge Tiago de Abril in Mato Grosso state, where the plane crashed.

"We know that the transponder was turned off," said Jose Carlos Pereira, the head of Brazil's airports authority, the Estado De Sao Paulo newspaper reported on Wednesday.

The transponder is a key component of the anti-collision system that each plane was equipped with. [The planes would not have detected each other if one of the two transponders were off](#), authorities said. The transponder also sends signals to air traffic controllers with details such as altitude and speed.

["A pilot only turns it off when he doesn't want to be identified. The Legacy could have turned it off to try some air tricks far from the eyes of the air traffic controllers," Pereira said. "But it also could have been a case of mechanical failure. It's very unlikely that a plane leaves the factory with that problem."](#)

The business jet, a Legacy 600 made by Brazilian manufacturer Embraer <ERJ.N><EMBR3.SA>, was new and had been purchased by ExcelAire Service, a charter company based in Ronkonkoma, New York.

## **CHRONOLOGY - Recent major air crashes**

(Reuters) - Airforce searchers found on Saturday the wreckage of a Brazilian passenger plane that crashed a day earlier in Amazon jungle with 155 people on board and there were no reports of survivors.

Following is a chronology of major air crashes since 2003:



Feb 19, 2003 - An Iranian military plane crashes near Kerman in southeast Iran, killing all 276 aboard. March 6, 2003 - A Boeing 737-200 Algerian flag carrier crashes shortly after take-off from Tamanrasset airport, killing 103 passengers and crew. July 8, 2003 - A Sudan Airways Boeing 737 crashes after takeoff near Port Sudan on a flight to Khartoum, killing 104 passengers and the crew of 11. A two-year-old boy was the only survivor.

Jan 3, 2004 - A Paris-bound Egyptian Boeing 737 operated by Flash Airlines crashes into the Red Sea off the resort of Sharm el-Sheikh, killing all 148 passengers and crew. Aug 24, 2004 - Two Russian passenger planes are downed almost simultaneously by Chechen suicide bombers, killing 89 people. The planes, which both took off from Moscow, flew internal routes for Russian airlines Sibir and KrasAir.

Feb 3, 2005 - An Afghan airliner crashes into a mountain near Kabul, killing all 105 people on board. The Boeing 737 was operated by Afghanistan's only private airline, Kam Air. Aug 2, 2005 - An Air France Airbus bursts into flames after overshooting the runway while landing at Toronto's Pearson International Airport in a storm. All 309 passengers and crew survive. Aug 14, 2005 - A Cypriot Boeing 737 operated by Helios Airways crashes in the area of Kalamos, 30 km (19 miles) north of the Greek capital Athens, killing all 121 passengers and crew on board. Aug 16, 2005 - A West Caribbean Airways MD-80 aircraft crashes near Venezuela's border with Colombia, in the Sierra de Perija mountains. All 160 passengers and crew are killed. Sept 5, 2005 - A Mandala Airlines Boeing 737-200 crashes just after takeoff near Medan in northern Sumatra. 102 people on board and 47 on the ground are killed, but 15 passengers in the tail section survive. Oct 22, 2005 - A Nigerian Bellview Airlines Boeing 737-200 airliner with 111 passengers and six crew crashes in Lissa, 30 km (20 miles) north of Lagos, shortly after takeoff from Lagos. All aboard are killed.

Dec 10, 2005 - A Nigerian Sosoliso Airlines DC9 flight from Abuja carrying 110 passengers and crew crashes on landing in the oil city of Port Harcourt and bursts into flames, killing 106. Four people survive the crash, whose cause is unknown.

May 3, 2006 - An Airbus A-320 of the Armenian airline Armavia, carrying 113 passengers and crew from Yerevan to the Russian seaside resort Sochi, crashes in the Black Sea while trying to land in bad weather, killing all on board. July 9, 2006 - A Russian Airbus A-310 run by Sibir airlines carrying 195 passengers and eight crew, crashes during a domestic flight to Siberia, killing 122. Aug 22, 2006 - A Russian Tu-154 operated by Pulkovo Airlines, with at least 154 passengers and crew aboard, crashes 30 miles north of the east Ukrainian town of Donetsk on a flight from Anapa on the Black Sea to St Petersburg.

### *Everyday error cause most airplane crashes*

LEXINGTON, Ky. —

Experts who study airplane accidents say the mistakes that lead to crashes are the same kinds of mistakes people make all the time, akin to locking keys in the car or forgetting an item on a shopping list. “In an airplane, it gets you in trouble,” said Scott Shappell, a professor at Clemson University who studies aviation accidents and the human errors that cause them.



Scholars say that as many as 80 percent of airplane accidents are caused by human error — it's what experts in aviation call “human factors” and will probably be deemed one of the leading causes of the Aug. 27 crash of Comair Flight 5191, which killed 49 people. The plane crashed after trying to take off from the wrong runway at Blue Grass Airport.

Human factors are an entire field of study in aviation. It embraces not only how a cockpit is run but also how mechanical repairs are made.

Specialists in the area work not only for the FAA but also as investigators for the National Transportation Safety Board and as consultants to airplane manufacturers to make sure planes are designed in a way that does not encourage human errors.



Its practitioners want to prevent mistakes. But they also recognize that, sometimes, mistakes get made.

Techniques and procedures should create a series of filters to catch mistakes before they cause a problem.

And they should have prevented the Aug. 27 crash, said Jim Hall, a former chairman of the NTSB.

“Almost every safety net that was in place was blown through,” Hall said.

Hall thinks the Comair crash will be studied by experts for years to come.

To figure out what went wrong, human-factors investigators will want to know what the pilots were talking about in the cockpit, Shappell said. They will also want to know when they went to bed, how they slept, what they ate and drank and if they were having difficulties at home.

But once the pilots were on the wrong runway, another factor would have come into play, what experts refer to as “confirmation bias.”

“Once you make a decision, you seek out those things that confirm your original decision and ignore everything else,” Shappell said.

### **Russian air safety 'extremely poor'**

•Rescuers carry a body of the Tupolev Tu-154 crash victim at the crash site near the Ukrainian city of Donetsk, about 400 miles (640 kilometers) east of Kiev, Wednesday, on Wednesday. AP PHOTO



Russian airlines are violating air safety standards by using fake spare parts, failing to carry out proper pre-flight checks and not properly supervising repairs, the prosecutor-general's office says.

More than 300 passengers have died in three separate crashes this year alone, prosecutor-general Yuri Chaika told Russian agencies after meeting Transport Ministry officials.

"A whole series of recent accidents and air crashes has shown that flight safety is extremely poor," he told the RIA-Novosti news agency.



"The growing number of incidents involving air carriers **fuels fear in society and promotes a lack of trust.**"

President Vladimir Putin ordered a government investigation into air safety after the spate of crashes.

At least 170 people, including 45 children, were killed in August when a Russian-made jet came down in stormy weather in eastern Ukraine.

In July, 122 passengers and crew died when an Airbus failed to stop after landing on a domestic flight in the Siberian city of Irkutsk and veered off the runway into nearby buildings.

The following day, a plane carrying Russia's navy chief burst into flames after overshooting a runway, injuring three people.

Transport Minister Igor Levitin told Russian television that inspectors had found **"cases of unscrupulous methods bordering on the criminal being used" in airline repairs.**

**"All this under the control of negligent officials who have for years been rendering services to their accomplices in crime," he said.**

Mr Levitin **blamed poor pilot training and a lack of modern aircraft for many of the problems.**

Russian domestic and cargo airlines still run large fleets of Soviet-era jets.

## **ARSA To Assist FAA On Repair Station Human Factors Training**

Representatives with the Aeronautical Repair Station Association (ARSA) told ANN this week the group is prepared to work closely with the Federal Aviation Administration (FAA) in the agency's stated effort **to mandate human factors training programs in aviation.**



"The Association supports programs that ensure quality and efficiency," said ARSA Executive Director Sarah MacLeod. **"Recognizing the value of human factors programs and training ensures higher and better productivity, which benefits the individual repair station and, ultimately, the entire industry."**

In a September 12 letter to ARSA, the FAA stated its intention to **mandate human factors training for FAA-certificated repair stations by changing title 14 CFR part 145 -- the Federal Aviation Regulation (FAR) that covers repair stations -- "to ensure human factors training is included."** The agency noted that **"not all repair stations will require the same level of training in human factors."**

**Human factors** training focuses on **human actions and reactions that can affect employees' abilities to perform efficiently**. The Association will continue to run articles and offer classes on **human factors**, as it has since the requirement for repair stations to have FAA-approved training manuals became effective, and plans to increase its offerings to members in 2007.

The FAA's letter was in response to a July 27 request from ARSA, asking the agency to clarify the FAR requirements for **human factors** training in repair stations. The Association's letter was prompted by concerns with how the repair station training program requirements, which became effective in April, are being interpreted in the field.

ARSA learned from several members that FAA inspectors, referencing language in Advisory Circular (AC) 145-10 and related inspector guidance, were taking the position that repair stations are required to have **human factors** in their training programs. ARSA wrote to the FAA seeking a definitive clarification.

The FAA pledged to fix the guidance material. "The AC will be revised to remove the requirement that training programs must include **human factors** training elements," the agency wrote.

ARSA welcomed the agency's quick response.

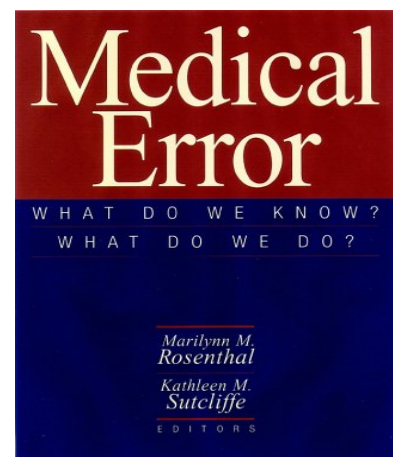
"The Association stands for good government," said ARSA's MacLeod. "When regulations are performance-based, the agency cannot demand more than the required result. In the case of **human factors** training, the FAA's guidance was requiring elements beyond what is included in the relevant rule."

The Aeronautical Repair Station Association (ARSA) is the only trade association dedicated exclusively to representing the interests of **aircraft maintenance** and alteration facilities before the Federal Aviation Administration (FAA) and other government agencies in the US and abroad. Its 700 members perform maintenance and alterations on behalf of U.S. and foreign air carriers, as well as other aircraft owners and operators.

### **Yearly Death Toll In Nation's Hospitals Due To Medical Mistakes 30 Times That Of 9/11**

*On 9/11 the World Trade Center was attacked where nearly 3,000 American lives were tragically lost within minutes. **Multiply that number by 30 and that equals the amount of***

***people who die every year in America's hospitals as a result of preventable medical errors.***







Memphis, TN (PRWEB) September 11, 2006 — The horrific attacks that happened in New York exactly five years ago is an event in America's history that will never be forgotten. But what about the estimated **98,000 who die in U.S. hospitals each year due to preventable medical errors?**

“Every month, twice as many as those who died in the 9/11 World Trade Center attacks die in U.S. hospitals from preventable adverse events,” says The Other AMA ([www.americansmadandangry.org](http://www.americansmadandangry.org)). **To put this in clear perspective, a jumbo jet at its full capacity could crash six days out of the week for the entire year leaving no survivors, and it still would not amount to the total number of needless deaths in America's healthcare system.**

The types of errors that lead to this staggering number of deaths in hospitals, according to the 1999 Institute of Medicine (IOM) report, **“To Error is Human: Building a Safer Health System,” include wrong-site surgery, mistaken identity, and restraint-related injuries or death, just to name a few.**

Five years have passed since 9/11 and the steps taken in the aftermath have helped prevent another tragedy. In 2003, approximately \$40 billion was spent on homeland security to prevent another terrorist attack like 9/11. If even a fraction of this effort had been spent on reducing preventable **medical errors** in hospitals the outcome would be monumental. The reality is that there has been no national collective will to change the deadly statistics. According to the follow-up 2005 IOM report, there has been little change in reducing preventable hospital tragedies since the 1999 IOM report.

Some of the change being seen is in hospitals implementing a proven aviation-based program known as **Crew Resource Management (CRM)**. CRM has been used in U.S. military and commercial airlines now for roughly thirty years. **CRM teaches teams how to reduce preventable error by improving human communication and coordination.**

The former fighter pilots of LifeWings Partners LLC have successfully adapted **CRM** for the healthcare industry. “Like flight crews, medical teams also work in technically advanced, time-restricted environments, that require a lot of **communication and teamwork,**” says Captain Stephen Harden, former Top Gun instructor and president of LifeWings. **“No matter how much education and training a pilot or doctor has, human error is inevitable. CRM puts a system in place to catch those inevitable errors before they harm the patient.”**

Several renowned hospitals, such as Vanderbilt University Medical Center and Vassar Brothers Medical Center are embracing the LifeWings safety program.

“The effect that LifeWings has already had on our **culture** is significant. The employees **feel empowered to speak up about their concerns,**” says Sue Sullivan,

Director of Risk Management and Patient Safety at Vassar Brothers Medical Center. Vanderbilt estimates **the program has saved 200 patient lives that would have otherwise been lost.**

### **Technicians cite revised FAA philosophy for SoCal flight problems**

LOS ANGELES – Federal Aviation Administration technicians claim a **change in maintenance philosophy** at the agency was partly to blame for several air traffic problems this summer, including one outage at the regional control center in Palmdale that delayed nearly 350 flights nationwide.



**Technicians claimed they had to postpone maintenance on backup power equipment in Palmdale because only one specialist was on duty when two were needed to disassemble the complex unit.**

**“It does take us longer to do the maintenance because of the lack of staffing,”** said Tony Gilmore, a technician and union representative at the Palmdale center, which handles high-altitude flights over Southern California and much of Nevada and Arizona.

The FAA now relies in part on remote monitoring and on-call personnel, allowing it to reduce staffing, technicians said.

**FAA officials said staffing and maintenance were not factors** in the July outage in Palmdale and a subsequent problem at Los Angeles International Airport in which a critical landing system malfunctioned.

The outages have prompted a federal inquiry by the U.S. Department of Transportation's inspector general.

**“It was a remarkable piece of bad luck that we had these things fail for different reasons,”** FAA Administrator Marion Blakey told the Los Angeles Times in a story published Tuesday.

**“All you can do is focus intently to address each and every one of them. It's not as though this points to a bigger problem,”** she said.

The outages reflect a growing national debate about how well the FAA is modernizing its aging air traffic control network while still maintaining sensitive equipment used to direct thousands of flights a day.

“There's so much pressure on them to show that they're modernizing the system to increase capacity that they're marginalizing the importance of keeping the infrastructure they have now,” said Ray Baggett, a vice president for Professional Airways Systems Specialists, the union that represents FAA technicians.

The July outage was caused by a faulty circuit board in a system that acts as a surge protector to protect sensitive equipment.

Maintenance logs do not show preventive maintenance was deferred, said Steven Zaidman, vice president of technical operations at the FAA's Air Traffic Organization.

## **ENGINE DROPS, CRUSHES YOUNG WORKER**

Hoisting an automobile engine by the use of chains and a forklift proved deadly in a California auto shop recently.

Eighteen-year-old Irvin Pescador from Oakland died after being crushed by a truck engine that had been hoisted by a forklift. Authorities reported that Pescador and a co-worker used chains, with the help of a forklift, to raise the engine off the ground. Pescador then crawled underneath to work on the engine.



According to reports, the engine slipped off the forks of the forklift and fell onto Pescador's chest and abdomen, crushing him to death.

The father of the victim worked at the same company, AP Trucking.

The California division of the Occupational Safety and Health Administration is investigating the fatality to determine the contributing factors.

## GO FIGURE

### Fiery Statistics

**395,500**

What does this number represent?

**Answer:** The number of home fires reported in the United States in 2004.

October 8 to 14 is National Fire Prevention Week. If you're planning a safety talk on fire prevention for your workers, here are some other residential fire statistics you might want to mention:



*Every 135 minutes someone dies from a home fire in the US*

- **3,190** deaths in the US in 2004 were caused by residential fires
- Every **79 seconds** a home structure fire is reported in the US
- Every **135 minutes** someone dies from a home fire in the US
- Every **32 hours** someone dies from a home fire in Canada
- **70%** (approximately) of residential fire deaths occur in homes that have either no smoke alarm or no working smoke alarm.

*(Source: National Fire Protection Association)*

### **Sugary beverages fuel the obesity epidemic, from the Harvard Health Letter**

**BOSTON** — Over the past 20 years or so, Americans have developed quite the sweet tooth, with an annual consumption of sugar at about 100 pounds per person. During these same years, many more Americans — particularly children — have become overweight and obese.





Added caloric sweeteners, such as high-fructose corn syrup, may be one of the major reasons, says the October 2006 issue of the Harvard Health Letter.

Sweeteners added to sports beverages and juice drinks are particularly troubling because many people think those drinks are healthful. But studies have shown that people don't cut back on their overall calorie intake to offset the extra calories from such beverages. Researchers are beginning to document the adverse health outcomes. Harvard researchers recently reported that women who drank one or more sugar-sweetened soft drinks per day were 83% more likely to develop type 2 diabetes than women who drank less than one a month. Not surprisingly, they were also more likely to gain weight.

The *Harvard Health Letter* notes that one of the problems with sweetened beverages is that they are watery. High-calorie drinks that are low viscosity (thin) may deceive us by preventing our bodies from "reading" calories, a capacity that depends, in part, on the thickness of a liquid.

In March 2006, the Beverage Guidance Panel issued a proposed "guidance system for beverage consumption." The six-level system emphasizes beverages with no or few calories — especially water — over those with more calories. It also recommends drinking no more than 8 fluid ounces of sweetened sodas, juice drinks, or energy and sports drinks per day.

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