jetBlue AIRWAYS

Aviation Human Factors Industry News

March 03, 2008

Vol. IV. Issue 09

DC-9 Runs Amok At Venezuelan Airport

There were apparently no serious injuries but it looks like it might be awhile before an Aserca Airlines DC-9 is back in service after a bizarre accident at Simon Bolivar Airport in Maiquetia, Venezuela, last week. According to the aviation Web site volarenvenezuela.com, the aircraft apparently left a hangar with both engines running and crossed a runway and a taxiway before coming to rest with at least part of its gear collapsed in the infield. Details are sketchy but the report says whoever was at the controls was unable to turn or brake the aircraft.

ASRA Report: Hurry-Up in the Maintenance Hangar

Maintenance technicians must often work at night, on multiple aircraft, under tight deadlines, and sometimes with limited staffing. The constant pressure to turn aircraft around quickly can lead to hurry-up errors:

- **During an operations check of the passenger service unit oxygen masks (drop test) we discovered left-hand #1**
- **passenger service unit mask was not dropping.**

jetBlue AIRWAYS

-
- **After troubleshooting, we discovered the cannon plug was damaged. Since we did not have the part in stock and the aircraft was already late, my manager instructed me to remove a passenger service unit from another CRJ200 that was in the hangar and install it on the aircraft in question. I questioned his instructions, but he told me to complete the tasks and to hurry. I completed switching the passenger service units and did an operations check. Sometime later and upon further review it has come to my attention that the passenger service unit removed from the other aircraft was not applicable to the aircraft in question. The result was the aircraft had to be removed from service as soon as the discrepancy was discovered, and a new part brought in to replace the incorrect passenger service unit.**

121 safe after jet slide-off, fire

Passengers, crew exit on inflatable slides, some into deep snow.

Jackson Hole Airport Manager Ray Bishop stands next to one of the damaged engines on a United Airbus A320 plane that slid off the runway upon landing at the airport late last Monday night.

A United Airlines flight from Denver carrying 115 passengers and six crew members slid off the runway at the Jackson Hole Airport Monday night, resulting in an engine fire and one minor injury.

All on the plane had to use doors, emergency exits and inflated slides to escape. At least one passenger reported seeing and smelling smoke inside, although the brief blaze was confined to an engine.

United Flight 267 was landing from the north at 9:14 p.m. when the plane began to skid, ultimately going onto the runway's safety apron and off the west side of the runway into about five feet of snow, according to officials. The plane is an Airbus A320 and can hold 156 passengers when filled.

The dense snow caught the airplane's landing gear and spun the plane about 120 degrees until it faced northwest. Both of the plane's engines ingested snow, and the right engine briefly caught fire. One of the plane's left wheels was flat the following morning.

There was no immediate explanation of the cause, whether the pilot landed long or fast, or whether the slide-off was due to equipment failure.

The incident is the fourth time an airplane has gone off the runway since December. Two weeks ago, a SkyWest CRJ700 was involved in a less serious mishap.

According to Jackson Hole Airport Manager Ray Bishop, airport rescue personnel were on the scene at 9:16 p.m. The flight crew deployed inflatable ramps from all six of the aircraft's emergency exits.

One of the ramps failed to inflate properly, but all 121 passengers and crew successfully evacuated the airplane using the other five. Many had to tromp through deep snow and up the plowed runway to the airport terminal.

While attempting to open one of the emergency exits, one passenger injured a wrist. The passenger declined treatment on the scene and drove to the St. John's Medical Center emergency room.

According to passenger Andrea Matthews, a Wilson resident, the plane came in for a landing after leaving Denver two hours later than scheduled.

"Everybody was tired and anxious to get their [destinations]," she said. "When we got to the end of the runway [the plane] started skidding. We weren't going really fast. We were getting close to having stopped. The plane lost traction and we fishtailed once or twice and went into the banks."

Matthews, who was sitting in the last row in the right had window seat, said that when the plane came to a stop, none of the passengers spoke. The captain then came over the intercom and asked if everyone was OK.

Venezuela Begins Recovering Bodies from Andean Plane Crash

Forensic and rescue workers work near the wreckage of a plane, in a mountainous area near Merida, Venezuela, 24 Feb 2008
Venezuelan authorities say search teams have retrieved several bodies from Thursday's plane crash in the Andes Mountains that left 46 people dead.
Search teams had to be dropped off at the crash site by helicopter because of the steep mountain terrain. The victims included Venezuelans, Colombians and an American citizen.
Investigators recovered the black boxes (flight data recorders) from the wreckage last Saturday. The voice and data recorders could provide clues about why the plane crashed shortly after it departed the city of Merida on its way to Caracas.

jetBlue AIRWAYS

Pilots need special training to fly from the Merida airport because the city is surrounded by mountains and planes must ascend sharply at takeoff.

777 pilot fired for buzzing airport

A local plane spotter took this photo of the new Cathay Pacific 777 flying low at Paine Field on Jan. 30. The jetliner's landing gear is retracted.

- **YouTube video | Cathay Pacific flyby**

The celebratory flyby, reportedly just a few dozen feet above the runway, surprised the senior airline officials who were on board, among them company Chairman Christopher Pratt, according to the South China Morning Post.

The Hong Kong newspaper reported that Capt. Ian Wilkinson lost his job for violating company guidelines requiring prior clearance for such maneuvers.

Industry publication Flight International reported Monday that Wilkinson was the airline's senior 777 pilot. Cathay Pacific was taking delivery of its sixth 777-300ER, and the plane carried 50 to 60 people when it swooped past the airfield with its landing gear retracted.

The plane may have been as low as 28 to 30 feet off the ground, an unidentified Cathay Pacific source told the publication.

The 777-300 ER is 242 feet long, weighs around 350 tons and is 61 feet 5 inches high at the tail. It lists for $264 million.

Images of the Jan. 30 stunt appeared on YouTube and on the Web site of a local plane spotter, Matt Cawby.

Federal Aviation Administration spokesman Mike Fergus said "the circumstances are being looked into and investigated by the FAA.

" A Paine Field spokesman had no comment."

An airline spokesperson told Flight International that "Cathay Pacific has a well-established approval process for flybys, and a number had been conducted in the past as display flights at air shows with proper approval in place."

The pilot and co-pilot were disciplined for not following those procedures, said the spokesperson. Both have appealed.

Boeing spokesman Chuck Cadena said "it's not uncommon" for pilots who are taking airplanes to circle back for a "flyby" over the runway — a goodbye to those left on the ground or watching from the observation deck at the Boeing delivery center at Paine Field.

Such maneuvers, weather permitting, are normally coordinated with the air traffic control tower and must comply with FAA regulations.

Cadena said he didn't know what height off the runway is typical for a flyby, or what level of permission is required to fly low. As for the Cathay Pacific incident, "it's a matter between the pilot and the airline."

London B777 Accident


Air Accidents Investigation Branch

Department for Transport

AAIB Bulletin S1/2008
SPECIAL

ACCIDENT

http://www.aaib.dft.gov.uk/cms_resources/S1-2008%20G-YMMM.pdf

jetBlue AIRWAYS

Crash-landing inquiry investigates fuel pumps

The investigation into the crash-landing of a British Airways Boeing 777 at Heathrow airport last month has ruled out a mechanical engine fault as a cause of the near-disaster. It also emerged that the British Airways pilots who saved the lives of 136 passengers on flight BA038 had left gallons of fuel gushing from the stricken plane after failing to shut off key valves, according to accident investigators.

The Air Accidents Investigation Branch said the fuel leak did not cause the accident but could have had serious consequences if the Boeing 777 had caught fire after slamming into the ground hundreds of meters from the runway. The AAIB also ruled out an intake of ice into the engines or a bird strike as causes of the crash.

Investigators indicated that the crash could have been caused by damaged engine fuel pumps, which are designed to make the plane safer upon landing and take-off by siphoning fuel into separate fuel tanks for the right and left engines.

Investigators found evidence of fuel pump damage that could have been caused by oxygen being mixed with the fuel, or of fuel being fed into the tanks at a dangerously low pressure. The AAIB said the evidence pointed to "either a restriction in the fuel supply to the pumps or excessive aeration of the fuel".

David Learmount, safety editor of Flight International magazine, said the report showed investigators were still far from pinpointing the cause of the crash.

The senior first officer of the flight, John Coward, was praised as a hero for steering the stricken jet over the airport fence and on to the ground 300 meters short of the runway. Eight passengers received minor injuries and one suffered a broken leg in the evacuation, while four of the 16 crew were slightly hurt. The AAIB said there was no evidence of a mechanical defect in the aircraft's Rolls-Royce engines, and no evidence of ice being ingested into the engines or of a bird strike. However, small pieces of debris were found in the engine tanks, the AAIB said, and investigators are considering their relevance to the crash.

jetBlue AIRWAYS

Kieran Daly, editor of Air Transport Intelligence, said: "The AAIB have effectively ruled out virtually all the potential causes of the accident. They are now following two lines of inquiry.

There were signs that not enough fuel was reaching the pumps that finally pump the fuel into the engines and they are looking at the debris in the fuel tanks."

The AAIB has ordered Boeing to remind airlines of the correct evacuation procedure for 777s following the revelation that the flight captain and co-pilot operated a set of handles and switches in the wrong sequence after steering the plane to safety. BA defended the actions of Coward and Captain Peter Burkill, saying the division of responsibilities for operating the fuel control switches and fire handles had been sanctioned by Boeing and the UK aviation regulator, the Civil Aviation Authority

EXCLUSIVE VIDEO: AMAZING FEATS OF AVIATION — DHL BAGHDAD

Recounting one of the most impressive feats in recent aviation history, *AVweb* video editor Glenn Pew recalls the circumstances of the DHL A300 shot by a surface-to-air missile over Baghdad. The crew successfully landed the aircraft without the ability to manipulate any control surfaces. *(Note: The aircraft shown in simulation is a Boeing 777, not an Airbus A300.)*

http://www.youtube.com/watch?v=DUstvXSytRc

Multimeter Test Leads Can Cause Trouble

Problem: Too many avionics workcenters are using safety wire on the ends of multimeter test leads used to probe connector-plug pins during troubleshooting. The big hazard is a real potential for being electrocuted during troubleshooting, as well as inducing voltages to circuits which otherwise should be de-energized.

Solution: Get your supply or materiel's coordinator to buy the right test-lead kits to troubleshoot connector-plug pins, such as the kit model No. TL 82 available from Fluke Corporation.

These kits can run from $60-70. Safety is the main concern, and with today's high-end electronics, we need to reduced unintentional energizing of other circuits

http://www.newark.com/38K8515/supplier-direct-ship/product.us0?sku=FLUKE-TL82

Trainee in jet cockpit at time of near miss

A 27-year-old crew member in training to be a copilot was in the cockpit of the Japan Air Lines jumbo jet that came close to hitting another aircraft on the ground at Hokkaido's New Chitose Airport last Saturday, and was handling communications between the plane and the control tower, the Construction and Transport Ministry's Aircraft and Railway Accidents Investigation Commission found last Tuesday.

The jet nearly rear-ended another plane after beginning its takeoff run without permission from air traffic controllers.

In the cockpit at the time were the captain, copilot and trainee, all of whom misheard the controller's instruction, the investigation found. The commission says the captain and copilot failed to confirm the controller's instructions, in direct violation of JAL's operations manual.

It is believed the trainee, who has a total of 340 flight hours, had been put in charge of contacting controllers by the captain.

'All Clear' Signal Given Prematurely

Light rain was falling, but visibility was good when the aircraft was pushed back from its stand onto a taxi at London Heathrow Airport the afternoon of June 26, 2006, for a scheduled flight to Munich Germany. The A320 was given a long pushback to a relatively narrow part of the taxiway, to allow another aircraft to be taxied to the stand, said the report by the U.K. Air Accident Investigation Branch (AAIB).

The pushback was conducted by a marshaller and the driver of a towbarless tractor. After the pushback was completed, the tractor was disconnected and parked near the A320's right engine. The marshaller did not signal the tractor driver to reposition the vehicle outside the aircraft movement area before disconnecting his headset and giving the flight crew the "all clear" hand signal.

The marshaller than got into the tractor and was told by the driver that the vehicle could not be driven forward because a warning light indicated that the nosegear cradle retracting mechanism had malfunctioned, causing the "drive inhibit" system to engage. Neither ground crewmember used the drive inhibit override button. "They heard the aircraft's engines start to increase power and saw the aircraft start to move," the report said. "They both got out of the tractor in an attempt to indicate, with hand signals, that they wanted the aircraft to stop. When it became apparent that the flight crew was not looking in their direction…they both returned to the tractor to make another attempt to move it and also for their own protection."

The commander could not see the tractor and the copilot's view of the tractor was blocked by a windshield post. The pilots heard a 'crunching' sound but felt no impact when the bottom of the right engine nacelle struck the rear of the tractor and pushed it out of the way. They observed no abnormal indications but decide to have the aircraft inspected after they were clear of the narrow portion of the taxiway. "Just as the commander was about to transmit a request for ATC to dispatch a vehicle to inspect the aircraft, he heard a transmission by the tractor driver advising ATC to stop an aircraft as it had hit a tractor", the report said. "Realizing that they were the aircraft involved, the crew stopped the aircraft and applied the parking brake. At the same time, ATC advised them to stop the aircraft".

The right engine was shut down, and ARFF personnel observed substantial damage but no fuel leaks. The pilots then taxied the aircraft on one engine to a stand and the 83 passengers disembarked.

Singapore Air A380 grounded due to fuel pump problem

Singapore Airlines said Tuesday an A380 superjumbo flight was canceled due to a fuel pump defect, the first major technical glitch to ground the world's largest passenger jet.

The carrier said the fuel pump problem was detected when the plane's engine was started ahead of departure Monday night on a flight from Singapore to Sydney.

"Airbus and our own engineers have dedicated teams to try to address these issues quickly, but last night's fuel pump defect took much longer to fix," Singapore Airlines said in an e-mailed statement to The Associated Press.

The airline said it had to switch to using a Boeing 747-400, which seats fewer people than the Airbus jet, because a replacement of the fuel pump failed to solve the problem. The company's second A380 could not be used as it was undergoing maintenance.

Of the 418 passengers on the flight, about 70 had to be transferred to alternative flights today, the carrier said.

"The delay was most unfortunate, because to date, the aircraft has been operating with very high reliability: the highest of any aircraft type to enter service," the statement said. "It is, of course, to be expected that technical issues will occur from time to time."

Singapore Airlines said the problem has since been fixed and the plane would resume its daily service to Sydney on Tuesday night.

Orlando Explores New Aviation Training Center

Aviation is a growing industry, and that means manufacturers, flight schools, airlines and maintenance shops all need trained workers. To fill that need, a coalition of business and education leaders in central Florida is working on a plan to build a new aviation-themed campus at Orlando International Airport, the Orlando Sentinel reported on Tuesday. The campus would involve half-dozen colleges, including Embry-Riddle Aeronautical University, the Florida Institute of Technology, the universities of Central Florida and South Florida, Valencia Community College, and the National Aviation Academy, a Tampa-based trade school for aircraft mechanics. The airport campus would offer courses in a wide range of aviation topics, from avionics and aerospace engineering to human resources and transportation logistics, according to the Sentinel. Companies such as AirTran, JetBlue Airways, Continental Airlines, Cessna Aircraft and FlightSafety International need workers in the Orlando area. The plan is still in a preliminary stage, and millions of dollars would have to be raised. But supporters say it would be a good investment in the region's economic future.

jetBlue AIRWAYS

FAA Rewards Efforts To Reduce Aviation's Environmental Impact

The FAA is present ing its 2007 Excellence in Aviation Research Awards to Professor Ian Waitz at the Massachusetts Institute of Technology and to a U.S. Air Force fuel research team. "Aviation needs to continue to get greener," said FAA spokesman Dan Elwell. "Dr. Waitz and the Air Force team are taking the steps to put a big dent in aviation's environmental footprint.

Their work is going to make a difference across the face of our entire planet." Waitz and his research team are working on ways to reduce air and noise pollution from aviation. The U.S. Air Force team has developed a synthetic fuel blend for the B-52 fleet. The blended fuel has less exhaust smoke and fewer particulate emissions than standard fuel.

The synthetic fuel is not only cleaner, but could potentially save millions of dollars and reduce dependence on foreign sources of oil, the FAA said. This is the 10th year that the Excellence in Aviation Research Award has been presented. The awards are given to individuals and/or institutions outside the FAA whose research contributions have resulted in a significantly safer, more efficient national airspace system.

EPA Cleans Up Radium Instruments For Strube

The Department of Environmental Protection Dec. 25 formally requested that the EPA take action including "removal and remediation duties" at seven facilities that house radium dial instruments. The facilities, owned by Strube Inc. and located in Lancaster Country, Pa., had been the subject of visits and inspections by the DEP, which found Strube uncommitted to meet previously outlined cleanup deadlines. Deemed "hazardous materials," the aged instruments that may no longer be used in aircraft must be "identified and properly disposed of" because Strube had "improperly stored" them, according to the EPA. Strube officials claim there is no public health threat. Strube's warehouses may contain an estimated 20,000 of the instruments hidden among some 58 million aircraft components, according Strube. The instruments may have been there since the 1950s. Strube had been issued a license "to possess and dispose of" all radioactive material at its facilities and has "made progress in properly containing hazardous materials at its facilities." The EPA judged Strube had offered no progress in the removal of radioactive materials.

Strube had hired security guards and recently hired a licensed contractor to handle the cleanup of two warehouses.

Safety Procedures Not Followed, NTSB Says

Washington, D.C.-Investigators Find Transit Agency Lacks Rules to Protect and Inform Workers

In an accident near the Eisenhower Avenue Metro station, two Metro workers were struck by a train. One died that day; the other died seven days later.

Three Metro employees were struck and killed by Metrorail trains in two accidents in 2006 because the employees and a train operator failed to follow proper safety procedures, the National Transportation Safety Board concluded yesterday.

The board also found that transit agency rules and procedures lacked adequate safeguards to protect track personnel; ensure that train operators were aware of track work being performed; and provide that trains operate at reduced speeds through work areas.

At the time of the accidents, the Operations Control Center, which controls train movement, made one announcement informing train operators that employees were working on the tracks. After one accident, in November, Metro required control center workers to make announcements every 20 minutes to inform train operators where maintenance work was being done.

The safety board made several recommendations; including having surprise safety inspections and requiring that pre-work briefings take place to ensure that track workers know their duties and the locations of safe areas.

The board also recommended that Metro "promptly implement" new technology that automatically alerts track workers of approaching trains and train operators of workers on or near the tracks. Such systems are being tested in the Boston and Baltimore subways.

Although Metro changed many of its policies after the 2006 accidents, safety board members said it was imperative for the system, the nations second busiest after New York's, to have a "strong safety culture" so that employees follow the rules. "A strong safety culture doesn't take dollars; it takes a will," board member Debbie Hersman said. "They had rules. Those rules weren't observed."

Family members of the track workers attended yesterday's hearing and faulted the agency for taking so long to make changes.

Betty Waldron's husband, Michael, died when he was hit by a Metro train near the Braddock Road Station in October 2005. "I wish it had happened before my husband was taken from me," she said.

Sophia Cherry's husband, Leslie, was one of two employees fatally injured in November 2006. He did not know that trains were sharing a track that day and had complained in the past about not being adequately informed about single-tracking. "Had he known, he could have been more aware," she said.

Metro has since changed procedures and announces to all operators when trains will share a track. Track walkers must also stop inspections during single tracking. More than a dozen improvements to work procedures were put in place after the November accident, including more training, surprise safety inspections and reduced train speeds, officials said.

"The death of any Metro employee hurts us all deeply," Metro General Manager John B. Catoe Jr. said yesterday in a statement. "I am committed to turning Metro into *the* safest transit system in the country . . . and we will look to add more employee safeguards, including adding new technologies."

Metro safety chief Polly Hanson said she wants to try the new automatic alert technology, but some within the rail department are balking at the extra work it would require, according to Metro sources who spoke on condition of anonymity for fear of losing their jobs.

In an accident near Dupont Circle on May 14, 2006, senior mechanic Jong Won Lee, 49, was hit and killed by a southbound Red Line train about to enter the station. Lee and two other mechanics had been working on a track circuit just north of the station.

All three moved out of the way to stay clear of a northbound train that was leaving the station. As the southbound train was arriving, two men stayed in the clear, but Lee did not, either because he was not aware of the train or because he was unable to find a safe area to avoid it, investigators found.

In the accident near Eisenhower Avenue on Nov. 30, 2006, the safety board said the train operator failed to follow proper procedure to slow or stop the train, and the two track inspectors failed to maintain an effective lookout for trains. Cherry, 52, died that day, and Matthew Brooks, 36, died seven days later.

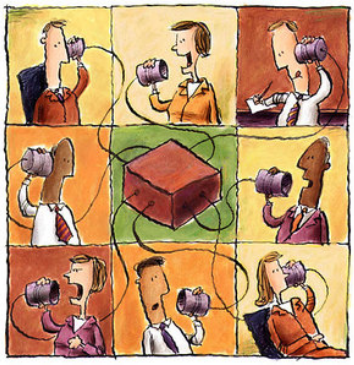
The train operator, identified in NTSB documents, was banned from operating trains or buses after the accident. She is receiving workers' compensation.

jetBlue AIRWAYS

After the NTSB finding, Metro spokeswoman Candace Smith said the agency is giving "serious consideration" to firing her.

Midnight Shift Nugget

Share Work Schedules with Friends



As shiftworkers, it can be challenging to maintain social ties with friends who work 9 to 5. In fact, some friends may even be hesitant to call you because they assume you're working or they don't want to disrupt your sleep. To make sure this doesn't happen, let your friends know how your schedule works. You might event want to give them a copy of your schedule if it rotates. That way it's easier for both of you to find a good time to get together. Like all relationships, good communication is key.

POP QUIZ

What Do You Know About Hypothermia?

QUESTION: How can your workers prevent hypothermia?

ANSWER:

- **Drink plenty of liquids, but not alcoholic beverages.**
- **Wear adequate protective clothing, including a hat, scarf, long-sleeved shirt, mittens (which are warmer than gloves), water-resistant coat and shoes, layers of loose-fitting clothing.**
- **Remain as dry as possible. If clothing become wet, it should be immediately removed.**
- **Avoid prolonged exposure to cold weather.**

QUESTION: What are some signs and symptoms of hypothermia?

ANSWER:

- **Involuntary, excessive shivering**
- **Confusion**
- **Drowsiness**
- **Slurred speech**
- **Irrational behavior**

- **Falling to the ground**
- **Can't walk**
- **Curls up**
- **Skin becomes pale**
- **Dilated pupils**
- **Decreased pulse rate**

QUESTION: What 7 things should be done to help a hypothermia victim?

ANSWER:

1. **Move the victim to a warmer environment.**
2. **Remove wet clothing.**
3. **Place the victim on a blanket or a warm surface, insulating the body from the cold ground, and wrap in blankets or other warming material.**
4. **Apply warm compresses to the center of the body—the chest, neck, head and groin.**
5. **Call for medical aid immediately.**
6. **Provide warm beverages, such as hot chocolate.**
7. **Share body heat.**

QUESTION: What 5 things should NOT be done to help a hypothermia victim?

ANSWER:

1. **Do not apply direct heat, such as hot water or a heating pad.**
2. **Do not attempt to warm the arms and legs. This can cause cold blood to be forced back toward the heart, lungs and brain.**
3. **Do not massage or rub the person. People suffering from hypothermia must be handled gently as they're at risk of cardiac arrest.**
4. **Do not give the person an alcoholic beverage, which lowers the body's ability to retain heat.**
5. **Do not try to give any beverage to a person who is unconscious.**

Good fats, bad fats: How to know the difference

With all the negative publicity given to fat in our diets, you'd think all fats are bad. But, that's not the case. Fat is a necessary part of a healthy diet, and some fats actually are good for you.

Fats are chains of carbon, hydrogen and oxygen. Fats that have more hydrogen in them are said to be more saturated than fats with less hydrogen.

And, saturated fats typically are less healthy than unsaturated fats.

With all the negative publicity given to fat in our diets, you'd think all fats are bad. But, that's not the case. Fat is a necessary part of a healthy diet, and some fats actually are good for you.

These categories can help you prioritize fats in your diet:

> Saturated fat. This fat has all the hydrogen it can hold. It's typically solid at room temperature and is found mostly in meat and dairy products. Coconut and palm oil also contain saturated fat.

Saturated fats raise your total cholesterol and your LDL, or "bad," cholesterol — that means a higher risk of heart disease. Of all the calories you get in one day, less than 7 percent should come from saturated fat.

> Trans fat. This is vegetable oil with hydrogen artificially added. Many commercially baked goods and fried foods in fast-food restaurants contain trans fat.

Not only does trans fat raise your total and LDL cholesterol, it also lowers your HDL, or "good," cholesterol. Less than 1 percent of your daily calorie intake should come from trans fat. Avoid it as much as possible.

> Monounsaturated fat. This fat has less hydrogen than saturated or trans fat. It lowers total and LDL cholesterol and raises HDL cholesterol. Canola, olive and peanut oils are good sources of monounsaturated fat.

> Polyunsaturated fat. This fat contains even less hydrogen. It has the same health advantages as monounsaturated fat. The majority of your intake of fats should be from these two. Look for safflower, corn or soybean oils. Omega-3 fatty acids, found mostly in fish, are especially beneficial for heart health.

It's a good idea to check food labels to see what types of fat and how much fat a product contains. Even with good fats, it's good to keep calories in mind. Each gram of fat contains twice the calories found in protein or carbohydrate.

A SAD story: Seasonal affective disorder

Light therapy and antidepressants help people who get depressed during the winter.

The gloom of winter seems to get inside some people, the dark affecting their mood as well as their days. In the late 1990s,

jetBlue AIRWAYS

the American Psychiatric Association (APA) recognized these winter blues as seasonal affective disorder, a name that seems to have been coined with its acronym, SAD, very much in mind.

Feel like hibernating?

SAD sufferers get depressed at other times of the year, but the APA's definition requires that the seasonal episodes — with the depression usually coming on in the fall and lasting through the spring — "substantially outnumber" the non-seasonal ones. And, strictly speaking, the diagnosis requires two straight years without any out-of-season depressions. Psychiatrists also face the tricky task of separating depression that might be triggered by events that happen regularly in the fall and early winter — the start of school, cyclical unemployment — from depression associated with the time of year itself.

The winter version of SAD is often compared to hibernation. People lack energy, sleep more than usual, crave sweets and starchy food, and gain weight. They may withdraw socially and have a hard time concentrating.

Out of sync

Experts debate whether a causal relationship has been proved, but there's certainly circumstantial evidence that lack of sunlight in winter triggers SAD. The fact that light therapy is a remedy is one clue to a connection. Epidemiologic evidence showing that SAD is more common and lasts longer among people living at high latitudes is another.

Dr. Norman E. Rosenthal, a psychiatrist at Georgetown University Medical Center who was among the first to describe seasonal affective disorder, believes that insensitivity to light may be behind this condition. Most of us go through winter on a relatively even keel because exposure to indoor lighting helps offset the lack of natural light, explains Dr. Rosenthal. But indoor light may be too weak for SAD sufferers.

Exactly how lack of light can influence our moods is an open question. Light, of course, is the stimulus for vision: it excites cells in the retina in the back of the eye that send signals to the areas of the brain that create and process visual thought. But there are neural pathways from the retina to other parts of the brain, including the suprachiasmatic nucleus, a part of the hypothalamus that helps put many of our physiological processes (sleeping, body temperature) on a circadian, or 24-hour, cycle.

Lighten up

Studies of light therapy for SAD go back to the 1980s, but many have been small, short, or flawed in significant ways. Still, there's enough wheat amid the chaff to safely say that light therapy does help some people with SAD.

Most studies have found it to be more effective first thing in the morning than later in the day.

Some SAD light boxes look like medical equipment, while others are more like regular table lamps. The prices vary, but from our quick look online, it seems you should expect to spend in the range of $100 to $200. Professional groups and government agencies have endorsed light therapy, but your insurance company may balk. If you are counting on coverage, better check first.

You can start gradually, but most studies suggest SAD sufferers need about 30 to 45 minutes of exposure to a 10,000-lux light source daily for light therapy to be effective. Lux is a measure of light intensity; 10,000 are about the intensity of light from the sun at dawn. In most homes in the evening, 300- to 500-lux light is the norm.

Exposure to such bright light has caused some concern about eye damage. Some companies sell light boxes that don't emit light in the blue part of the spectrum, because blue light is believed to be more damaging to the retina. Others sell equipment that uses LED lights that can be calibrated to emit light in the range of the spectrum that the companies contend is more effective at resetting circadian rhythms.

Most experts say regular fluorescent lights — as long as they have an ultraviolet (UV) filter — are safe and effective.

Pills instead

In 2006, the FDA approved Wellbutrin, a brand of bupropion, as a treatment for SAD. The approval was based on several studies showing that the drug worked to prevent SAD symptoms if people started taking it in the fall before symptoms started.

A number of studies have shown that fluoxetine (Prozac), sertraline (Zoloft), and other drugs in the selective serotonin reuptake inhibitor (SSRI) class of antidepressants might help SAD patients. Canadian researchers reported trial results in 2006 that showed fluoxetine and light therapy were equally effective (a 67% response rate).

People take melatonin for jet lag, but it might be useful for SAD, too. Oregon researchers have reported that taking melatonin pills in the afternoon helped some SAD patients by resetting their biological clocks.

‘More light’

If light is the key to relieving SAD, why sit indoors in front of an artificial version? That seemed to be the question that Swiss researchers were asking in the 1990s when they designed a trial that compared a one-hour walk each morning to sitting in front of a light box for half an hour. The mood of the walkers improved much more than that of the sitters.

Perhaps it was the physical activity — not the exposure to outdoor light — that brightened their outlook. And the 2,800-lux light used in the study is far less intense than the 10,000-lux light used today.

Those who believe SAD is related to problems of circadian rhythm think that the trick is to reset the biological clock with light in the morning. Still, the Swiss study is a reminder that light exposure at other times of the day might help some SAD sufferers, perhaps especially those with mild cases. Dr. Rosenthal describes patients who have benefited from interior decorating (more lamps and ceiling lights) and winter travel, even to Antarctica, where it’s very sunny indeed during the Northern Hemisphere’s winter.
For more information on seasonal affective disorder and other forms of depression, order our Special Health Report, Understanding Depression, at www.health.harvard.edu/UD.

Picture This!

Alcohol - Insulator of Common Sense!