



## Aviation Human Factors Industry News

July 03, 2007

Vol. III, Issue 23

### [Aircraft oxygen generators fueled massive US plant fire that forced evacuations](#)

RALEIGH, North Carolina: **Oxygen generators** similar to those blamed for the deadly 1996 ValuJet crash likely caused the rapid spread of a chemical fire that forced the evacuation of thousands last year, a U.S. agency said Wednesday.

The U.S. Chemical Safety Board issued a safety advisory to **aircraft maintenance** and hazardous waste storage workers out of concern the **Alabama Company** that shipped the unspent, mislabeled devices also might have sent them elsewhere.

Chemical oxygen generators are used to provide supplemental oxygen in drop-down masks in case a commercial aircraft cabin depressurizes. **Unexpended generators in the cargo hold of ValuJet Flight 592 were blamed for the 1996 crash that killed 110 people.**

Before last year's fire, the safety board said Mobile Aerospace Engineering Inc. **placed generators in steel drums and shipped them to a hazardous waste facility, where they were misidentified as general oxidizer waste and sent to North Carolina,** the board said.



At least 78 oxygen generators were found among the rubble of the Oct. 5 fire that destroyed the EQ Industrial Services plant, said Robert Hall, the board's lead investigator. The massive fire led city officials to ask 16,000 residents — about half the city — to evacuate, and about 30 people were treated for respiratory problems in the hours after the fire.

"Apparently this aircraft maintenance facility had forgotten the lessons of ValuJet about expending these things," Hall said. "We're concerned that there might be somebody else out there that's not following the procedure."

After the 1996 crash, the National Transportation Safety Board ruled that expired but fully functioning chemical oxygen generators should be expended before being transported.

## TAAG Angola 737 crashes on landing, five killed

A TAAG Angola Airlines 737-200 carrying 71 passengers and seven crew crashed last week at M'Banza Congo Airport on arrival from Luanda, killing four passengers and one crewmember, according to Flight Safety Foundation's Aviation Safety Network.



According to press reports, the aircraft broke apart after hitting the runway and skidded into a house or building. TAAG reportedly was added to the EU's airline blacklist to be published next week, along with all Indonesian carriers and several from Eastern Europe.

The Pratt & Whitney JT8D-17A-powered aircraft first flew in January 1985, ASN indicated. It is TAAG's fifth fatal accident since 1980. Most recent was in 1997 when three people were killed in an F-27 accident. The airline lost another 737-200 in 1983 in an accident that killed 130. Its fleet comprises four 737-200s, four 737-700s, two 747-300s and two 777-200s.

## Air China flight noses into ground, injuring 8

The nose of a Boeing 767 hit the ground because the plane's undercarriage was suddenly raised while passengers were boarding at Beijing Capital Airport yesterday afternoon. Three passengers and five crew members were reported to have been injured, the Beijing Times reported today.

The accident happened at 5:10pm when passengers were still boarding



the Air China plane which was scheduled to take off at 5:30pm for Dubai, a witness said.

**The plane's nose hit the ground when the undercarriage was withdrawn and some passengers fell on the boarding ramp and some fell in the cabin, the witness said.**

Ambulances took three passengers and five crew members to the airport hospital and an assistant captain was reported to have been injured seriously, the report said.

A crew member named Li Bo was sent to the General Hospital of the Administration of Civil Aviation and doctors said his waist muscles were strained and some bones in his chest may have been fractured, the report said.

Airport workers cordoned off the scene around 6pm and began pumping fuel from the plane, the report said. Rescuers then used an air cushion to lift the plane nose for repairs.

Air China said it arranged another flight to send passengers to Dubai at 9pm. **The airline said no passengers or crew had been injured in the accident but didn't explain why the undercarriage was lifted.**

## [Africa body to improve air safety](#)

The ACAA will license and inspect equipment and aviation staff a body to **standardize air safety measures across Africa** is due to be inaugurated in Namibia.

The Africa Civil Aviation Agency will be based in the capital, Windhoek, and will train pilots and coordinate aviation policy across the continent.

**Africa accounts for only 3% of global air traffic, but is responsible for 17% of fatal air crashes.**

The agency's director says it will bring Africa's safety standards into line with those in Europe and the US.



## [Accidental Deaths Increasing at Alarming Rate](#)

**Every five minutes one US resident dies as a result of unintentional injury, according to the National Safety Council (NSC).** Accidental

deaths are the fifth leading cause of death overall, behind those caused by heart disease, cancer, stroke and chronic lower respiratory diseases.



"Accidental deaths in the United States are rising at an alarming rate, more than 20 percent over a 10-year period, reaching **113,000 deaths in 2005**, according to the latest data available," says NSC president Alan McMillan.

The safety council is worried that **the all-time high of 116,385 accidental deaths recorded in 1969 could soon be surpassed**. McMillan says **unintentional injury** is one of the most serious public health issues facing the country.

"**Accidental death in America is a silent epidemic**. Trauma from accidents follows only heart disease and cancer in national medical expenditures. For people between the ages of 18 and 64 with private health insurance, more is spent on medical care for trauma and poisoning than for any other health condition," he says.

**Motor vehicle crashes continue to be the leading cause of injury-related deaths in the country**. Speeding, driver **distractions and impairment**, and failure to wear seatbelts are major contributors to these injuries and fatalities.

Poisoning, particularly from overdoses of over-the counter, prescription and illicit drugs, is now the fastest-rising cause of accidental death with a five percent increase last year alone. **Death from falls ranks third**, while choking and drowning incidents round out the top five causes and collectively account for 83 percent of all accidental deaths.

The NSC notes that there's a **disturbing trend toward more accidental injuries** and deaths occurring in and around the home. Death rates from injuries in the home and community have risen by 30 percent since 1992. More than half of all injury-related deaths and 75 percent of all disabling injuries are occurring in US homes and communities.

**On a more positive note, work-related deaths have declined by 17 percent since 1992.**

## Tackling Maintenance Training

Pilot, **maintenance** and cabin crew training can account for up to 20% of an airline's operating budget, and this training business is worth about \$3 billion in the 90 seat and over market, said Alteon Training President Sherry Carbary.

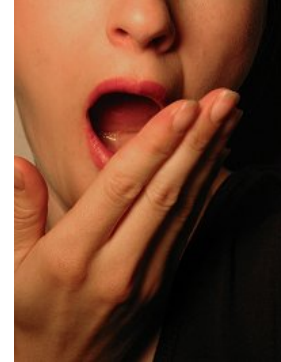
With the projected growing worldwide fleet, the **shortage** of pilots and **maintenance personnel** could exacerbate. "New planes will require more than 18,000 new pilots every year -- 360,000 pilots over the next 20 years -- on average, through 2025 **as well as 480,000 new mechanics during that period of time,**" she said.



To help tackle the shortage of qualified aviation personnel, KLM Engineering & Maintenance announced on June 11 that it established a partnership with the Delft University of Technology. Students will complete their studies at KLM E&M and then receive a two-year contract. The program starts on Sept. 1.

## Adaptation to Shiftwork and Turnover

Adapting to a **shiftwork lifestyle** can be very challenging. Accompanying the transition to working a non-traditional schedule are **social and health obstacles** that many employees have to figure out on their own. **Not surprisingly, turnover rates for shiftwork operations are higher than daytime operations.**



To account for the high rates of turnover at shiftwork operations, a recent study tracked recent nursing graduates as they spent their first years working shifts at a hospital (*Collegian 2007 Jan;14(1):23-30*). The study made interesting observations about **sleep, depression, and social adaptation.**

**Sleep:** While the nurses initially reported serious **sleep disturbances**, some improvement was marked by the end of year.

**Depression:** The nurses with a history of depression before working shifts had a harder time adjusting to shiftwork. They tended to have more **sleep disruptions** and report higher levels of emotional exhaustion.

**Social Adaptation:** Social dysfunction scores were correlated with burnout, **sleep disturbances** and job satisfaction. Not surprisingly, those who have a difficult time adapting to the social challenges of shiftwork are more likely to leave their job.

## Crew Resource Management (CRM): Saving lives

**Crew (or Cockpit) Resource Management (CRM)** training originated from a NASA workshop in 1979 that focused on **improving air safety**. Express AviationWorld finds out that CRM is probably one of the most vital and unavoidable modules for crew training. **You cannot afford to give it a miss.**

The NASA research presented at a meeting found that the primary cause of majority of aviation accidents was **human error**, and that the main





problems were failures of interpersonal communication, leadership, and decision making in the cockpit. A textbook example of such an event was the catastrophic accident the infamous Tenerife disaster. (Los Rodeos, Tenerife's North airport is, unfortunately, famous for the fateful accident which occurred on March 27, 1977, in which 583 people died when KLM and Pan Am 747s collided on a crowded, foggy runway in Tenerife, Canary Islands. The incident remains the world's worst aviation accident in history. Many contributing factors, lead up to the crash, but the probable cause, cited by the Air Line Pilots Association (ALPA, 1978), was the KLM pilot taking off without takeoff clearance.

According to sources, aviation industry psychologists John K Lauber and Robert Helmreich were approached by the aviation fraternity to develop new kinds of psychological training for flight crews. The training focuses on group dynamics, leadership, interpersonal communications, and decision-making. The training is now known as Crew Resource Management (CRM). Dr Lauber, a member of the National Transportation Safety Board, defined CRM as "using all available sources - information, equipment, and people - to achieve safe and efficient flight operations." More specifically, it is the active process employed by crew members to identify existing and potential threats and to develop, communicate, and implement plans and actions to avoid or mitigate perceived threats. CRM supports the avoidance, management, and mitigating of human errors. The secondary benefits of effective CRM programs are improved morale and enhanced efficiency of operations.

CRM training has since been introduced and developed by aviation organizations including major airlines and military aviation worldwide. CRM training is now a mandated requirement for commercial pilots working under most regulatory bodies worldwide, including the FAA (US) and JAA (Europe).

CRM training encompasses a wide range of knowledge, skills and attitudes including communications, situational awareness, problem solving, decision making, and teamwork; together with all the attendant sub-disciplines which each of these areas entails. CRM can be defined as a management system which makes optimum use of all available resources - equipment, procedures and people - to promote safety and enhance the efficiency of flight operations.

CRM is concerned not so much with the technical knowledge and skills required to fly and operate an aircraft but rather with the cognitive and interpersonal skills needed to manage the flight within an organized aviation system. In this context, cognitive skills are defined as the mental processes used for gaining and maintaining situational awareness, solving problems and taking decisions. Interpersonal skills are regarded as communications and a range of behavioral activities associated with teamwork. In aviation, as in other walks of life, these skill areas often overlap with each other, and they also overlap with the required technical skills. Furthermore, they are not confined to multi-crew aircraft, but also relate to single pilot operations, which invariably need to interface with other aircraft and with various ground support agencies in order to complete their missions successfully.

CRM has prevented accidents and saved lives in the aviation industry. CRM alerted the aviation industry to the human-to-human interactions that are an integral part of any team performance. This training has the potential to save lives and money, and prevent accidents and lawsuits as well. Crew Resource Management training is now required for airlines in 185 countries by the International Civil Aviation Organization (ICAO), the regulatory component of the United Nations.

## What are the benefits of a nap?

Naps have been shown to benefit almost every aspect of human wellness. The benefits to the body include better heart functioning, hormonal maintenance, and cell repair. They help you live longer, stay more active, and look younger. No organ is as affected by naps (or the lack thereof) as the brain. The benefits result in greater alertness, improved memory retention and creative insight. Napping can make you a faster typist, better dancer or anything else requiring complex and coordinated motor skills. Also, a nap's effects on mental health include improved mood, lowered stress, and greater psychological balance.



## A Human Interest Story

### “Glacier Girl” flies again

On July 15, 1942, eight U.S. warplanes bound for England were forced to ditch in Greenland. Though the crews were rescued, the aircraft were left behind, eventually becoming entombed in ice. Now, one of the planes- a P-38 fighter nicknamed ‘Glacier Girl’- is completing its mission, having been recovered and restored at a cost of more than \$4 million. The fighter is currently flying, in stages, from Teterboro, N.J., to Canada, Greenland, Iceland and ultimately to England. The last surviving mission member, Col. Brad McManus, 89, has gone along for part of the ride. “It’s a thrill to know this is occurring,” he said, “and to think they are going to fly it over the same route that we flew in 1942.”



## They Never Came Home



On June 18<sup>th</sup>, 2007, Nine (9) Charleston, South Carolina Firefighters kissed their families goodbye and went off to work. Little did they know what tragedy this day would bring. Keep these brave men who made the ultimate sacrifice and their families in your prayers.

- *Firefighter James (Earl) Drayton Age 56, 32 years of service*
- *Captain Mike Benke, Age 49, 20 years of service*
- *Captain William (Billy) Hutchinson Age 48, 30 years of service*
- *Firefighter Melvin Champaign, Age 46, 2 years of service*
- *Engineer Mark Kelsey, Age 40, 12.5 years service*
- *Engineer Bradford (Brad) Baity, Age 37, 9 years of service*
- *Captain Louis Mulkey, Age 34, 11.5 years of service*
- *Firefighter Brandon Thompson, Age 27, 4 years of service*
- *Asst. Engineer Michael French, Age 27, 1.5 years of service*