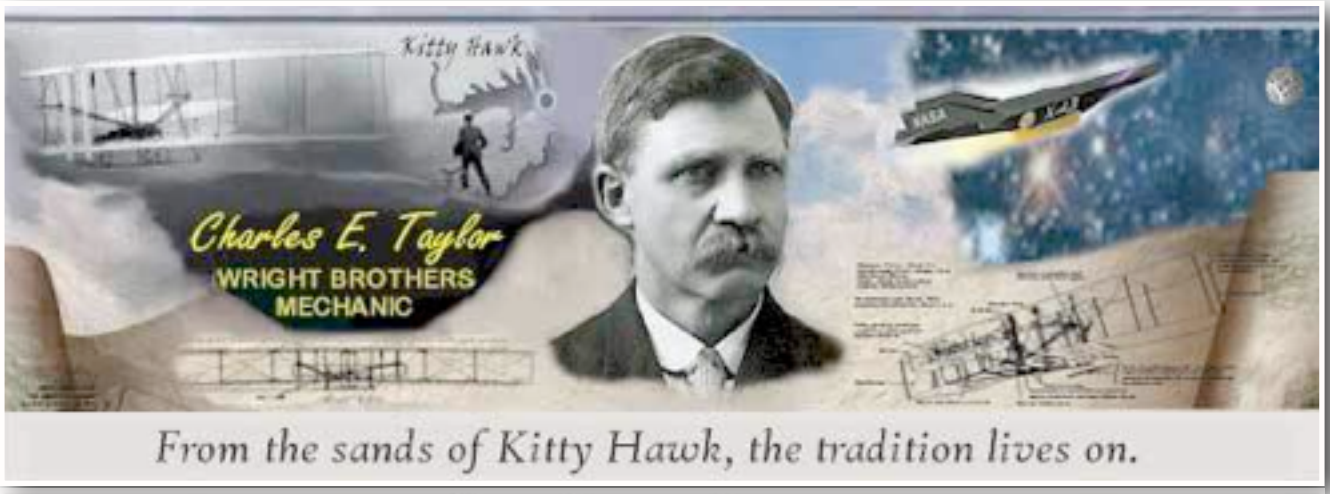
Aviation Human Factors Industry News

Volume XII. Issue 10, May 22, 2016



Hello all,

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

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

New SMS Calls for Trusted Human Factors Sources

By Dr. William Johnson FAA Chief Scientific and Technical Advisor for Human Factors in Aircraft Maintenance Systems.

SMS has raised the awareness toward the human factors hazards in maintenance. Dr. Bill sees reports on the increased use of the trusted sources from FAA's Human Factors Website. He offers a few examples.

The regulations currently require that Part 121 operators have a safety management system well under way. That is clearly happening. The industry is embracing SMS for more reasons than mere regulatory compliance. I am noticing that the word "required" is hardly used when industry personnel talk about SMS. I see enthusiasm for the recognized value in a structured approach to spot trends and to recognize and address hazards before they cost money, injure a worker, or threaten the continuing safety of flight for airline operators.

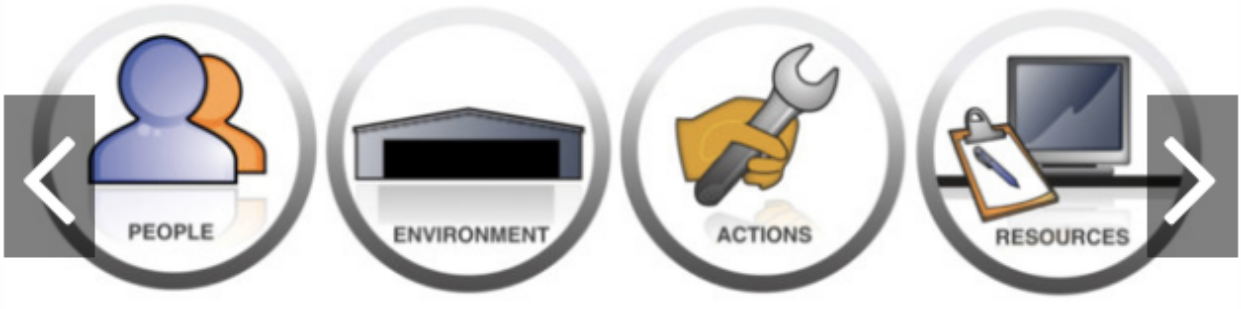
The good news is that there is a large "trickle down" approach where Part 121 operators are asking their suppliers to establish and capitalize on a SMS. Of course, a supplier is not likely to have the same requirement for a large SMS that a 7/24/365 airline has. Each SMS is different and matched to organization needs. These organization-specific needs, in my opinion, have triggered a revised interest in maintenance human factors. I offer three examples here, which include how to categorize hazards, how to estimate return on investment, and best fatigue risk management methods and training. All of these topics are worth revisiting.

Categorizing Human Factors

Increased attention to safety management, data collection, voluntary reporting, and hazard management begs for organized categorization of hazards and errors. Over the years maintenance personnel have used the Swiss Cheese, SHELL, Bow Tie, and PEAR. Of course, I am partial to PEAR being the co-inventor and chief promoter the concept for 20 plus years. PEAR, for review, stands for People, the Environment in which they work, the Actions workers perform, and the Resources necessary to perform the work. PEAR is the main human factors training paradigm for FAA inspector training as well as for CASA Australia HF training for engineers. Training support resources are available at www.humanfactorsinfo.com as well as at the CASA website. PEAR is significant because the categories can represent the holes of error in the cheese or the human resilience represented by the solid part of the cheese.

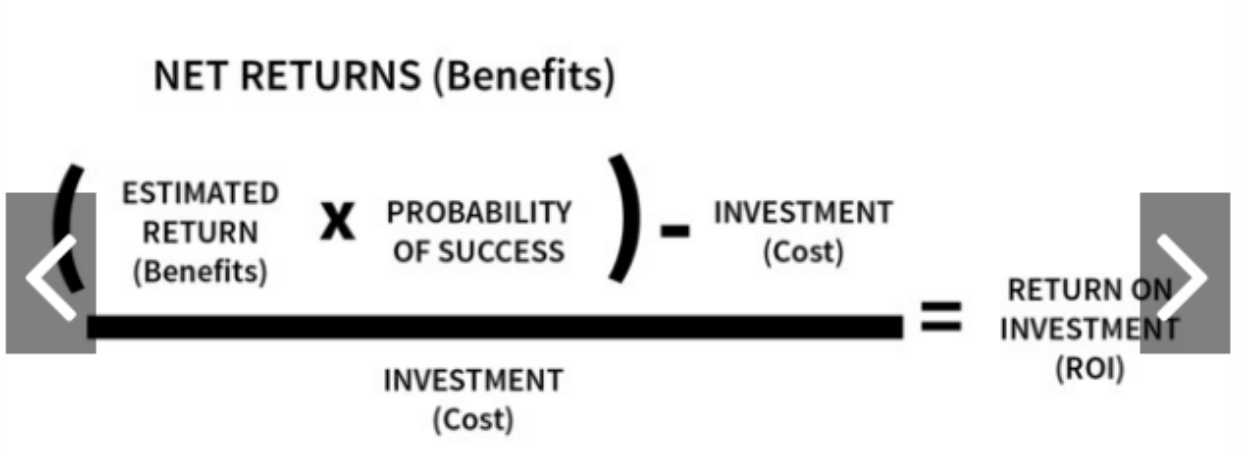
PEAR overlaps with SHELL but is easier to understand. On the Bow Tie, PEAR is an ideal way to offer the proactive barriers that prevent the event of focus.

The purpose here is not to make you a PEAR expert but it is to insist that the concept is alive and well. If you want more detail then Google "Johnson PEAR Model."



Justifying Your Human Factors Interventions

Engineering/maintenance managers know where the most significant hazards are. Fostering the positive safety culture, using the technical publications, and ensuring fitness for duty are a few of the most common opportunities to address hazards. However, organizational-specific information, discovered by voluntary reports or SMS data will identify specific hazards, like aircraft ground movement, availability of specific tools/equipment, scheduling challenges, shift turnover communications, and more. Unlimited resources would permit organizations to address all hazards, but that's not the real world. For that reason organizations must apply risk assessment to look at the likelihood that the hazard may cause an error and what is the severity of such an outcome. But organizations must also determine the financial and safety impact of a hazard in order to prioritize which hazard reductions have the highest payoff. That's where the FAA Maintenance Human Factors Return on Investment tools can come in handy.



The above figure shows that one does not have to be an economic expert to calculate return on investment. In fact, it is more about understanding your hazards and the associated number of events (or potential events) that will result in an unmanaged hazard. SMS data can help assign costs if you are motivated to assign costs. The aviation maintenance expert will assign cost to the hazard intervention and predict the level of confidence in the estimation. The rest is multiplication and division. The tools and detailed directions are available in the tools section at www.humanfactors info.com.

Fatigue Risk Assessment

Many have seen me write or speak that SMS, regulated or not, is the best approach to fatigue management regulations in maintenance. Most authorities do not have strict rules for fatigue risk management. Even when there are national industrial fatigue rules they are usually trumped by a variety of stipulations that permit aviation maintenance personnel to work more consecutive days and longer hours than they should. Proper SMS will quickly discover if there is a maintenance fatigue issue in an organization. By design, an SMS must identify such hazards, determine the corrective action, promote the action, and assess the impact.

My recent experience suggests that industry is becoming increasingly aware of the hazards associated with worker fatigue. I believe that SMS programs have an impact on the awareness of worker fatigue hazards. The number of users on the two-hour FAA web-based training continues to grow (estimated at over 200k users in the past five years. (Course # ALC-258 available at www.faasafety.gov.) The video, titled "Grounded," is available as part of that training or accessible on YouTube.

Demand Remains High for Maintenance Human Factors Support

Industry has stepped up to address the hazards associated with human factors challenges in maintenance. For the most part, they have done that without extensive regulations. The safety and business case speak louder than regulations. FAA intends to continue to support the maintenance human factors website and is open to all suggestions for additions to our website and associated resources.

http://www.humanfactorsinfo.com/

http://www.faasafety.gov/

LEADERSHIP PERSPECTIVE

Factors that Influence Risk Acceptance

By CMDCM (AW/SW) Paul Kingsbury
Command Master Chief, Naval Safety Center

Far too often safety gets a bad rap. The "products" of safety are narrowly seen in terms of policies that slow down work or require unwieldy or unattractive PPE. Who really digs wearing that glow-belt during PT or wearing a hard hat and safety glasses in the shipyard? These perceptions can distract us from truly thinking about risk-taking behaviors that we should understand and strive to influence.

Consider that in the course of a typical workday, our people literally make millions of risk decisions. From the time we wake up, we are engaged in activities that involve hazards and risks. The risk-decision-making process involved only takes a matter of seconds but can result in outcomes that have significant financial, operational, and emotional cost for the individual and organization. Safety leaders can positively shape the decisions their people make. Leaders must understand that although their people may identify hazards and understand the outcomes, a variety of factors can influence them to take more risk than they should.

Before we explore the factors that influence risk acceptance, we have to understand the fundamental process of making risk decisions. Figure 1 outlines the process that occurs and how the outcome of each step can lead to a safe or unsafe behavior. (See page 20).

We've done a good job at identifying hazards, labeling them and training on them. However, we must also identify the new hazards presented by new missions and evolving technologies. We're OK at ensuring our people understand the outcomes that can result from failure to implement hazard controls, but we must continue to educate in order to pass on the corporate memory of mishaps.

The area we fail to effectively understand and influence is how individuals make the decision to acceptance or reject risk once the hazards are known and understood.

What the model does not capture are the factors that can skew the decision-making process from the start, including stress, fatigue, and alcohol use. These can all affect our ability to identify hazards and understand outcomes; they influence how much risk we accept. We've constructed an entire risk-management model around this decision making process. Supervision is the important last step of our five-step deliberate risk management process for a reason: it's the element that is key to identifying weaknesses in the individual decision-making process and provides the opportunity to stop at-risk behavior before it occurs.

We often hear the mantra of "management by walking around," but do we consider it in the context of shaping the risk decision-making process? For example, we supervise maintenance evolutions to identify where our people are taking too much risk by not following procedures, not using PPE or falling victim to a lack of experience. We also supervise lower level leaders to ensure they are not modeling poor behaviors and are helping look for these 10 factors as well. (See next page.)

Understanding these 10 factors reinforces the value of knowing our people so we can identify behavioral changes that occur when they are distracted, tired or inebriated. In turn, we make better management decisions and don't put them in situations where they are unable to make effective risk decisions.

Sometimes the most important concepts to understand about leadership are the ones we take for granted. Taking time to understand how our people think about risk and the ways that you can influence that decision making process will go a long way to making you a more effective leader while improving organizational performance.

The 10 Factors of Risk Tolerance

Adapted from "Strategies for Understanding and Addressing Risk Tolerance," Exxon Mobil, 2011

As a safety professional, you can positively shape the risk decision making of your Sailors. 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. Familiarity resulting in complacency. Encourage Sailors 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.
3. 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?" Apply the ABCD process. Teach Sailors worst-case scenarios.
4. 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.
5. 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.
6. 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.
7. Confidence in equipment. Overconfidence in technology increases risk tolerance. Ensure technical training captures the limits of equipment and engineering. Promote the ABCD process and on-the-spot risk assessment. Make sure Sailors know how to gauge risk. Teach them to ask, "What if it fails?"
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 Sailors understand these as "last line of defense" or "not to be relied upon" controls. Provide appropriate ORM and TCRM training.
9. Potential profit or gain. Perceived or actual (fiscal, emotional, physical) gains increase or decrease risk tolerance. Remove rewards for risk taking.

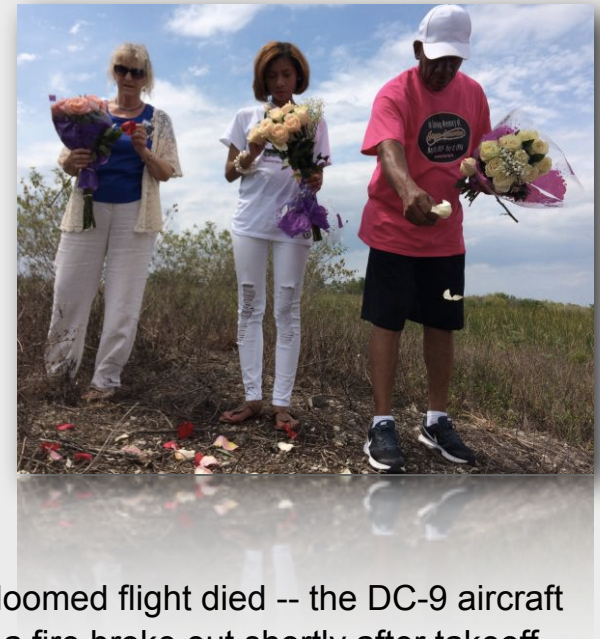
Eliminate barriers to doing it the right way. Bring these concepts into leadership discussion to increase awareness.

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.

ValuJet Relatives Gather for 20th Anniversary of Everglades Crash

-In the stillness of Everglades National Park, they came to remember.

Twenty years ago to the day, the crash of ValuJet Flight 592 robbed families of parents, children, and spouses. On Wednesday, about 30 relatives of those who perished traveled to the Everglades crash site, and a nearby memorial, to pay their respects.



"It just brings back good memories, of my mother," said Dana Simonton, 52, of Macon, Georgia. "At least it gives me some peace and some closure, to actually be able to go to the actual crash site."

All 110 passengers and crew on board the doomed flight died -- the DC-9 aircraft swallowed up by the Everglades muck after a fire broke out shortly after takeoff from Miami International Airport. Simonton's mother, Joyce, died on her 67th birthday.

The day a plane with 110 people disappeared into the Everglades

In the days leading up to the 20th anniversary, relatives shared stories of their loved ones on a group Facebook page. One woman mourned the death of her childhood friend, who was only seven years old when she boarded Flight 592.

Another lamented the death of a flight attendant who wasn't supposed to work that day, but at the "last minute" subbed in for a co-worker.

"Hard to believe it's been 20 years!" one commenter wrote. "It still breaks my heart and leaves a knot in my stomach as if it just happened."

Family members who made the trek to Miami visited the crash site on airboats, and then gathered at the concrete memorial just off of Tamiami Trail, about 12 miles west of Krome Avenue. There, the names of all 110 passengers and crew are engraved in stone, and surrounded by 110 pointed columns that rise as high as nine feet, and point toward the crash site eight miles away.

Relatives have gathered for similar remembrance services at the 10 and 15-year marks. Gail Dunham, the executive director National Air Disaster Alliance/ Foundation -- a group for air crash survivors and family members -- served as an organizer for the events.

Dunham said it's unclear if the families will return again five years from now.

"So many have moved away," she said. "Some have passed away. It's harder for them, we have two people in wheelchairs today."

For families, Duhham said, the grief "doesn't go away. It doesn't get better. It just gets different."

In the wake of the Flight 592 crash -- which was caused by improperly stored oxygen generators that caught fire -- the Federal Aviation Administration adopted tougher standards that required smoke detectors and fire extinguishers in a plane's cargo hold.

Pilots' Errors Caused F-16 Collision at Nellis

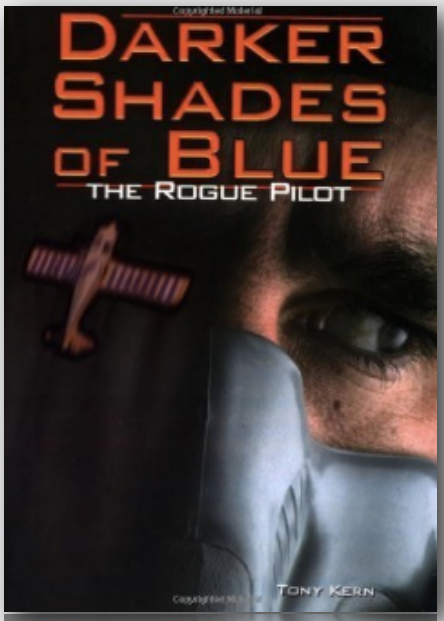
Mistakes by a pair of pilots caused their F-16s to collide after landing on the runway at Nellis AFB, Nev., in August 2015, Air Combat Command investigators found. The collision almost killed one pilot and caused nearly $70 million in damages, according to the accident investigation report released Monday.

The mishap site after the crash recovery

The pilots were both assigned to the Air Force Reserve Command's 301st Fighter Wing at NAS Joint Reserve Base Fort Worth, Texas, and were participating in exercise Red Flag 15-4 at the time of the collision. After the first pilot landed his fighter normally, he did not move to the exit side of the runway, according to the report. While preparing to land, the second pilot did not open his speedbrakes. He landed with the proper spacing, but closed on the other F-16 because “he landed too fast, touched down long, and had the engine above idle power,” according to the report. After noticing the first aircraft on the hot side of the runway, he applied heavy braking pressure and directed his fellow pilot to clear right. The unaware pilot of the first aircraft misunderstood the call and continued to drift left, but braked and turned hard right after hearing a second command. At the same time, the second pilot abandoned normal runway deconfliction and pulled hard right in an attempt to pass on that side. Instead, the aircraft collided. The impact forced both aircraft off the runway, fired the second pilot’s ejection seat, and pinned him under the other F-16’s wing, causing “life threatening blunt force, burn, and crush-type injuries.” First responders were on the scene in 68 seconds, ultimately helping save the pilot’s life. The second pilot was not injured. One aircraft was considered a total loss and the repair costs to the other aircraft are estimated at $5.4 million, according to the report.

http://www.airforcemag.com/AircraftAccidentReports/Documents/2016/081515_F-16C_Nellis.pdf

Bizav Has Lower Threat of 'Rogue' Pilots than Airlines



"The anonymity in today's large carriers where you don't fly with the same people" puts airlines at more risk for rogue pilots than business aviation, where "we fly with the same people, which allows us to keep an eye on people in our organization," Thomas Anthony, director of USC's aviation safety and security program, said on Friday at the Flight Safety Foundation/ NBAA Business Aviation Safety Seminar in Austin, Texas. During his presentation, "Human Factors in Extremis: The Rogue Pilot Phenomenon," he specifically discussed aviation's most unsettling accident cause: pilot murder-suicide.Should Malaysia Airlines MH370 join the identified cases of last year's German Wings Flight 9525 and 2013's Air Mozambique's LAM470, "Then you would have three [pilot murder-suicide] primary causes of fatal commercial accidents in three successive years," said Anthony. "I think that's significant."

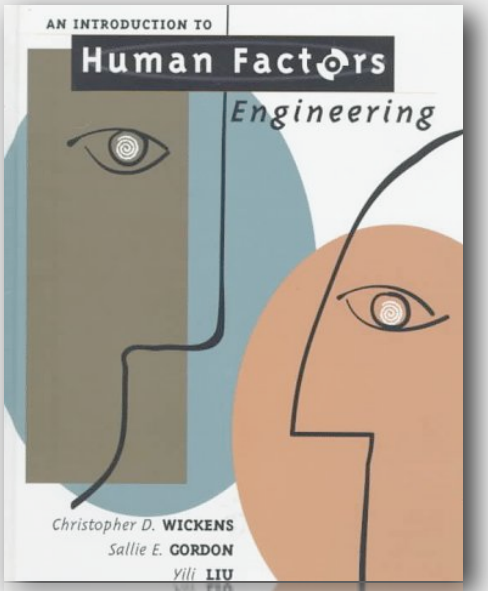
Unlike "accidents based on wreckage, this brings us into an area of the profiler of criminal behavior, and the psychology of murder-suicide—a very different area of inquiry," he noted. "Murder-suicide is premeditated; it's not out of the blue."

Safety standards in aviation and civilian drones: Where are the human factors?

Human factors knowledge is about the relationship and interaction between humans, machines, procedures, and the environment.

Its primary concern is to ensure understanding the predictable capabilities and limitations or performance of human beings to ensure safety, efficiency, and well-being of the individual within a system.

Limited application of human factors contributed to a number of aviation accidents in the 70s and 80s. For example, the crash of Eastern Airlines flight 401 in 1972 was attributed to lack of proper cockpit resource management. In 1977, two Boeing 747 aircraft collided on a runway in Tenerife. This accident was attributed to a breakdown in normal communication procedures and misinterpretation of messages. In both cases, competent, experienced, and healthy flight crew made performance errors.Aviation human factors knowledge has developed mostly through investigation of past accidents and incidents. It is applied and integrated during system design (controls, symbols, displays, checklists, manuals, charts, crew resource management, procedures, duty time/rest periods, a non-punitive voluntary reporting system, and lay out of the flight deck, cabin, and Air Traffic Control stations) and certification as well as during personnel certification. Human factors training and knowledge is a licensing prerequisite. (ICAO Annex 1).



Drones are heavier than air, manipulated by humans and therefore have to be regulated like manned aviation. There are several types of drones with different operational characteristics. This article is mainly about commercial quadcoptor operations.

Quadcoptors are popular for both commercial and recreational purposes. They come in different sizes and can be purchased over the counter for as low as US $50.

Whereas some countries have legislation in place to regulate commercial operations, they mainly address security, authorizations/permits, weight, height restrictions, and safety of airports. The human factors component has been omitted, yet the same is necessary in a number of areas to ensure that the safety standards are equivalent to those in manned aviation. This article, though not exhaustive, addresses some of the important areas.

Training

This is not conducted by licensed instructors in approved training organizations like is the case for manned aviation.

No standard internationally approved quadcoptor training curriculum exists. Apart from manuals that come with the equipment and guidance from experienced fliers, there are a number of enthusiast websites with instructions and demonstration videos. No mention is made of human factors. Similarly, there are no standard licensing requirements for quadcoptor operations.

Some retailers in the United Kingdom run short training courses for aerial survey pilots with a human factors component training courses for aerial survey pilots with a human factors component. However, this is not a regulatory requirement.

Control and Display Designs

Aircraft manufacturers invest a lot of resources on cockpit design research, to suit the measurements, movements, limitations of the human body and to ensure that pilots understand onboard systems, including the latest automation. During the 777 design process, Boeing worked with eight major airlines in the design phase, to ensure that the aircraft suited their customers' operational requirements.

Quadcoptor manufacturers do not involve customers in the design process. The control units are not tested to ensure that they match the measurements or biomechanical design and motion of human hands and fingers.

Further, they do not have an array of display warning lights or aural alerts to attract attention in case of for instance, a system failure, wind shear, flying dangerously too low, etc. It is left to the pilot to diagnose problems and make split-second decisions.

Regulations should make it mandatory for human input in the design stage so that pilots are both knowledgeable and comfortable with the set up/configuration/ displays of remote control units.

Environment

Manned aviation has the sterile cockpit rule to prevent idle talk and distractions while operating below 10,000 feet. Quadcoptor operations are by nature prone to distractions. For instance, a pilot out in a field on an aerial survey mission could be distracted by other humans, pets, a swarm of insects, or his/her cell phone. Such distraction, however brief, could end up in disaster.

There is need for regulators to include situational awareness and distraction recovery techniques in the training curriculum.

Duty Time

Quadcoptor operations are mostly Visual Line of Sight (VLOS). This implies, the operator may be on his feet for a considerable amount of time leading to fatigue and ultimately impairing one's control abilities/decision making.

There are no regulations or guidance material to determine how long operations should last. Duration mostly depends on battery life or accomplishment of the assignment/mission. Long periods of duty might lead to a decline in concentration levels, leading to potentially unsafe situations.

Regulators should stipulate duty time, adequate rest periods and ensure that commercial operators adhere to, and roster their operations in a manner that allows pilots adequate rest and recovery periods.

Crew Resource Management/Procedures

Commercial aircraft engaged filming/survey/photography carry an extra crew member specifically for the purpose. Multitasking by a quadcoptor pilot, for instance, taking pictures or filming simultaneously increases the potential for mistakes.

Regulations should separate roles in commercial operations so that the pilot concentrates on flying and photography/videography duties are assigned to a second person.

A non-punitive reporting system

ICAO Annex 19 establishes a state safety system, key to which is data collection through mandatory and voluntary reporting systems. It is intended to identify hazards and unsafe conditions that have not yet caused an accident/incident.

These systems can only work if operational personnel have the confidence that no punitive action shall be meted out against them for unintentional mistakes/errors.

In quadcoptor operations, a pilot who inadvertently hovers over private/restricted access property and reports the same should not be punished if for instance, he did not know the boundaries of this property, or because fatigue impaired his decision making at the time.

Regulations should provide for safety management systems with structures, policies and procedures to deal with reported unsafe conditions and a requirement for remedial action.

It is not necessary to have several accidents and incidents for human factors training and knowledge to become part of drone operations. The lessons learned from manned aviation have improved the safety and efficiency of civil aviation. Regulators worldwide should move fast to incorporate the same in drone regulations. This is the only way possible performance errors will be identified and addressed in the rapidly developing drone industry, before disaster strikes.

http://www.quadcopters.co.uk/caa-approved-drone-training-67-w.asp

Aviation Institute of Maintenance Launches Free Online "Human Factors" Safety Course

On May 2, 2016, the Aviation Institute of Maintenance (AIM) launched a free online course in aviation safety for aviation professionals, students, and enthusiasts around the globe. Understanding that 80% of all aviation-related incidents and injury occur because of human error, oversight, fatigue, and other human-related factors, AIM intends to combat such incidents by offering widespread instruction and guidance on minimizing risk. The school encourages students, professionals, and volunteers to enroll in this free continuing education course by visiting www.Aviation.edu.

In addition to the free Human Factors course, AIM has also made available an advanced online professional certification course entitled, "Minimizing the Risk of Incident and Injury due to Human Factors." This certification course provides an in-depth understanding of the twelve most common human-related risk factors for aviation incidents, known as the "dirty dozen." This course draws from the material in the introductory curriculum and allows the trainee to apply their knowledge and experience to numerous scenario-based situations in order to become more aware of accidents, why they happen, and how to avoid them. The instructor-led certification process carries a cost of $49 and awards graduates a certification from Aviation Institute of Maintenance.

Dr. Joel English, Vice President of Operations at AIM and author of Plugged In: Succeeding as an Online Learner, states that both the free introductory course and the full certification course are examples of innovative technologies and strong online teaching methods. “Our certification course doesn’t have the anonymous feel of a ‘MOOC,’ where the trainee wades through streams of information with no interaction. It’s situation based, there’s interaction with the instructor, and the assessments draw directly from the scenarios that the video lectures discuss.” The courses feature high definition video instruction, interaction with others in the course, and examples from authentic experiences that help the aviation professional think critically about safety in the workplace. English states, “AIM has always dedicated our instruction to awareness of the possibility for accidents or injury, and we found no reason to keep this innovative coursework to ourselves, when professionals around the industry could benefit.”

About Aviation Institute of Maintenance

Aviation Institute of Maintenance is the United States' largest family of aviation maintenance schools, with headquarters in Virginia Beach, Va. Students learn the skills necessary to become successful in one of the world’s fastest growing industries, aviation maintenance and the free Human Factors course and certification are examples of the school’s passion and commitment to the aviation industry. AIM graduates are trained to meet the increasing global demands of commercial, cargo, corporate and private aviation employers. AIM’s campuses are located in the following major metro areas: Atlanta, Philadelphia, Dallas, Houston, Indianapolis, Las Vegas, Washington, D.C., Kansas City, Mo., Oakland, Calif., Orlando, Fla., and Virginia Beach, Va.

Learn more at: www.Aviation.edu.

Dirty Dozen Maintenance Posters

By System Safety Services

These posters were originally created in 1993 as a follow up to a "Human Factors" workshop. They were designed to help raise the awareness of each of the preconditions depicted on the posters.

For more information visit www.system-safety.com or email dupontr@system-safety.com .

FSF Study Recommends New Go-around SOPs

A new study recommends redefining approach go-around criteria for business and commercial aviation operations. Only 3 percent of commercial pilots comply with SOPs mandating go-arounds if the aircraft is not on a stabilized approach at or below 1,000 feet agl; corporate pilots are believed to be equally non-observant.Compliance could eliminate 54 percent of accidents, according to the study, but most pilots believe the standard is unrealistic and thus have little incentive to observe it. “Understanding the Psychology of Non-compliance in Go-around Decision Making” also finds these pilots score lower on all measures of situational awareness and are less communicative with other crewmembers than compliant pilots. Yet the estimated 330 airline go-arounds per day for compliance would create risks of their own.

The study, presented late last week by risk management consultancy Presage founder Dr. Martin Smith at the Flight Safety Foundation/NBAA Business Aviation Safety Seminar in Austin, Texas, recommends making 300 feet, rather than 1,000 feet agl, the go-around height for unstable approaches. The study, commissioned by the FSF, also recommends enhancing landing go-around criteria. In the interim, recommended measures include installing stable approach and alerting systems on aircraft, as well as ensuring flight crews actively communicate during approach and landing.

Records show Las Vegas stunt planes company had safety concerns

Before a recent stunt plane crash killed an instructor pilot and student passenger, records show that federal authorities had noted multiple safety issues on similar acrobatic flights offered by a Las Vegas tourism company that allows paying customers - even those without any previous flight experience - to fly and control planes.The April 30 incident involved a fixed-wing single-engine plane operated by Sky Combat Ace that crashed near Jean, about 30 miles south of Las Vegas.

The company on its website advertises aerobatic, air combat and sightseeing flight experiences with package prices ranging from $150 to $2,000.

The business has claimed an unblemished safety record before the recent fatal crash.

But the Federal Aviation Administration and National Transportation Safety Board have previously identified multiple related safety issues and incidents.

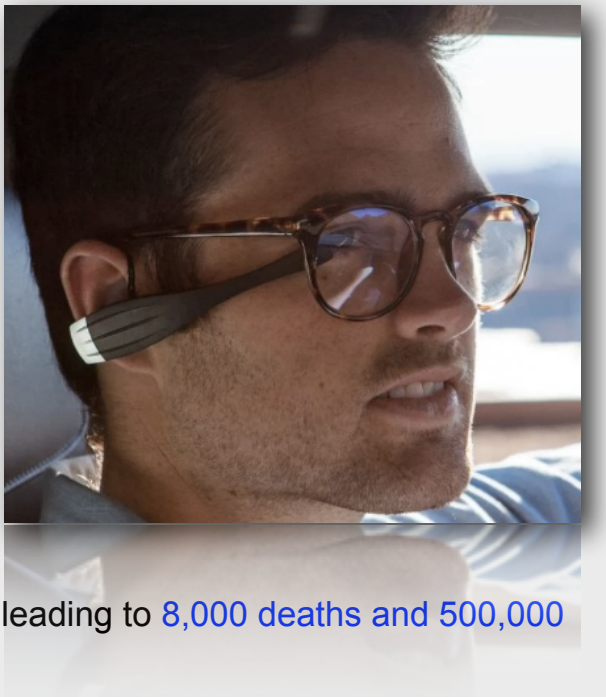
Smoke/Fire Hood

iEvac® is the only Smoke/Fire Hood certified to the American National Standard. Providing protection against fire related gases including carbon monoxide, the number one cause of injury or death in a fire situation. iEvac® protects lungs, head, eyes and face. It is easy to don, one universal size and can be worn with eyeglasses, beards and long hair. There is no maintenance required and the hood is a clear material resulting in an unobstructed view with twin cartridges for easier breathing. iEvac® Smoke/Fire Hood is certified to the American National Standard and the U.S. Department of Homeland Security has designated iEvac® as a qualified anti-terrorism technology.

Visit www.ElmridgeProtection.com for more information and call 561.244.8337

This Bluetooth Headset Won't Let You Doze Off At The Wheel

The makers of the device want to take on the scourge of drowsy driving.



A team of young entrepreneurs are leading the charge to combat drowsy driving with Vigo, a Bluetooth headset that monitors your alertness and stimulates you when you start to fall asleep.

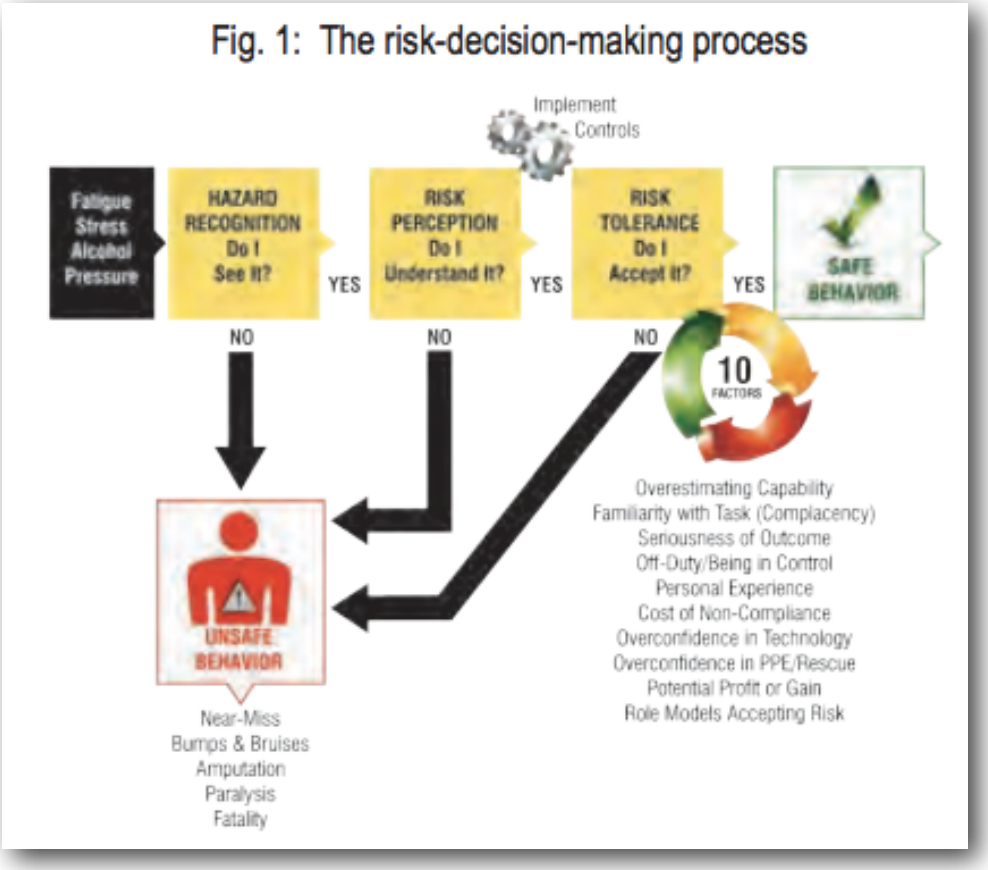
By tracking eye and head motion, Vigo uses a combination of audio alerts and vibrations to wake up the driver if needed.Drowsy driving and falling asleep at the wheel cause an estimated 1.2 million crashes and mishaps per year, leading to 8,000 deaths and 500,000 injuries annually.

Jason Gui and Tiantian Zhang are the co-founders of Vigo. In the video above, Gui explains more about how this invention could help save lives.

http://www.wearvigo.com/

https://www.dropbox.com/sh/btnoh2cd8m5nmk7/AACQjQnPiS4VGcGyUcciAS_aa/1.%20Product%20Overview.docx?dl=0

http://www.nhtsa.gov/Driving+Safety/Drowsy+Driving



TED: Ideas Worth Spreading

Matt Cutts: Try something new for 30 days

Is there something you've always meant to do, wanted to do, but just ... haven't? Matt Cutts suggests: Try it for 30 days. This short, lighthearted talk offers a neat way to think about setting and achieving goals.

My 30 day challenges

Add:	**Subtract**:
Bike to work	No TV
10,000 steps/day	No sugar
Take a picture a day	No Twitter
Write a novel	No caffeine

https://www.ted.com/talks/matt_cutts_try_something_new_for_30_days