# The Safety Wire

**February 2013**


## *"The SMS Elephant"*

Recently, while talking to one of the FAA's SMS experts, he said the process of developing a program was explained to him by a small commercial operator as trying to tackle the 'SMS elephant.' I have had a number of ALEA members express their…'challenges' with implementing an SMS at their unit. ALEA, in cooperation with the International Helicopter Safety Team (IHST), put out a SMS Toolkit several years ago. The toolkit is available for free on the ALEA website: http://www.alea.org/assets/cms/files/safety/SMS-Toolkit.pdf

Still, sometimes the information in the toolkit needs a bit more explanation to help us all transform the theory into an actual program. The IHST SMS Committee has seen a similar need for further guidance in the utilization of the toolkit within the general helicopter industry. To address that need, I am going to start focusing on a section of the SMS Toolkit each month. I will be including information that the IHST SMS Committee is working on. Fixed-wing guys, don't worry, this applies to all of us. Hopefully, we can all use this information to build up our own SMS programs one step at a time. Remember, if you are able to secure funding, there are several commercial SMS providers that will do all of the work for you by providing a pre-packaged or even a computerized SMS. Several of these companies are ALEA Corporate Members.

This month, let's start with the very basics. SMS has been plagued over its young life with varying definitions, labels and categorizations of components. Even within a single SMS program, the definitions can be confusing and clear as sea fog. ALEA and IHST work with the FAA's SMS office and other industry leaders to try and make sure there is common ground we can all work from. The FAA expects to have a new set of regulations for Part 121 operators to follow sometime in 2013. While this new set of regs will not apply to law enforcement operators directly, it will be the common language for the industry. This new CFR Part 5 also more closely mirrors ICAO guidelines, making it a resource we can use to communicate in a common SMS language with the international community. As ALEA is an international organization, it benefits our membership to have a basic foundation to start from. The SMS Toolkit is anchored in this collective effort.

On page 96 of the toolkit, under definitions, SMS is defined as having, "systematic procedures, practices, and policies for the management of safety (as described in this document it includes safety risk management, safety policy, safety assurance, and safety promotion)." It will be easiest to conduct this effort by concentrating on those four 'pillars' of SMS. Back on page 6 of the toolkit, we see those four pillars defined. Page 7 further breaks each pillar down into 12 elements. It is important to remember that these pillars and elements are independent components but must be developed to work with the rest of the SMS, like gears in a machine. In the upcoming issues of the newsletter, I will explain not only the theory behind each of these pillars and elements, but also show how that function works with the other elements and, most importantly, how you can incorporate that function into your daily operations.

Let's first take a quick look at the Policy Pillar. This pillar covers: Safety Policy, Management Commitment, Accountability, Safety Personnel Designation, Emergency Preparedness and Documentation. Let's look at Safety Policy…


Here is where we find our first major shift from a traditional safety program, which was usually a separate document in a different folder on the shelf, or at a minimum, a separate section at the end of the unit's policy and procedure manual. To quote someone on the IHST SMS team, "SMS is not always something you have; it is a way of doing business." The unit's general policy statements must be written in conjunction with the goals of the unit. These policies explain exactly 'what' is expected of the aviation program. Once established, you can begin the process of making sure there are procedures to guide everyone on 'how' those policies are to be conducted. The final, published procedures can be included in the documentation section of this pillar, but they are developed, monitored and trained for in the other three pillars of SMS.

It is likely that your unit already has safety policies included in your safety program. You may also have safety related policy statements in your general policy manual. The first step is to reconcile those two sources and put them in one place. The SMS policy effort and traditional unit policy setting should be one combined effort. Every policy that seems 'non-safety' related should be reconsidered within a safety mindset. Some are easy to identify, such as training or mission policies. However, does something as benign as a scheduling policy have a safety aspect that should be considered? Sure it does.

Standard Operating Procedures (SOP) and the Policy Manual should not be separate from the SMS Program. The entire aviation program should be anchored by a safety policy statement right at the top of the manual that sets the tone for all operations (SMS Toolkit, p.15). I would recommend something more than just simply stating that safety is the "number one goal" or

other arbitrary terms similar to that without further explanation. Sure, the details are in the procedures, not the policy. However, we need to have something that offers more specific direction and authorizes employees to choose safety over unacceptably risky operational choices. For example:

All operations conducted at Bob County Sheriff's Office will be done in the safest manner possible. No mission or customer is so important as to require deviation from safety policies, procedures, industry standards, or the prudent judgment of our employees. The primary goal of any operation is the preservation of equipment and assurance of personnel safety so these resources will be available for continued service to the community.

The policy statement can be expanded upon, but you get the point. Of course, no policy is of any use without the backing of management and assignment of responsibility, accountability and authority within the program. Next month we will look at this aspect of SMS Policy and start in on the Hazard Identification element of the Risk Management Pillar as well.

**THE SAFETY OF THE OPERATOR IS MORE IMPORTANT THAN ANY OTHER POINT. GREATER PRUDENCE IS NEEDED RATHER THAN GREATER SKILL.**

**~ WILBUR WRIGHT**

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## EMERGENCY PROCEDURE OF THE MONTH

Yes, I'm as guilty as anyone else. I go far too long without breaking out the ol' POH and going over my emergency procedures. Often, I find myself doing it only a few days before taking or giving training in the aircraft. Sometimes, I pull out the much-loved CFI flashcards only after reading an accident report or hearing of an almost-accident report. So I'm going to remind myself to go over at least one emergency with my crew on a monthly basis, and this is how I'm going to do it. I hope you will all join me in the effort and do the same with your coworkers.

## ABNORMAL OIL PRESSURE

Consider the following cases and review the emergency procedures for the aircraft you fly:

Cirrus SR-20 (Lycoming / IO360)
Injuries: None
NTSB Report# CEN12LA076

Shortly after takeoff in instrument meteorological conditions over water, the pilot observed the No. 2 cylinder head temperature (CHT) rapidly increase followed by a drop in oil pressure. He declared an emergency and attempted to return to the airport, but the engine failed and the propeller seized. The pilot landed safely on the water and was rescued by a local fisherman. Examination of the engine revealed the No. 2 fuel injector nozzle was clogged resulting in detonation of the No. 2 cylinder.

Arrow Falcon Exporters Inc. / UH-1H (Lycoming / T-53)
Injuries: None
NTSB Report# WPR11LA423

During cruise flight, the pilot noted a fluctuation in the engine oil pressure followed by the illumination of the red warning light indicating low oil pressure. He performed a precautionary landing, and at 10 feet above ground level, the engine lost total power. The helicopter subsequently landed hard on uneven terrain and rolled onto its left side. Post-accident examination of the engine revealed that a gear tooth on the starter-generator drive gear had separated. The separated tooth jammed the accessory gear drive train, which resulted in the failure of the engine oil pump and subsequent catastrophic engine failure due to oil starvation.

Piper PA-24-260 (Lycoming / TIO-540)
CEN12LA551
2 Serious 1 minor

During a cross-country flight, the pilot and passengers smelled something burning; smoke began to fill the cockpit, and the oil pressure dropped. The propeller then oversped, and the engine seized. In the ensuing forced landing in the dark, the airplane struck trees and impacted a ditch. The engine was covered with oil, and the right magneto was found hanging by spark plug wires. The separation of the right magneto from the engine allowed the engine oil to escape, causing the engine to seize. It is likely that the right magneto attachment nuts were not torqued properly and came loose.

## 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.*

Aircraft: Bell 206L-1
Injuries: 3 Fatal
Pilot-in-Command Age: 35
Total Flight Hours - All Aircraft:3312
Total Flight Hours - Make/Model:489
Total Instrument Time: 311
Instrument Rated ATP

The air ambulance positioning flight was en route to a landing zone to pick up a patient for transfer. One witness in the accident area described a helicopter circling overhead. Radar and global positioning system data depicted the accident helicopter reversing course multiple times just prior to the accident. The flight path of the helicopter prior to the accident was consistent with spatial disorientation and subsequent loss of control due to an inadvertent encounter with

instrument meteorological conditions. The wreckage was located in forested terrain approximately 3.5 miles south of the intended destination. The wreckage distribution was consistent with an in-flight separation of the main rotor and tail boom. An examination of the helicopter airframe, engine, and related systems revealed no pre-impact anomalies. Both the main rotor assembly and tail boom separated in overload.

Weather information indicated a moist, stable environment from the surface to approximately 2,500 feet, which supported low clouds and stratus below 2,500 feet. In addition, an AIRMET had been issued for instrument meteorological conditions (IMC) due to low ceilings and poor visibility. The Area Forecast advised of marginal visual meteorological conditions in the state of Arkansas. One witness stated that it was very dark and no moon could be seen. The investigation was unable to determine if the pilot was using the night vision goggles at the time of the accident.

NTSB Probable Cause: The pilot's loss of aircraft control, due to spatial disorientation, **resulting in the in-flight separation of the main rotor and tail boom.**

Aircraft: Bell 407
Injuries: 3 Fatal
NTSB Identification: CEN13FA122

On January 2, 2013, about 2057 central standard time, a Bell Helicopter model 407, N445MT, impacted terrain near Clear Lake, Iowa. A witness located about 1 mile south of the accident site reported observing the helicopter as it approached from the east. He noted that it appeared to slow and then turn to the north. When he looked again, the helicopter appeared to descend straight down. He subsequently went back into his house and called 911. He described the weather conditions as "misty," with a light wind.

A second witness reported that he was working in his garage when he heard the helicopter. He stated that the sound of the helicopter changed as if it was turning, followed by what he described as a "thump" and then everything was quiet. He subsequently responded to the accident with the Ventura Fire Department. He reported that there was a coating of ice on his truck windshield that the wipers would not clear. He decided to drive another car to the fire station because it had been parked in the garage. While responding to the accident site with the fire department, as the fire truck he was on was waiting to cross Highway 18, they observed a Clear Lake police car, also responding to the accident, slide through the intersection. They informed dispatch to advise following units to expect slick road conditions. He noted that there was a haze in the air, which was evident when looking toward a street light; however, he did not recall any precipitation at the time.

A pilot located at the Mason City airport reported that he saw the helicopter fly overhead and estimated its altitude as 300 feet above ground level (agl). He was leaving the airport at that time and noted there was a glaze of ice on his car. He added that the roads were icy as he drove out of the airport and onto Highway 18. He commented that he had flown into Mason City about 1830 and encountered some light rime ice at that time.

Weather conditions recorded at the Mason City Municipal Airport, located about 7 miles east of

the accident site, at 2053, were: wind from 300 degrees at 8 knots; 8 miles visibility; broken clouds at 1,700 feet agl, overcast clouds at 3,300 feet agl, temperature -3 degrees Celsius, dew point -5 degrees Celsius, altimeter 30.05 inches of mercury. At 2117, the recorded conditions included broken clouds at 1,300 feet agl and overcast clouds at 1,800 feet agl.

***Okay guys, just one more…***

***This is the first accident report for 2013…you can't make this stuff up!***

Aircraft: PIPER PA-30
Injuries: 3 Fatal
NTSB Identification: **ERA13FA101**

On January 1, 2013, about 2240 central standard time, a twin engine Piper PA-30 collided with terrain during an uncontrolled descent in Jasper, Alabama. The student pilot and two passengers were fatally injured, and the airplane was destroyed. The airplane was unregistered, and is owned by a private individual. The unauthorized flight was conducted in night, instrument meteorological conditions and no flight plan was filed.

Witnesses stated that on the night of the accident, it was dark and raining. They heard the airplane flying very low and, shortly thereafter, they heard a loud crash. According to the airport manager/instructor, the pilot worked as a cleanup person at the airport in trade for flight lessons. The airport manager said that student pilot completed his first solo flight on April 27, 2012. He also said that the student pilot received his flight lessons in a single engine Cessna C-172 airplane. After the student pilot's solo, he no longer received lessons from the airport manager.

The owner of the airplane stated that he knew the student pilot from his work at the airport. He went on to say that he never gave permission to the student pilot to fly his airplane. The owner was asked if he ever took the student pilot flying in his airplane and he responded "no." He said that the student pilot did not have a key for his airplane and it was not typically locked.

***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 'MuGu' Smith*

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