AIRBORNE LAW ENFORCEMENT ASSOCIATION

The Safety Wire

September 2013

SOMETIMES GREY TAKES ON AN EERIE SHADE OF GREEN.

Our flight had been a bit anticlimactic before heading back to base. Several calls held promise for some excitement, only to fizzle out when half-hearted bad guys gave up at the first sign of the good guys. The sky was clear enough to see every star God ever created through the NVGs, but the air was still hot and heavy with humidity brought on by later than normal Florida summer rain that evening. That same humidity kept our law enforcement business slow, so we finally gave up and headed home. "Huh" was all I managed to mutter as a devious layer of fog became visible near our airport. The shallow green haze was just thin enough to allow most of the ground lights to radiate through it. There was enough light to recognize the world was still down there, but the green smoke we saw through our goggles was also thick enough to keep the origin of the lights a dangerous mystery. Dangerous… in that it seemed as if the answer to the mystery was just beyond reach, and all one needed to do was get a little bit closer.

The layer was only a few miles square, covering our airport and leaving the rest of the county as clear as it usually that time of year. It was near midnight, I was hungry and I had work I needed to get done. My computer was in the office, ten feet from the fridge that had my dinner. We thought we could see the runway lights and the flood lights near the hangar. The temptation to push it a little and get home was…absolutely nonexistent. We flew to a nearby airport that was clear, landed and walked to a burger joint across the street. For the next few hours, my partner and I ate dinner while listening

Aviation Safety Officer Workshop

Join me in Vancouver

Tuesday, October 29th

At all upcoming ALEA Regional Safety Seminars, there will be an Aviation Safety Officer's Forum. The format is an open workshop and roundtable discussion. The content will be determined by the input of those attending. We will work with sample forms and tools used within an SMS to manage safety. The group will also be able to exchange ideas and seek solutions to safety challenges facing their operations.

to the radio for calls, able to respond from the airport that stayed VFR. The most hazardous aspect of my decision to divert was the effect on my cholesterol count.

During the Safety Officer Forum at the ALEA Regional Safety Seminar in Napa, California this month, we discussed a number of important issues. One of those items was the need to make sure our aircrews know that they have the ability to land offsite or divert to another airport in the interest of flight safety. I am fortunate enough to work for a boss who believes in this. Unfortunately, our industry still has segments that treat the decision to divert or land in the face of a safety issue as some sort of crime or indication of subpar piloting skills. I say 'safety issue' because this does not only apply to weather but any other issue, such as the suspicion of a mechanical problem, which is better dealt with on the ground.

Back in the March newsletter, I discussed the Policy Pillar of a Safety Management System. In reference to this particular issue, the policy should include:

1. **Written authorization for the crew to make the decision to land or divert if it is the safe response to an inflight issue.**

2. **An outline for the infrastructure supporting such a decision. Depending on your type of operation, this might include landing area information, fueling options and a plan for securing the aircraft should it need to be left for an extended period of time.**

If the support for the contingency plan is not in place, your crews will be less likely to make the right choice even if they are told the option exists. This highlights an important aspect of the problem. We often perceive the situation as a question of if we 'can' do it or not. Could I have landed that night with the thin fog over the airport? Probably…maybe…sitting here in the office I think so…who cares?

We do not want to fly into marginal conditions until our ability to complete the flight transitions from *can do it* to *can't do it,* because then we are out of options. The decision should be made long before we get to that point. However, without authorization and a reasonable means of support for such a decision, we are often compelled to fly until it is no longer a choice, when it is too late to make the safe decision.

The question is not about what one *can* do, it is about what one *should* do. It is in these grey areas, when things seem *almost* possible, when we *could* continue, when the rule doesn't *quite yet* apply, before we hit the stone wall of our limits… that is when the decision is not clear. That is precisely when we need to be armed with a clear policy and a reasonable plan that says, "If you're even wondering, here's what you should do…"

> **"Always keep an 'out' in your hip pocket."**
>
> ~Bevo Howard
> Airshow pilot

Are you a new manager or administrator in the public safety aviation world?

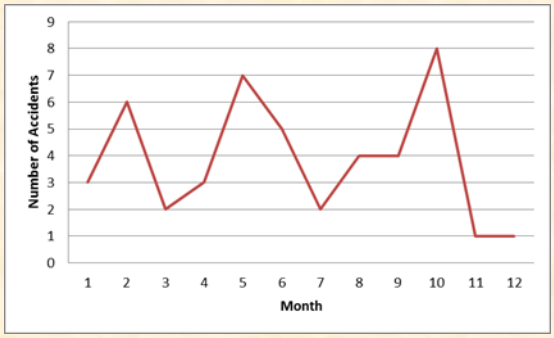
Are you a safety officer who needs to get the boss some information managing safety in a public safety aviation unit?

I have worked with a number of ALEA unit managers and safety officers to develop a simple brochure containing important safety information that every manager in public safety aviation should know.

The brochure is available for download from the ALEA website here:

http://www.alea.org/assets/cms/files/safety/Brochure%20Management%20Leadership.pdf

Autumn is here again:



I ran an article last year in the September Safety Newsletter about increased accident rates during certain times of the year (http://www.alea.org/safety-newsletters/2012September.htm).

After writing that article, our industry suffered a number of serious accidents throughout the fall of 2012. Recently, I attended an International Helicopter Safety Team meeting (www.IHST.org) and had a meeting with the guys who perform the data analysis for us (JHIMDAT), including our own Mark Colborn from the Dallas Police Air Unit. They ran their numbers for reported law enforcement aviation accidents (United States only) and found similar results. Forty-eight percent of our accidents in 2009-2011 occurred in May and October!

I am a big believer in the power of using 'lead indicators' to sharpen our risk management mindset. Autumn is a time of changes and many of them effect our operations.

CY09-11 LE Breakdown by Month		
Month	Count	Percentage
Jan	2	9%
Feb	3	13%
Mar	0	0%
Apr	0	0%
May	6	26%
Jun	3	13%
Jul	0	0%
Aug	2	9%
Sep	2	9%
Oct	5	22%
Nov	0	0%
Dec	0	0%
	23	100%

1. Weather changes (temperature, snow, winds, seasonal fog, etc.).

2. Changes at home: For example, kids starting school can have an effect on our personal schedules, in turn creating fatigue, stress, etc.

3. Budget: Many of us are stretching our budgets until funding from the new fiscal year becomes available. Once the funds are in, there may be an increased pace in maintenance procedures or training.

4. Holidays: The number of holidays in the fall can cause changes in schedule, work load, fatigue, and stress.

5. Illness: Seasonal weather changes sometimes bring increases in illness and the use of medications that have a negative effect on our work performance.

6. Bird Strikes: Seasonal migration of birds can increase the risk of an in-flight strike.

SMS Development

- ✓ **Establish the Context (Policy)**
- ✓ **Identify the Hazard**
- ✓ **Analyze the Hazard**
- ✓ **Determine the Risk (Risk Assessment)**
- ☐ **5. Treat the Risks**
- ☐ **6. Monitor and Review**

Over the previous months, we have worked through the first four steps in the Risk Management process. In August, we took all of the hazards, including direct and latent factors (July Newsletter), and analyzed the risk involved in each. We now have a list of these hazards prioritized according to risk. The pictures below are examples plugged into the spreadsheet available on the Safety First page of the website:

ALEA Safety Management System Workshe

Hazard	Report #	ID Date	Original Risk Level	Ris (Inte
IIMC	2013-1	6/22/2013	4	New wx plar
Bird Strike	2013-2	6/23/2013	7	New routing
Old Helmets	2013-3	6/24/2013	2	Helmet repl
No aircraft floats	2013-4	6/25/2013	10	Limit missio
O2 system inop	2013-5	6/26/2013	15	N/A Mission
Landing prox to hangar	2013-6	6/27/2013	3	new marker
Xwind landing limits	2013-7	6/28/2013	6	Training, pol
Xwind training insufficient	2013-8	6/29/2013	3	Training

Summary | Risk Assessment | Control Design | ROI | RM Assurance

Hazard	Original Risk Assessment Likelihood (1-5)	Severity (1-4)	Risk Level	Updated Risk Assessment* Likelihood (1-5)	Severity (1-4)	Risk Level
IIMC	3	1	4	2	1	3
Bird Strike	1	3	7	4	3	14
Old Helmets	1	1	2	2	1	3
No aircraft floats	4	2	10	3	2	6
O2 system inop	5	2	15	5	2	15
Landing prox to hangar	1	2	3	4	2	10
Xwind landing limits	3	2	6	3	2	6
Xwind training insuffici	2	1	3	2	2	5

Summary | Risk Assessment | Control Design | ROI | RM Assurance

Likelihood						
		1	2	3	4	5
		Frequent	Probable	Occasiona	Remote	mprobable
Severity 1	Catastrophic	2	3	4	8	12
2	Critical	3	5	6	10	15
3	Marginal	7	9	11	14	17
4	Negligible	13	16	18	19	20

* Updated Risk Level to be calculated during Risk Management Assurance phase [see RM A

Instructions: 3 For each hazard enter the Likelihood of the hazard causing an incident and the Severity of the potenti damage that the hazard could cause. This can sometimes be difficult to determine. It may help to limits for your program, such as: Frequent - every f

The next step is to treat the risks. There are various names for the products of this step, including Risk Mitigations, Treatments and Interventions. I personally think that this is the fun part. I enjoy looking at the factors involved in each hazard and thinking of a way to counter them. There is a very important step we need to take here before really digging into the process of developing an intervention. We need to bring this information to a safety committee for further action.

As safety officers, it is our job to identify hazards and risk, do all of the analysis, come up with options for reducing risk, etc. For this information to have a real effect on safety, we need access to management, training and operations. The safety committee is where we get that done.

Management:

1. First of all, it is management's responsibility to look at the risk information and assume responsibility for it. They are the 'Accountable Executive,' meaning they are accountable for deciding what level of risk is acceptable within the operation they manage. If the risk is above the acceptable level, they have to choose between doing something to reduce it or stopping that particular activity. This is not a decision the safety officer can make.

2. Every 'treatment' we develop to reduce risk must include some kind of policy/procedure element. It may be a review of, or adjustment to, an existing policy or the creation of a new one. Without this element, safety information has no means of having an effect on the way business is done at the operation. Remember, SMS is not a piece of paper, it is the way you conduct your daily activities. Again, setting policy is something that the safety officer can make suggestions on, but in the end, it is the responsibility of management to establish the rules and procedures that govern daily activity.

Training:

1. Any effective 'treatment' that is developed to reduce risk is going to involve addressing human behavior. It may mean changing the way things are done, re-emphasizing an established behavior, learning a new task, etc. Every person involved in the 'treatment' needs to clearly understand two things. First, how to perform the action. Second, why they are performing the activity as outlined by the 'treatment.' Managing these training efforts is the responsibility of the Chief Pilot, Chief TFO, Head of Maintenance or whomever is designated to perform these tasks at your unit.

2. Understanding, changing and managing human behavior is part science and part art. The knowledge and experience needed to perform this task is something that only experienced training staff possess. A wise safety officer will recognize the value of including this resource in addressing risk.

Expert Input:

The safety committee should have representatives from the maintenance, line level pilot and TFO ranks.

1. These folks are your local experts in their respective areas: don't miss out on their valuable input and first-person perspective of daily operations.

2. Inclusion of the comments, suggestions and preferences of unit members that represent non-management employees adds validity to the safety program.

Without access to these resources through the safety committee, the SMS is a toothless tiger relegated to exclamations of, “Look at this! Be careful!” With the safety committee involved, we can now begin work on designing ‘treatments’ that will attack the risks we’ve identified and the safety committee have found in need of mitigation. See you next month…

More Information – SMS Toolkit: p. 37 http://www.alea.org/assets/cms/files/safety/SMS-Toolkit.pdf

Reporting Forms *(Updated August, 2013)* –http://www.alea.org/assets/cms/files/safety/Hazard%20and%20Risk%20Assessment%20Reports%201.0.docx

Blank SMS form: http://www.alea.org/assets/cms/files/safety/SMS%20Book%201.xlsx

With Examples:http://www.alea.org/assets/cms/files/safety/SMS%20Book%201%20with%20examples.xlsx

Reality Check…

NTSB Identification: **ANC13FA093**
Aircraft: CESSNA 170B
Injuries: 1 Fatal

According to a witness, after the airplane departed from the mountain ridgeline, he watched the airplane do a series of low altitude maneuvers as the pilot began his search. The witness said that he observed the airplane fly by his location at approximately 80 to 100 feet above the ground, traveling at an estimated 45 mph. He said that after it passed by, it then began a left turn, and then the nose of the airplane pitched down abruptly and it began to spin. The airplane subsequently descended vertically, nose first, and it collided with the tundra and brush-covered terrain.

Continuous poor weather conditions in the area prevented the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), and a representative from Cessna Aircraft Company from reaching the accident site [for several days]. All the primary flight control surfaces were identified at the accident site, and flight control continuity was verified from all of the primary flight control surfaces to the cockpit.

NTSB Identification: ERA13FA336
Aircraft: ROBINSON R66
Injuries: 5 Fatal

According to preliminary air traffic control information, after takeoff the non-instrument rated pilot called Approach Control and advised the controller that the flight had just departed CZG, and was requesting visual flight rules (VFR) flight following. The flight proceeded in a southwesterly direction flying about 3,000

feet until about 2157, then turned to a south-southeasterly heading while flying between 2,600 and 3,000 feet msl (variations in altitude were noted).

The flight proceeded in a southeasterly direction with altitude and slight heading changes until about 2219, at which time recorded radar reflects a left turn to a northeasterly direction. Shortly thereafter, the pilot advised the controller, “we’re inadvertent IMC, reversing ah, can you give us a heading to the nearest airport, please"

The controller asked the pilot if he wanted a heading to the nearest airport and if the flight was in IFR conditions, but the pilot did not respond to that transmission. The radar data reflects that the left turn continued to a north-northwesterly heading for about 9 seconds, at which time the radar reflects the helicopter turned to a north-northeasterly heading, followed by a turn to a northerly heading. The controller instructed the pilot to fly heading 068 degrees for a vector to Sky Haven Airport (76N), Tunkhannock, Pennsylvania, to which the pilot immediately replied at about 2220:03, “6 alpha gulf having trouble maintaining control here.”

The radar data from Wilkes-Barre Approach reflects that between 2219:53, and 2220:03, the flight descended from 2,800 to 2,600 feet and proceeded in an east-southeasterly direction, and between 2220:03 and 2220:17, the flight proceeded in a northeasterly heading with some altitude deviation noted. The controller then asked the pilot, “helicopter 6AG ah you having trouble maintaining altitude sir", to which the pilot immediately replied, "Affirmative 6AG." The radar data reflected that between 2220:17, and 2220:27, which was between the time the pilot informed the controller he was having trouble maintaining altitude, the helicopter descended from 2,600 to 2,300 feet, and changed direction to the southeast. There were no further recorded communications from the pilot.

The helicopter crashed on privately owned wooded land leased to an energy company; there were no known witnesses to the accident.

The ELT activated and a search was initiated, but adverse weather (heavy fog) caused the search to be called off in the early morning hours. The search resumed when the weather allowed, and the wreckage was located on July 28, 2013, about 1350.

NTSB Identification: **ERA11FA493**
Aircraft: CESSNA 172M
Injuries: 1 Fatal

On the morning of the accident, the airplane was observed circling at low altitude in a left turn about 1 mile southwest of the departure airport with the pilot visibly waving at people on the ground. During the third and last circle, the airplane pitched nose up, decelerated, then pitched nose down steeply and descended toward the ground. The airplane then rotated to the left with

its nose still pointed down, turned about 180 degrees from its original direction of travel, then disappeared from view. Moments later the sound of an impact was heard.

Post-accident examination of the airplane and engine did not reveal any evidence of pre-impact malfunctions or failures that would have precluded normal operation.

Download of a portable GPS discovered in the wreckage confirmed the witness' observations of the airplane's flightpath and that the pilot was maneuvering at low altitude (less than 500 feet above ground level) when the airplane decelerated below its aerodynamic stall speed and entered a spin. Review of manufacturer's published data indicated that altitude loss during a stall recovery could be as much as 250 feet, and 1,000 feet of altitude loss for a one-turn spin and recovery could be expected.

NTSB Identification: **ERA13TA341**
Aircraft: MD 369E
Injuries: 2 Serious

On July 29, 2013, about 1045 eastern daylight time, a McDonnell Douglas Helicopter 369E, operated as a public use flight, was destroyed when it impacted terrain following a collision with a utility wire in cruise flight. The commercial pilot and passenger were seriously injured. Visual meteorological conditions prevailed and no flight plan was filed for the local aerial observation flight.

According to a Federal Aviation Administration inspector, a utility wire ran from one ridge to another. The helicopter had been flying between the ridges and contacted the wire. The helicopter subsequently descended into a valley and a post-crash fire consumed the wreckage. The inspector added that the helicopter was equipped with two wire cutters, one near the bottom of the fuselage and one near the top of the fuselage; however, the wire contact was with the rotorhead, which was located above the top wire cutter.

Loosely safety related, but a bit of entertaining advice this month that showed up in my email:

Ten Commandments for Helicopter Pilots

1. Keep always thine RPMs, for without them the gates of heaven shall be closed to thee, and thou shalt pass directly to Brick City.

2. Guard thy tail rotor as thy loins; it is a sacred thing and its loss maketh the earth spin, and rise up and smite thee.

3. Pickest thou up and sittest thou down with great care, lest thy machine roll in the mud like the swine and makest thou an impoverished pedestrian.

4. Loadeth not thy machine unevenly or excessively, lest thou wander and stumble like the braying ass.

5. Run not thy fuel or oil dry, for surely it is easier for the camel to pass through the eye of the needle than for a fool to autorotate in the wilderness.

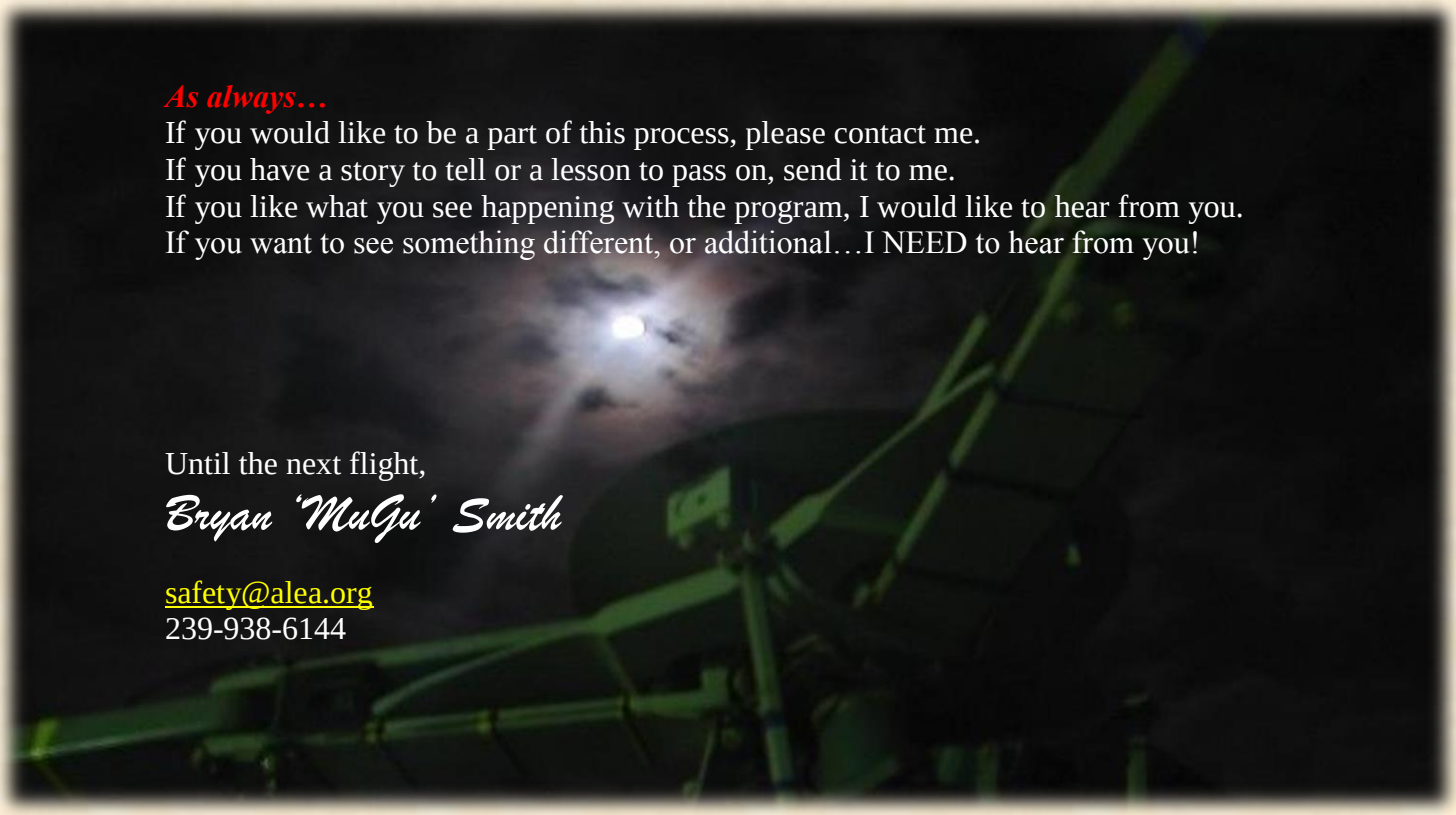
6. Linger not in the curve of the deadman, for it tempteth fate, and shall bringeth thee back pain.

7. Swoop not low, for many are the snares of Edison and Bell; their wires yieldeth not, and makest thou a yo-yo.

8. Loseth not sight of the earth, if thou are not a master of the black art of IFR, else thy machine shall seek the earth without thy council, and thy friends shall mourn the passing of a fool.

9. Loseth not thy G's for the sake of pushover or other folly, lest thy blades smite thee, and journey on without thee.

10. Descendeth not without airspeed, for the air directly beneath thee is wrathful, and wouldst swallow thee up.



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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