



Aviation Human Factors Industry News

June 28, 2007

Vol. III, Issue 22

Engine Failure Traced to Fuel Control Unit

[Eurocopter France EC120B. Destroyed. Two fatalities, one serious injury.](#)

An **overspeed and catastrophic failure** of the engine occurred during a law enforcement patrol flight near Fair Oaks, California, U.S., on July 13, 2005. The **pilot and front-seat observer were killed** and the observer-trainee was seriously injured when the helicopter struck terrain near the bottom of a steep hill.



NTSB said that the **probable cause of the accident** was the failure of a diaphragm in the engine fuel control unit that caused increased fuel flow. **“The diaphragm’s failure was the result of improper installation by the engine manufacturer,”** the report said.

Texas jury convicts Ark. man, ex-owner of aircraft maintenance business

DALLAS - A federal jury in Dallas has convicted an Arkansas businessman in a **fraud investigation related to aircraft parts and a threat to aviation safety.**





Sentencing is September 21st for 65-year-old John Wentzell Downs, who faces a maximum ten years in prison and \$250,000 fine.

Downs was convicted on fraud and making false statements charges involving [maintenance of aircraft parts](#). He formerly owned Millennium Propeller Systems of Lancaster.

Investigators say Downs now lives in Mena (ME'-nuh), Arkansas, where since August he's owned Mena Aircraft Propellers.

Prosecutors say Millennium [repeatedly did maintenance without complying with proper manuals or operations specifications](#).

Authorities say Millennium in May of 2005 [surrendered its certification and was no longer authorized to repair propellers -- but did so anyway, and backdated some documents](#).

Downs testified he didn't intend to defraud the Federal Aviation Administration.

[United Airlines Blames Computer Snafu on Employee Error](#)

[Close To 300 Domestic Flights Affected](#)

United Airlines yesterday said the [computer outage](#) that disrupted its schedule for 2 hr. last Wednesday morning was the [result of employee error](#), according to a statement from UA executives to employees cited by the Associated Press. Nearly 300 flights were delayed or canceled when the Unimatic system shut down after ["an employee made a mistake and caused the failure](#) of both Unimatic and our backup system," COO Pete McDonald said without elaborating, according to AP.



[Ten face action over Sea King tragedy](#)

Accepting "full responsibility" for the 2005 Sea King helicopter crash that [claimed nine lives](#), the navy today [began disciplinary action](#) against 10 defense personnel adversely named by a military inquiry.



"You have my assurance that those who are responsible will be held to account," said Australian Defence Force chief, Air Chief Marshal Angus Houston, after a "sad" morning briefing the families of those killed when the chopper nose-dived on the earthquake-hit Indonesian island of Nias.

Defence chiefs said they had legal advice preventing them from naming those facing action, but said they ranged from junior sailors to senior officers.

All but one are still serving. They face action ranging from demotion to sacking, with consequent "severe" financial penalties.

Defence chiefs said the military board of inquiry report had been forwarded to the NSW coroner, who would decide whether any criminal charges would be laid.

They said a civilian aid worker was also being investigated by Australian Federal Police (AFP) after banned butane gas cylinders were taken on board the Sea King, which could have contributed to a post-crash fire.

The 1,700 page report exonerated the crew, finding their actions did not contribute "in any way" to the tragedy.

It confirmed the crash was caused by the incorrect fitting of a simple nut and split pin during maintenance on the Sea King two months earlier, which meant the pilot lost all control of the helicopter.

But it also criticized an "embedded culture" of shortcuts and work-arounds in the Royal Australian Navy's maintenance practices, and a lack of support from navy aviation command and the wider navy and defense organizations.

And it highlighted safety deficiencies in the Sea King's seating and restraint systems, internal structure and materials.

Despite numerous warnings, some of which were on record, there had been no appreciation at the higher level of the extent of the problems and their nature, the report said.

"These deficiencies presented heightened impact, flail and toxic smoke hazards and impediments to escape," the report said.

"This directly affected the probability of survival of the occupants after the accident and contributed to the deaths of some of the seven occupants who appear to have survived the initial impact sequence."

The navy maintains the 30-year-old Sea King helicopters are still safe when properly maintained, though they will be replaced with MRH 90 aircraft in 2010.

But the service has been embarrassed by the grounding of Sea Kings in May because of the same error which caused the fatal 2005 crash on a Nias football field, which left only two survivors.



"The difference is stark," said Chief of Navy, Vice Admiral Russ Shalders.

"This time the error was discovered and action was taken."

"I take a positive out of that," added commander of the Australian fleet, Rear Admiral Davyd Thomas.

"It indicates to me a better safety record."

He added that by December, all Sea Kings would be fitted with energy-absorbing troop seats, improved harnesses and enhanced fuel systems.

The defense force has **accepted all 256** of the board's recommendations, which Vice Admiral Shalders characterized as **"things we could do better" rather than things that were being done badly.**

The reforms are spread across eight fields - airworthiness, command control and communication, engineering and logistics, general administration and personnel, maintenance management, operations, safety and aviation training.

Air Chief Marshal Houston defended his forces' safety record, saying that despite a "high operational tempo" there had been no fatal accidents in the six years prior to the Sea King crash, a record unmatched by any defense force of equal or greater size.

Asked about his meeting today with relatives of those killed, he said: "Clearly it was a sad day. Some of them were quite upset.

"My heart goes out to them; they have my deepest sympathy.

"The loss of nine lives continues to be deeply felt by all members of the Australian Defence Force."

Laura Ryan, the partner of the Sea King's pilot Lieutenant Paul Kimlin - who was one of the nine killed in the crash - said while there were no surprises among the findings, the final report offered her no "closure".

"It's just disappointing that we couldn't find out who was going to be punished and how they were going to be punished," Ms Ryan said.

However, Lieutenant Kimlin's sister, Janelle Carter, said for her, the inquiry was never about laying blame for the crash.

"The word 'blame' came up in the meeting today but that was quickly corrected. It's more (about) accountability and the need for this to never happen again," she said.

Vice Admiral Shalders said: "What this accident has taught us is that we must move forward from a **'can do' mentality to a 'can do safely' attitude.**" Rear Admiral Thomas said 80 of the board's recommendations had already been reported as complete, and 90 per cent were targeted for completion by the end of the year.

Defence Minister Brendan Nelson said: "While there is nothing we can do today to change the tragic events that occurred on Nias Island, **the things we are doing will do much to prevent such an accident from happening again.**"

Flight Safety Foundation President Promotes Safety Management Systems Before Congress

Alexandria, VA, — Flight Safety Foundation President and CEO **William R. Voss** testified earlier this month on Capitol Hill before the U.S. House of Representatives Committee on Transportation and Infrastructure's subcommittee on aviation. The hearing was called to hear testimony on the National Transportation Safety Board's "Most Wanted Aviation Safety Improvements List."



Voss acknowledged the importance of the accident investigation process to discover why aircraft crash and to develop solutions to minimize the risk of the same accident happening again, but he emphasized the importance of safety management systems in discovering risk before a plane crashes.

"Aviation safety professionals have adopted a more proactive **safety management approach** in order to identify risk and prioritize actions by analyzing data from 'normal' flights. They use reporting systems that allow pilots, **mechanics** and others to report problems that would normally go unrecognized," Voss stated. **"By protecting this data and acting on it early, lives are saved."**

He further explained the vital **importance of trust and open communications between labor and management** in achieving this **proactive safety management culture.**

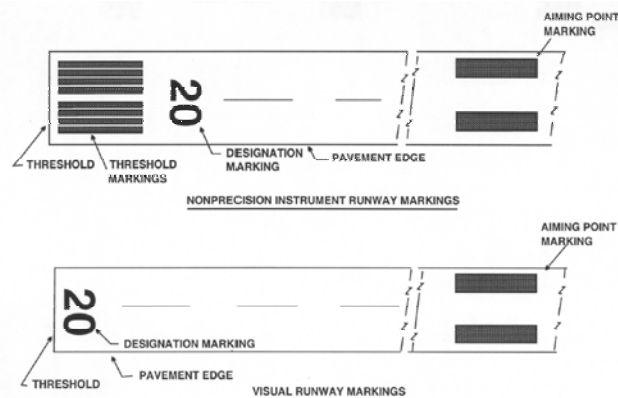
"The industry and regulator have been through difficult times and labor relations are strained," Voss said. **"But such debates must never be allowed to compromise the free flow of safety information in the system. Safety professionals use this information to save lives."**

Voss and others on the panel suggested to Chairman Jerry F. Costello (D-IL) and Ranking Member Thomas E. Petri (R-Wis) that future hearings dedicated to safety management systems in aviation would provide a great opportunity for Congress to understand more fully the proactive work being done by safety professionals in the industry. Subcommittee members expressed interest in learning more about this topic.

NTSB looks at runway markings

Agency prepares Comair findings

WASHINGTON -- As it prepares to release findings about the cause of last year's fatal Comair crash in Lexington, Ky., the head of a federal safety agency told Congress last week that it's "very interested" in how airport runway and taxiway markings may confuse pilots.



Mark Rosenker, chairman of the National Transportation Safety Board, told a House subcommittee that the agency will make safety recommendations at its public hearing July 26 on the crash.

Comair Flight 5191 crashed on Aug. 27, 2006, at Lexington's Blue Grass Airport, killing 49 of the 50 people aboard.

Runway and taxiway markings and signs at the airport have been raised as issues in the accident.

At last week's hearing of the House transportation committee's aviation subcommittee, Rep. James Oberstar, D-Minn., cited confusing runways and taxiways at nearly 150 airports nationally and asked Rosenker, "Has the board looked at that situation and have you made recommendations?"

"Clearly we are very interested in that," Rosenker said. "We're making recommendations we'll be presenting" in the July 26 meeting.

Rosenker did not offer details about the recommendations but said they would cover not only the Lexington crash but "could apply to other situations as well."



He was not available for an interview later in the day to elaborate.

The Lexington crash occurred when the Comair jet **mistakenly** tried to take off from a runway that was too short.

Neither Oberstar nor Rosenker specifically cited Blue Grass as among the airports with confusing markings.

But in its submission to the NTSB regarding the Comair crash, the **Air Line Pilots Association asserted that the airport's configuration and markings did not conform to charts the crew had.**

The pilots' union **recommended that standardized runway and taxiway markings now used at the nation's 73 largest airports be expanded.**

"We feel it ought to apply to all airports that have commercial service," Capt. Terry McVenes, the association's executive air safety chairman, said in an interview yesterday.

Blue Grass Airport has said that its markings were reviewed by the Federal Aviation Administration and that no problems were found.

"We have had numerous inspections before and after (the Comair crash) and have had no issues," airport spokesman Brian Ellestad said yesterday. **"FAA reiterates that we meet all requirements for signage, markings, lighting, runways and taxiways."**

Rosenker was one of several witnesses at last week's hearing, which examined the status of the **NTSB's "most wanted"** aviation safety improvements.

Doing more on runway safety has been one of the board's top priorities since its "most wanted" list was created in 1990.

Rosenker said the **FAA has done little until the last two years to address the dangers of planes hitting other planes or vehicles on airport surfaces.** Now the agency is testing new technologies, including using traffic lights on runways and putting a new alert system in the cockpit.

"The question we have is, when will you implement?" Rosenker said.

FAA Associate Administrator Margaret Gilligan, sitting next to Rosenker, said her agency is evaluating an on-board system that will warn pilots of on-the-ground collision dangers.



"We do have airlines that have committed to put that technology on the flight deck once it's approved," she said.

The runway signal lights are being **tested at Dallas-Fort Worth International Airport.**

Another longtime **"most wanted" NTSB** item is addressing **fatigue** among pilots and maintenance crews. In April the NTSB recommended to the FAA that it work with the National Air Traffic Controllers Association to revamp scheduling to provide adequate rest for the work force.

In the Comair investigation, the NTSB was told by the lone controller on duty at the time of the crash that he had **had very little sleep before arriving for work.**

"Fatigue continues to be a significant aviation issue today, yet little or no regulatory action has been taken by the FAA," Rosenker told lawmakers.

Gilligan said that **"fatigue is not easily addressed by prescriptive rules"** and that **aviation industry workers had a "personal responsibility" to come to work properly rested.**

The controllers association has said the work force is so short-staffed that people are working long hours and extra days, causing exhaustion. The union, in a labor dispute with the FAA, also says scheduling problems often result in controllers not getting adequate rest between shifts.

Rep. Ted Poe, R-Texas, asked Gilligan whether, with the number of controllers now handling air traffic, there is a crisis.

"The agency has a very aggressive plan for hiring air traffic controllers in preparation for what may be increases in retirements in coming years," she said. "At this point, we are making those staffing numbers. ... At this point, we do not see a crisis."

But Capt. John Prater, president of the pilots' association, told the panel: "We believe a few more controllers in the tower would be a good thing, **especially well-rested controllers.**"

Gail Dunham, president of the National Air Disaster Alliance Foundation, a group representing families of air crash victims, scolded the NTSB for not holding a public hearing on the Comair crash while it was still under investigation.

Such a hearing would have provided an opportunity to hear testimony under oath and explore the complex issues involved in the Comair tragedy, she said.

The agency has said it did not hold a hearing because it didn't believe one was necessary.

Stay Alert On The Job

Have you ever had the experience of arriving home from work and **not remembering** the drive? **You were probably tired, distracted by worries and bored with the same old highway route.**



When you realized how inattentive you had been, you likely resolved to pay more attention behind the wheel.

Driving a motor vehicle on "automatic pilot" is a dangerous practice, and so is doing your job in that mental state. **You are doing one thing - working, while thinking about something else - your worries or the weekend.**

This state of mind can occur in any kind of work, but it is more likely to occur when the **job is repetitious. Boredom, fatigue and frustration** also contribute to the point where your **brain takes a vacation.**

That may seem like a pleasant way to pass the day at work, but in fact **it is quite risky.** You need to use your mental faculties to the fullest to **prevent injuries to yourself and other workers.**

Fatigue sets people up for injuries by affecting mental alertness and physical reaction time. **Inattention** can easily lead to dozing off for a second or two. **Yearly in the US and Canada 7,000 to 10,000 die from falling asleep at the wheel.**

Whether it's the white line on the highway or the assembly line in the plant, you can **become hypnotized by repetition. Thinking stops and information from the outside bypasses your conscious mind.** Your mind can't turn back quickly enough to deal with emergencies or deviations from the usual routine. When a machine jams, for instance, you are not ready to process that information in the usual way.

You may have a reflex action such as reaching into the equipment without turning it off first.

Here are some **anti-boredom** suggestions to discuss with your supervisor:

- **Break** your work pattern to help you stay aware.
- **Rotate** frequently to other jobs.
- **Take** on more responsibilities to give you new challenges.
- **Work** as part of a team in which the interaction with others will help you stay interested.
- **Have** the lighting, temperature and background music altered frequently to help you stay alert.

- **Try** to get enough sleep each night. Many working people are trying to get by without the average seven or eight hours required for physical health and mental alertness.

Stay aware of the hazards. When it has been a long time between injury incidents or near misses, it's easy to **forget how dangerous workplace situations** can be.

Lack Of Sleep May Affect Airport Security

Study Shows Fatigue Increases Speed, Mistakes.

According to a new study, **lack of sleep** may affect the attentiveness of airport baggage screeners -- and, in turn, could compromise passenger safety.

Dr. Nayantara Santhi, Research Fellow at Brigham and Women's Hospital in Boston, **kept 31 healthy people awake for 36 hours straight** and asked them to perform a visual search task every two hours. The longer they were awake, the quicker they searched -- and **the more mistakes they made**, according to the Atlanta Journal-Constitution.



"These results suggest that **safety and performance** in socially critical low target prevalence search tasks may be especially vulnerable to the detrimental effects of **sleep deprivation**," Santhi said.

The National Air Traffic Controller's Association has long pointed to a lack of sleep causing problems in the tower, recently made worse by increasing staffing shortages.

Just this week, as ANN reported, the NATCA said **1,000 controllers have left the field in the last two years, leaving those that remain fatigued**. Fatigue was cited as a **reason for mistakes** leading to near-misses.

"This is a concern because of **fatigue**. We have less people working, which means we are going to have more people working positions longer and traffic longer," said NATCA spokesman Dan Horwitz.

The Federal Aviation Administration has been aware of the **importance of sleep for decades**. So much so, it made specific rules that are strictly adhered to.

"Regulations limiting flight time and pilot rest have been in place since the 1940s. Current FAA regulations impose an eight-hour limit for a pilot's flight time during a 24-hour period, provided the pilot has had at least eight continuous hours of rest during the 24-hour period.

If a pilot's actual rest is less than nine hours in the 24-hour period, the next rest period must be lengthened to provide for the appropriate compensatory rest," according to the agency.

According to the American Association of Sleep Medicine, **not sleeping well may lead to a number of problems.** People not getting enough sleep are more likely to have a **depressed mood, attention and memory problems, excessive daytime sleepiness, more nighttime falls, and use more over-the-counter or prescription sleep aids.**

In addition, **recent studies associate lack of sleep with serious health problems such as an increased risk of obesity, cardiovascular disease and diabetes.**

Midnight Shift Nugget

Fiber

Fiber is especially important to **shiftworkers** because it reduces the risk of heart and gastrointestinal problems. **A fiber-rich diet** can also lower blood sugar, help prevent gallstones and lower the risk of colon cancer.

Aim for 25 grams a day, through five or more servings of cereals, potatoes, carrots, broccoli, peas, beans, apples, bananas, nuts and citrus fruits.



3 tips for your health and the planet's

Suggestions for how to be healthy and "green"

Aside from pesticide use and a few other issues, most of us haven't worried much about the connections between health issues and the environment. For our health, we work on our waistlines and fret over our cholesterol levels. **For the environment**, we recycle and maybe drive a fuel-efficient car.

But because of accelerating climate change and the havoc it could wreak, it's not so easy to send environmentalism off into its own separate compartment these days.

We thought we'd bring personal and environmental health together and provide three "green" and perhaps surprising health tips.



1. **Go to bed early.** This may help you lose weight and will put a damper on energy use. Americans weigh more and are sleeping less. Average daily sleep time has decreased from about nine hours a century ago to about seven now. Studies have identified a correlation between short sleep and being overweight or obese.

Hormones may be why: Lack of sleep depresses the levels of leptin, the hormone that tells the brain we're full, and increases ghrelin, the hormone that makes us hungry. Household use of electricity has increased by over 50% since the early 1980s. By turning in earlier, we'll dial down our appetite for kilowatts and maybe food.

2. **Turn down the heat and the air conditioning.** By adjusting your thermostat, you may keep your metabolism burning more calories but use less of another kind of energy. Humans, like other mammals and birds, control their body temperature by continually adjusting their metabolisms. When the air is cool, metabolism revs up to produce more heat. When it's hot, sweating and other responses also burn up extra energy. But when air temperatures are in the thermoneutral zone (TNZ) — which for humans with their clothes on tends to be in the mid-70s — our metabolisms don't have to work so hard to maintain body temperature, and we burn fewer calories. We're spending more time in our TNZs these days because of heating and — particularly — air conditioning. Some experts believe all that time in the comfort zone is contributing to the obesity epidemic.

3. **Eat fish, but the right kind.** Fish needs no introduction as a healthful food. As the main food source of long-chain omega-3s, it's good for your heart and probably your brain. But the sterling health credentials have some environmental tarnish. Some species are contaminated with pollutants — mercury and PCBs are the main concern. Stocks of others have been dangerously depleted by too much fishing. Some groups are working to steer consumers to species that are in good supply. The Marine Stewardship Council, a British group, certifies fisheries as sustainable. Environmental Defense, a New York-based environmental group, has posted a helpful list of best and worst fish choices at www.oceansalive.org. The Blue Ocean Institute has a useful guide at www.blueocean.org/seafood.

[Do you know how much water you should drink per day when working outdoors in hot weather?](#)

[The answer:](#)

Everyone agrees that in hot weather you should **increase your intake** of cool (not ice-cold) water. Generally, experts say that you **should drink 5 ounces (150 ml) every 20 minutes.**



People doing hard outdoor work such as agricultural labor should drink at least one cup (250 ml).

So on a hot day, in an eight-hour shift, a person working outdoors should drink almost 1.5 gallons (6 liters)! That'll keep the juices flowing.

Picture This!



End