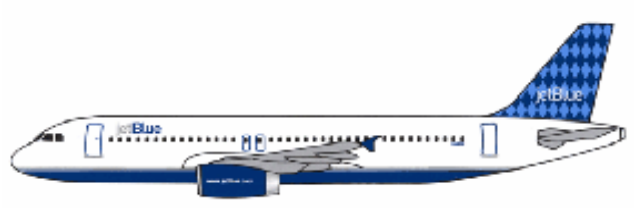

Aviation Human Factors Industry News

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ANSV about Tuninter ATR-72 accident

Rome, Italy - Conclusion of technical investigation

"A meeting was held this morning at the offices of the ANSV (Agenzia nazionale per la sicurezza del volo) with the participation of family members of the victims of the accident involving aircraft TS-LBB, an ATR-72 belonging to Tuninter airline, which occurred on August 6th, 2005, in the waters off the coast of Palermo, during which the ANSV illustrated the results of the technical investigation in detail, highlighting the cause of the accident.

During the meeting, also attended by the mayor of Bari dott. Michele Emiliano, the first printed copy of the final investigation report was symbolically presented to the president of the Associazione Disastro Aereo Capo Gallo (the Capo Gallo air disaster association), prof. Rosanna Albergo Baldacci, by the president of ANSV, prof. Bruno Franchi. Also attending the meeting were members of the ANSV board (captain Cesare Arnaudo and prof. Michele Gasparetto and prof. Elda Turco Bulgherini) and the Secretary General (captain Mario Giampaoli).

'Out of a sense of due respect for those who were lost in the tragic accident off the coast of Palermo, we consider it fitting to present the first copy of the final investigation report to the families of the victims, as was also done on the occasion of the conclusion of the investigation into the accident at Milano Linate on October 8th, 2001.

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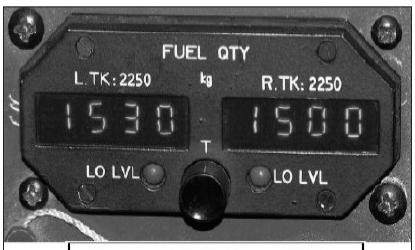
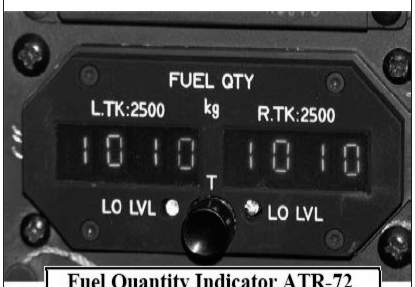
It has been a very complex investigation', stated prof. Franchi, 'At the end of which ANSV has issued, as a preventative measure, no less than fifteen safety recommendations in addition to the three already issued during the investigation.

These recommendations, some directed to the European Aviation Safety Agency (EASA), could contribute to an improvement in the current safety standards, helping to resolve critical issues that emerged during the investigation'.



Fuel Quantity Indicator ATR-42



Fuel Quantity Indicator ATR-72

The accident in question, in which 16 people perished (14 Italians and 2 Tunisians), was caused by a series of linked events leading to the final ditching. This last act was the result of both engines flame out due to lack of fuel.
The cause of the accident is ascribable, first of all, to the incorrect procedure used by the airline's maintenance personnel for replacing the Fuel Quantity Indicator (FQI) on that aircraft, in which an FQI for an ATR-42 was installed in an ATR-72.

In fact, as highlighted by ANSV a few weeks after the event, it emerged during the investigation that the quantity of fuel indicated by an FQI for an ATR-42 installed in an ATR-72 aircraft is more than the amount of fuel actually in the tanks. In particular, on an ATR-72 with zero fuel on board, the FQI for an ATR-42 will indicate a total fuel quantity equal to or more than 1800 kg, this being the fuel quantity communicated by the crew of TS-LBB to the air traffic controller in contact before ditching. This incorrect procedure was therefore the trigger event leading to the ditching of the plane due to lack of fuel.

Among the factors contributing to the occurrence of the accident the following are, in particular, noted.

- Errors made by the ground mechanics and engineers when searching for the Fuel Quantity Indicator and checking its proper identity.

- Errors made by the flight crew, who did not observe operational procedures, in particular regarding verification of the fuel on board.

- Inadequate checks by the responsible department of the airline involved of whether operational procedures were being observed by air crews.

- Inaccuracy of data fed into the spare parts management system and lack of effective monitoring of the system itself.

- Inadequate training in the use of the spare parts management system and lack of a person responsible for managing the system itself.

- The airline's maintenance and organizational standards at the time of the accident were unsatisfactory for an appropriate management of aircraft.

- The installation characteristics of the Fuel Quantity Indicators (FQIs) for ATR-42 and ATR-72 aircraft were such that it was possible to install an FQI for an ATR-42 in an ATR-72 and viceversa.

From the analysis of the errors ascribable to different individuals at various levels involved in the event it clearly emerged that they were operating in a potentially flawed organizational system, not able to provide sufficiently effective support to prevent the errors occurring".

Report says SAS flew 'dangerous' planes for years

A new study shows that Scandinavian Airlines (SAS) had been using planes with defects for several years.

A new report shows that a number of SAS's planes have had problems for years.

The European Aviation Safety Agency (EASA) said that of the 18 out of 27 planes investigated, fully 16 were found to have defects or lacking filters in the hydraulic system, reports Politiken.dk.

The problems relate to SAS's fleet of 27 "Dash" airplanes, which have been permanently grounded since last October.

One of SAS's Dash Q400 planes had to make emergency landings twice last year.

Claus Sonberg, an SAS communications director, said: "SAS had no possibility of -- and cannot be blamed for not -- discovering these problems, or the undetected error that caused the first two accidents, in the course of its maintenance work."

In March last year, a Civil Aviation Authority (CAA) technical expert reportedly wrote a memo saying it was only "a matter of time" before something serious would happen with the airline. SAS disputed this strongly, with support from the CAA itself.

Earlier investigations have shown that 25 of the 27 planes had sustained rust damage.

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EASA maintains that the defects would only have been critical if maintenance had not been up to par.

United, American Plan Safety Push After Icing Linked to British Crash

Prompted by suspected ice accumulation in the fuel system of a British Airways PLC jumbo jet that crash landed near London last month, two major U.S. carriers are stepping up safety initiatives to prevent such problems, according to people familiar with the matter.

Reuters

A British Airways plane made an emergency landing at Heathrow Airport last month.

The moves come amid growing indications that a buildup of ice crystals or slush simultaneously restricted fuel flow and reduced the thrust of both engines of the Boeing 777 jet moments before the Jan. 17 accident at Heathrow International Airport, these officials said.

UAL Corp.'s United Airlines, and AMR Corp.'s American Airlines are taking precautionary steps to ensure fuel quality and re-evaluate fuel characteristics before investigators release preliminary findings. While it is common for airlines to ramp up safety efforts in the wake of a high-profile crash, they typically wait until the release of such findings or early safety recommendations by regulators or manufacturers.

United is reassessing certain quality-control systems it uses for accepting and testing fuel at airports, according to these people, and is reviewing procedures its mechanics use to drain water from jetliner fuel tanks. American has launched an effort to determine if a different type of jet fuel could better withstand temperature extremes on the longest and coldest polar routes, other officials said.

The moves come as U.S. and British investigators are focusing on whether ice crystals may have clogged the plane's dual oil-cooler systems, according to people familiar with the details. The radiator-like devices use fuel flow from each of the wing tanks to cool engine oil, and fuel then flows from there to the nearby engine during flight.

Investigators also want to determine how mechanics who worked on the aircraft before a pair of earlier flights may have reacted to warnings of potential ice buildup in the fuel. An internal Federal Aviation Administration memo last month said "a maintenance message indicating excessive water in the center tank was set during taxi on the two previous flight legs, although it cleared itself both times."

Water can be drained from Boeing 777 fuel tanks only on the ground, so part of the puzzle is what mechanics did to ensure the fuel system wasn't contaminated.

United's routine procedures call for removing excess water after every several hundred flight hours.

United, American and Rolls-Royce Group PLC, which made the engines on the plane that crashed, have declined to comment on the investigation. Boeing Co., which said its 777 aircraft flew for 12 years and about 3.6 million hours world-wide without a major accident, said "it would be inappropriate to comment at this stage." The crash didn't result in fatalities.

The analysis and safety-oversight efforts by the airlines haven't uncovered any significant new icing-related hazards or resulted in operational changes. British regulators are expected to issue an update on the probe within a few days, though they don't appear ready to release new safety mandates or recommendations. The latest moves highlight how closely large segments of the global aviation industry are following the investigation, believed to be the first time ice contamination in fuel brought down a large, state-of-the-art jetliner with no apparent mechanical or computer malfunctions.

The FAA recently asked U.S. carriers that fly Boeing 777 aircraft to comb through their historical safety data to identify instances when engines were slow to rev up in response to pilot commands, or may have reduced thrust on their own, according to one person familiar with the investigation.

Unions, consumer groups demand better aircraft maintenance

Consumer groups and airline unions called on the federal government today to do a better job monitoring aircraft maintenance performed overseas as a way to prevent airline crashes in the future.

The calls came at a Washington conference that explored how to keep flying safe in an era when most major airlines, including US Airways, the dominant Philadelphia carrier, have collectively outsourced more than half of the maintenance of their aircraft to outside contractors in this country and abroad.

Speaking on a panel, Deborah Hersman, a member of the National Transportation Safety Board, noted that her independent agency can only recommend that the Federal Aviation Administration adopt tougher rules to prevent airline accidents. But often better procedures or practices aren't adopted by the FAA until after a serious mishap, she said.

"It does take a death toll before changes are put in place," she said.

The conference built on reports over the last three years by the U.S. Department of Transportation's inspector general and Consumers Union, publisher of Consumer Reports, that found large gaps between the standards major airlines use when they maintain their own planes and what's required of outside contractors both at home and abroad.

According to the DOT, nine major air carriers, including America West, which merged with US Airways in 2005, had increased the percentage of heavy maintenance outsourced to certified repair stations from 34 percent in 2003 to 67 percent in 2006.

The conference was sponsored by the Radnor-based Business Travel Coalition, representing corporate travel managers, and the Teamsters union, whose members include mechanics at major airlines.

There have been no multi-fatality accidents for major U.S. airlines since 2001.

But 21 people were killed in 2003 when an Air Midwest commuter plane, operating as a US Airways Express carrier, crashed near Charlotte, N.C. The safety board later found that improper maintenance work done on the plane by an outside contractor was one of the causes of the crash, and it faulted Air Midwest and the FAA for failing in their oversight duties.

William McGee, a Consumer Reports contributing editor who authored the magazine's report, told the conference with over 200 participants, and more online, that overseas repair facilities are subject to less oversight than the airlines' in-house shops.

Among other problems McGee said he found in a nine-month investigation is that repairs at foreign shops don't have to be done by a licensed mechanic, as long as one with a license signs off that the work was done properly. Also, employees of most overseas shops aren't subject to drug and alcohol screening or security background checks as they are in this country, he said.

"We're truly in uncharted skies with what's happening now," McGee said.

Rep. James J. Oberstar (D., Minn.), chairman of the House Transportation and Infrastructure Committee, in a videotaped address to the group, said legislation the House passed last year to reauthorize the FAA would require the agency to raise the requirements on overseas facilities. The legislation is still pending in the Senate.

Sen. Claire McCaskill (D., Mo.), a member of the Commerce and Homeland Security committees, in another videotaped address, said she found it "kind of weird" that passengers can't carry shampoo on an airline flight yet there are lax security standards for overseas repair shops.

Sarah MacLeod, executive director of the Aeronautical Repair Station Association, the only industry representative among the panelists, said most of her members are small businesses. They need help from the major airlines that hire them to develop better training manuals and educate mechanics so they can do a better job, she said. But, she said: "Contract maintenance is here to stay."

Kevin P. Mitchell, chairman of the Business Travel Coalition, said he has set up another group he named the Coalition to Legislate Aircraft Maintenance Outsourcing Reform, or CLAMOR, to press Congress to adopt more stringent rules on outside contractors.

Mitchell said he invited FAA and airline officials to participate in the conference but they declined.

Oil cap wasn't on skydiving plane that crashed, killing five...

A factual report is out on the plane crash near a Flathead Valley skydiving venue last May that killed all five people aboard.

The National Transportation Safety Board says there were no mechanical or structural problems with the Cessna airplane.

However, it says an oil cap wasn't on the oil filling tube.

The report says there was no oil on the windshield.

The plane had just taken off from Skydive Lost Prairie and was returning to the runway when it crashed.

The NTSB investigation says the pilot did not have any drugs or alcohol in his system.

The crash also killed two instructors and an engaged couple who were going to go skydiving.

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Engine Separates During Departure

Feature story from last week – Update: including photographs

B747 Missing Nr1E Oct04.pdf

Boeing 747-100. Substantial damage. No injuries.

The report said that an anti-seize compound that is not authorized for use because it causes corrosion had been used on second-stage turbine bolts during maintenance of the engine and no preservations procedures had been performed before the engine subsequently was placed in storage for five years. Only a visual inspection of the high-pressure turbine and turbine exhaust case had been performed before the components were installed on the no.1 engine of the accident aircraft 94 operation hours before the separation occurred.

Report Says Human Error Caused Cruise Ship To Tilt

An ambulance transports injured passengers to a hospital from the port at Cape Canaveral, Fla. after an incident aboard the cruise ship Crown Princess.

The National Transportation Safety Board confirmed human error is to blame in a cruise ship accident that injured hundreds of passengers in July 2006.

The NTSB said the Crown Princess "experienced a severe roll during a turn" after leaving Port Canaveral.

The report said an instrument panel showed the ship was making a sharp turn, so the second officer disengaged the autopilot and took manual control of the vessel's steering system.

While traveling at full speed, he turned the wheel back and forth several times, eventually causing the vessel to tilt sharply.

The sudden roll caused people to be thrown around, or struck by unsecured objects.

The roll caused 14 serious injuries and nearly 300 minor injuries to passengers and crew members

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Report: Pilot Failed To Compensate For G-Forces In Blue Angels Mishap

Blackout Led To Accident At MCAS Beaufort

The US Navy's final report on the April 2007 loss of an F/A-18 pilot during a performance of the Blue Angels aerial demonstration team concludes the pilot failed to properly tense his muscles to counter the g-forces from a high-speed turn.

Blue Angel #6, piloted by Lt. Cmdr. Kevin Davis impacted a residential area near Marine Corps Air Station Beaufort in South Carolina near the end of an April 21, 2007 performance. Davis' plane pulled an extremely tight turn to rejoin the formation just before the mishap.

"In his final turn to attempt to rendezvous with the other Blues, he put a very fast, high-G turn on the aircraft. A real aggressive turn," Capt. Jack Hanzlik, a Navy spokesman and former aviator, told the Associated Press. The turn subjected Davis to six Gs of force.

The Blue Angels fly without the benefit of G-suits, which prevent pilots from blacking out during such maneuvers by inflating air bladders against the lower body to force blood upward to the head and heart. Instead, Blues are taught to handle the forces by tensing their abdominal and leg muscles.

It isn't bravado that keeps the Blue Angels from wearing G-suits, but rather the center-mounted control stick of the F/A-18.

Inflation of a suit's air bladders could cause the pilot to bump the stick, putting the plane into an uncommanded attitude during precise maneuvering. Members of the USAF Thunderbirds demonstration team do wear g-suits, as the side-mounted controller of the F-16 provides room for the bladders to inflate.

"Kevin had performed these maneuvers in training and in the fleet. He had done them in similar situations and he had a history of performing them well without any problems," Hanzlik said... but, apparently, not in the accident. Due to the high forces, Davis likely suffered a temporary loss of blood flow to his brain, leading to tunnel vision and disorientation.

In a heartbreaking statement, the report also notes Davis did try to recover, "and in the last few seconds he may have been aware of his low altitude and was attempting to save the aircraft," said the report by Marine Lt. Col. Javier J. Ball.

The investigation also found the Blues violated Navy policy by allowing the waiver allowing the pilots to fly without g-suits to expire in 2005 -- a lapse Ball called "a lack of careful attention to operating requirements." The waiver was reinstated following Davis' accident.

Concerns arise over regional airlines

A flag and bows are left with flowers on a fence bordering the observation area at the Charlotte Douglas International Airport at the scene of a US Airways Express crash in Charlotte on Jan. 9, 2003. Officials said 21 people died in the Jan. 8 crash of the Beech 1900D turboprop commuter plane.

On Langford's third flight of the day, his regional jet carrying 71 passengers skidded off a snowy runway in Cleveland, severely damaging the aircraft and injuring three people. He was not at the "best of his game" because of lack of sleep, he told investigators with the National Transportation Safety Board (NTSB).

Capt. James Langford had slept for less than one hour the night before reporting to work as a Delta Connection pilot last Feb. 18.

Rapidly growing regional airlines such as Shuttle America, which operated the flight Langford piloted under a contract for Delta Air Lines, have suffered a growing share of crashes in recent years. That's prompted several top aviation experts and federal officials to call for upgraded safety programs.

Regional carriers had four fatal crashes that killed 85 people over the past five years, according to federal data. Over the same period, one person died in a major airline crash.

"This is where the accidents are occurring," said NTSB Vice Chairman Robert Sumwalt in a speech he delivered on the subject.

The safety board has not issued its conclusions on the Shuttle America accident, but hundreds of pages of public records on that case and several other accidents and incidents in recent years raise questions about the level of safety at the nation's regional carriers.

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Regionals were slow to adopt safety programs introduced at major airlines and in recent years, many have lowered pilot hiring standards because turnover was so high, according to NTSB case files and private safety experts.

Officials at the regional airlines insist that they run safe operations and that the number of accidents they have had compared with large carriers is a statistical fluke. Roger Cohen, president of the Regional Airline Association, said his members fly under the same regulations as large carriers and have spent millions improving safety in recent years.

"It's safer to fly an airplane than it is to take a shower," said Jonathan Ornstein, chairman and CEO of Mesa Air Group, which operates regional airlines. "No fatalities last year. That speaks for itself."

Regional airlines with lesser-known names such as Mesa, Shuttle America and Atlantic Southeast account for nearly half of all airline flights and carry more than 20% of passengers.

Despite having more fatal accidents than major airlines, the odds of dying on a regional carrier are remote. Since 2003, there have been four fatal accidents out of more than 24 million regional airline flights. There were no fatal accidents on regionals in the five years prior to 2003.

"We are seeing trends now that should give us cause for concern," former NTSB Chairman Jim Hall said. "You see a lowering of standards, an increased accident rate, an increase in the number of incidents."

Regional airline safety has arisen in recent NTSB cases:

•Pilot fatigue contributed to the crash of a Corporate Airlines plane trying to land at Kirksville, Mo., on Oct. 19, 2004. The flight, a connection for American Airlines, crashed into trees, killing 13 of the 15 people aboard.

•A Pinnacle Airlines crew flying for Northwest Airlink crashed a jet in Missouri on Oct. 14, 2004, after the craft reached an unauthorized high altitude. In its final report, the NTSB said it had seen a troubling pattern of pilot sloppiness in recent accidents that involved regional carriers. Both pilots on the Pinnacle jet died, but no passengers were aboard.

•Investigators looking into the case of a Pinnacle jet that slid off a snowy runway April 12 in Traverse City, Mich., found that about a pilot a day was quitting the airline, or about one-third of its pilot workforce each year. A Federal Aviation Administration inspector told investigators that Pinnacle Airlines had two "high-risk" concerns: high pilot turnover and too few employees, NTSB documents said. No one was injured, but the jet suffered substantial damage.

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Tighter rules

In December 1994, after the third fatal crash of the year involving what were then known as "commuter airlines," Transportation Secretary Federico Peña announced that the government would step up regulation of carriers using propeller planes to ferry passengers from small communities to large airports.

At the time, pilots on commuter airlines could work longer hours and had fewer training requirements than their counterparts at major airlines. The smaller carriers also got less scrutiny from federal regulators.

A study by the NTSB found accident rates on commuter flights were twice as high as larger airlines.

The rules, which went into effect March 20, 1997, ushered in a period of unprecedented safety at regional airlines. From that date until Jan. 8, 2003, not a single passenger died on a regional airline flight.

During that time, the regional airline industry began to change dramatically. Prop planes were retired for regional jets, which flew faster and longer distances. As major carriers teetered into bankruptcy after the Sept. 11 terrorist attacks, regional carriers offered a low-cost alternative for transporting people. Growth in the industry exploded.

"These are not your grandfather's or even your father's regional airlines," says Roger Cohen, president of the Regional Airline Association. "The airplanes, the people, the procedures are dramatically different than that old puddle-jumper perception."

All but one of the large regional carriers has in recent years adopted a program begun over a decade ago at major carriers to get pilots to report safety problems.

Still, regional carriers generally lag major airlines in adopting sophisticated data analysis of flight risks, according to airlines and federal data.

"They are not identifying the risks of their operation as much as other larger operations would do," says Michael Barr, who teaches aviation safety at the University of Southern California.

Fatigue policies

A key area of the investigation into last year's Shuttle America crash has focused on airline policies.

One month before the accident, Langford received a written reprimand for the high number of absences he had taken over the previous year, according to NTSB files. He could be fired if he missed work again, the letter said.

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In addition to sick time, his absences included a day he missed because he had not slept well during 11 hours off duty between trips, he told investigators. "You are not fatigued," Langford said an airline dispatcher told him when he tried to explain the absence.

The NTSB considers fatigue one of its top safety issues and pilots who don't feel rested are supposed to be able to excuse themselves from work. Langford said later that he had been suffering from insomnia but was afraid he would be fired if he tried to miss work because of fatigue.

Langford has declined to comment on the crash, and Shuttle America won't comment on the ongoing investigation. An airline report on the accident filed with the NTSB said its policy is to provide pilots with time to rest if they are tired.

EMPLOYERS IN COURT

Company Fined for Not Verifying Training

Here's an actual case from the Occupational Safety Health and Review Commission that demonstrates some of the points about training.

The case involves a crane operator and a less experienced rigger who were moving a stack of concrete pilings, each weighing approximately 6,000 pounds. Because his view was obstructed, the crane operator simply placed the pilings where the inexperienced rigger told him they should go. After he drove away, all of the pilings fell. When he left his crane to investigate, he saw that the rigger had been crushed to death. After an inspection, OSHA fined the company for failing to implement adequate training and work rules to ensure that the workers knew how to perform their jobs safely.

The company had given each new worker a safety manual and on-the-job safety training. It also held weekly tool box safety meetings and thought it was doing enough to make sure workers understood how to perform their job safely. But it never tested them on what they knew. During the five months that the inexperienced rigger had been on the job, he received at least one written reprimand for putting too many pilings on a stack and creating the risk that they would fall. The company also wrote him up for safety lapses on at least two other occasions. But it never gave him additional training because nobody knew that he didn't know how to do his job properly -- they just thought he was slacking off. If someone had taken the time to verify whether the rigger understood the correct way to stack concrete pilings, the accident could have been avoided.

***Secretary of Labor v. Gary Concrete Products, Inc.*, OSHRC Docket No. 86-1087 (May 16, 1991).**

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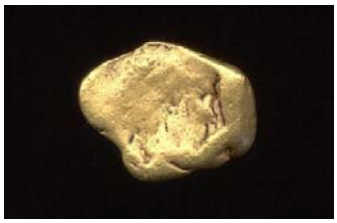
Midnight Shift Nugget



Diet, Exercise, Sleep! The Path to a Healthier Lifestyle

For years your doctor, your mom and your friend who goes to the gym multiple times a week have probably been telling you to eat better and exercise more. It's all you hear on television, in the newspapers and on talk radio. New doctors and dieticians usher in new diets, new fads, and so you've made some lifestyle changes – cutting back on your fat and sweets intake, and doing some cardiovascular exercise a few days a week. Despite all this, you still feel burned out, can't drop those extra pounds, and don't have the energy to greet each day with enthusiasm. What are you missing?

The third piece of the puzzle: sleep

Though the exact mechanisms of how sleep works, how sleep rejuvenates the body and mind is still mysterious, one thing sleep specialists and scientists do know is that adequate sleep is necessary for healthy functioning. Research shows that all mammals need sleep, and that sleep regulates mood and is related to learning and memory functions. Not only will getting your zzzs help you perform on a test, learn a new skill or help you stay on task, but it may also be a critical factor in your health, weight and energy level.

Sleep problems and obesity: interacting epidemics

An estimated 18 million Americans have sleep apnea, a sleep-related breathing disorder that leads individuals to repeatedly stop breathing during sleep. Not only does sleep apnea seriously affect one's quality of sleep, but it can also lead to health risks such as stroke, heart attack, congestive heart failure and excessive daytime sleepiness. Sleep apnea is often associated with people who are overweight – weight gain leads to compromised respiratory function when an individual's trunk and neck area increase from weight gain. These interacting problems of weight gain and sleep apnea make it difficult to help oneself off the slippery slope of health problems. From a behavioral perspective, those suffering from sleep apnea may be less motivated to diet or exercise – daytime sleepiness lowers their energy levels and makes it difficult to commit to an exercise and/or diet program which would improve both their weight and sleep apnea.

Unfortunately, losing a significant amount of weight in a healthy manner can be very difficult, so Richard Simon, MD recommends treating sleep apnea first: "Unfortunately, we do not have great treatments for obesity that have long term success rates of much greater than 5–10%," Simon says. "Thus I prefer to start therapy with [continue positive airway pressure] (70% success rate) and then add exercise (probably less than a 50% success rate).

People feel restored when they are effectively treated for sleep apnea and are more willing to start exercising then."

Sleep deprivation may also inhibit one's ability to lose weight – even while exercising and eating well! A 1999 study at the University of Chicago showed that restricting sleep to just 4 hours per night for a week brought healthy young adults to the point that some had the glucose and insulin characteristics of diabetics. Such sleep restriction may have been a bit extreme, but it is also not altogether uncommon in our society and is a pattern deemed the "royal route to obesity" by Eve Van Cauter, PhD, who conducted the Chicago study.

Getting in shape: how sleep and exercise do a body good

Though research shows that exercise is certainly good for one's body and health, properly timing exercise is necessary to maximize the beneficial effects. For example, a good workout can make you more alert, speed up your metabolism and energize you for the day ahead, but exercise right before bedtime can lead to a poor night's sleep. All the jumping jacks in the world won't make up for a night of tossing and turning! Sleep experts recommend exercising at least three hours before bedtime, and the best time is usually late afternoon. Exercising at this time is beneficial because body temperature is related to sleep. Body temperatures rise during exercise and take as long as 6 hours to begin to drop. Because cooler body temperatures are associated with sleep onset, it's important to allow the body time to cool off before sleep.

Diet and sleep: a healthy helping of the right stuff

Are you someone who needs a fresh cup of java to coax you out of bed in the morning? Or perhaps you prefer an afternoon jolt from the cola vending machine? Or maybe you're more the candy bar type – in any case, you're not alone. In a 24/7 culture, cups of coffee, cans of soda and candy bars are staples of everyday consumers. For some, the day can't begin without a cup of Starbucks and for many students today no study break is complete without a can of Coke. How did caffeine become the drug (and food) of choice?

In fact, lack of sleep creates a vicious cycle – the more tired you are, the more caffeine you'll consume to stay awake during the day; but the more caffeine you consume, the harder it'll be to fall asleep at night. Not only are foods and drinks high in caffeine likely to keep you up at night, but they're also usually replete with sugar or artificial sugar and not much else. When a healthy snack such as a carrot or granola bar is replaced with a can of Mountain Dew, you're at higher risk for putting on weight and it becomes harder to sustain energy for a longer period of time.

For those individuals who suffer from gastroesophageal reflux (GERD), commonly known as acid reflux, diet and sleep go hand-in-hand. Those individuals with GERD often suffer from nighttime heartburn, and according to NSF's 2001 Sleep in America poll, adults in America who experience nighttime heartburn are more likely to report having symptoms of sleep problems/disorders such as insomnia, sleep apnea, daytime sleepiness and restless legs syndrome than those who don't have nighttime heartburn.

Food is also related to sleep by appetite and metabolism. Research by Dr. Van Cauter shows that people who don't get enough sleep are more likely to have bigger appetites due to the fact that their leptin levels (leptin is an appetite regulating hormone) fall, promoting appetite increase. This link between appetite and sleep provides further evidence that sleep and obesity are linked. To top it off, the psychological manifestations of fatigue, sleep and hunger are similar. Thus, when you're feeling sleepy you might feel like you need to head for the fridge instead of bed.

What it all means: how diet, sleep and exercise affect you

By now you probably realize that health is complex – if one part of the body system suffers, you're likely to see consequences in other areas of your life. Though diet and exercise are critical components of healthy lifestyles, it's also important to remember that sleep is inherently linked with how we eat (and how much), how we exercise (and whether or not we lose weight), and how we function on a daily basis. Getting the proper amount of sleep each night is necessary to face the world with your best foot forward. Sleep will help you on the road to good fitness, good eating and good health.

WAKE-UP CALL

For Drowsy Drivers

As highways in North America and around the world become more crowded and dangerous, consumers are looking to electronics for the future of driver safety.

Now comes news of a system that monitors where drivers are looking as they drive. Current systems rely on a camera that senses head movement, but the new one looks at the positions of the driver's eyelids as well.

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If a driver is dozing behind the wheel and the system determines that a crash is possible, the safety system can make a sound, flash a light or jerk the seatbelt to awaken the driver. If a crash seems likely, the brakes will apply in pulses to slow the car and wake the sleeper. If a crash is unavoidable, the system will apply the brakes and engage seatbelts.

Toyota and Nissan are both working on such systems, although neither has said when they expect to have one in production.

DROWSY DRIVING VICTIM

Candice Ann

Person

July 8, 1970 -
April 14, 1989

It was April 14, 1989...a Friday night. My sister, Candi was driving home. She had been up most of the night studying for college exams and had worked a long shift at a grocery store. It was around 5:30PM and it was a perfectly warm Spring day. She fell asleep while driving her truck. She was on a 2 lane road and crossed over the center line crashing head-on with another vehicle. Candi was killed instantly at the age of 18... just 3 months shy of turning 19. Ironically, the car she crashed into was filled with family members- our cousin Carrie, her mother, and my cousin Curt's girlfriend Sarah. They were all on their way to watch Curt play in a high school baseball game. Curt was on a bus with the rest of the team when they came upon the accident. He instantly recognized his mom's car, but didn't know that Candi had died in the other vehicle. Thankfully no one else died, but they did have serious inuries.

FROM THE VIDEO FILES

Caitlyn MacKenzie: From Tragedy to Life-Saving Lessons

Caitlyn MacKenzie

In June of 2007, 12-year-old Caitlyn MacKenzie was playing in the swimming pool at the home of a family friend. She got out of the pool, grabbed a towel and went to reposition the outdoor lamp. It was the last thing she ever did. By the time she reached the hospital, the low grade electric shock Caitlyn received had killed her.

Ironically, Caitlyn wanted to be a teacher when she grew up. Unfortunately, the lessons others will learn from her will be from her death. To spare other families the pain of losing a child, Caitlyn's family agreed to share their story in a public service awareness campaign of the Energy Education Council that promotes the importance of electrical safety, entitled The TLC Campaign (Teach Learn Care).

To drive home the importance of electrical safety, show your workers this video of Caitlyn's family as they discuss the death of their daughter.

ELECTRICAL SAFETY

10 Quick Tips

1. **Never use any appliance or machinery while touching anything wet.**
2. **Unplug machinery and appliances before cleaning, inspecting, repairing, or removing something from them.**
3. **Keep electrical equipment, machinery, and work areas clean. Oil, dust, waste, and water can be fire hazards around electricity.**
4. **Keep access to panels and junction boxes clear.**
5. **Move flammable materials away from electric heat sources and lights.**
6. **Know the location of fuses and circuit breakers.**
7. **If you are not trained to work in high-voltage areas, do not enter them, even in an emergency.**
8. **Make sure all electrical equipment is properly grounded.**

9. **Plug power tools into grounded outlets installed with Grounded Fault Circuit Interrupters.**
10. **Use C-rated extinguishers for electrical fires. Never use water.**