

# The Safety Wire

March 2013



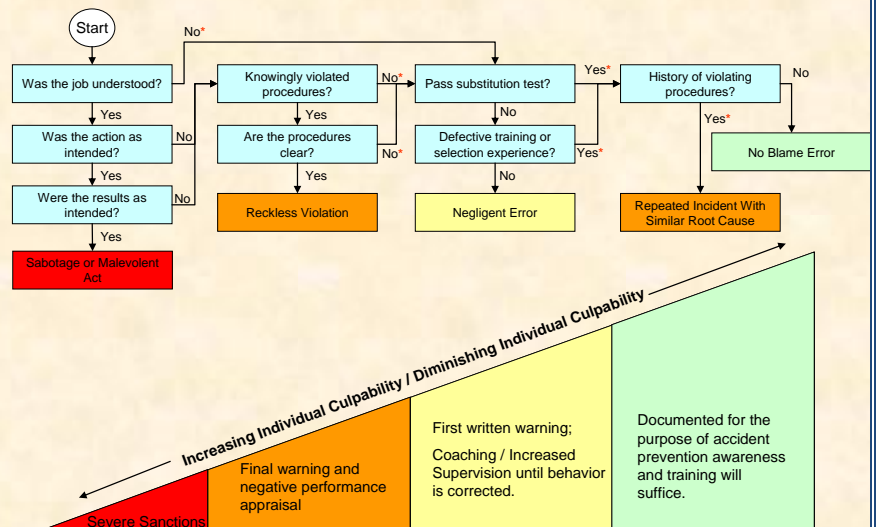
**“YOU JUST DID THAT, SO YOU JUST GOT FIRED”**

This was a humorous quote from a HAI safety video. The play on words referring to *Just Culture* was made to explain the ‘old way’ of dealing with human error in the aviation world. Unfortunately, as much as we would like it to be, it is not always the ‘old way’ when the time comes to deal with a mistake. Most of us are familiar with the real concept of *Just Culture*, but just to be sure we’re all on the same page, let’s review it quickly.

Human error cannot be completely programmed out of any organization. From time to time, we must recognize that good employees will make honest mistakes. It is important that we deal with the causes of the error instead of simply punishing or firing the person. There are several good reasons for this. First, many mistakes in aviation do not leave immediate evidence. A hot start, overspeed, hard landing or other mechanical abuse could cause damage that would not be visible to the next aircrew or mechanic. If the offender is not comfortable admitting the mistake to management, it will go unnoticed until a later flight when a component that could otherwise be repaired, suddenly fails. Second, many ‘honest mistakes’ are ones that could happen to anyone at the unit. Sometimes, they are a result of normalized deviation from policy or safety procedures that had gone unaddressed for too long. Dealing with the issue allows management to keep not only the same person, but others from making the same error. Finally, it makes financial sense. If employees are comfortable reporting close calls and actual goof ups, action can be taken before a real accident happens or before minor unreported component stress leads to a complete system failure, loss of an aircraft and/or injury. Also, a good employee represents a significant investment in time and money.

As we all know, this does not mean we do not punish those who intentionally violate policy or act negligently. It is actually a rather easy theory to understand and follow. Having the policy on paper is only the beginning; management must follow it and employees need to believe management will honor the promise. For more reading on Just Culture, refer to page 56 of the SMS Toolkit (<http://www.alea.org/assets/cms/files/safety/SMS-Toolkit.pdf>).

There is a flow chart on page 59 that can be cut and copied directly into your policy. That version is a little complex, so it may help to start with the simpler chart printed in the previous version of the toolkit:



\* Indicates a ‘System’ induced error. Manager/supervisor must evaluate what part of the system failed and what corrective and preventative action is required. Corrective and preventative action shall be documented for management review.

## SMS: POLICY PILLAR

(SMS Toolkit p.9)

Last month we took a look at the policy pillar of an SMS. We discussed the importance of making your unit's Standard Operating Policy (or whatever title you give it) and Safety Policy one document, not two separate policies. The incredibly important Safety Statement was also covered and it was suggested that it be at the top of your unit's policy manual. Included in that statement should be a commitment from management to a Just Culture.

The success of the entire program rests on management's support of this foundation. During SMS workshops conducted at Heli-Expo this month, one Safety Manager confessed that his company had a safety statement that included a commitment to Just Culture in their policy, but it was sometimes forgotten about when the time came to deal with a mistake. One person in class suggested having the boss sign the policy. This is a suggestion made in the FAA's SMS training program as well. Another class member suggested having the boss sign it every year, to both keep the idea fresh and address possible management changes (which *never* happens in law enforcement, right?). The Safety Statement and commitment to Just Culture not only have to be documented in black and white... people need to believe in it. If they do not, the Hazard Identification and Risk Assessment will never get off the ground.



## SMS: RISK MANAGEMENT PILLAR

(SMS Toolkit p.27)

The Risk Management (RM) process covers several core elements to a safety management system (p. 7 – elements 6-10). It is important to remember that you shouldn't get hung up on the idea that certain tasks belong solely to one pillar or another. Many tasks overlap. For example, when setting the context of your RM process, you will use the safety expectations, limits and authority outlined in your policy. Once a risk is identified and a control put in place, the new rule or technique must be put into policy and addressed with training (Safety Promotion Pillar).

I find it easier to address the RM process without thinking about what pillar I am operating in. I like the 6-step outline on page 27. When thinking about theory, or checking to make sure my SMS is covering all essential elements, I then revert back to the four pillars and 12 elements (p.7) as more of a checklist.



- 1. Establish the Context**
- 2. Identify the Risks**
- 3. Analyze the Risks**
- 4. Evaluate the Risks**
- 5. Treat the Risks**
- 6. Monitor and Review**

Establishing context is one of the great strengths of an SMS as opposed to a traditional safety system. Don't look for every possible risk in every aspect of your operation all at once. You will either cripple the safety program by proclaiming the sky is falling, or throw your hands up and write off risks as 'inherent dangers' to be accepted as part of doing business instead of mitigated and controlled. Start by dividing your effort into sections of the operation: patrol ops, training, maintenance, scheduling, etc. Your policy will outline the scope of your effort as well. Finally, when we discuss prioritizing identified risks, we will discuss setting a threshold for acceptable levels of risk.

## SMS: RISK MANAGEMENT PILLAR

### 1. Establish the Context

### → 2. Identify the Risk

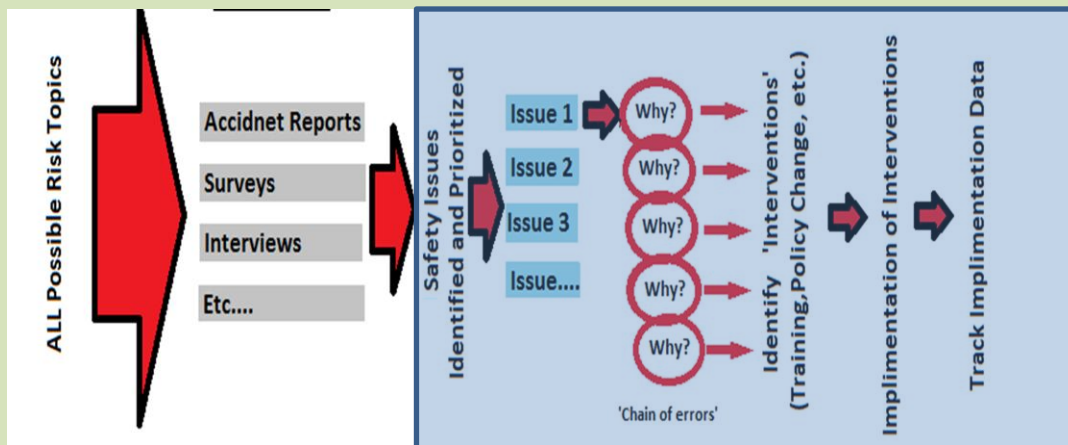
Now we start on what most Safety Managers consider to be the ‘meat and potatoes’ of their program; risk identification and mitigation. After your policy is established and the context set, start collecting information on the risks that are at your operation through a Hazard Identification process (p.32). At this point, don’t worry about deciding if the risk is too big or small, we address that later. Also, don’t spend too much time at this point looking at the latent factors in each risk, or the associated links in the accident chain that may be present. There will be time for that as well. Identify the risks. There are many ways to do this and in truth, the task often drifts between social science and art. It requires a good working understanding of the operation you are analyzing. To do it right, it requires input from as many sources as possible. As I have often said when asking for input from the ALEA membership on the ALEA Safety Program, “I do not have all the answers, but we do.” Draw on the observations and experience of your unit members.

Here is the tie-in this month. If unit members do not understand or believe in the commitment from management to a strong **Just Culture** (as outlined in the Safety Statement), they will not participate in the **Hazard Identification** process and your Risk Management efforts will fail to make a significant impact on safety.

Over the next few issues we will follow a Risk Management model I made up for a research project. There is a presentation on the process on the website as well. (<https://www.dropbox.com/s/j19hibc3lkzxpqh/HAI%20IHST%20SMS%20presentation%20web%20version.pptx>).

*Be sure to download it and run the slideshow – don’t just view it on the website link*

Consider the various forms of Hazard Identification you can use. The toolkit has a simple Hazard Identification form (p.52) that you could print out today and distribute to your unit members for them to fill out. Distribute them with sealable envelopes and set up a place where they can be anonymously deposited if the Just Culture idea is new to your agency. Equally as easy, put together a simple survey and pass it out to everyone. Keep it to one page the first time unless you want to be disappointed with how many completed forms make it back to you! Rounding out the top three easiest ways to ID hazards... walk around the workplace with a notepad and write down risks you see.



**EVERY ACCIDENT, NO MATTER HOW MINOR, IS A FAILURE OF THE ORGANIZATION**

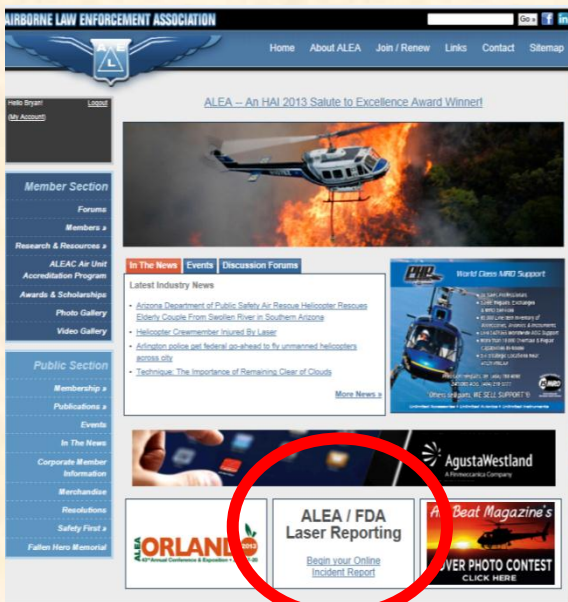
~JAROME LEDERER

(NASA DIRECTOR OF SAFETY DURING THE APOLLO MISSIONS AND ORGANIZER OF THE FLIGHT SAFETY FOUNDATION)

# LASER REPORTING

It is no secret that laser strikes are on the rise. Our mission profiles make us prime targets. I regularly receive phone calls and emails from members having troubles with laser strikes. Most of the time, the biggest problem is getting the agency administrators to understand the seriousness of the situation and take proper action against offenders.

Fortunately, we are also the best equipped resource to do something about the growing problem. While talking to members from the FAA's Law Enforcement Assistance Program, they informed me that the vast majority of resolved laser incidents come from law enforcement aircraft. We are able to locate offenders and arrange for immediate law enforcement contact, which is something that airline pilots and general aviation aircraft cannot do. Laser reports going to the FAA rarely have enough information for investigators to work with.



Many of the offenders attacking us with lasers also take aim at other types of aircraft in the skies. If we make an arrest and fill out the ALEA online laser reporting form, the FAA and other federal authorities can use that report to correlate other laser strike incidents to the same individual.

I am proud that our profession consistently leads the way in aviation safety on numerous fronts. Here is another area that we can make a significant impact on a threat affecting the entire aviation industry. Please, use the ALEA laser strike reporting form on the website, especially if you have managed to get a suspect identified.

<http://www.alea.org/areas/laserincidents/>. The

federal agencies working hard to combat the laser threat have emphasized the importance of collecting information on the laser device itself and getting photos of it. This may be as simple as getting the ground units to take a picture of it with their phone and emailing it to you with a model number, etc.

More info: <http://www.laserpointersafety.com/>  
<http://coastguard.dodlive.mil/2013/02/blinded-by-the-light/>

*Air Beat* laser related articles: [March/April 2012 \(p. 28 and 42\)](http://www.mydigitalpublication.com/publication/?i=104397)  
<http://www.mydigitalpublication.com/publication/?i=104397>

## Laser Information

Laser Model:  (if known)  
Laser Manufacturer:  (if known)  
Laser Beam Color:  (if known)  
Laser Power in Milliwatts (mW):  (if known)  
Laser Class:  (if known)

Noted on labeling of the laser. Examples are Class I, II, IIa, IIIa, IIIb or IV. Other examples are Class 1, 1M, 2, 2M, 3R, 3B or 4

\* = Required Field

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## **EMERGENCY PROCEDURE OF THE MONTH**

### **SMOKE IN THE COCKPIT..**

Consider the following cases and, with your crew, review the emergency procedures for the aircraft you fly:

#### **PIPER PA-24-180**

**Injuries: 2 Fatal**

**NTSB Identification # ERA12LA145**

According to the Federal Aviation Administration, the crew was practicing instrument holding patterns as part of an instrument proficiency check. Air traffic control (ATC) queried the crew about altitude fluctuations, and the crew responded that there was smoke in the cabin. ATC cleared the flight direct to HYA, and the crew responded that the smoke had cleared and they wanted to continue the flight. Radar and radio contact was subsequently lost. The wreckage was found, submerged, in the bay near Brewster.

#### **EUROCOPTER MBB-BK 117 C-1**

**Injuries: 4 Uninjured**

**NTSB Identification # ERA11IA091**

The helicopter was on final approach to land when smoke and flames were observed emanating from the suction control mounted on the left side of the cabin. According to the flight nurse, the helicopter was on final approach to land, when she noticed "a smell" followed by smoke and flames emanating from the suction control mounted on the left side of the cabin. She notified the pilot and discharged a fire extinguisher, which extinguished the fire. The pilot landed the helicopter without further incident. He subsequently noted obvious fire damage on the left cabin wall near the suction device control switch and the liquid oxygen gauge. Post-incident examination revealed fire damage on the face of an overhead medical cabinet that was part of a medical interior installed about 7.5 years prior to the incident per a supplemental type certificate. A sheathed wiring bundle for a 120-volt alternating current power outlet mounted in the aft end of the cabinet displayed chafing damage and arcing consistent with rubbing on the metal housing for the vacuum control switch. The wiring was installed without adequate clearance or support to prevent it from chafing on the switch housing.

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### **REALITY CHECK...**

*The following excerpts are directly from NTSB reports. The intent is not to judge, but to use the harsh lessons experienced by some to increase safety for everyone.*

**CORRECTION:** Last month, the first accident report was mislabeled as occurring in a Jabaru 230. It should have read: Bell 206L-1

Aircraft: Robinson R44  
Injuries: 1 Uninjured  
NTSB Identification: ERA12LA429

The pilot was operating the helicopter in night visual meteorological conditions in the early morning hours, after having driven about 6 hours and then flown about 3.5 hours immediately before the accident flight. He stated that he was in cruise flight about 600-800 feet above ground level and had been flying less than 10 minutes when, while turning over a lake, he saw the clutch actuator light illuminate. The pilot reached for the circuit breaker box under the passenger seat to pull the clutch circuit breaker, and then felt "light in the seat." He stated that the helicopter was rapidly descending, and he pulled up on the collective to arrest the descent. After pulling on the collective, he received a low rotor rpm horn and then observed the surface of the lake reflecting the moonlight about 50 feet below the helicopter as it continued to descend. The pilot pulled on the collective to soften the impact, and the helicopter came to rest in the lake. The pilot then egressed and swam to shore.

Post-accident examination revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. Operational testing of the clutch actuator revealed no anomalies. The reason for the illumination of the clutch actuator light could not be determined. It is likely that, while reaching down in an attempt to pull the clutch circuit breaker, with a lack of outside visual references due to the night conditions and the helicopter's location over a lake, the pilot made an inadvertent cyclic input that resulted in the helicopter's nose-down attitude and subsequent descent. The pilot's lengthy time awake and the time of the accident suggest that he may have been fatigued at the time of the event.

Aircraft: Cessna 340A  
Injuries: 3 Fatal  
NTSB Identification: **MIA06FA069**

A commercial pilot with two passengers on a business flight was arriving at the destination airport in a light twin-engine airplane. The air traffic tower controller advised the pilot to follow a slower airplane that was on base leg. The controller subsequently asked the accident pilot if he could reduce his speed, "a little bit." The accident pilot responded that he was slowing down. Less than a minute later, the controller told the accident pilot that he was cleared to land. The accident pilot's last radio transmission was his acknowledgement of the landing clearance.

Ground witnesses described the airplane as flying slowly with its wings wobbling, turn right, and dive into the ground. The majority of the airplane was consumed by a post-crash fire. Inspection of the flight controls and engines disclosed no evidence of any pre-impact mechanical problems. Low speed flight reduces the margin between a safe operating speed and an aerodynamic stall. Wing "wobble" at low speeds is often an indicator of an incipient aerodynamic stall.

Toxicological samples from the pilot's blood detected diphenhydramine (a sedating antihistamine commonly known by the trade name Benadryl) at a level consistent with recent use of at least the maximum over-the-counter dose. Diphenhydramine is used over-the-counter for allergies and as a sleep aid, and has been shown to impair the performance of complex cognitive and motor tasks at typical doses. The FAA does not specifically prohibit the use of diphenhydramine by pilots, though Federal Air Regulation 91.17, states, in part: "No

crewmember may act, or attempt to act as a crewmember of a civil aircraft...while using any drug that affects the person's faculties in any way contrary to safety..."

*A mentor once told me, "The best way to remember which medication is safe for flight is to realize that if you are sick enough to need medication, you're probably too sick to fly."*

If you do take any medication, supplements, vitamins, etc., remember to find out exactly what the effects will be on you **IN FLIGHT**. This is usually not a question your family doctor or the internet can answer. When in doubt, check with your Aviation Medical Examiner or an aeromedical professional to be sure.

*As always...*

If you would like to be a part of this process, please contact me.

If you have a story to tell or a lesson to pass on, send it to me.

If you like what you see happening with the program, I would like to hear from you.

If you want to see something different, or additional...I **NEED** to hear from you!

Until the next flight,

*Bryan 'Mugy' Smith*

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