



The Safety Sigma

QUARTERLY NEWSLETTER OF THE NAVAL SCHOOL OF AVIATION SAFETY

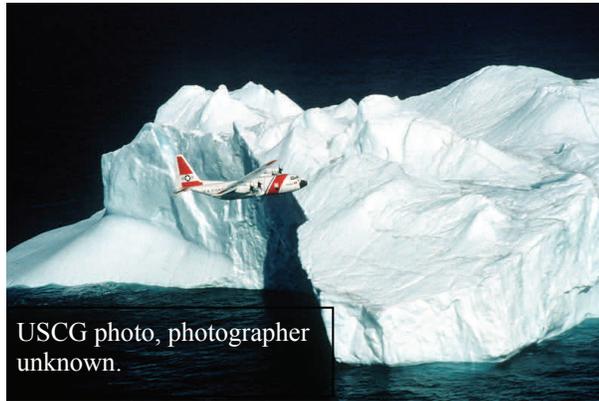
In the last 2 years I have written numerous articles for the Safety Sigma. My articles have discussed safety leadership, organizational culture, safety management systems, the blue threat, and other topics. Some of these topics have been abstract, like the Efficiency-Thoroughness Trade-Off (ETTO) principle (Spring 2013), or how to integrate your WTI, CRM-F and ASO to better combat blue and red threats (Winter 2013), or tools to develop a Just Culture (Spring 2014).

In this issue I wish to be more blunt. Since it is summer in Pensacola, with a 106 heat index as I type, I want to talk about something cold—icebergs. Regarding icebergs, I will discuss Delta R, how not to determine if a missing bolt was properly torqued, safety surveys and zip ties.

Icebergs: The iceberg analogy is an overused cliché which I myself reference frequently at the schoolhouse. Like most, I encourage leaders to “look beneath the waterline” while often disregarding the fact that there is a big freaking piece of ice floating above the water that is pretty darn easy to see.

If you don’t take action after you see this iceberg, you are going to have a bad day. My point is, yes, there is more ice under the water, but in reality we avoid running into icebergs by taking action after we see them. You might not see them if you are not provided with the proper tools, cut corners and rush. Anybody seen Titanic?

Delta R: As we remember back in aero class, Delta T predicts aircraft performance based on the difference between the actual temperature and a standard day. I would like to use a variation of that and define a Delta R: the difference between your actual resources and your actual readiness. If you have been through the ASO or ASC in the last couple years you know I discuss how command climate surveys have revealed concerns about units being overcommitted (ASD Issue Paper #118). Why is this? Is it new? Has this just started happening in the last few years? When I look back at my first deployment in 1991, I would wholeheartedly agree that we were overcommitted, chasing Soviet submarines and providing a detachment in support of De-



USCG photo, photographer unknown.

The Top of the Iceberg

- CAPT Jody “Caveman” Bridges, USN, SAS Director

sert Storm. In 1994 in the Adriatic, flying armed surveillance and reconnaissance and overland ISR we were overcommitted. I would say that my entire 25-year career was spent with overcommitted units. I think this can be explained simply as “Delta R.” Some would call that efficiency, or a really cool word like Earned Value. But as a safety pro who understands organizational culture, I see more than earned value or efficiency. Maximizing the delta between readiness and resources is due in part to more efficient practices. A “git-er-done” attitude and “cutting corners,” both of which lower the margin of safety, help maximize the Delta R as well. As we strive to maximize readiness, at times we reward at-risk behaviors because Sailors and Marines receive “ataboys” when they routinely do more with less. Do we really know how much Delta R is being achieved because of these at-risk behaviors? Is that “readiness” real? Or are you about “ready” to lose a whole bunch of Delta R due an error chain which results in a mishap because of little to no safety margin? Remember, human error won’t go away, so we put processes and procedures in place to ensure that errors won’t result in mishaps. Our procedures are based on understanding the fallibility of human beings. When we try too hard to maximize our Delta R, ignoring these procedures, we have a hard time seeing the iceberg.



USN photo, CWO5 D. Kissel, USN

How not to determine if a missing bolt was properly torqued: This is added for comic relief but it is as frightening as it is funny. I recently read a HAZREP on a TFOA. I won’t mention the squadron name, to protect the innocent (and avoid any nasty emails I might get in the future), but it was released in mid-August with one accepted causal factor and one recommendation:

Accepted Causal Factor: Nozzle section outer augmentor separated from aircraft during flight.

Analysis: “Properly torqued” VEN link assembly bolts backed off during flight, causing the leading edge of nozzle section outer augmentor to lift into slipstream and depart from aircraft. All other VEN assembly bolts were found to be properly torqued.

This Issue

- Learning Lessons from Civilians
- Threat & Error Management
- Prominent CRM Hazards
- Self-locking Nuts
- Low-cost & No-cost Reports

The Top of the Iceberg (cont)

- CAPT Jody "Caveman" Bridges, USN, SAS Director

Recommendation: Brief to all F/A-18E/F/G maintenance personnel.

So let me get this straight. You know the bolts that fell off in flight were properly torqued because the ones that did not fall off were properly torqued? Is that the analysis? I would put forth that using the sample of bolts that did not fall off wasn't really representative of the group of bolts that did fall off. What is the lesson learned for that young maintainer? Properly torqued bolts fall off aircraft in flight? Is that acceptable in the Super Hornet? I would suggest maybe, just maybe, there is a deeper root cause than properly torqued bolts falling off the aircraft. Maybe the causal factor is similar to what Zeus discusses later in this issue.

Safety Surveys: I really enjoy when CWO5 Kissel comes down from the Naval Safety Center to discuss maintenance safety with the ASOs and ASCs. I get to hear the latest aviation maintenance

gouge from the fleet. The last time he stopped by, he had a smartphone full of pictures he took during recent safety surveys. They were pictures of icebergs, I'm sorry, non-standard practices.

These pictures were taken in the middle of the work day. Chiefs, senior NCO's, and aviators walked by, but probably not the safety guy/gal. I can just hear the safety guy now. "You darn kids get off that Super Hornet and get some PPE on!" Or how about, "Where is your B4 stand son? You get your butt off that ladder and get some proper support equipment!" Is that the problem with these pictures? Is the problem due to not having an engaged Safety Department? I would say no, and if you believe that the problem lies within the safety department then you probably believe that you can determine if a missing bolt was properly torqued by checking the ones that are still there.

If your safety department is running around making people comply with established procedures, what is it truly accomplishing? I see these pictures as icebergs, as indicators of what the behavioral norms are of that organization. Do you think a Sailor or Marine who does not follow procedures on PPE or support equipment is following all the other procedures to the "T"? You just "happen" to see

the only non-standard procedure? Nope, the behavior is just the part of it that is above the water line, that is visible, the "tip of the iceberg." If the Safety Department is your police force, you may just be masking the bigger problem.

Zip Ties: So what is beneath the water? A lot. One thing that is below the water line in Naval Aviation is zip ties. Zip ties you say? That is impossible! Zip ties are awesome and we use them all the time with great success. However, it has been determined by the Joint Services Wiring Action Group (JSWAG) and the 505 manual that lace ties are



Lace Tie, MIL-HDBK-522

supposed to be used in most applications, not zip ties.

There might be some zip ties on aircraft installed by the original equipment manufacturer (OEM) but any O-level maintenance requiring removal of zip ties calls for replacement with lace ties. Well, back to the icebergs and how much ice is beneath the waterline. Below are some more photos from fleet safety surveys.

It is a regular "Zipaploosa" of zip ties out there. There are also splices too close to connectors, bundles of wiring not properly secured, etc. A lot of ice is beneath that waterline.



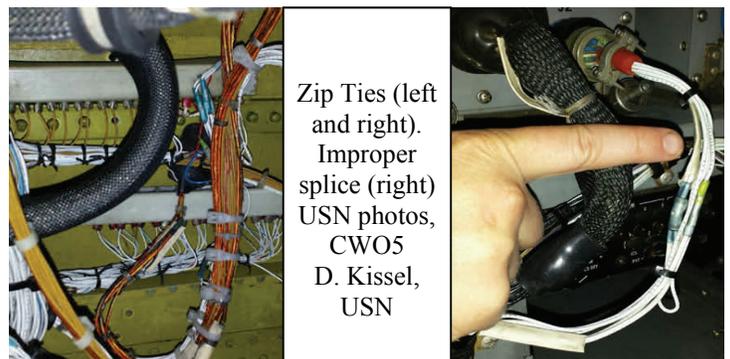
Base of the iceberg, retrieved from mariashriver.com

In summary, Sailors and Marines who don't comply with established procedures that were set forth to manage risk are symptoms. They are a visible symptom of organization-wide normalization of deviance. It requires all leadership within that organization to set the standard. The Chiefs, NCOs, ready room, and front office must all lead from the front and walk-the-talk when it comes to compliance. No one should ignore a Sailor or Marine who is clearly cutting corners.

Often we get "heads-down," and get stuck in the office. When we do get out, it is for a mission, to get something done. When that happens we walk by icebergs. Skippers, remember there are plenty of icebergs out there, and if you are looking for them, you can see them and change course.



No cranials (top), Wing walker sitting on aircraft bay (bot). USN photos, CWO5D. Kissel, USN



Zip Ties (left and right). Improper splice (right) USN photos, CWO5 D. Kissel, USN



Left. OKINAWA, Japan (Aug 27, 2014) - Ordies with Marine Aerial Refueler Squadron 152, carry a container of GTR-18 missiles away from an MV-22B Osprey during a threat reaction evolution outside of Okinawa, Japan. The threat reaction evolution is a chance for pilots to stay up to date on their qualifications while keeping an alert and aware mindset for any arising combat scenario.

USMC Photo by LCPL D.A. Walters

Right. ARABIAN GULF (Aug. 29, 2014) Sailors prepare to arm an F/A-18C Hornet assigned to the Valions of Strike Fighter Squadron (VFA) 15 aboard the aircraft carrier USS George H.W. Bush (CVN 77). George H.W. Bush is supporting maritime security operations and theater security cooperation efforts in the U.S. 5th Fleet area of responsibility.

USN Photo by Mass Communication Specialist 3rd Class Lorelei Vander Griend/Released



Left. SEVILLE, SPAIN (Mar 21, 2014) – Members of the Coast Guard’s acceptance team were on hand to accept delivery of the 17th HC-144A Ocean Sentry. The aircraft will be one of three Ocean Sentries operating from Air Station Corpus Christi, Texas.

U.S. Coast Guard photo.



Learning Lessons from our Civilian Counterparts

-Major Rob "Tattoo" Orr, USMC

My last Safety Sigma article discussed an aviation mishap prevention strategy that emphasized learning from our past mistakes. The article also mentioned that personnel in safety billets face the daunting challenge of devising creative ways to provide useful information to their target audience while keeping them engaged. With that in mind, one innovative technique is to incorporate the high points from the "incidents" and "accidents" of our civilian aviation brethren. The database containing this information is vast and represents a largely untapped resource for a military aviation safety campaign plan.

Illuminating what the two worlds have in common provides a better understanding of the factors and hazards that can lead to a mishap. This open-mindedness has already led to the military adapting such programs as CRM, SMS, and fatigue modeling.

While military and civilian aircraft are quite different, it is usually not the particulars of the aircraft that were causal to a mishap. History has proven that much more often it is a combination of various human (and sometimes environmental) factors that lead to disaster, no matter the type of aircraft. While the armed forces still experience a significant amount of mishaps in uniquely military environments, the fact remains that a notable chunk of military crashes share the same contributors as those in the civilian sector. Consider the following facts:

- Since the dawn of military aviation, we have lost more aircraft and personnel to non-combat related mishaps than to enemy action. This includes two world wars, Korea, Viet Nam, Desert Storm, Iraq, Afghanistan, and every other contingency operation over the past century.

- We've lost more aircraft since the beginning of FY14 (16 as of this writing in an 11 month period) than we've lost to enemy action since the War on Terrorism began on 9/11.

- None of the aircraft destroyed in FY14 to this point were due to enemy action.

Consider some of the factors and issues below highlighted by civil organizations. Numerous takeaways can be applied to the safety promotion component of your unit's SMS.

Weather: The #1 killer in general aviation crashes is inadvertent flight into IMC. The fact that you have an instrument rating and maybe a better-equipped aircraft certainly mitigates this hazard. CFIT and spatial-d, however, are still two of the top killers in military aviation with many of these mishaps being weather-related.

Runway Incursions: According to the FAA, there were 1241 reported runway incursions in FY13. Military aviation is certainly not immune to these hazards and mishaps.

Fatigue: Fatigue has been identified as a causal factor in many aviation mishaps of both the civilian and military variety. Consider the practices that we sometimes share with the airlines: crossing multiple time zones, multiple sorties in a day, long days, shortened crew rest periods, unpredictable sched-

ules, and flying during your circadian trough. Once again, consider the unique factors introduced by military aviation that make fatigue even more of a threat for our personnel. If the airlines' efforts to combat fatigue are generally regarded as quite advanced and effective, what can we learn from them?

Maintenance-related Mishaps: The airlines have an exemplary safety record in recent years. In terms of financial losses from mishaps, the real money is lost due to preventable damage incurred during maintenance, in the hangar and on the tarmac. With razor-thin profit margins for commercial carriers, particularly since 9/11, cost-cutting measures continue to be implemented, from smaller seats and luggage fees to a frontal assault on maintenance related ground mishaps. Leading causal factors are once again shared by the military and the "civ div": supervisory failures, deviation from published procedures, breakdowns in CRM (with shift changes being a weak link), and complacency. Engine FOD remains a costly problem for civilians and military alike.

Automation: The Colgan Air and Asiana crashes both cited aircrew / automation interaction failures as causal. Most military aircraft are lagging civilian models in terms of automation advances, but the incorporation of these technologies has mitigated many hazards while introducing some new ones. For more airline automation case studies, research the Nagoya, Strasbourg, Air France, and Bangalore crashes, to name just a few. If you're fortunate enough to fly with an autopilot, the FAA's recent report on the associated

hazards provides some very useful information. Learn how to identify and mitigate such hazards as "mode surprise," "mode confusion," poor monitoring practices / complacency, overreliance on automation, and the related vicious cycle of degradation of basic piloting skills. Lastly, if you want more information and can wait until this December, reference my masters thesis on automation-related mishaps.

Helicopter EMS Operations: "Civilian medevac helo pilot" is now cited by the NTSB as the most dangerous profession in the country. Many of these aviators are former military and are usually flying fairly advanced and well maintained machines. Why are they crashing so often? The obvious answer lies in the nature of their typically non-routine operations: short-notice launches that sometimes interrupt sleep, pressure to complete the mission, necessity for speed, possible night and/or foul WX, and unfamiliar zones with numerous obstacles. In a military helicopter, at least you're not single-piloted in most cases, but many of the same hazards listed above can still present a threat on our missions. LCDR Phil Fatoletis here at SAS (human factors guru) has more information on this topic as well.

The information above is only a starting point for learning from our civilian aviation counterparts. With a little creativity, many more parallels and lessons learned can be drawn. Why limit your database? On the next page are a few links to get you started in your quest for additional information from civil sources.

(Next page, top right corner)

http://www.aopa.org/asf/ntsb/search_ntsb.cfm

http://www.faa.gov/data_research/accident_incident

https://www.ntsb.gov/investigations/reports_aviation.html

An endless amount of free information is available as public record on the internet, including reports from foreign safety agencies as well. Learning from the past mistakes of others is the less painful way to promote aviation safety at your unit as opposed to relearning the lesson "the hard way" from a mishap. Semper Fi, Tattoo.

Threat & Error Management in Naval Aviation

-Capt Justin "Fisty" Hall, USMC and LT Chad "Old Bones" Paulus, USN

Threat and Error Management (TEM) has been a standard operational principle in commercial aviation since the mid-90s. Considered to be the next evolutionary step for CRM, TEM development is a direct result of our progress in understanding human factors. However, many in Naval Aviation are still unaware of what it is or how it works. Despite the fact that all of us have grown up using the 7 Critical Skills, CRM failures are still the leading causes of mishaps in Naval Aviation. As a result, TEM is one of the advanced Crew Resource Management (CRM) topics currently taught at the CRM schoolhouse. The concept of TEM is extremely important to safe and effective mission completion and has the power to change Naval Aviation.

In order to understand TEM, we first need to define threats and errors. Threats increase operational complexity. If not managed properly, threats can decrease safety margins. Errors are crew actions or inactions that lead to deviations from expectations. They reduce safety margins, and may occur from mismanaged threats. In short, a threat is something that comes at us and an error is something that comes from us. TEM helps aircrew identify and manage threats and errors before they impact safety of flight.

The US Navy TEM model is based on United Airlines' 2011 TEM model, as shown in Figure 1. The primary objective of TEM in

the civilian sector is safe operations. Though we want our operations to be safe, it is not our primary objective. Our primary objective is mission effectiveness. Safe operations are a by-product of mission effectiveness. The goal is to stay in the mission effectiveness area of the model.

We always face threats and errors in aviation. If we utilize the TEM model correctly, we can catch threats and errors before they occur and we can get the crew and aircraft back into the mission effectiveness/safe operations regime of the model.

The model works by assuming we will face threats and we will make errors when we fly. When we face threats, our first response must be to identify them and come up with a plan to mitigate them. If we do not identify or if we improperly identify a threat, then it could lead to an error. To help us manage threats, we rely on the use of the 7 CRM skills. Ultimately, if we identify and prepare for threats, we're able to stay in the mission effectiveness area of the model.

If we don't identify and prepare for a threat, we move down the model and can possibly make an error. If we make an error, we must identify and fix the error. Built into the model are resist and resolve tools to help identify errors. Resist tools are the hardware in our aircraft that alert us of error (ex. TCAS, RADALT, GPS, etc.). Resolve tools are the tools that we bring to the fight (i.e. human-ware). Some examples of resolve tools are our CRM skills, systems knowledge, attitude, and health. Resist and

resolve tools help us ID the error made and can guide us in repairing the error. If we accurately ID and repair the error, we move back to the top of the model.

An error can become consequential, causing an undesired aircraft state. An undesired aircraft state is a position, speed, altitude, condition, or configuration of an aircraft that reduces safety margins. If we end up in an undesired aircraft state, we can still recover the aircraft. If we recognize this state and recover from it, we move back to the top of the model. If we don't recognize the undesired aircraft state or we don't properly recover from it, at worst case, a mishap (accident/incident) occurs.

Another aspect of TEM is data collection. Existing programs like ASAP and MFOQA help us identify potential threats and errors. These programs help us combat preventable mishaps. They are a part of the proactive approach to trend analysis, threat mitigation, error reduction, and mishap prevention. In the past we had a predominately reac-

tive approach to threats, hazards, errors, and mishaps.

The 7 Critical skills allow us to accomplish the mission by helping us ID and manage threats and errors we face. If CRM is a tool, then TEM is the toolbox for CRM. The incorporation of TEM into our current CRM program can further mitigate human error and the potential for mishaps.



Figure 1. US Navy TEM Model

Prominent CRM Hazards in Naval Aviation

-LCDR Phil "Dr. Phil" Fatolitis, USN and CDR Bill "Pop" Little, USN (ret)

CRM as a Hazard: Among other things (e.g., proficiency, situation awareness, stress and fatigue), individual aircrew performance is a function of social and organizational phenomena (Wickens et al., 2004). In Naval Aviation, a very important social setting is constituted by teams (crews) who operate aircraft. When effective operational social behaviors (e.g., the "7 Skills" in CRM) break down, the stage is set for mishaps to occur. Per Prince and Salas (1993), the 7 Skills are: Mission Analysis, Assertiveness, Leadership, Communication, Situation Awareness, Decision-Making and Adaptability.

Since investigations into the contributions of effective CRM failures began, it has been consistently found that CRM failures play a major role in the incidence of mishaps (Helmreich, 1997). The same holds true today, based on the best data available. Figure 2 shows, via DoDHFACS, the contribution of CRM (shown as Coordination/Communication/Planning) issues as a causal factor in Naval Aviation Class A mishaps for a decade-long time period.

CRM is identified as a causal factor in 67% of Class A mishaps

FY 2000-2009, and along with other causal factors, it accounts for ~\$2.7 billion in losses and 176 fatalities (about 88% of all Class A fatalities). If CRM was the lynch pin that could have prevented these losses, a profound savings would be encountered in the organization. An interesting addendum to this point is that CRM was found to be a causal factor 267 times during the same time period, showing that, in some cases, individual mishaps had multiple CRM failures.

If CRM causal factors are examined even more closely, Mission Analysis, Leadership and Communication (again, elements of the U.S. Navy's 7 Skills) emerge as compelling points of discussion with respect to mitigation.

General Mitigation Approaches:

Prince and Salas (1993) state that mission analysis is a skill that includes organizing and planning, and is the *first skill that must be utilized by aircrew* despite the dynamic requirements to adjust priorities, assign tasks during a given flight. Based on their review of the literature, Prince and Salas

(1993) found that leaders were more effective when briefs were delivered in an organized fashion and identified norms for the crew. They also found that more effective crews made more plans and strategies and that when crews were less informed of mission goals, there was a performance decrement when missions changed.

With respect to leadership, Prince and Salas (1993) discussed research showing that more effective leaders *actively involved* crewmembers in mission tasks and ensured that mission tasks were clearly identified and communicated to crewmembers. They also showed research in which micromanagement of crewmembers by leadership led to less effective performance.

Communication is a skill that has implications across other skills. Obviously, communication is used to conduct briefs. It is used as a means to "back-up" or verify the actions of crewmembers. Is there a "best way" to communicate in crew settings? Prince and Salas (1993) found conflicting evi-

dence in this domain. Their review of the literature showed that increased communication frequency led to better performance, and in different settings, less information was required for optimal performance. Perhaps optimal communication among crewmembers occurs when correct information of sufficient content is provided.

Improving CRM Training: Salas et al. (1998) discuss several factors that may improve CRM training: a mandate, access to data and access to resources. According to Salas et al. (1998), a mandate from involved organizations creates a requirement in which CRM training is continually evaluated in a standardized way. The goal is to identify if CRM is effective and to find ways to improve it. The only rational way to do this is via data collection and analysis. The authors go on to discuss organizational climate as a facilitator to the accurate observation of the effects of CRM training over time. The organization must fully support CRM improvements and provide access to resources as a result. Resources should test both the effectiveness of skills training and decay rate of CRM training. Such an approach is comprehensive and includes observation in the classroom and cockpit, and of mishap reports. Salas et al. (1988) indicate resources are needed to design and deliver CRM training and develop evaluation paradigms. Since CRM is a prominent causal factor in mishaps where the majority of lives and money are lost, significant allocation of resources toward improved CRM approaches are warranted and even moderate allocation of resources is desperately needed.

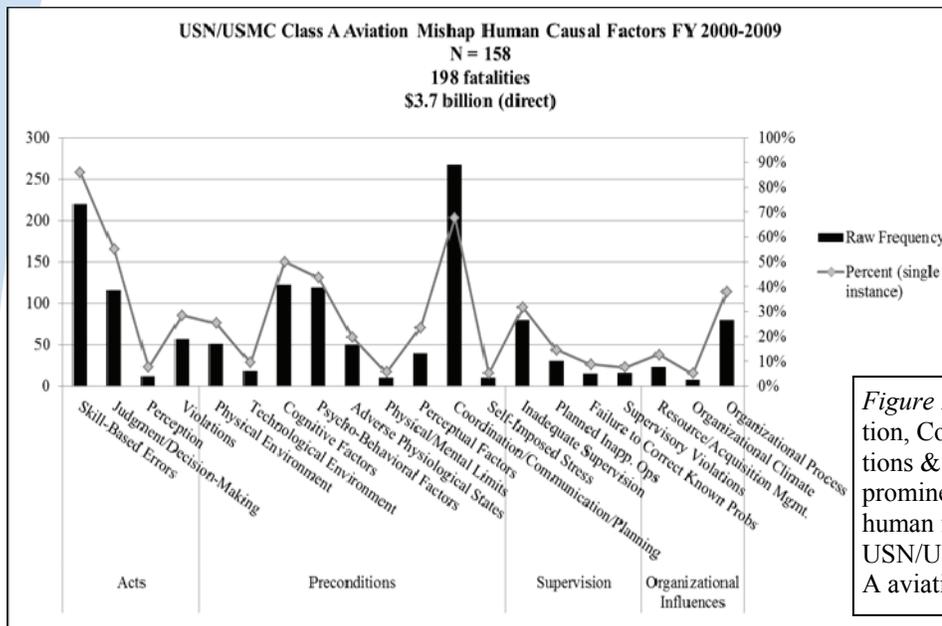


Figure 2. Coordination, Communications & Planning is prominent among human factors in USN/USMC Class A aviation mishaps.



Can I Reuse Self-locking Nuts?

-Mr. Rick "Zeus" Wartman



Over the past 28 years as an aircraft structures engineer, I have seen many cases of self-locking nuts being re-used on aircraft. Many times the re-use of these locknuts has allowed bolted connections to come loose and be causal to the aircraft either making an unscheduled landing or led to one of the causal factors in a mishap.

Many bolted connections exist in the assembly of an aircraft. Some of these connections use safety wire to prevent the bolted connection from becoming loose. Other bolted connections use self-locking nuts to prevent them from coming loose.

There are two general types of locknuts used on aircraft: the all metal type and the type with a nylon or non-metallic locking feature. The all metal type of

lock nut is either a distorted thread nut or a spring beam type of nut. The distorted thread lock nut typically is a nut that has the top of the nut crushed slightly which makes the threaded hole appear as a slight oval. When it is threaded onto the bolt the distorted oval is forced into a round threaded hole. This causes friction to occur between the nut and the threaded fastener. This friction creates the locking feature. The spring beam type of nut has small slits (usually 6) equally spaced around the top of the nut. These small slits allow the individual fingers of the nut to be bent slightly inward. When the nut is threaded onto the fastener these fingers are forced outward resulting in additional friction between the nut and fastener.

The nylon lock nut has an elastomeric insert at the top of the nut. The inside diameter of this insert is smaller than the outside of the threaded fastener. When the nut

is threaded onto the fastener the insert is distorted by the threads and causes an increase in friction between the nut and fastener. Nylon lock nuts are designed to be used in applications that do not exceed 250 degree F, as anything above this temperature would cause the insert to soften, preventing the locking feature from working correctly.

All types of lock nuts rely on a mechanism to increase the friction between the nut and the threaded fastener to provide the locking feature. However, each time a locknut is threaded onto a fastener the friction decreases as the locking feature conforms to the threaded fastener. For a lock nut to be used a second time on a threaded fastener requires that the "running torque" be measured to make certain it is within limits. The running

torque is the amount of torque required to rotate the nut on the threaded fastener after the locking feature has fully engaged the fastener, but before the bolted connection has achieved clamp up force. A misconception is that if an individual cannot rotate the nut onto the fastener by hand while the locking feature is engaged, then the nut can be re-used. Since the running torque is difficult to measure, it is standard practice that lock nuts should only be used one time for assembly. If the nut is taken completely off of the fastener, a new nut should always be installed each time. NAVAIR 01-1A-8 states "When self-locking nuts are installed in critical applications, a new self-locking nut shall be used. Do not re-use self-locking nuts in critical applications."



Low-cost and No-cost Reports—How Much is Enough?

-LT Jim Bates, USCG

Regardless of what your service calls them, I am referring to mishaps/incidents/hazards with dollar values less than \$50,000. So many have the same ingredients as a bigger mishap, and we know we need to capture them, write about them, and learn from them. Even if you believe you are reporting everything that is "reportable" per your service policy, isn't it important to know where your air station/squadron stands in relation to others? Maybe another unit reports more because their FSOs are more accessible, or their command is more amenable to sharing lessons with the fleet.

The Coast Guard, tends to report more of these events per 100,000 flight hours, per aircraft, per unit,

per (insert any denominator you want), than the other uniformed services. While aviation mishap stats are usually referenced to a particular fiscal year, I have become interested in referencing them to FSO assignment years. We do virtually all of our PCS'ing and billet changes in the summer, so I generally like to align rates with a particular FSO or FSOs. The reporting is largely on their shoulders, so they deserve the credit, right? From the summer of '13 through summer of '14, our most actively-reporting FSO reported 5.0 Class Ds per aircraft at their air station. The overall average was 1.8 reports per aircraft. If my unit reported less than 1.8 reports per aircraft, I'd hope I would ask myself why. Perhaps I'd call the

guy who led the pack to ask him what he's doing differently.

To be honest, I really started thinking about aligning local reporting rates with FSO assignment periods, because I hypothesized that in our usual 2 years as an FSO, there exists a "sophomore slump" where 1st year motivation is perhaps followed by complacency, laziness, or a completely "dropped pack." I know this

because I personally fought this as an FSO. It can be a frustrating job often without immediate gratification. You have to keep searching for hazards and writing about them all the way through your passdown to the next FSO. How much is enough? There is no definitive number. The hazards are still out there. Go find them and keep up the good work writing about them!



“Doc” Bank Memorial Award

The *Milt “Doc” Bank Memorial Distinction*, recognizes the student or students in each graduating ASO class who best exemplify the characteristics of the late, great Milt “Doc” Bank, PhD: motivation, intelligence, imagination and aptitude to be a potential future ASO Instructor. The recipient of this award for ASO Class 14-5 was Captain Ayleah Alejandre, USMC. For ASO Class 14-6, the winner was LT Maile Richert, USN.

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