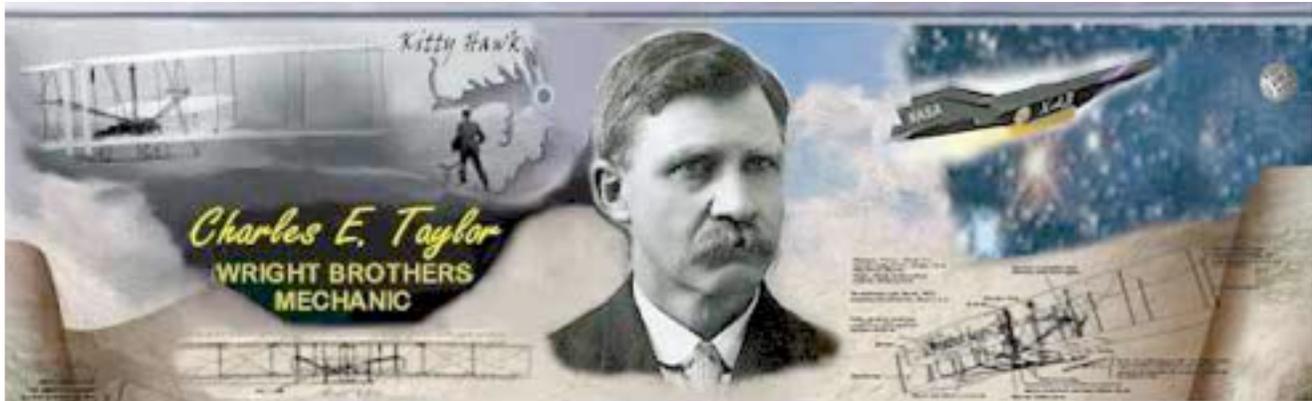


Aviation Human Factors Industry News

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

Hello all,

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

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★Study finds criminal prosecution following accidents damages flight safety

★Accident: Arrow Cargo DC10 at Manaus on Mar 26th 2009, dropped parts of engine on houses

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Tunisian pilot who prayed as his plane went down jailed in Italy

A pilot accused of praying when he should have been taking emergency to avoid a crash in which 16 people died has been **sentenced to 10 years** in by an Italian court.

Captain Chafik Gharby was at the controls of a plane belonging to the Tunisian charter airline Tuninter that crashed in the sea off the coast of Sicily four years ago. The 23 survivors were left

swimming for their lives, some clinging to a piece of the fuselage that stayed afloat after the turbo-prop aircraft broke up on impact.

Gharby was at first hailed as a hero for having saved the lives of most of the passengers. But after an investigation, he, his co-pilot, and several Tuninter executives and **technicians were charged** with a range of offenses including manslaughter.

The court in Palermo agreed with prosecutors that the **chain of events** that led to the crash began when a **wrong part was installed** in the ill-fated plane, a Franco-Italian ATR 72. A mechanic **accidentally fitted an outwardly identical fuel gauge intended for the smaller ATR 42.**

The plane took off from Bari, bound for the Tunisian island of Djerba, on 6 August 2005. As it flew over Sicily, its engines slowed to a halt, even though the instrument panel showed the aircraft had enough fuel left for the flight.

The judges accepted the prosecution case that the pilots, instead of making a crash landing on the sea, should have been able to glide the plane to Palermo airport. Instead, Gharby was said to have panicked. In cockpit recordings entered as evidence he was heard calling for the help of "Allah and Muhammad his prophet".



His lawyer, Francesca Coppi, said: "Faced with danger, he invoked his god as would any one of us."

She described her client as "a broken man" who was "convinced he did everything possible to save as many lives as possible". The co-pilot, Ali Kebaier, also **received a 10-year sentence**. Tuninter's director-general, Moncef Zouari, and the company's technical director were both given **nine years**.

A **mechanic** and two executives in the airline's maintenance department each received **eight-year sentences**. Two of the accused were acquitted.

remaining seven defendants, who were not in court to hear the verdict, will not have to go to prison until the appeals process has been exhausted.

Of the passengers who died, two were Tunisians. The other 14 were Italians and many of their relatives travelled to Palermo on chartered buses to hear the verdict.

Angela Trentadue, whose 27-year-old daughter died in the crash, welcomed the sentences. Another relative, who did not wish to be identified, said: "I wanted to hug the judge."



Study finds criminal prosecution following accidents damages flight safety

A new doctoral study of the criminal prosecution of pilots or air traffic controllers following aircraft accidents and incidents has concluded that they have a definite **detrimental effect on flight safety**, but fail to have the intended effect of deterring individuals from making **mistakes**.

In fact, the study found, controllers are particularly aware that successful

prosecution could follow an **unintentional error**, and the resulting stress may even make mistakes more likely. The study was carried out by two, Dr Sofia Michaelides-Mateou, a professor of law at the University of Nicosia, and a Cyprus Airways Airbus A320 captain Dr Andreas Mateou, and presented at the Flight Safety Foundation's European Aviation Safety Seminar in Nicosia on 18 March.



Meanwhile, a criminal prosecution of individuals associated with the now-defunct Cypriot carrier Helios Airways as a result of the August 2005 fatal crash of one of its Boeing 737s is about to begin in the Cyprus courts in the next two weeks.

The Cyprus court case is coincidental to the study, because the study's purpose was to determine, generically, the positive or negative effects on flight safety of proceeding with criminal prosecutions against those involved in aviation accidents.

All on board the Helios aircraft died, so the pilots cannot be prosecuted, but other Helios employees and contractors, **including engineers**, have been charged to appear before the Cyprus courts, and may yet be called to appear also before courts in Greece, where the crash occurred at the end of a flight from Larnaca, Cyprus.

As well as examining former aviation accident criminal prosecutions and their judicial outcomes, the doctoral study carried out a survey of pilots and controllers to find out their perception of whether the threat of prosecution in the event of an accident had a positive effect on aviation safety, and they were almost unanimous in their opinion that it was detrimental.

There was a very small minority, says Michaelides-Mateou, that believed the threat of prosecution was an incentive not to make an error.

One of the effects of the threat - or the actuality - of prosecution, the study found, is that although pilots and controllers instinctively want to provide information that will reduce the risk of an error or mishap in future, **they**

withhold it because their own testimony may incriminate them - and their lawyers certainly advise them to take up their right to silence.

Mateou points out that, increasingly in cases all over the world, data from the technical investigation, and from the flight data recorder and cockpit voice recorder, is being used in its **raw form** as evidence in trials without the need to test its validity in law. This contravenes Annex 13 to the Chicago Convention, but it is happening, he points out. The result of this "intermingling" of raw data with legal evidence leads to pilots and controllers being advised to maintain their right to silence even in front of the technical accident investigators, explains Michaelides-Mateou.

The FSF, Eurocontrol and the European Regions Airline Association, which are joint partners in staging the safety seminar at which the doctoral study was presented, have publicly expressed concern for many years on the detrimental effect that the threat of the criminal prosecution of unintentional human error has on the voluntary reporting of incidents.

Accident: Arrow Cargo DC10 at Manaus on Mar 26th 2009, dropped parts of engine on houses

An Arrow Cargo McDonnell Douglas DC-10 freighter, registration performing flight JW-431 from Manaus, AM (Brazil) to Bogota (Colombia) with 4 crew, was climbing out from Manaus, when one of the engines produced a loud bang, described as an explosion by residents. The crew shut the engine down but decided to carry on to Bogota, where the airplane landed safely.



In the meantime fire engines and emergency services were racing to a neighborhood of Manaus (rua Humaita, Terra Nova), where parts of the engine had damaged 12 houses and a number of cars. Parts found so far include the cowling around combustion chamber and turbine and the engine outlet.

Manaus Authorities reported, that the control tower of Manaus was notified of the debris on the ground and radioed the crew of the DC-10. The operation of the aircraft was not impaired, so that the crew continued to Colombia.

Arrow Cargo confirmed, that the airplane dropped parts of the engine. The airline will compensate for all damages incurred by the accident. The crew continued the flight to Bogota on two engines with the third engine shut down.

RECENTLY RELEASED ACCIDENT REPORTS

02-FEB-2008 Ground accident - Fokker F27 Mk 500 Friendship at
Edinburgh - Turnhouse Airport (EDI), UK AAIB ACCID.

FINAL AAIB Bulletin: 2/2009

Summary:

The aircraft was scheduled to operate a night cargo flight from Edinburgh Coventry. The weather conditions at Edinburgh Airport were wintry with snowfall, which required the aircraft to be de-iced. Shortly after both engines had been started, the commander signaled to the marshaller to remove the Ground Power Unit (GPU) from the aircraft, which was facing nose out from its stand, down a slight slope. As the marshaller went to assist his colleague to remove the GPU to a safe distance prior to the aircraft taxiing off the stand, the aircraft started to move forward slowly, forcing them to run to safety. The flight crew, who were looking into the cockpit, were unaware that the aircraft was moving. It continued to move forward until its right propeller struck the GPU, causing substantial damage to the GPU, the propeller and the engine. The ground crew were uninjured. No cause as to why the aircraft moved could be positively identified.



Download report:

http://www.aaib.gov.uk/sites/aaib/cms_resources/Fokker%20F27%20Mk%20500%20Friendship,%20TC-MBG%2002-09.pdf

The downside of advances in aviation technology

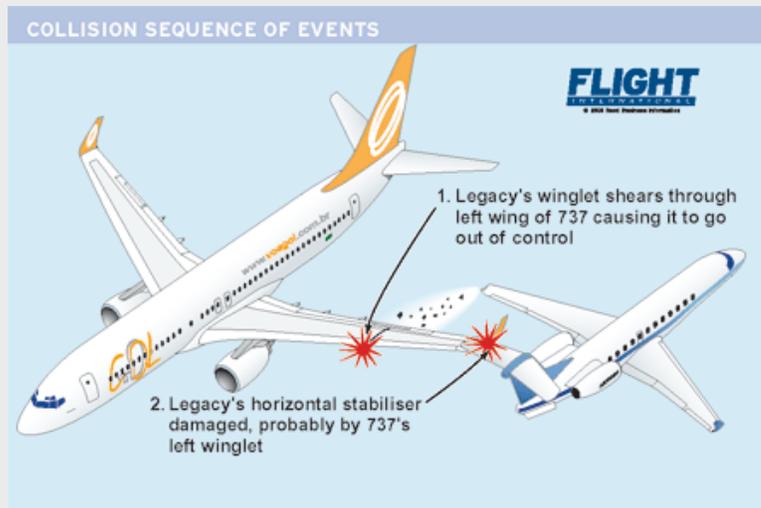
How could improvements in position reporting, **situational awareness**, and course guidance ever turn out to be a bad thing? Sounds impossible,? That's what I thought until I read a Vanity Fair article that made me go "hmmm". The article is called "The Devil at 37,000 Feet" by William Langewiesche, and was published in January 2009. This is the sad and tragic story of the midair over

Brazil back in 2006 between a brand new Embraer Legacy 600 jet and a Gol Airlines Boeing 737, another brand new airplane. Mr. Langewiesche does a good job of explaining, sometimes slightly beyond layman terms, the very technical aspects of these complicated airplanes and their systems, along with air traffic control. Some of it describes the native people that live on the ground near the crash site, some comments about the environment, some jabs at the military, and that somehow the "devil was at play" (accident investigators words).

When describing this airplane and the class it's within, the author says "... which by political, ethical, and environmental measures are abhorrent creations, but which nonetheless are masterworks of personal transportation". And "the corrupted tax structures that allow airplanes as questionable as the Legacy to be built, sold, and flown". At one point of the article, the author was saying what a marvel of technology this airplane is (and it is), but then calls it "questionable"?

But I'll leave the personal and political aspect of the article aside and get to the technical.

Somehow the Legacy's transponder got put into the "**standby**" mode (the transponder transmits location and altitude to controllers), which made the airplane invisible to other aircrafts collision avoidance, known as TCAS. This was in a lousy radar and radio area in Brazil, so the controllers missed it, but that doesn't let them off the hook by a long shot. The two airplanes were head on at the same altitude, another thing that should not have



happened in a non-radar area, but there was some confusion on the controllers' part due to their odd way of displaying assigned and actual altitude (we don't do it that way in the U.S.).

The Legacy's collision system depends on their transponder, so it was not tracking other airplanes. These two airplanes simply flew right into each other with no warning at all. The 737 probably never knew what happened as they spiraled in, killing all on board. The Legacy wasn't sure what occurred and barely made it to an airport, no one was injured.

The author of the story used a term that I've never been a big fan of: the "big sky" theory. Why don't I care for it? Because too often pilots chalk too much up to this theory when they're cruising along. Those of us on the ground know there's way more airplanes in the sky than anyone in the sky or on the ground realize. Add to that we aren't in the business of having planes skim right by each other; we keep them apart by 5 miles in most cases. The sky wasn't so "big" when these two airplanes hit, now was it?

The fact that navigational systems have gotten so good that two relatively small objects (relative to the immense amount of "sky") could collide in the middle of nowhere South America **is enough to give pause**. All it would have taken was a few feet here or there and none of this would have occurred. This situation (head on, same altitude, poor ground surveillance) could've occurred (and probably did occur) prior to these flight systems being so precise, so we kept airplanes further apart to account for that.

But with increasing traffic numbers, and improving technologies (like the ones on these very advanced airplanes) we can, and do run airplanes closer than in the past. **And quite safely at that**. The lesson here for pilots and controllers to keep in mind and learn from is this: They can make things as slick and easy as possible, even make it so an airplane can practically land itself.

They can even put in great radar and radios (or satellite or datalink) to give controllers the ability to see and hear everyone everywhere. **But if the minds involved are complacent, confused, or just plain lazy, the technology is just another way to make a great big mess.**

EU protests US bill on aviation maintenance

EU officials lodged a protest Friday over a bill pending in Congress that would require **American inspectors** on aircraft outside the United States. The measure pending in a reauthorization bill for the Federal Aviation would violate the latest US-EU aviation safety agreement, said John Bruton, who heads the EU delegation in Washington.



Bruton said the US-EU treaty that went into effect in March 2008 **allows for EU teams** to inspect aircraft in a reciprocal agreement.

The new requirement would mean "extra costs for the US and European industry overall and would jeopardize jobs," he said in a letter to Transportation Secretary Ray LaHood.

He said the measure would also make it harder to advance to a new round of "open skies" talks to further deregulate transatlantic air travel.

LET'S NOT MEET BY ACCIDENT!

Nuts And Bolts

FEDERAL AVIATION ADMINISTRATION
SAFETY TEAM. A Newsletter Written by Mechanics for Mechanics

The FAASafety Team utilizes a website FAASafety.gov for dissemination of information and training courses. Currently the site consists of type courses and a Pilot Proficiency Program (WINGS) to foster Part 91 pilots towards routine training instead of a once every twenty four month regulatory flight review. It is a risk based program that provides targeted training derived **from data analysis** showing what is causing accidents. From that point, core requirements in those practical test areas are reviewed along with elective areas. Completion of the Basic Wings Phase



will provide the regulatory flight review and if one maintains that Basic Level, the computer will maintain a 'moving' flight review required date. The system allows for further training to Advance and Master levels.

Additionally, the FAASafety.gov site contains a **Maintenance Hangar** section that provides **technicians** with resource links that are utilized by many technicians. The Aviation Maintenance Technician Awards program will be launched shortly, on line, which will also consist of targeted training based on maintenance accident risk factors. Currently a course concerning **Failure to Follow Procedures in Inspection** is available for taking with another forthcoming on Failure to Follow Procedures in. You can also obtain information on IA Refresher Training Course Providers and set preferences to obtain email notifications of safety events taking place within your area. A quarterly **Nuts and Bolts Newsletter** can also be obtained through the FAASafety.gov Notice system and past issues can be viewed, on line, under the Maintenance Hangar - AMT/IA Toolbox link. This **Newsletter** is a simple information sharing written by mechanics for mechanics. Quarterly topics include an Ask the Feds section where routine issues are discussed. An accident resulting from maintenance issues is discussed so **we can learn from the mistakes** of others. The industry contributes short articles covering numerous topics.



So go and visit FAASafety.gov and see what you like. Ideas are always welcome, the site is for your use. Register and have access to much more and set your preferences to receive what information you like. If you need any assistance, visit the FAASafety Team Directory link and search for the nearest FAA Safety Program Manager in your area. They will be able to answer your questions and help you with the site navigation.

<http://faasafety.gov/>

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Picture This!

We've heard of "break glass in case of fire" but never "break ice in case of fire." This frigid fire extinguisher was observed at a fueling station in New Brunswick, Canada. The photographer tells us he mentioned the hazard to an employee and **when nothing was done about** it, he sent the picture to his local fire department. When he next returned to the station, he observed that the extinguisher had been removed!

