Aviation Human Factors Industry News

January 2, 2008

Vol. IV. Issue 01

Probe after Qantas pumps wrong gas into jets

Potentially fatal gas being pumped into passenger jet emergency oxygen tanks in Australia has sparked a worldwide safety investigation.

The Australian Safety Transport Bureau confirmed last week that Qantas engineers accidentally put nitrogen into the emergency oxygen tanks of a Boeing 747 passenger jet at Melbourne Airport.

The Australian carrier immediately checked the oxygen supplies of more than 50 of its planes that had been serviced by the mislabeled nitrogen cart at the airport. But an aviation source said: "This could have affected hundreds of planes worldwide. Any international jet that passed through Melbourne and was serviced by Qantas could have had nitrogen pumped into its oxygen tanks."

Health experts warned that in an emergency the effects of nitrogen in the oxygen tanks could have potentially fatal results.

Dr. Ian Millar, hyperbaric medicine unit director at the Alfred hospital, said: "If there was an emergency and the pilot took nitrogen instead of oxygen, instead of gaining control of the aircraft he would black out and it would be all over. It's a pretty serious mistake."

Nitrogen, which is non-flammable, is commonly used at airports to fill aircraft tires.

The aviation source said: "Qantas took delivery of the new nitrogen cart 10 months ago. It looked exactly like the old oxygen cart. When the attachments did not fit they went and took them off the old oxygen cart and started using it."

The mistake was eventually spotted by an aircraft engineer. "He was walking around the plane and asked what they were doing. When they said they were topping up the oxygen, he said, 'No you're not, that's a nitrogen cart'," said the source.

The incident was reported to the Civil Aviation Safety Bureau, which confirmed that an investigation detected nitrogen in the crew oxygen tanks on the Boeing 747-300. A bureau spokeswoman said it was a one-off incident.

But the aviation source said: "This has affected at least 175 planes and Qantas has had to tell any other airline that has been serviced in Melbourne to check out its oxygen supplies."

Air New Zealand was told about the problem six weeks ago. "As a result of receiving that letter we did take some precautionary measures," a spokeswoman said. "The oxygen tanks on a small number of planes were removed, checked, re-serviced and refilled. No irregularities were found."

A spokeswoman for the Australian Transport Safety Bureau said: "Very clearly they (Qantas) needed to carry out a risk assessment because there was a chance that other aircraft were affected.

"They identified 21 that were at risk because they had had a reasonable amount of oxygen top-up, so there was a reasonable chance they had been contaminated. There were another 30 aircraft at minor risk because they have had minor top ups," said the spokeswoman. The planes were inspected and no positive results found.

She said the airline had turned the error into a learning exercise and informed engineers all over the world about the mistake. "They have talked to thousands of their engineers around Australia and overseas, informing them about this lesson that has been learnt," she said.

Qantas engineering executive general manager David Cox said: "We had a guy using a new rig and he inadvertently serviced the crew oxygen with nitrogen. He realized what he was doing and flagged it."

Mr. Cox said that once the mistake had been realized, extensive safety checks were put in place to ensure no other aircraft had been contaminated and that it could never happen again.

"Every aircraft, including customer aircraft that could have been touched with this rig has been checked," he said after confirming the rig had been in use at the airport for several months. Mr. Cox said the airline had been completely open in informing all safety authorities, staff and other airlines about the mistake.

jetBlue AIRWAYS

Engine blast spurs debate on safety standards

A recent midair jet engine failure that sent metal chunks exploding with violent force is prompting federal investigators to debate the need for tougher engine safety standards.

Some metal pieces thrown by the engine peppered the side of a Southwest Airlines Boeing 737-300, according to federal safety investigators.

Engine failures that fling shrapnel toward the passenger compartment or key components of an aircraft have caused several major accidents and draw close scrutiny from accident investigators.

The National Transportation Safety Board (NTSB) launched an investigation into the incident because it has "significant concern" any time high-velocity material strikes an aircraft, spokesman Peter Knudson said.

The debris did not penetrate the jet's skin and pilots landed safely on one engine in the Nov. 17 incident, according to the NTSB.

Investigators are interested in this particular case because preliminary evidence indicates that pieces of fan blades and other metal parts flew around the armored shield that is designed to prevent engine debris from escaping, Knudson said. The NTSB has investigated at least two other cases in which shrapnel from a damaged engine escaped in a similar manner, according to the agency's database of investigations.

The investigation has only just begun, but one possible outcome is a finding that existing protections on engines are not sufficient to prevent metal shards from being flung out of a damaged engine.

Twin-engine jets are designed to be flown for extended periods on a single engine and pilots are drilled repeatedly on the procedure, according to the Federation Aviation Administration (FAA).

Though explosive engine failures are extremely rare, they have caused several notable fatal crashes. On July 19, 1989, for example 111 people died in Sioux City, Iowa, when an engine on a United Airlines DC-10 exploded, rendering the jet uncontrollable. Two people died on July 6, 1996, in Pensacola, Fla., when an engine on a Delta Air Lines MD-80 sent large metal chunks flying into the passenger compartment.

jetBlue AIRWAYS

Violent, high-energy engine failures can cause severe damage, said Kevin Darcy, a safety consultant and former accident investigator with Boeing. But many times the debris that escapes from an engine is made up of slow-moving pieces that do not threaten a plane's safety, Darcy said.

Federal aviation regulations require that engines be built with an armor-like shield around the rapidly spinning fan blades so that, if they fail, debris cannot fly out toward the passenger cabin, fuel tanks and key components of the aircraft.

The shield only covers the series of fans within the engine. If a piece of metal bounces forward of the armor, it can easily slice through the thin layers of sheet metal covering the front of an engine. That is apparently what happened on the Southwest flight.

The CFM56-3 is the most popular jet engine in the world, said Rick Kennedy, a spokesman for GE, which makes the engine in partnership with French manufacturer Snecma. It is only the second case in the model's history in which debris escaped during a failure, Kennedy said. The engine has operated for 170 million total hours.

Engine safety has improved dramatically since jets were introduced on commercial aircraft in the 1950s. Engines are now so reliable that the vast majority of airline pilots will never experience an engine failure during their entire careers, according to the FAA.

Southwest Airlines spokeswoman Brandy King confirmed the incident occurred, but said the airline could not comment because of the investigation.

String of blunders doomed Nimrod crew

The RAF Board of Inquiry report into the destruction of Nimrod XV230 over Afghanistan identified a string of errors and miscalculations that all played a part in the deaths of 14 British servicemen.

Have your say: What lessons should the Government learn?
The plane was brought down in September 2006 after leaked aviation fuel ignited, causing a catastrophic explosion.

The inquiry considered the most probable cause and the crew's ability to respond to the fire.

jetBlue AIRWAYS

Fuel pipe seals

The inquiry found a fourfold increase in faults with all Nimrods' fuel seals and couplings between 1983 and 2006, leading to fuel leaks inside the aircraft.

The inquiry concluded: "The past history of fuel coupling faults across the fleet indicated that a leaking fuel coupling could have occurred during XV230's last flight."

It raised grave questions about the maintenance of the vital seals. According to the firm that makes the seals, they should have an "unlimited service life" as long as they are inspected every five years.

But the report said: "No Nimrod seals have been removed solely for the purpose of the examination scheduled. The Board has been unable to find any formal record explaining the apparent dichotomy between the manufacturer's recommendation and MoD practice."

MoD officials in charge of Nimrod maintenance told the inquiry that removing the seals for inspection would "effectively require the replacement of the seals every five years."

Fuel tanks

The inquiry found the other possible cause of the leak that led to the fire was XV230's fuel tanks overflowing after mid-air refueling.

In that case, aviation fuel would seep out of a "blow-off valve" and run down the side of the aircraft, possibly seeping into the hot-air pipe system.

Twice in August last year, the crew of XV230 noticed small marks along the side of the plane near the valve, suggesting that some fuel had flowed out.

But the overflow incident was far from unique to XV230. Experiments by the inquiry team proved that fuel could flow out of Nimrod tanks under a number of circumstances.

The report revealed that the possible problem of fuel overflows had been considered in 1985 by the plane's manufacturers but no action was taken.

"Although BAE recommended trials, they were not conducted," the report said.

Hot air pipes

The inquiry considered the possibility that an electrical failure could have caused a spark that ignited the aviation fuel but effectively ruled it out.

Instead, the investigators concluded that the hot air pipes in the plane's air cooling system, which can reach 420C, were the most likely ignition point.

As a result, the air cooling systems in all Nimrods have been turned off.

The inquiry findings focused attention on a technical failure on another Nimrod in November 2004, when hot air leaked from the cooling system, melting fuel seals.

After this, the RAF asked the MoD to install a warning system to alert crews to leaks. The MoD refused. "The decision will be reconsidered ... following publication of the Board's report," the inquiry revealed yesterday.

Fire detection and suppressant systems

The Board found that the crew of XV230, among the most experienced in the Nimrod fleet, had no hope of locating and tackling the fire because the area of the plane concerned was not fitted with fire-fighting detectors.

The report said: "In the limited time available to them, the crew had to determine the fire's source by a process of elimination; there is no evidence that they were able to do so. The crew had no means of attacking the principal fire."

In 2004, following a study of fuel leaks and minor fires aboard Nimrods, the aircraft support company, now called BAE Systems, recommended the installation of detection and suppression systems.

The Government rejected the advice. That decision was wrong, the inquiry said, recommending a range of "mitigation" measures.

"Mitigation might involve introduction of fire detection and suppression systems [and] fire retardant coatings," the report said.

Safety Culture Can Reduce Human Errors In Aviation Accidents

Human errors have been found to be a leading cause of aviation accidents and incidents, a UK aviation safety expert said yesterday, but with the right safety culture and a more error-tolerant approach in safety management systems, such errors can be managed. Cliff Edwards, managing director of Aviation Hazard Management, in a talk on human factors in safety management system said that human errors have caused about 80 per cent of accidents, but added that these are manageable, as they can be predicted and measured.

jetBlue AIRWAYS

"In principle, every occurrence or accident has an element of human error in it," said Edwards during the seminar in conjunction with the Aviation Safety Week at the Rizqun International Hotel. Many factors contribute to human errors, including mental and physical health, support systems, leadership, communication and working culture, but individuals are not solely to blame as the organization's system itself could be flawed.

Having had 45 years of experience in the aviation industry, Edwards said that a desire to learn is the foundation of any error management program.

"Data is important and will help, but data driven safety only helps to fix what already went wrong," he said.

He added: "We need a better approach to understanding our workplace and the issues our staff face every day and we need to build in more error tolerant systems."

A safety culture should be instilled in all organizations to ensure the efficiency of a system, he said. "No matter what your position in the company, you can begin to change the culture and make a difference," he said.

He further said that commitment is the key to manage the problem of changing the working culture. Good communication skills can also be practiced to achieve effective teamwork and decrease the number of human-caused aviation accidents, he said.

Training is necessary for employees, but it is not the answer to address the problem of human-caused 'accidents, because effective leadership is still required to change attitudes and behaviors, he added.

The Need for Safety Management Systems

The Federal Aviation Administration (FAA), the Air Transport Association (ATA) and the International Air Transport Association (IATA) held its 4th Annual International Aviation Safety Forum outside Washington, DC, Nov. 28-30, at which participants from around the world pledged to implement Safety Management Systems, a systematic approach to managing risks associated with commercial aviation. The session was covered by VLJ Report's sister publication Air Safety Week.

Acting Federal Aviation Administrator Robert Sturgell said: "the question for us in aviation is how to maintain the safety record that's the envy of all transportation. How are we going to raise the bar? The answer is SMS -- safety management systems. Aviation no longer is in the business of combing through ashes and wreckage to find answers. SMS will give us the intelligence we need before the problem reaches the headlines. When it comes to risks, the low- hanging fruit is long gone. SMS uses hard data to point us in the direction we need to go. We don't have to wait for something bad to happen. Ultimately, we don't want to just meet ICAO minimums. Ultimately, our goal is to raise the bar worldwide no matter where you go.

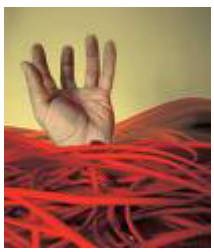
"At its most fundamental level, a safety management system helps organizations identify and manage risk," he continued. "It is based on hard data. Safety management systems help us manage risk far better than we have, because it's a disciplined and standardized approach to managing risk. At the very core of the SMS is the need to identify potential hazards and then analyze risk.

After that, the next steps are to rank hazards and assess risk, and then identify mitigation options. It's a closed-loop process where identified risks are mitigated and the mitigations are monitored to provide continuous system safety."

He said the FAA's recent Call to Action for runway safety is an example of using SMS principles. A string of events pointed to a problem with U.S. runways. They involved a variety of factors - miscommunications, missed turns on taxiways, a snowplow, missed turns onto an active runway, signage.

"When we issued our Call to Action, we looked at 5.4 million records covering a 20-year period," he said. "We found 117 isolated instances of flight crew confusion here in the United States involving a variety of issues. Our Call to Action is addressing these issues as we speak. Short-term action such as enhancing runway markings and improving pilot training are already under way."

FAA Wants Help Eliminating Useless Rules



Have you come across something that’s arcane, anachronistic or just plain useless in your travels through the regs? Well, the FAA says it wants to know about it. The agency has issued a Review of Existing Regulations that invites anyone with a beef about how the law of the air is now set to drop them a line. “Getting public comments is a necessary element of our effort to make our regulations more effective and less burdensome,” the agency claims in the document.

It's asking that you list the top three aggravations in descending order for it to consider. The FAA has to do this under Executive Order 12866 and provides a long list of efforts toward that end. "Our goal is to identify regulations that impose undue regulatory burden; are no longer necessary; or overlay, duplicate, or conflict with other Federal regulations," the document says.

Airlines in India recommend MEDA

In keeping with the growing need to ensure adequate safety standards for airlines in India, the Aviation Safety Week organized by the Directorate General Civil Aviation (DGCA) and Airports Authority of India (AAI) from December 10 to December 14, 2007, held a seminar on Maintenance Error Decision Aid (MEDA) system. Major airlines in the country have already adopted the MEDA system, which helps identify human errors and reduce safety risks in airline operations.

BOEING®

Maintenance Error Decision Aid (MEDA)©

At the seminar, airlines like Jet Airways, Kingfisher and Air India spoke about the importance of incorporating effective safety measures. Unlike the traditional investigation efforts, wherein the focus is on identifying the erring employee, the MEDA system aims to determine the factors that contribute to the errors committed by maintenance technicians and inspectors, and take corrective actions to avoid or reduce the likelihood of similar slips in the future.

Inaugurated by Ashok Chawla, Secretary, Ministry of Civil Aviation, the Aviation Safety Week is an interactive session with the media, in which the Minister for Civil Aviation, Praful Patel, the DGCA, the Joint Secretary, Ministry of Civil Aviation and other senior officials of the AAI and the airlines are participating.

SCSI Courses Available

The Southern California Safety Institute (SCSI) offers Safety Management Systems-Essentials SMS-E DL) training through Distance Learning. This course can be taken on line through the world-wide web at anytime and any place at your convenience. SCSI's Safety Management

SCSI
Southern California Safety Institute

jetBlue AIRWAYS

Systems-Essentials course taken via Distance Learning will teach you the basics about Safety Management Systems. Once you have completed the basic SMS Essentials course through Distance

Learning or in the SMS-E classroom course, 14-18 Jan 2008, Southern California, SCSI recommends following up with the hands-on Safety Management Systems-Workshop (SMS-W) classroom course where you will be able to create in class your own individual Safety Management Systems Program for your Organization and take back with you to implement. Over 50 students have taken SCSI's Safety Management Systems–Essential course via Distance Learning over the past year and as their schedule permits are following up with the Safety Management Systems Workshop with success. It doesn't end there. SCSI instructors are available to help with any questions and concerns you have once you return to your organization and continue the process of implementing your program.

SCSI hands-on Safety Management Systems-Workshop will be offered in the

Following locations for 2008

Southern California, USA 21-25 January 2008

Prague, Czech Republic 28 April–2 May 2008

Southern California, USA 8-12 September 2008

Please visit SCSI's website at <http://www.scsi-inc.com/> and click on the tab Distance Learning. We invite you to take the Demo to Distance Learning by following the instructions provided. If you would like to discuss obtaining SCSI's Certificate in Safety Management Systems and additional information on Distance Learning and Safety Management Systems Courses please contact John Richardson, Dean of Training,<mailto:john.richardson@scsi-inc.com> or tel: 800 545-3766 ext 4 (US and Canada) or 310 517-8844 Ext 4. For registration, please contact Ed Treto, Registrar, registrar@scsi-inc.com <mailto:registrar@scsi-inc.com> or tel: 800 545-3766 (US and Canada) or 310 517-8844 Ext 1.

Marlene Foulk

Director of Administration- SCSI

24325 Crenshaw Blvd, #226

Torrance, CA 90505

Tel: 800 545-3766 or 310 517-8844 x2

Fax: 310 540-0532

e-mail: marlene.foulk@scsi-inc.com

website: www.scsi-inc.com

OSHA recognizes GE Aviation site for safety success

The U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) has certified General Electric Aviation Customer Training Services in Springdale, Ohio, as a "Star" site in its prestigious Voluntary Protection Programs (VPP).

Richard T. Gilgrist, director of OSHA's area office in Cincinnati, presented the company with a VPP star flag and plaque during a recent ceremony.

"General Electric Aviation Customer Training Services have demonstrated an excellent record in workplace safety and health management," said Gilgrist. "Its outstanding efforts include management commitment to safety and health, as well as employee involvement in safety and health programs."

General Electric Aviation Customer Training Services' Customer Technical Education Center (CTEC), employing 49 people, has had zero OSHA-recordable injury or illness incidents during the past four years.

CTEC's instructors and administrative support staff design, develop and deliver training programs to students from around the world. The facility has more than 80,000 square feet of space, housing 14 classrooms, a small auditorium, a cafeteria, office space and 27 bays equipped with lifts, hoists and tooling for major engine handling. Engines and thrust reversers are available for hands-on training.

OSHA's Star designation is the highest level of recognition that an employer can achieve in the VPP. Designed for worksites with comprehensive, successful safety and health programs, the VPP is open to all industries and to employers with injury rates below their respective industries' national averages.

More than 1,860 worksites nationwide have earned entry into OSHA's VPP, which has proven over the years to be an effective means of reducing injuries, illnesses, fatalities and costs, while fostering a more productive workforce and increasing employee morale.

jetBlue AIRWAYS

Hearing loss risk

Your hearing may be at risk, says *Harvard Men's Health Watch*

Call it acoustic trauma or noise-induced hearing loss. By any name, it's the most important preventable cause of permanent hearing loss. Up to 28 million Americans have impaired hearing; for as many as a third, acoustic trauma is a significant contributor, reports the December 2007 issue of *Harvard Men's Health Watch*.

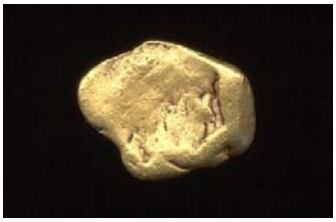
Acoustic trauma is a product of modern life. On-the-job noise exposure is the most common cause, but recreational noise — such as loud music — is catching up. If present trends continue, the condition may someday be known as "iPod ear."

A sound's potential to damage the ear depends on the duration as well as the intensity of the sound. How much sound is dangerous? The Occupational Safety and Health Administration offers guidelines: Sounds below 75 decibels (dB) are safe, but eight hours at 85 dB can be harmful. (The sound of a lawnmower or heavy traffic is approximately 90 dB.)

Most often, noise-induced hearing loss begins with a subtle difficulty hearing high-frequency tones, then slowly begins to encompass lower tones. Usually, both ears are equally involved. Once your hearing is lost, *it can't be restored*; your only recourse is to wear a hearing aid. That's why it is important to recognize the warning signs. If your ears ring or buzz after being exposed to noise, it's loud enough to cause damage. And if noise exposure makes hearing painful, muffled, blurry, or distant for hours or days, you are already in trouble.

***Harvard Men's Health Watch* provides some sound advice: First and foremost, turn down the volume. For occasional exposures, use disposable ear plugs. If you're frequently at risk, invest in custom-fitted ear plugs. And for maximum protection, add acoustic earmuffs.**

Midnight Shift Nugget



Benefits of Improving Shiftworker Health & Fitness

It's hard to believe, but 2008 is just a few days away. While many of you are trying to cram in that last bit of work before 2007 is in the books, it's important to take a minute and take stock of the past year and set goals for the new one.

jetBlue AIRWAYS

One of the most common goals people make is to get in better shape and avoid weight gain. This is an important goal for everyone to make, but if you're a manager it also begs the questions: is improving employee health and fitness a good business goal? The answer to that question appears to be yes.

Below we will examine why shiftworkers might be more susceptible to weight gain than their daytime counterparts and why there are many benefits to helping employees get in better shape. Lastly, we will look at how companies can help their employees by offering wellness programs.

Is there any link between shiftwork and weight gain? A handful of studies have reported a link. For example, a 2000 study found hospital employees working 8-hour evening or night shifts had gained an average of just under 10 pounds since starting shiftwork. Day-shift workers in similar jobs had gained just two pounds (Geliebter et al., 2000).

The source of the extra pounds was no mystery: workers in the study reported "an increase in their food intake... combined with exercising less" since starting shiftwork jobs. This pattern is all too typical among shiftworkers: food options on evening and night shifts tend to be limited to sugary vending machine fare, and time off is often consumed by trying to get enough rest (especially for workers on 12-hour shifts).

What are the benefits of employer involvement? You might be inclined to view obesity as a personal matter and "none of your business" as an employer. But the problem, like people's waistlines, just keeps getting bigger: about two-thirds of adults in the United States are overweight according to data from the National Health and Nutrition Examination Survey 2001 to 2004.

Consider at the benefits of employer involvement:

- **Higher productivity. Obese workers take more sick days and account for a greater amount of lost productivity, than non- obese employees.**

- **Lower medical costs. Employees who weigh more, cost more: they incur more health care expenses and take more disability time and more sick days. Obesity can cause or worsen many other medical disorders, including Type 2 diabetes, heart disease and some forms of cancer. Losing weight usually improves these conditions.**

- **Better-rested, more alert workers. Not only does carrying around extra weight drain energy, but also it can contribute to sleep apnea, a disorder characterized by interrupted breathing during sleep. Compared to healthy people, sleep apneas are several times as likely to suffer on-the-job alertness lapses and to cause automobile accidents due to falling asleep at the wheel.**

What you can do? **While no employer ever has the right to force employees to exercise, employers can offer programs and services that make it easier for employees to exercise and eat healthily.**

Establish a company-wide wellness program. Many companies report great success with wellness programs that emphasize nutrition and exercise. For example, you can:

- **Offer on-site fitness facilities for employees or reimburse health-club dues.**
- **Have on-site weight management programs.**
- **Hand-out pedometers.**
- **Sponsor company sports teams and walking clubs.**

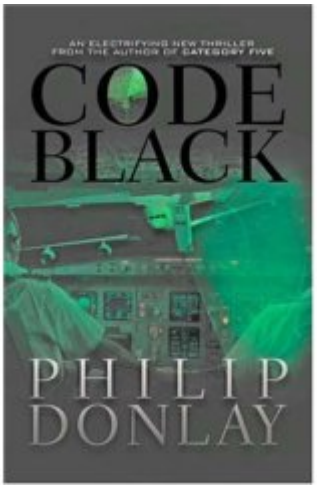
Stock vending machines with healthy food and water. This is especially valuable for night workers, who often have to depend on the vending machines for nighttime snacks. So when they face down a vending machine that is full of candy bars, chips and sugary drinks, it isn't going to help them make healthy decisions.

It doesn't cost much to offer baked tortilla chips, fat-free Fig Newtons, low-fat pretzels and real fruit juice in place of or alongside the standard potato chips, cupcakes and artificially-flavored soda. In fact, many vending machine companies deliver healthier, lower-fat snacks on request.

Sources:

Geliebter, A, et al. "Work-shift period and weight change." *Nutrition* Volume 16, Issue 1, 27-29. 2000.

Mid-Air Collision. Think it Can't Happen?



Pilot Reveals Potential Dangers of Congested Skies

Every time you board a plane, do you have to silence that little voice in your head that asks 'what if?' What if on this seemingly normal day,

the plane I'm boarding becomes a grim statistic of a debris field strewn with twisted and charred metal? What if the air traffic control team on duty is overworked and understaffed, and doesn't notice my flight veering into the path of another plane? Well, brace yourself.

jetBlue AIRWAYS

Author/Pilot Philip Donlay's latest thriller */Code Black/* presents a nightmarish air travel scenario. He puts the reader squarely in the middle of an all-too-plausible mid-air disaster that leaves a crippled commercial jet struggling to stay airborne over Chicago with nowhere to go - except perhaps the icy waters of Lake Michigan. It's Donlay's wealth of experience, plus his behind-the-scenes knowledge that makes */Code Black/* not only a compelling read-but perhaps an all to frightening reality.

Unfortunately for air travelers this scenario is not far-fetched in the least. In October of this year two private planes came close to colliding in mid-air near Las Vegas due to an error made by an air traffic controller. Donlay, also a professional pilot with 30 years experience, knows all-too-well the very real danger of mid-air collisions. He vividly remembers the day when an air-controller error resulted in his plane and a 727 crossing paths at 37,000 feet over Indianapolis.

"We saw him just in time," says Donlay. "We took evasive action and crossed over the top of him by 200 feet. It was a close call that I'll never forget."

While researching his book, Donlay uncovered more than a dozen documented midair accidents. His fictional, but entirely possible, scenario envisions what could happen if a small series of events at an air-traffic-control site snowballed into a major midair collision. Midair collisions are a part of our history, with nearly 1,600 people dead since the beginning of commercial air travel. But could Donlay's fictional account become a grim reality?

"Certainly, there are safeguards in place to prevent something life what I write about in */Code Black/* from happening," says Donlay. "But even with all the high-tech processes and systems at the air-traffic-controllers' fingertips, human error is still a very real danger."

jetBlue AIRWAYS

In June, Aviation Today reported seven recent near mid-air collisions in the vicinity of the New York area. The local air-traffic controllers union says Kennedy, Newark and La Guardia airports are short-staffed, a problem cited by air-traffic-controllers in locations across the country.

While air-traffic-controllers bemoan not having enough people in the control tower, the number of people in the skies is ever-increasing. FAA officials say Very Light Jets, or VLJs, a new generation of aircraft that are inexpensive and can land almost anywhere will cause a large surge in air traffic.

If you have ever sat in the back of an airliner and wondered, "what if?", then you are not alone. */Code Black/*, although a work of fiction, plays out the thrilling and terrifying possibility of a mid-air collision, a terrible scenario...but one based in fact.

Bad Designs

That's not a handle!

The lids on oatmeal containers were recently redesigned. The new-style lid fits down into the top of the oatmeal container. There's a lip all the way around the inside of the lid (arrow). The lip, which looks like it could work as a handle, affords sliding one's fingers underneath to pick up the oatmeal container.

The other day I reached into the pantry to grab the oatmeal. I put my fingers under the lip of the lid using my thumb to hold the side of the container. I got just a few steps from the pantry before the lid came off dumping oatmeal all over the floor! The problem is that it looks like you can pick up the container by the lid, but you can't.

Maybe the purpose of this new lid is to get people to buy more oatmeal, since half of it ends up on the floor!

The old-style lid doesn't look like you could use it as a handle to pick up the oatmeal container, so people probably aren't inclined try it. People are probably more apt to use two hands to pick up containers with these old-style lids.

Design suggestion

The lid on the new-style container should not look like it could work as a "handle" to pick up the container. This might be done by:

- **Not making the center of the lid set down in the top of the container so deeply.**
- **Removing the "handle" from the inside of the lid by curving the lip outward rather than inward.**

Sporty's 2-Man Survival Pack

Sporty's Survival Pack is and has been upgraded to include new items and larger quantities of items, all while remaining stowed in a compact backpack weighing only 12 lbs.

This Survival Pack was custom designed with the general aviation pilot in mind. It contains a large selection of quality supplies in each of six groups necessary for survival and rescue:

- **Medical and First Aid Group: First aid cream, adhesive bandages, cotton balls, gauze bandage, antiseptic towelettes and non-aspirin acetaminophen tablets.**
- **Food and Water Group: 1 qt. rugged canteen, two 3600 calorie food bars, water-purification tablets, fishing kit and 8 water packs.**
- **Signal and Light Group: Two light sticks, whistle, long burn candle, signal mirror and a high-intensity strobe light.**
- **Emergency Devices Group: Quality utility knife, 50 ft. nylon rope, wire saw, quality liquid-filled compass, toilet tissue and sewing needles.**
-

- **Shelter and Protection Group: Large, orange two-person tent, two emergency space blankets (84" x 55") and two emergency sleeping bags.**
- **Fire and Cooking Group: 50 waterproof matches with case, fire starting sticks and metal cookpot.**

All of these items are packaged in a high-quality, red backpack that is 12 inches wide, 17 inches high and 10 inches deep and weighs 12 lbs. (without water). The Survival Pack is available for $159.95 and may be ordered from Sporty's Web site.

GO FIGURE

Holiday Health

What does this number represent?

350

Answer: It's the approximate number of calories contained in a single glass of eggnog. Here are some other holiday food figures for you:

3, the number of pounds you can expect to gain simply by eating an extra 200 calories a day between now and New Year's

125, the number of calories floating in a 5 oz glass of mulled red wine

503, the number of calories baked into a slice of pecan pie

114, the number of calories in a wedge of camembert cheese

227, the number of delicious calories in a brownie

For the next four weeks, we'll all be faced with dangerous food temptations. And while it's easy to shrug off the prospect of gaining a few pounds over the holidays, the fact is that most of us will not be that successful losing the extra weight, despite our New Year's Resolutions.

So here are half a dozen suggestions from the Harvard Health Publication on how to make it through the holidays without packing on the pounds.

1. **Choose your calories carefully.** At a party, don't blow your calorie budget on just anything. Browse the buffet or food table carefully and select only your favorites.

2. **Take 10 between helpings.** There's a bit of a communication gap between our bodies and our brains, and it can take several minutes before the stomach notifies the brain that it's full. Before going for a second helping, have a chat with someone or drink some water. Give yourself a 10-minute break. It could be that you're full and just don't know it yet.

3. **Step away from the table.** At a party, try to maintain some distance between yourself and the food table, where it's too easy to eat mindlessly while you socialize.

4. **Eat first.** Before going out - whether to a party or even just to the mall - have a slice of apple with a bit of peanut butter, or some other combination of complex carbohydrate and protein. This will help you resist any tempting treats.

5. **Mind the drinks.** There are a lot of calories in a glass of wine, beer or hot buttered rum - ranging from 125 to 300. If you drink alcohol, have a glass of water between drinks.

6. **Keep moving.** Try to enjoy a bit of exercise, such as dancing or walking, to work off the holiday calories.

(Sources: Harvard Health Publications, MayoClinic.com and USDA.)