

The Safety Wire

March 2012



Greetings fellow law enforcement aviators and welcome to the first of a new series of ALEA Safety Newsletters. It is a great honor and privilege to serve as your Safety Program Manager. Over the years I have had the opportunity to meet and work with many of you across the country. To those of whom I have not yet had the pleasure of meeting, I look forward to the opportunity.

I would like to begin this by first thanking Keith Johnson and the various members of the ALEA Safety Council who have developed such a fantastic safety program over the years. Thanks to their efforts we have a much lower accident rate than other areas of the industry. There is still work to be done to make our profession even safer. I am looking forward to continuing forward with this program with an ambitious goal, and I need your participation to make it happen.

That goal? ZERO accidents. Seem impossible? Like many of you, I do not track law enforcement accidents in numbers, I track them in names. The names of brothers and sisters lost to us, the communities they serve and their families. This program will continue to lay out the stepping-stones along the path, such as lower accident rate markers, increased training goals, improved equipment throughout the industry and increasing the percentage of agencies with functioning SMS programs. However, the vision for the end goal of the program can only be zero accidents. Never can the loss or injury of one of our own be an acceptable margin of error.

The course for this program is not to lower the accident rate by cutting back on our services to lessen our exposure to risk. Actually, as an active law enforcement pilot flying both rotary and fixed wing aircraft, I hope to see an increase in our flight hours because I believe the more we are in the air, the safer our fellow officers on the ground are, as well as the communities we serve.

So how can we reach such an ambitious goal and continue to see growth in our industry? By refusing to fight fair.

“That is the whole secret to successful fighting. Get your enemy at a disadvantage; and never, on any account, fight him on equal terms” ~ George Bernard Shaw

This is a concept many of us know well when we work(ed) the road. Bad guy wants to fight mono y mono? We call for six more guys. The guy with the warrant likes to run, so we sneak the K9 unit up to the back door before we roll up. Scumbag pulls a knife? We

pull a gun. Our enemy in airborne law enforcement is the collection of various risks that are present in our line of work. Some of these risks can be eliminated, some can only be mitigated if we want to continue flying. However, as aircrews, we are not obligated to go out and meet those risks on their terms. Just because danger is inherent to our profession we do not need to accept it at face value as a cost of doing business. The idea of going headlong into the face of danger armed with only our courage and sense of duty will not lead us to the goal outlined above.

To reach our goal we must understand how to identify our enemies, understand their nature and confidently defeat them every time they challenge us. There is no silver bullet that can accomplish this goal, no single source of information, no one training method or piece of equipment. It will be a multifaceted effort, and one of the greatest aspects of this endeavor is you...

CALLING ALL CARS...

The ALEA Safety program is *your* program. You, the membership, are the greatest resource of information out there on law enforcement safety. From firsthand knowledge of the many unreported 'close calls' that are constantly threatening to turn into an accident to the various war stories and personal experiences that could help send another of our peers home safely at the end of their shift, your input is critical. Everyone, from the newest TFO to the pilot who counts his years of experience in decades, has something to add to this program. Something that can save a life.

I promise you this: I will keep any input from you confidential, changing names and details if necessary, unless you explicitly give permission to release such information. Accidents that have claimed the lives of our brothers and sisters will be handled with respect for their sacrifice. It is important that we turn difficult and sometimes embarrassing experiences, into a benefit to others so they may be used to make a positive difference in our community.

Your input will help direct the Safety Program's efforts to the real issues you are concerned with. It will help tweak the safety products we provide to be the most effective for your agency. It will add to the knowledge base we all must use if we don't wish to learn all of those harsh lessons ourselves.

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!

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MOTHER HEN'S CORNER:

Safety Officer? It's a tough job, I know. No need to go it alone anymore. Those of you who have taken on the challenge of being a Law Enforcement Aviation Safety Officer please send me an email with your name and contact information if you would like to be part of a new ALEA Safety Officer mutual aid group. I will send the group Safety Officer specific information and facilitate discussion between the group members on meeting challenges and exchanging information needed to keep their program running effectively. safety@alea.org

ATC: THEIR AIRSPACE – YOUR AIRCRAFT...YOUR LIFE

For some of us air traffic control is a constant element in our daily operations. For others, we only occasionally need to talk to ATC in certain parts of our work area. Whatever the case, it is important we understand that while controllers are primarily concerned with safe operations, they are human and susceptible to the same errors that we are. While ATC can be a fantastic source to increase flight safety, it does not change our ultimate responsibility as pilots to ensure our aircraft, and crew, stay safe. Two recent accidents illustrate the limitations of ATC interaction that we must remember.

In one case (NTSB: ERA12FA196) a Cirrus SR22 was on downwind at a busy controlled airport when he was instructed by ATC to, "cut it in tight". The witness statement states that the aircraft, "entered a steep bank, followed by a vertical, uncontrolled descent." All three occupants were killed in an apparent stall/spin accident. Though rare, the occasion does come up from time to time when ATC gives us an instruction that either involves more risk than the situation warrants (i.e. being rushed across the approach path of a runway in front of landing aircraft), or is downright dangerous. In such situations we have to remember that it is okay to tell the controller we simply are unable to comply and move on to option #2. There is always an option #2, though it may involve going around, holding position, delaying our response, or inconveniencing someone else...including the controller. Often this is a decision that requires information only available in the cockpit, which means you. To be clear, this pertains to cases of flight safety, this does not apply if the issue is simply a conflict of convenience, in which case ATC wins. As PIC, you are always ultimately responsible for the safe operation of the aircraft. While we work with ATC to stay safe, the responsibility cannot be delegated to them.

This point is illustrated by a second recent accident involving the midair collision of an R22 and a Beech 35 (NTSB: WPR12LA109A). The pilot of the R22 had chosen to utilize the benefit of flight following with local ATC, which is a great risk mitigation resource. The pilot even received a traffic warning from the controller about the airplane that would eventually hit her. Unfortunately, for a reason not clarified in the report, the midair collision still occurred. Information received from air traffic control is much like the information we provide to the people we serve on the ground. It is useless unless properly acted upon by the recipient. A traffic warning from ATC still requires us to locate the

aircraft and do what is necessary to avoid it. This sounds simple, but it is easy to fall into the trap of handing over collision avoidance to the controller, thinking that because they have acknowledged the possible traffic conflict is out there that they will take care of it if we don't. I admit that I am guilty of this from time to time when working a busy call in busy airspace. *Tower knows I'm here, if that guy gets too close they will move him or give me a second advisory.*

ATC is there for our safety, but it is not a system without potential for error. A report released in May, 2011 from DOT's Inspector General Scovel about ATC safety identified a 53% increase in controller errors from 2009-2010 (<http://www.oig.dot.gov/library-item/5556>). The report contributed some of the increase to a change in reporting system, but still identified two major areas of concern: training and risk management. The FAA plans on training 11,000 new controllers by 2020 to deal with the significant number of outgoing personnel that were hired after the 1981 ATC strike fiasco. The DOT report states that the FAA is not adequately prepared to train such large numbers of new controllers. This means less experience in our ATC facilities during this process, and more distractions for the veteran controllers tasked with keeping watch over the new guys. In the area of safety management, the report spends a significant amount of time explaining that the FAA does not have a good idea what the risks to safety even are. Without a definition of the risks, the risk management process cannot move forward. This will be the topic of an upcoming Air Beat article on safety culture.

We have a great number of safety resources to utilize while flying our missions, and ATC is one of the best. None of these resources however are beyond error. Maintain situational awareness and remember that everything from our flight crew, to equipment, to ATC is there to make things safer. However, the final responsibility lies with the guy at the controls. To end on a more positive note about ATC, if interested, go to the link below to see a list of the amazing ATC 'saves' that lead to national awards.

http://www.natca.org/archie_league_awards.aspx#content

ALEA WEBPAGE SAFETY FORUM QUESTION OF THE MONTH:

Have you ever had a safety issue resulting from poor coordination with Air Traffic Control (near midair, airspace violation, etc.). Has ATC ever, "saved your bacon?" Any lessons learned?

The **Safety Forum** can be found at:
www.alea.org/forum

LEADING EDGE

"To tell a pilot to play it safe is to tell him nothing, nobody wants to crack up; the question is: just exactly what are the dangers, and how does one deal with them?"

~Wolfgang Langewiesche *Stick and Rudder*, 1944

In the world of risk management there are two types of information that can be used to identify risks that effect safety. We are very familiar with what is commonly referred to as 'lag' factors. Lag factors are those pieces of information that are based on an incident that has already occurred. The most common examples of lag factors are those based on accident reports. Though useful in directing safety programs so the same incidents don't occur again in the future, they do have some limits. The biggest drawback of course is that usually someone must get hurt or some metal must get bent before the information becomes available.

The second type of risk management information that can be used is called 'lead' factors. As you may have guessed, lead factors can be analyzed before the fact and utilized to stop an accident before it occurs. The benefit to using this type of safety information is obvious. The safety program will continue to analyze how lead factors can be used in conjunction with traditional lag factors in upcoming newsletters.

Not all lead factors are big indicators linked to system wide issues within the unit. On a smaller scale they can be used in the cockpit to monitor the risk situation of the flight so issues can be identified and addressed early on.

On page 32 of the Jan/Feb issue of Air Beat, ALEA Aeromedical Liaison Dr. Dudley Crosson presented a great list of lead factors we can use in safety management on a daily basis. On that page you will find a list of 12 indicators your situational awareness has been compromised. Learning to recognize these cues in yourself, or the person sitting next to you, can help identify and stop a chain of errors before they lead to an accident.

The first item on the list is 'Ambiguity' and in our business we run into this a little too often. Sometimes ground units ask for our help in an area the radar shows may be effected by poor weather. Of course, when we ask the units on scene what the weather is like the answer is usually, "not too bad". These two sources of information are not only conflicting, but both subject to error. When the desire to answer the call for assistance is added to the mix, it can be difficult to maintain proper SA on the situation. Figuring out what is going on with the weather is something we are all trained to do. In cases where there is conflicting information on the weather we should recognize the potential for trouble and use this red flag as a reminder to step back from the situation for a second, recognize the prospective error and conscientiously apply our training and experience to the situation. A helpful step in this process is to utilize CRM and verbalize to your aircrew that the two sources of critical information do not match and you need to dedicate a minute to figure out what the real situation is.

In upcoming newsletters we will look at similar applications of these 12 indicators. If you can think of more to add to the list, send them in!

REALITY CHECK...

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

Date: February 15, 2012
Aircraft: Bell 407
Injuries: 1 Fatal, 2 Serious.

On February 15, 2012, about 1300 mountain standard time, a Bell Helicopter model 407, was substantially damaged when it impacted trees and terrain during a search and rescue (SAR) mission. The commercial pilot and one SAR crewmember received serious injuries, and the other SAR crewmember was fatally injured. Visual meteorological conditions prevailed.

The mission was in response to a reported snowmobile injury accident, in order to transport medical personnel to that scene. Initial attempts to locate that victim, based on trail network and geographic coordinate information, were unsuccessful. The helicopter began a grid search, and the crew observed two snowmobilers signaling to them in a meadow. The helicopter landed in the meadow, and a SAR member exited and spoke with the snowmobilers. They were from the victim's party, and they agreed to lead the helicopter on their snowmobiles to the accident site. The SAR member reboarded the helicopter, the helicopter lifted off to follow the snowmobilers, flying about 100 to 200 feet above the trees. Since the helicopter was faster than the snowmobiles, the pilot stopped two or three times in a hover to allow the snowmobiles to catch up. On either the second or third hover, the pilot experienced a slight left yaw, which he believed he corrected. The helicopter then started "spinning rapidly" and descended into the trees. Witness accounts of the spin direction have not yet been reconciled.

The SAR member in the rear seat remained conscious throughout the event, and extricated himself, despite an injured leg. He assisted the other SAR member and the pilot out of the helicopter after they became verbally responsive. The second SAR member subsequently succumbed to his injuries. The pilot carried a radio to the top of a nearby ridge and requested assistance. A ground team reached the helicopter about 75 minutes later. The accident site was heavily wooded, and the elevation was about 9,350 feet above mean sea level.

Date: Jan 3, 2012
Aircraft: Cessna 172P
Injuries: None

The pilot of a Cessna 172P, made a forced landing on a street after the engine lost power. The pilot, the sole occupant on board, was not injured. The public use airplane was substantially damaged. The airplane was registered to and operated by the Civil Air Patrol (CAP). Dark night visual meteorological conditions (VMC) prevailed at the time of the accident, and a company flight plan had been filed. According to the pilot's statement, engine power was set at 2300 rpm and the airplane was at 1,600 feet msl. When the airplane was about 6 miles from the destination airport, the pilot heard a loud

“boom” and the engine lost all power. The pilot did not have sufficient altitude to glide to the airport and landed on a highway. When the airplane was on final approach, it collided with power lines. The pilot was able to land the airplane, but was forced to swerve to the right to avoid oncoming traffic. The airplane struck a curb and spun around. The right wing struck a utility pole, resulting in substantial damage.

The engine was disassembled and examined under the direction of a Federal Aviation Administration (FAA). When the crankshaft was turned, no movement of the intake or exhaust valves or magneto gears was observed. Upon removal of the rear accessory case, it was discovered that the rear crank gear bolt was loose and the gear dowel pin (part number STD 1065) was sheared. According to the FAA inspector, there was a line on the dowel pin, similar to a pre-existing crack. According to the attending mechanic’s report, the sheared dowel pin would cause the camshaft and rear accessory gears to stop turning. According their (NTSB) report, the dowel pin was fractured from the aft end of the crankshaft approximately in plane with the aft face of the crankshaft where it mated to the crankshaft gear.

Date: October 15, 2010
Aircraft: Bell 206B
Injuries: 1 fatal

During the flight that preceded the accident flight, the pilot stated to one of the two officers aboard the helicopter that he would not be able to fly for as long as normal because he needed to obtain fuel. Upon completion of the observation flight, the pilot returned to the police department and shut down the helicopter to allow the two officers to exit. The pilot then restarted the helicopter and departed en route to an airport where he could refuel the helicopter. A witness near the accident site stated that he heard the helicopter’s engine sputter and stop and saw the main rotor separate from the helicopter. The helicopter entered an uncontrolled descent and impacted terrain. Postaccident examination of the helicopter revealed that there was no usable fuel on board and that the main rotor mast separated as a result of overload due to mast bumping. No preimpact mechanical anomalies that would have precluded normal operation of the helicopter were noted. Mast bumping typically results from a low-G flight condition caused by the pilot pushing the cyclic control forward abruptly from either straight-and-level flight or after a climb. Pushing the cyclic forward abruptly is contrary to the appropriate actions for entering an autorotation, which are lowering the collective pitch control to the full down position, adding antitorque pedal as needed to maintain heading, and applying cyclic as needed to maintain proper airspeed. Review of the pilot’s medical records indicated that he had a history of depression, anxiety, and obstructive sleep apnea. Each of these conditions had been documented and treated since 2007, and none were reported to the Federal Aviation Administration (FAA) on the pilot’s airman medical application in 2010 or earlier. Any of these conditions may have disqualified the pilot from obtaining an airman’s medical certificate. Postmortem toxicological testing indicated that the pilot was taking alprazolam, an anti-anxiety medication, and venlafaxine, an anti-depressant. Alprazolam is one of a class of drugs which may worsen obstructive sleep apnea, and venlafaxine can cause fatigue and dizziness. The fact that the blood level of venlafaxine

found was higher than normal therapeutic levels makes it more likely that the side effect of dizziness occurred and impaired the pilot's performance.

The National Transportation Safety Board determines the probable cause(s) of this accident as follows:

The total loss of engine power due to fuel exhaustion, which resulted from the pilot's inadequate preflight planning and decision-making, and his improper control inputs following the loss of engine power, which resulted in mast bumping and separation of the main rotor. Contributing to the accident was the pilot's improper judgment in acting as a pilot with disqualifying medical conditions.

That is all for this first edition of the Safety Wire. Again, your input is critical. Your safety and the safety of your fellow law enforcement aviators depends on it.

Until the next flight,

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