Aviation Human Factors Industry News

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Charles E. Taylor
WRIGHT BROTHERS MECHANIC

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

Hello all,
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In this weeks edition of *Aviation Human Factors Industry News* you will read the following stories:

★**The Crash of Dana Airlines Flight 0992: A Case Study in Human Factors Failures**

★**Got Safety Culture**

★**The 10 Factors of Risk Tolerance**

★**Pilots of crashed 747 missed cues about off-course approach**

★**The Do's of Airport Ramp Safety**

★**Groundbreaking safety report urges industry and regulators to improve standards of aviation English**

★**Respected accident investigator calls for aviation safety inquiry**

★**United Airlines maintenance crews teaming with IBM and Apple**

★**And Much More**

The Crash of Dana Airlines Flight 0992: A Case Study in Human Factors Failures

The Aviation Consulting Group President and Chief Consultant, Dr. Bob Baron, has developed a case study into the human factors failures,the crash of Dana Airlines Flight 0922. Dr. Baron has been a frequent contributor of human factors articles to our newsletter. We thank him for this recent contribution. Click on the link below for access:

https://www.tacgworldwide.com/Information/Dana-Airlines-Flight-0992-Case-Study

Got Safety Culture?

By Bill Johnson, PhD Chief Scientific and Technical Advisor for Human Factors in Aircraft Maintenance Systems, FAA.

Capitalizing on selected questions, used for discussion in an FAA Airworthiness Inspector's Human Factors Workshop, Johnson helps you to be introspective as you reconsider your corporate safety culture.

The mere thought of another Ph.D. writing about "Safety Culture" could cause you to flip to the next article in this AMT magazine. Don't do that! Try a couple more paragraphs.Look for definitions of safety culture. There are many. The good news is that the definitions are redundant, containing the same words and concepts.
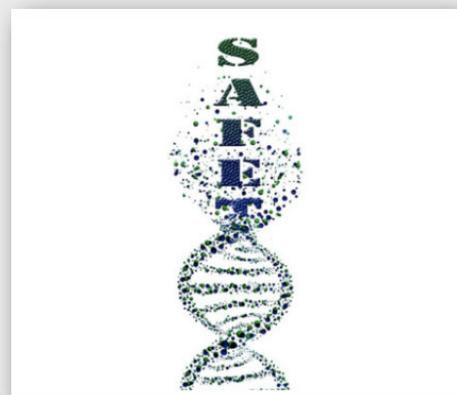
Safety culture, like organizational culture, is founded on an organization's shared beliefs, attitudes, values, and commitment regarding the importance of safety at every level of the organization. A strong safety culture requires unilateral knowledge and commitment. Every person in the organization should be able to express, with varying levels of detail, their personal commitment and job/task related contribution to worker safety and safe flight.

While definitions of safety culture are abundant safety culture is intangible. It is not an object or a written policy. An organization cannot "hold up and show" their safety culture. While intangible, an organization's safety culture is manifested by employee attitude and behavior. It is visible based on how corporate leaders from every level of management demonstrate their understanding of culture and their commitment to safety. Demonstrated commitment can include training programs, voluntary reporting with a just culture, establishment of formal measures to identify and manage hazards, and sufficient equipment and procedures to enhance continuing worker and flight safety.

Aviation Safety Inspectors Consider Safety Culture During Human Factors Training

Regulatory compliance is one of many ways to ensure safety. A primary role of the FAA Airworthiness Aviation Inspector is to ensure that the regulated entity, any certificate holder, follows the rules. FAA's Compliance Philosophy helps the ASI to work with you to ensure compliance. Of course, mere compliance does not guarantee a quality safety culture. Your FAA Inspector is not a safety culture assessor. However, an insightful ASI can work with you to help identify challenges and solutions before they evolve to a noncompliance or an undesirable event.

All FAA Airworthiness ASIs take a three-day maintenance human factors course. FAA is one of the few regulators that offer such a course for their workforce. This author sees the course as one of many demonstrated FAA Flight Standards management commitments to organizational safety culture. The mere existence and support of the three-day class shows that FAA management sees the importance of the maintenance human factors topics. The class is a tangible demonstration of safety culture.

The course covers the usual maintenance human factors fundamentals, like human error, communication, fitness for duty, failure to use technical procedures, event investigation, voluntary reporting, and more.

The course is structured around the PEAR Model, standing for People, the Environment on which they work, the Actions that they perform, and the Resources necessary to complete the work. Yes, the Dirty Dozen is included.

There is considerable discussion throughout the course proceedings. Average aviation years of experience for this class are always greater than 25. Thus, experience and aviation wisdom ensures powerful story telling. One unit of the course considers safety culture by looking at demonstrated ways to consider an organization's commitment to safety (aka, safety culture). Here are a few sample ASI questions and expected company answers.

Voluntary Reporting Question

ASI Question: Show me the published written "Just Culture" policy and steps for voluntary reporting

Sample Excellent Corporate Answer: Here is the policy. It is part of our Aviation Safety Action Program, or a similar reporting method. It clearly explains the voluntary reporting process and how such reports are processed. It delineates a timely just culture decision-making process that protects workers who make mistakes. It makes it clear that blatant procedural noncompliance, reckless behavior, unfitness for duty, or falsification of records, and other actions are not protected by the policy and not immune from regulatory or corporate punitive action. This program has been instrumental in identification and management of hazards and risk before it becomes an undesirable event. To maximize the value of this voluntarily reported information we publish a quarterly newsletter of significant reports. In addition we use voluntary reports as discussion items for shift change and other safety meetings. We are working on a program to push this information to worker mobile phones.

Human Factors Training Question

ASI Question: Show me the course outlines for your maintenance human factors training

Sample Excellent Corporate Answer: We have three courses for maintenance human factors. One is a two-hour introduction for new hires. The second is an eight-hour course for all employees. That course includes about two to four hours of computer-based training of fundamentals.

It is followed by a four-hour event investigation and discussion class, with an instructor. Our third class is the two-hour recurrent training which includes information from our voluntary reporting, other event-based reports, and any description of new practices/procedures. It is aligned with the EASA recurrent training requirements and takes place on a 24-month recurring basis.

All employees, managers, and executives must take the human factors training. Our instructors are usually promoted from the maintenance or maintenance training ranks. Usually they have a college degree and an Airframe and Powerplant Certificate but neither are firm requirements. All HF instructors must have taken a train-the-trainer class and some human factors training outside of our organization. We encourage our HF trainers to attend at least one human factors related meeting at least annually.

Shift Turnover Question

ASI Question: Show me your shift turnover practices/process

Sample Excellent Corporate Answer: Of course, the shift turnover question is somewhat dependent on the size and complexity of the shop/location. Our various departments match the turnover to meet their specific requirements. There is no one size fits all. In most cases we have designated lead mechanics who have the responsibility to document the status of jobs from one shift to another. They have the responsibility and are given sufficient shift overlap time to convey the status of all tasks that transfer from one shift to the next. If there are complex procedures in progress, the lead mechanic can ask personnel from the outgoing shift to stay on to ensure proper handover. There is a shift turnover office at the worksite where the meetings take place for every turnover. Job cards are used as the primary documentation for job status. We have documentation to ensure that all appropriate handover communications are clearly discussed and documented accordingly. Incoming workers are required to check the last task performed prior to the shift change. In our company the management and the workers recognize that shift change, or within shift task turnover, presents a hazard. We treat shift and task turnover very seriously.

Safety Culture Question

ASI Question: What evidence do you have to indicate that your company has a positive safety culture?

Sample Excellent Corporate Answer: You can ask any worker on this floor and you will get an answer to this question. We have had a lot of training about risk assessment. The training is backed up with newsletters, signage, and plenty of heart felt talk from company leadership. Every worker knows their particular jobs and can talk about how their job performance affects overall attention to worker and flight safety. We celebrate accident-free worker safety as much as we celebrate schedules and maintenance quality performance. When a worker sees or perceives a serious issue they are encouraged to report the potential hazard immediately. We have seen management rush to buy new equipment when workers identify potential safety risk. Voluntary reporting on safety-critical matters is always perceived as a positive step toward continuing safety in our departments and for the company at large. As workers we appreciate the quest for continuing safety. We get it!

Size Matters for a Safety Culture

The FAA Aviation Safety Inspectors human factors class includes inspectors from the airlines, larger repair stations, and small general aviation organizations. That diverse group of inspectors knows that one size safety culture does not fit all. Large organizations have multiple shops and locations to manage and there may even be a designated person to manage activities that foster culture. Small shops have fewer people and fewer resources to help cultivate the right culture. Size does matter but that is OK. As stated at the outset the key words include: shared beliefs, knowledge, values, and commitments where every person in the organization can express their personal commitment and demonstrated contribution to worker safety and safe flight. Got safety culture?

The 10 Factors of Risk Tolerance

As a safety professional, you can positively shape the risk decision making of your crewmembers. Although they may identify hazards and understand the outcome, a variety of factors may still influence them to accept more risk than they should.

Let's take a look at what can influence risk tolerance and what safety leaders can do to shape those behaviors.

1. Overestimating capability (younger people) and experience (role models). Reflect on your role as a mentor, admit that despite your experience the exposure is still there. Acknowledge skill but reinforce policies and procedures.

2. Confidence in equipment. Overconfidence in technology increases risk tolerance. Ensure technical training captures the limits of equipment and engineering. Make sure crewmembers know how to gauge risk. Teach them to ask, "What if it fails?"

3. Familiarity resulting in complacency. Encourage crewmembers to focus on the task like it's the first time they have done it. How would I teach this to a new person? Stop and think. Draw from knowledge, skill and techniques.

4. Underestimating seriousness of the outcome. A hazard could involve a "pinch point" but the outcome actually results in amputation or crushing. Hazard identification should better define the outcome. Get people to ask, "How bad could it really be?" Teach crewmembers worst-case scenarios.

5.Voluntary actions and being in control. Key factor in off-duty risk (people are 28 times more likely to be hurt off the job). Overconfidence and false sense of control may lead to underestimating risks. Integrate "stop and think" moments into personal activities. Use checklists to improve situational awareness

6. Personal experience with an outcome. If you've seen a mishap or a near-miss that ended badly, you will be less tolerant of the risk. However, as incident rates improve, fewer leaders will have had these experiences resulting in skepticism. Know what incidents have occurred and point out the consequences. Tell sea stories.

7. Cost of non-compliance. Identify the cost of noncompliance and increase where necessary. As the actual or perceived cost increases, the risk tolerance decreases. Remove barriers and reward those who gauge risks and mitigate the factors that increase the potential for error.

8. Confidence in PPE and rescue. Relying solely on PPE and rescue efforts increases risk tolerance. Emphasize the limits of protection and rescue measures. Ensure crewmembers understand these as "last line of defense" or "not to be relied upon" controls.

9. Potential profit or gain. Perceived or actual (fiscal, emotional, physical) gains increase or decrease risk tolerance. Remove rewards for risk taking. Eliminate barriers to doing it the right way. Bring these concepts into leadership discussions to increase awareness.

10. Role models accepting risk. Leaders' actions influence the mindset, behavior and decision-making abilities of their workers. Identify and address risk-taking leadership (in the appropriate situations). Recognize perceived pressure that could lead to erosion of standards and address immediately.

Pilots of crashed 747 missed cues about off-course approach

Pilots of the ill-fated Boeing 747-400F which crashed at Bishkek were given several warnings and indications that the aircraft was not following the correct approach before it overshot the airport.

The MyCargo Airlines aircraft had been too high on the approach to runway 26 and failed to intercept the 3° glideslope from the ILS.
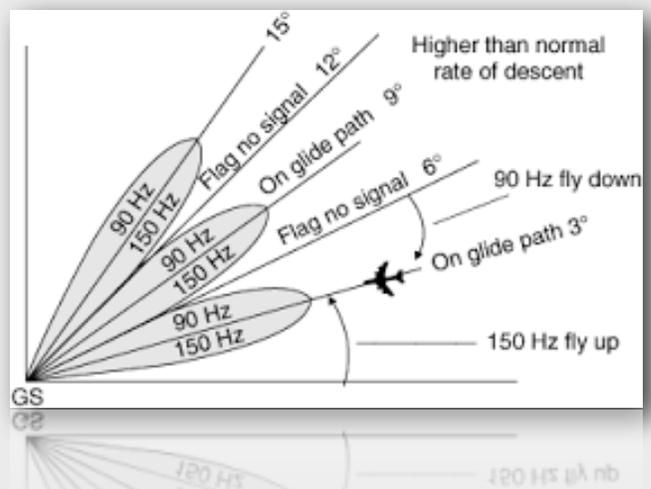
Instead its autopilot followed the instruction to level off and maintain altitude at 3,400ft – putting it some 50% higher, in relation to the glideslope and the ground, than it should have been.

Russia's Interstate Aviation Committee states that crew's glideslope deviation indicator was showing the "full down" position, indicating that the jet was "significantly" above the descent path.

But the approach, conducted in darkness and fog, remained uncorrected. The 747 was still in level flight at 3,400ft when it passed the outer marker, about 2.1nm before the runway, which should have been overflown at 2,800ft according to the approach chart.

While the cockpit-voice recording contained no aural alert when the marker was passed, the inquiry says the marker is "indicated" to both pilots on their primary flight display.

Although the aircraft began to descend shortly after crossing the outer marker, this was the result of an inadvertent capture of the false 9° glideslope reflection from the ILS.

The aircraft then passed over the middle marker – situated 0.6nm before the runway – and, again, this was signaled on the pilots' displays although there was no aural notification.

This middle marker was supposed to be overflown at an altitude of 2,290ft – or 235ft above ground – but was instead passed at 3,300ft. The late descent meant the aircraft overflew the entire length of the 4,200m runway.

Both pilots' navigation displays were set to 'map' mode, with a 10nm scale.

The glideslope deviation indicator was "fluctuating" by four dots either side of neutral, says the inquiry into the 16 January crash.

It adds that, after the false glideslope capture, the aircraft issued a series of cautionary alerts because it was not tracking the glideslope.

"These events were continuously recorded almost until the end of the flight," says the inquiry.

Some 20s before impact the enhanced ground-proximity warning system was triggered five times, issuing alerts on glideslope deviation over the space of 6s. The inquiry states that these alerts sound when the aircraft deviates below the glideslope – the volume of the warning depending on the height above ground and the size of the deviation.

Although the crew attempted a missed approach, only after failing to sight the runway at the decision height, belated execution of the go-around resulted in the 747's striking the ground having already flown beyond the end of the landing runway.

The Do's of Airport Ramp Safety:

1. Know your limits. Fatigue is deadly.
2. Wear a complete and proper ramp uniform when working on the ramp and associated safety equipment (Vest, ear protectors, etc.)
3. Be FOD-free.
4. Always maintain situational awareness 5. Keep your head on a swivel.
6. Watch out for other crewmembers . Say something if not following SOP!
7. Know the location of the nearest firefighting equipment.
8. Know how to operate firefighting equipment.
9. Know aircraft danger zones
10. Stay within the ramp posted speed limits when driving

Groundbreaking safety report urges industry and regulators to improve standards of aviation English

Simply put - Aviation English is the de facto international language for both civil and commercial aviation.

An independent report on pilot / air traffic controller communications by Dr Barbara Clark, commissioned by the UK Civil Aviation Authority, made the front pages of UK newspapers recently.

In the course of researching the report, Dr Clark unearthed grounds to suspect that cheating has been occurring in aviation English examinations. Dr Clark was also informed by sources within the aviation English community that there are cases of official language proficiency certificates being handed out without any testing being conducted.

The report also raises a number of serious concerns about language proficiency of some native and non-native English-speaking pilots and air traffic controllers.

Dr Clark, founder of communication and safety consultancy You Say Tomato and author of the independent report, says, "I urge regulators, industry, and professional bodies to work together to adopt the recommendations in my report.

Communications must be seen as a central element of aviation safety. We must all work to improve standards and stamp out corrupt practices." Dr Clark added, "I applaud the CAA for commissioning and publishing my unflinching independent report into aviation English."

Independent report on pilot / air traffic controller communications makes recommendations to reduce threats to aviation safety caused by corrupt practices and poor use of aviation English.

Respected accident investigator calls for aviation safety inquiry

A commission of inquiry into the overall state of aviation safety in Canada is being urgently requested by Virgil P. Moshansky, the retired Alberta judge who conducted an exhaustive inquiry into the 1989 Air Ontario Fokker F-28 crash near Dryden, Ont., which killed both pilots, a flight attendant and 21 passengers. He broached the idea on April 6 during the second day of a review of aviation safety by the House of Commons Standing Committee on Transport, Infrastructure and Communities. The committee has set aside up to eight days for hearings.

The common theme of testimony from Moshansky as well as the Air Transport Association of Canada, the Canadian Business Aviation Association and others has been the depleted state of Transport Canada funding and the department's increased reliance on safety management systems (SMS).

In his four-volume final report on the Dryden crash, Moshansky made no fewer than 191 recommendations for change at Transport, including what he described to the committee as "a complete rewriting" of the Canadian Aviation Regulations.

Moshansky told the committee that the safety environment did improve in the immediate aftermath of his report, but that funding cuts soon began eating into capabilities. Accusing the government of complacency as the number of Transport inspectors was steadily reduced, he said SMS was never intended to replace direct operational oversight, including of airports.

"Yet Transport Canada has done precisely that," in stark contrast to the environment in the United States and elsewhere.

He also accused Transport of being secretive about the way it has reduced oversight, relying on internal memorandums rather than public notices in *The Canada Gazette*.

In addition to calling for a national inquiry, Moshansky suggested that increased funding for safety inspections and improved inspector-pilot currency standards could be a surcharge on every passenger ticket.

He closed his presentation to the committee by telling the Members of Parliament that by calling on government to correct the situation, "among the lives you save could be your own."

United Airlines maintenance crews teaming with IBM and Apple

United Airlines is all about being a more efficient carrier these days. It helps the bottom line, you know.

Which is why the Chicago-based carrier, in conjunction with tech giants IBM and Apple, has embarked on a cutting-edge program to streamline how the carrier's airplane technicians go about their jobs.

The pilot program began last month with 70 Apple iOS devices deployed to United's maintenance crews at five hubs. The devices are being used to research and handle maintenance sign-offs, key aspects of the complex tech ballet skilled plane maintenance crews go through as they repair and maintain every part of hundreds of large airliners.

Before the Apple iPhones and iPads were introduced into the equation at United maintenance hangars in recent weeks, technicians typically had to make multiple trips from airplanes they were working on to remote kiosks or workstations to do the necessary research and sign-off on work being done.

But the new program being tested should put an end to most of that time-consuming running back and forth.

Noted Don Klaus, line maintenance international managing director: "This mobility concept will bring most of the needed power and data into their (technicians') hands. This will allow most issues to be identified, researched and then signed off or deferred planeside."

The tech mobility program is being tested at United maintenance facilities in Denver, Newark, Houston, Los Angeles and San Francisco, and is focused on United's growing fleet of Boeing 787 Dreamliners.

United maintenance technicians give high marks to IBM (NYSE: IBM) for the collaborative way the tech company is working with United's maintenance crews.

Noted Lenny Antonelli, a lead technician at United's Newark Liberty International Airport maintenance facility: "I was very impressed with IBM and glad the company is listening to us front-line employees rather than just picking a system and giving it to us. Inviting us to work with the IBM design team and our IT group is the best idea the company has had."

FSF Releases Second Aviation Safety Toolkit

The Flight Safety Foundation has released its Global Safety Information Project (GSIP) Year Two Report and initial GSIP toolkits,

which are intended to help commercial and business aviation organizations develop their safety data-collection, -analysis and -sharing capabilities.

The GSIP was launched in October 2014 to study how aviation safety data is used in the Pan America and AsiaPacific regions, and to produce toolkits that can be used by aircraft operators around the world to mitigate risk through more effective safety-data collection, processing and sharing."Safety management systems are becoming more widespread, and 65 percent of the organizations surveyed as part of the GSIP already are using safety performance indicators linked to ICAO accident categories," said FSFGSIP project leader Mark Millam. "But, at the same time, there are many challenges in ensuring that safety data are used consistently in trying to manage risk."

The foundation also believes that certain "underserved aviation industry sectors—for example, business aviation, charter/on-demand carriers and helicopter operators—will benefit from information sharing and that existing practices likely will be translatable/adaptable by the other sectors without reinventing methods or safeguards."

https://flightsafety.org/wp-content/uploads/2017/03/GSIP-Year-2-Report-with-appendices.pdf

Swiss Air Force revises safety measures for shows

The Swiss Air Force show teams will take to the skies again later this month – now under stricter safety measures following accidents in St Moritz and the Netherlands.

The Swiss Armed Forces announced on Tuesday that pilot training would resume next week, and that safety standards for air shows had been raised. Solo pilots will now perform at an elevation of 60 meters rather than 46m, and groups will fly at 92m rather than 60m above the ground.

PC-7 pilots will also have to keep a greater distance from each other. The new policy requires three meters of space between planes; previously, it was two. In February, a PC-7 jet performing as part of Patrouille Suisse's aerobatic team clipped a television cable above the finish line at the skiing world championships in St Moritz, sending a camera plummeting to the ground and briefly interrupting the event. No one was injured.

Last June, two Patrouille Suisse F-5 jets collided near a Dutch air base, with one crashing in a pond and the other landing safely with a damaged tail. The pilot of the plane that fell in the water ejected and landed in a greenhouse with cuts and bruises.

http://www.vtg.admin.ch/en/organisation/air-force/einsatz-luftwaffe/patrouille-suisse.html

Shift in Earth's magnetic poles means changes at local airport

A change in Earth's magnetic poles is changing how airports around the world label their runways.
Airport runways are named according to their magnetic compass heading.

For example, 28 is the name for 280 degrees and 18 for 180 degrees.

"The magnetic deviation of the earth takes place, and so airports have to adjust for that deviation," said Kevin Klein, director of Cherry Capital Airport in Traverse City.
Cherry Capital hasn't had to change its headings since the 1940's.

"The runway heading sets up with the magnetic and with the compasses and all the instruments that are in the aircraft," Klein said. "So we want to make sure that those line up appropriately." The Gaylord Regional Airport is currently about six degrees off, and that number could get up to 10 degrees.

Instead of building a new runway, the airport can repaint the runway and put in new signs that reflect the new compass heading.

If you're boarding a plane any time soon, there's no need for concern.
It does not affect pilots much, just the airport.

"If you're shooting an approach into here, instead of saying you're on the approach to runway 27, you're on the approach for runway 28 now," said Nicholas Beyer, the Chief Pilot at North Country Aviation. "There's really no difference."

The Gaylord Regional Airport will have to do regular maintenance to the paint within the next six years anyway, so they'll use that project to change the numbers.

The manager of Gaylord Regional Airport said he's been there almost ten years, and this is the first time they've had to make these types of changes.

Funding for the change will come from a federal state block grant.

7 Flying Hazards That Are Easily Overlooked

1) Over priming the engine.
When you over prime the engine, it can cause excess fuel to be splashed and drawn into either the exhaust manifold or the intake manifold. If the fuel ignites in the intake manifold, it can cause an engine fire.

2) Base-to-final turn.

Your base-to-final turn is the point in the traffic pattern that has the greatest risk for inadvertent stall/spin. If you overshoot final and cross-control the plane, you're setting yourself up for problems.

3) Inadvertent flight into clouds at night.

Night flying has risks that revolve primarily around disorientation and illusions. Inadvertently flying into a cloud can be hazardous for both instrument-rated and non instrument-rated pilots.

4) Frost.

Frost is a danger that isn't always obvious. Even a thin layer of frost can destroy up to 30% of your lift.

5) Scud running.

If you're diving below weather to maintain visual contact with the ground, you're opening yourself up to a CFIT accident, or colliding with something sticking out of the ground.

6) Hazardous attitudes.

Pushing to complete a flight is one of the worst things you can do. It's better to be safe on the ground than sorry you're in the air.

7) Not doing weight and balance.

Even if you're familiar with your aircraft, regularly performing weight and balance is a good idea. Remember, your aircraft's maximum gross weight isn't a performance limitation, it's a structural limitation.

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97% Of Americans Attribute Personal Performance To A Good Night's Sleep

A national study reveals that 97% of Americans believe that a good night's sleep is important to help them perform at their best and getting enough sleep improves the quality of their life.

The study was commissioned by the manufacturer of Herobed, a hybrid bed-in-a-box, and conducted online by Harris Poll among more than 3,000 US adults aged 18 and older. The survey focused on how participants view the critical relationship between sleep, good health and the quality of life.The study also found that less than half of Americans (46%) gave credit to a comfortable mattress as a necessity for them to achieve a good night's sleep.

The survey also zeroed in on other elements that people view as necessary contributors to a good night's sleep—proper room temperature (37%), a dark or quiet room (30% each), and comfortable pillows (28%).

"We found it shocking that most people really don't understand how a mattress can directly impact quality of sleep, which we know can affect quality of life, performance, and overall health," says Jeff Quinn, Herobed co-founder, in a release. "Armed with this knowledge, our goal with Herobed is to educate and spread awareness of the importance of sleep and its impact on everyday performance."

Additional Survey Findings

- 64% of Americans believe a better night's sleep is more appealing than having better sex. Broken down by gender, 78% of women prefer a better night's sleep to better sex as opposed to 50% of men.

- 65% of millennials would rather spend money on a vacation than a new mattress.

Methodology

This survey was conducted online within the United States by Harris Poll on behalf of Herobed from February 28 to March 2, 2017 among 3,184 U.S. adults nationally, ages 18 and older. This online survey is not based on a probability sample and therefore no estimate of theoretical sampling error can be calculated.

WHAT HAPPENS TO YOUR BODY WHEN YOU TAKE A NAP?

Having a nap often gets a bad reputation because it's associated with laziness, but some of the most successful people in history, including Albert Einstein, were notorious nappers.

While the jury is still out on whether or not napping is actually a healthy pastime, your body does get up to some interesting things when you're catching a few winks. To keep you in the know, here's what happens to your body when you take a nap.

YOUR HEART RATE SLOWS

When you're napping, your heart rate slows right down. This is because your senses aren't being stimulated as much as when you're awake, your stress levels are lessened and your body has fewer needs. Have you ever noticed that your breathing slows as you're falling asleep? That's for the same reason!

YOUR BODY TEMPERATURE DROPS

Your body's thermoregulatory system - the part of your body that's in charge of regulating temperature - lowers your body temperature as you're drifting off to sleep. This is because you're not using as much energy as usual, so your body doesn't need internal heat.

YOUR STRESS & ANXIETY LEVELS REDUCE

Stress and anxiety disorders have been linked to sleep deprivation because the part of your brain responsible for worrying is activated by not getting enough kip. When you nap, you're calming your brain, resulting in reduced stress and anxiety.

YOU DISCONNECT FROM YOUR SURROUNDINGS

As you're about to drift off into the land of nod, your body changes its sensory input so that it blocks out your surroundings. This ensures that, for the most part, your brain doesn't bother you with sensory interruptions when you're snoozing.

YOUR BLOOD PRESSURE LOWERS

Sometimes we just can't help but have a nap, but other times we'll plan them in advance. Interestingly, the act of even anticipating a nap can calm us and lower our blood pressure as our heart rate slows. In fact, people who frequently nap are less likely to experience heart problems than those who don't nap at all.

YOUR MEMORY IMPROVES

The act of napping has been proven to improve your memory and information retention. Scientists believe that, after learning something new, having a nap can be beneficial for helping you remember that information. In a similar way, napping can help you to retain memories.

YOUR BRAIN CLEARS

When you're napping, the space between your brain cells increases so that cerebrospinal fluid can flow through, clearing the brain of toxins. So, when you're getting your shut eye, your brain is getting rid of all the bad stuff that builds up throughout the day.

YOUR FOOD CRAVINGS ARE CURBED

When we're tired, our bodies seek out other energy sources, with the main culprit being food. When napping, we replenish our energy which helps to suppress those pesky food cravings.

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