

Aviation Human Factors Industry News

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From the sands of Kitty Hawk, the tradition lives on.

Hello all,

To subscribe send an email to: rhughes@humanfactorsedu.com

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Stockport air disaster: The holiday flight that ended in catastrophe

Fifty years ago a plane returning from Majorca plunged to the ground in Stockport, Greater Manchester, killing 72 people. Here survivors and eyewitnesses recall what remains one of Britain's worst, but lesser-known, air disasters.

The British Midland flight was full of returning holiday makers bound for Manchester Airport when, on the morning of 4 June 1967, it suddenly lost power and began to fall.

Terrified residents watched the aircraft hurtling across rooftops, so low they could see people inside, banging on the windows.

Moments later it crashed on a small patch of open ground at Hopes Carr, on the edge of the town centre, striking a garage building and lighting up in a ball of fire.

Of its 84 passengers and crew, 72 died and the remaining 12 were seriously injured. They included a stewardess and the captain.

"We were met with a scene of sheer horror," said retired Stockport firefighter Mike Phillips, who was 21 at the time.

"There were bodies all over the place, and body parts. Members of the public were just screaming for us to do something."

The aircraft had narrowly avoided hitting rows of nearby houses, averting an even greater disaster. Incredibly, no-one on the ground was hurt.



"There was this thick black smoke," Mr Phillips said. "Hundreds of people arrived. I always say the real heroes are the civilians who got stuck in and were a real help to us.

"I saw the body of a young boy, and he just looked like there was nothing wrong with him. That stayed with me."

An air accident investigation found the cause of the crash to be "fuel starvation" due to a fault in the fuel lines and the Canadair C-4 Argonaut propeller aircraft's [poor warning system](#).

It is still considered one of the worst air disasters in British aviation history, alongside Lockerbie in 1988 and Staines 16 years earlier.

Captain Harry Marlow was not blamed, and there were strong indications he made concerted efforts to steer the aircraft away from people's homes.

The former RAF display pilot suffered amnesia and never flew again. He died in 2009.

Survivor Harold Wood was 15 at the time of the crash.

Remembering the flight's final moments, he said: "We were banking quite steeply and I could see a gentleman coming out of a shop and getting into his little Anglia van and looking up at the aircraft. We were that low that I could really at that time tell you the registration.

"I thought to myself at this point 'we aren't going to make this'.

"And at this point this is where I can't remember a thing about the actual flight other than actually waking up in the aircraft itself, surrounded by flames and my brother next to me.

"I saw a hole in the side of the aircraft so I thought, right, let's get out of here."

Mr Wood's brother, Bill, also survived but his father did not.

Vivienne Thornber, who was 19 and traveling with friend, Susan Howarth, remembers the plane plunging "as low as the bedroom windows".

The pair later escaped the smoldering wreckage with the help of policemen.

She said: "There was [no mention of 'fasten your seatbelts'](#) or anything like that. We were not informed that there was anything wrong and we hadn't realized until we knew that we were too low to go anywhere.

"I woke up after the impact and saw the cabin door swinging backwards and forwards.

"There were flames and I thought 'come on Vivienne, do something or else you are going to get burned alive here.'"

Charles Hunt, now aged 95, was a police inspector placed in charge of a makeshift mortuary. He had the upsetting task of dealing with the dead.

"Casualties had been brought in," he said. "They were all dead of course. There were 32 in there.

"The only two that could be identified were a little girl of about six, with hardly a mark on her body, and the co-pilot had a head injury. The rest were all burned beyond recognition.

"It was upsetting to see all the passengers' belongings. They had just been on holiday, and this was the end of it."

[A service will be held on Sunday at the site of the crash](#), where two memorials stand in tribute to the victims and the rescuers.

An hour-long documentary has also been made to mark 50 years since the disaster. Six Miles from Home will be shown at the Stockport Plaza on 10 June, from 19:30 BST.

Aviation expert Ian Barrie, who produced the film with Roger Boden, said: "I was four years old at the time, and Roger was a boy who cycled to the scene on his bike.

"While we all grew up knowing about the plane crash, [it seems to often be forgotten](#).

"What emerged very quickly was what a [human story](#) it was. People were sitting in their kitchens making a slice of toast, there was a huge boom, they looked outside and it was an air liner.

"It's just hard to comprehend."

Though the flight ended in such horror, some survivors said one thing that impressed them was the response from the people of Stockport.

Ms Thornber said the messages she received while battling severe injuries were "wonderful and very, very moving".

"When I was in hospital there were a lot of letters written to me most of whom I have to say I've no idea who they were, [just normal people wishing me all the best](#).

"The kind people at Stockport Infirmary forwarded more letters. It was just marvelous that people would even think of doing that for somebody they'd never even met."

National Safety Month 2017: Falls, Fatigue, Ergonomics, and More

National Safety Month is focused [on reducing the leading causes of injuries and deaths at work, on the road, and in Americans' homes and communities.](#)

National Safety Month 2017 is about to begin. Marked in June by the National Safety Council and its member companies, the month has several themes each year. National Safety Month is focused on reducing the leading causes of injuries and deaths at work, on the road, and in Americans' homes and communities.



NSC [offers downloadable resources](#) highlighting the month's lineup of safety topics:

- Week 1: Stand Up to Falls
- Week 2: Recharge to Be In Charge (Focusing on Fatigue)
- Week 3: Prepare for Active Shooters
- Week 4: Don't Just Sit There (Focusing on Ergonomics)

For more information and resources, visit this [page](#).

NSC: Preventable Deaths Increase during Summer Months

Americans have been encouraged to make safety resolutions and break bad habits.

An NSC news release shows that [July and August](#) record the highest number of preventable deaths. 117,041 people died from these incidents in July and August from 2011 to 2015 as a result of poisonings, car crashes, falls, drowning, choking and fires. “Someone dies [every 4 minutes](#) because of something we know how to prevent,” said Deborah A.P. Hersman, president and CEO of the National Safety Council. “National Safety Month is the ideal time [to pause and take stock](#) of our own safety, because history tells us that the odds may not be in our favor during the summer months.”

146,571 people died from preventable deaths in 2015, a seven percent increase over 2014. The NSC has released the data on the first day of June, which is National Safety Month. A large part of the rise in preventable deaths, according to the NSC, is [the opioid crisis as well as the rise in motor vehicle deaths](#).



Can't Touch This !

Al “Blackie” Blackman, American Airlines

*JFK Aviation **Maintenance Technician***

Al “Blackie” Blackman is not only an accomplished AMT; he’s also a world record holder. At the age of 92, Blackman holds the record for “Longest Career as an Airline Mechanic” and is celebrating his 75th anniversary later this year as an American Airlines AMT, with no plans to retire. Blackman began his career in 1942 at sixteen years old with a company called American Export,



which was later purchased by American Airlines. Through his incredible career, Blackman has worked on over 50 different aircraft types, including helicopters during the Korean War. Even in his spare time, Blackman restores vintage aircraft for the Historical Aircraft Restoration Project.

Blackman looks at every day on the job as a new challenge. His beloved late wife of 57 years, Delores, would jokingly tell him “Go to work — play with your friends,” because he enjoyed his job and coworkers so much.

Learjet Fatal Occurred in a Circling Approach

The Learjet 35 involved in the fatal accident near Teterboro Airport (TEB), New Jersey, on May 15 was “less than a mile” from Runway 6 on the ILS approach when it crashed during the right turn for the circling approach to land on Runway 1, according to the National Transportation Safety Board's preliminary report.

“Aircraft typically start the right turn at the final approach fix for Runway 6, which is located 3.8 nm from the end of Runway 6,” TEB ATC told the Safety Board. The two pilots were killed on the Part 91 positioning flight from Philadelphia.



As the aircraft neared TEB in day VMC, New York Tracon cleared the flight for the ILS Runway 6 approach, circle to land Runway 1. At about nine miles from the airport, ATC instructed the crew to contact TEB tower, but the crew did not comply until four miles from the airport. The tower cleared the flight to land on Runway 1 and reported the TEB winds of 320 degrees at 16 knots, gusting to 32 knots. A TEB controller reported that he observed the airplane **bank hard to the right**, and he could see its belly with the wings almost perpendicular to the ground. The airplane then appeared to level out for just a second before the left wing dropped, showing the entire top of the airplane. Some witnesses described seeing the airplane’s wings **“wobbling”** before the left wing dropped and the airplane descended to the ground. The accident site was located on a 180-degree bearing about a half-mile from the threshold of Runway 1.

The Safety Board said the cockpit voice recorder was found to be operating at the time of the accident and a transcript will be produced.

<https://app.nts.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20170515X80533&AKey=1&RType=Prelim&IType=FA>

Failure to Follow Procedures

The U.S. Department of Transportation's Federal Aviation Administration (FAA) proposes a \$435,000 civil penalty against United Airlines for allegedly operating an aircraft that was not in an airworthy condition.



The FAA alleges that on June 9, 2014, United mechanics replaced a fuel pump pressure switch on a Boeing 787 in response to a problem that a flight crew had documented two days before. However, the airline **failed to perform a required inspection** of the work before returning the aircraft to service, the agency alleges.

United operated the aircraft on 23 domestic and international passenger flights before performing the required inspection on June 28, 2014, the FAA alleges. Two of those flights allegedly occurred after the FAA had notified United that it had not performed the inspection.

The FAA alleges the aircraft was not airworthy during all 23 of the flights.

“Maintaining the highest levels of safety depends on operators **closely following all applicable rules and regulations**,” said FAA Administrator Michael Huerta. “Failing to do so can create unsafe conditions.”

United has asked to meet with the FAA to discuss the case.

The truth behind the 10 deadliest plane crashes of all time



Next month will mark 232 years since the first ever fatal aviation accident took place when a type of hot air balloon crashed in a field in France killing its inventor Jean-François Pilâtre de Rozier as well as his passenger, Pierre Romain.

Since then there have been many more to have claimed scores of lives. Here, we count down the 10 deadliest plane crashes of all time.

It's worth noting at this point that 2017 is on its way to being one of the safest years in aviation history, with just 37 crashes and 117 fatalities so far, according to the Bureau of Aircraft Accident Archives.

10. American Airlines Flight 191

Date: May 25, 1979

Fatalities: 272

The DC-10 left Chicago O'Hare on the Friday afternoon of Memorial Day weekend only for its left engine to detach from its wing and fall off, rolling the plane in the air and sending it crashing to earth just a mile from the runway.

The plane “burst into a pillar of flame and smoke that could be seen up to eight miles away,” the Chicago Tribune reported at the time. All 271 people on board and two on the ground were killed in what remains America’s worst aviation disaster.

The crash was found to be the result of a [shortcut](#) taken by removing the plane’s engines for maintenance, cracking an aluminum component which held the engine to the wing.

9. Iranian Air Force Ilyushun Il-76

Date: February 19, 2003

Fatalities: 275

The official report into the military aircraft that crashed in the Sirach Mountains near Kerman in Iran found that [bad weather, including high winds and fog](#), brought the plane down, killing all on board, all members of the Revolutionary Guards. The Aviation Safety Network classifies the crash as a Controlled Flight into Terrain.

8. Iran Air Flight 655

Date: July 3, 1988

Fatalities: 290

A controversial incident during tense times in the Gulf, owing to the Iran-Iraq War, the Airbus A300, a civilian airline, was [shot down](#) by surface-to-air missiles fired from US military cruiser USS Vincennes, killing all on board.

The flight was in Iranian airspace, over Iranian territorial waters and on its usual flight path, yet, according to the US government, Vincennes mistook it for an F-14A Tomcat fighter plane. Crew on the American ship made 10 attempts to contact the Iran Air aircraft on military and civilian radio frequencies, with no response, before firing.

In 1996 the US government and Iran reached a settlement at the International Court of Justice, the former expressing “deep regret over the loss of lives”, but not admitting legal liability or formally apologizing. The US agreed to pay \$213,103.45 compensation per passenger, about £346,000 in today’s valuation.

7. Malaysia Airlines Flight 17

Date: July 17, 2014

Fatalities: 298

A similar incident took place over eastern Ukraine when a Malaysia Airlines Boeing 777-200 flying from Amsterdam to Kuala Lumpur was [shot down](#) near the Russian border, likely by pro-Russian forces in control of the region during the War in Donbass between separatist insurgents and the Ukrainian government.

All 298 on board died when the plane crashed into a field near Torez. Some airlines had already begun to avoid Ukrainian airspace owing to the Crimean crisis that began early in 2014, with the International Civil Aviation Organization warning of a risk to passenger jets in the area, but not all carriers had changed their routes.

In September 2016, Dutch prosecutors concluded that the missile used to shoot down the plane had been transported into eastern Ukraine from Russia, adding that the launch vehicle returned across the border a day after the crash. The conflict in the region is ongoing.

6. Saudi Arabian Airlines Flight 163

Date: August 19, 1980

Fatalities: 301

The death of all 301 passengers on board the Lockheed L-1011 on the runway at Riyadh is the world's deadliest aviation accident not to involve a crash or mid-flight break up. The flight took off from the Saudi capital airport en route to Jeddah, only to return to Riyadh minutes later for an emergency landing after a fire started in the cargo department.

However, when the plane landed, [instead of initiating an emergency evacuation](#), the pilot taxied the aircraft back towards the airport, stopping on the runway for nearly three minutes. It then took some 23 minutes to access the aircraft once the engines were stopped.

By the time the doors were opened all on board had died from smoke inhalation. The source of the fire is believed to have been two butane stoves in the cargo. An evacuation was never initiated.

5. Air India Flight 182

Date: June 23, 1985

Fatalities: 329

Deemed the deadliest terror attack involving a plane at the time, the Air India Boeing 747 crashed off the coast of Ireland en route from Toronto to Sahar International in India, after a [bomb placed in the cargo hold](#) by Sikh extremists Babbar Khalsa exploded over the Atlantic.

The passenger responsible is believed to be 'M Singh' who checked himself onto the flight - along with a suitcase - but did not board. A second bomb intended to go off in tandem on another flight exploded early in the terminal building at Narita Airport, Japan.

An investigation into the bombing of Flight 182 found numerous [failings in the security processes](#) in Canada that allowed the terrorist attack to be successful. A number of memorials commemorate those who died, in Canada and Ireland.

4. Turkish Airlines Flight 981

Date: March 3, 1974

Fatalities: 346

[A design flaw](#) on the Douglas DC-10 led an aircraft carrying 335 passengers and 11 crew to crash in the Ermenonville Forest north of Paris, after taking off from Orly Airport bound for London Heathrow, en route from Istanbul.

Around 10 minutes after the plane took off from Orly, the rear left cargo door blew off owing to a problem with how the hatches latched shut - [they could be forced shut by baggage handlers without the pins locking correctly](#) - causing an explosive decompression in the cabin and severing cables linking the flight deck with the aircraft's elevators, rudder and two engines.

The aircraft pitched sharply nose-down and began picking up speed as the pilots lost control, before it crashed into trees traveling at around 490mph. In the wake of the accident, the locking mechanism on the cargo doors was redesigned. The crash remains the deadliest single-plane crash with no survivors, the worst on French soil and the second worst in Europe.

3. Charkhi Dadri mid-air collision

Date: November 12, 1996

Fatalities: 349

The world's deadliest mid-air crash involved Saudia Flight 763 and Kazakhstan Airlines Flight 1907 over the city of Charkhi Dadri in northern India.

The Saudia-operated Boeing 747 was bound for Dhahran from Delhi while the Kazakhstan Airlines Ilyushin Il-76 was bound for Indira airport from Shymkent when they collided, killing 312 people on board the former and 37 on the latter.

The crash occurred after the Ilyushin aircraft was cleared to descend to 15,000 feet, **but then descended past that level to 14,500 feet** while the 747 was ascending in the opposite direction. By the time the air traffic controller could warn of the proximity between the two aircraft it was too late.

The tail of the Kazakhstan plane cut through the Saudia wing, causing the aircraft to go into a rapidly descending spiral, while the Ilyushin entered a gentler but still fast and uncontrolled descent.

The captain of a passing US Air Force aircraft saw the crash and described a "a large cloud lit up with an orange glow". **A number of factors** were found to have caused the crash, including the failure of the Kazakhstan Airlines pilot to follow the ATC instructions.

2. Japan Airlines Flight 123

Date: August 12, 1985

Fatalities: 520

The largest single aircraft accident in history was the crash of a Boeing 747 into Mount Takamagahara in central Japan. Just four survived when the aircraft spiraled out of control, its wing clipping a mountain ridge, before flipping and landing on its back, following an explosive decompression towards the rear of the plane, [the result of a faulty repair job seven years earlier](#).

Pilots were able to keep the plane in the air for 32 minutes after the mechanical failure - a time that has not been matched repeating the scenario in flight simulators since - before crashing into a mountain.

Today, there is a shrine on the mountain dedicated to the crash, as well as a museum opened by the airlines that includes last letters and notes written by passengers to loved ones, [to which all staff must visit](#).

Though four passengers were able to survive, all female and sat in the middle of rows towards the rear of the aircraft, some concluded that more could have been saved had the wreckage been reached quicker by rescuers, and the offer of assistance from a nearby US base been accepted.

A month after the crash a Japan Airlines maintenance official [committed suicide](#), leaving a note, "I am atoning with my death".

1. Tenerife Airport Disaster

Date: March 27, 1977

Fatalities: 583

"The magnitude of the accident speaks for itself, but what makes it particularly unforgettable is the [startling set of ironies and coincidences](#) that preceded it," wrote author and pilot Patrick Smith of the accident that took place at Tenerife North Airport (formerly Los Rodeos) 40 years ago, when two Boeing 747s, one belonging to KLM, the other to Pan Am, collided on a foggy runway.

Neither of the two aircraft were supposed to be at Los Rodeos, both having been diverted away from Las Palmas on the nearby island of Gran Canaria, after it transpired that Canary Island separatists planted a bomb in the airport flower shop.

The collision occurred when the KLM aircraft attempted to take-off **without clearance** while the Pan Am aircraft was still taxiing along the same runway, having missed its turning to leave.

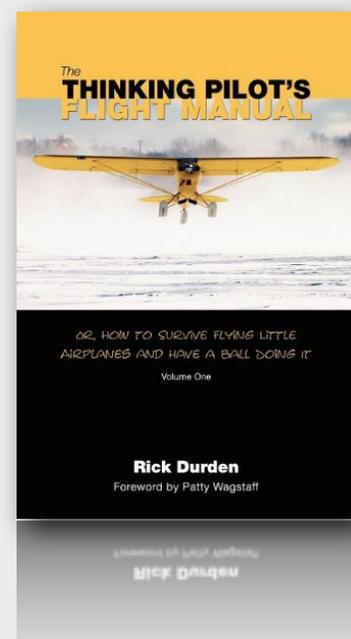
As the KLM 747 emerges from dense fog, having begun an errant take-off, owing to **poor communication and confusion over radio contact**, the pilot of the Pan Am was recorded as saying “There he is! Look at him! Goddamn, that son of a bitch is coming!”

The KLM attempted to leapfrog the Pan Am but couldn't and clipped the mid-section of the latter with its belly. There were no survivors on the KLM flight while 61 of the 396 on the Pan Am survived.

<http://www.telegraph.co.uk/travel/comment/tenerife-airport-disaster/>

The Thinking Pilot's Flight Manual: Or, How to Survive Flying Little Airplanes and Have a Ball Doing It

In a provocative and sometimes controversial style, this guide starts where standard-issue flight training manuals leave off. The **Thinking Pilot** guides you deeply into topics that weren't taught in flight training—everything from how to really do a preflight, through keeping your passengers happy, scud running, precautionary landings, and how to survive a crash. It includes a detailed introduction to flying floats, skis, aerobatics, and classic airplanes; probes of aviation's dirty little secrets, explodes myths, and presents the best, most succinct guide to flying tailwheel airplanes ever written.



Rick Durden was once described as aviation's Renaissance Man. He is an Airline Transport-rated pilot with experience in some 200 types of airplanes, a practicing aviation attorney who has been involved in hundreds of aircraft accident cases, writer, aviation magazine editor, safety counselor, flight instructor, volunteer pilot in remote areas of the U.S. and Central America, and has been the executive director of a nonprofit conservation organization making use of aircraft and volunteer pilots throughout much of North America.

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AOPA's ASI Launches Educational Podcast Series

AOPA's Air Safety Institute has introduced a [monthly podcast series](#) named "There I Was..." The podcasts are aimed at educating pilots through discussions with a variety of pilots talking about [unexpected scenarios and how they survived them](#).



"There I Was..." is hosted by ASI's executive director Richard McSpadden, a former commander/flight leader of the USAF Thunderbirds, and co-host Kristen Bodnar, ASI's lead project manager and private pilot. Each 30-minute podcast segment will feature a pilot, known or unknown, some with a wealth of experience and others not so experienced, who [will share a story](#) of a challenging flight scenario and what skills they used to get out of that scenario. The presentation is very informal, much like discussions we all have with friends at the airport.

The first segment features aerobatic champion and air show performer Patty Wagstaff who recalls a flight in Alaska many years ago in which she encountered unexpected weather while flying with a non-pilot friend in a Cessna 185. Wagstaff explains the situation in which she was unexpectedly forced into IMC and how quick thinking, good planning and a bit of luck helped her out what could have been a bad situation.

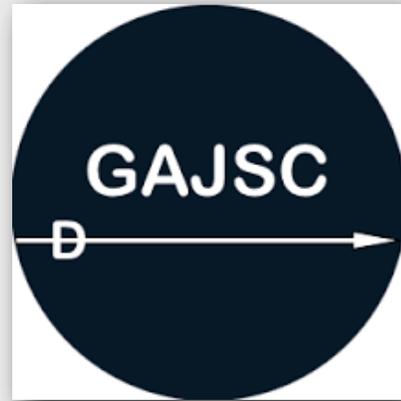
Wagstaff, Bodnar and McSpadden then [analyzed the factors that contributed](#) to the successful outcome of the scenario, which could just as well have been fatal if it were not for the decisions Wagstaff made before and during the flight. You can listen to the discussion by clicking this link.

<http://www.flyingmag.com/aopas-asi-launches-educational-podcast-series>

June's GAJSC Safety Topic

Each month the General Aviation Joint Safety Committee (GAJSC) Loss of Control (LOC) Work Group selects a safety topic. For the month of June 2017, the topic is "[The Human Startle Response and Managing Unexpected Events](#)".

The FAAS team is on the committee and fully supports every safety initiative. We need your help in spreading this message:



One aspect of CRM addresses management of unexpected events. Humans are subject to a "[startle response](#)" when they are faced with unexpected emergency situations and may delay action or initiate inappropriate action in response to the emergency. Training and preparation can reduce startle response time and promote more effective and timely response to emergencies.

Managing Unexpected Events

- * Fatal general aviation accidents often result from inappropriate responses to unexpected events.
- * Unexpected events which occur close to the ground require rapid appropriate action.
- * Loss of aircraft control is a common factor in accidents that would have been survivable if control had been maintained throughout the emergency.
- * Pilots and CFI's should train and plan for emergencies by reviewing and practicing "what if" scenarios.
- * Vocalizing takeoff, approach and landing expectations including: aircraft configuration, airspeed, altitude, route and emergency options can help a pilot be prepared for the unexpected.

Aviation Risk Management Handbook (FAA-H-8083-2), Chapters 5.
http://www.faa.gov/regulations_policies/handbooks_manuals/aviation/media/risk_management_hb_change_1.pdf

Be more awake by day, sleep better at night

No one is immune to the occasional bout of low energy and weariness. But timed right, small changes in your routine can give you a lift during the day and improve your sleep.

See your doctor if you have other symptoms — such as unexplained weight gain or loss, fever, shortness of breath, morning headaches, or difficulty concentrating — or you recently started a new medication. Otherwise, give these strategies a try for a month to see whether your energy level reboots.



Morning

The brain makes melatonin, the hormone that causes sleepiness, when it's dark.

Morning light helps stop the production of melatonin, says Shelby F. Harris, director of the Behavioral Sleep Medicine Program at Montefiore Medical Center in New York.

Upon awakening, open the curtains or shades, sit by a window while you eat breakfast, or take a morning walk. Continue to expose yourself to light during the day to keep your body's sleep-wake cycle synchronized.

Even mild dehydration can zap energy, memory, and attention, according to a 2016 study published in the American Journal of Clinical Nutrition.

Older adults can have a tougher time staying hydrated, in part because the mechanism that triggers thirst might become less efficient with age.

To compensate, make it a point [to drink at regular intervals throughout the day](#), beginning in the morning.

Coffee and tea count toward your hydration (they have only a mild diuretic effect, if any), as do foods with a high water content, such as soup and most fruits and vegetables.

Afternoon

Get moving. It seems counterintuitive, but [physical activity](#) is a powerful antidote for fatigue.

And it doesn't have to be strenuous: In a small University of Georgia study, couch potatoes who engaged in a 20-minute, low-intensity aerobic exercise routine three times per week for six weeks reduced their fatigue level by 65 percent; those who engaged in moderate-intensity exercise lowered it by 49 percent.

At this point, stop sipping coffee and tea. Thanks to their caffeine, both are great pick-me-ups, but it's a good idea to [limit the stimulant to 400 milligrams per day \(two to four 8-ounce cups of coffee\)](#) and taper off by late afternoon. Caffeine can disrupt sleep when it's consumed even six hours before bedtime.

Evening

[Power down](#). Dim the lights, switch off the TV, and put away smartphones, tablets, and computers at least an hour before bedtime. This will trigger your brain to start producing melatonin.

Also, make over your bedtime habits. To get the seven to nine hours of slumber you need to restore body and mind, improve your sleep hygiene. Keep your bedroom dark, use your bed only for sleep (no pets allowed), and stick with a regular sleep schedule.

Address your stress. Sometimes it's difficult to separate physical fatigue from the mental drain caused by life's demands and worries.