# The Safety Wire

**October 2012**

***"Well, this is stupid,"*** I thought to myself, accurately labeling my current situation while stubbornly continuing on course. I'd planned on going for a run, but had let an endless supply of chores push my plan late into the afternoon. When I saw the thunderstorms building, I thought I would still have the time to squeeze in my jog before the rain. Now, I found myself still a mile out from home in the driving rain trying to remember what the formula is to convert the time between seeing lightning and hearing thunder to the distance the strike is from me. When the spread dwindles down to a couple seconds, I contemplate how it will look when the 'safety guy' gets struck down running in a rainstorm in a state with more injuries and deaths occurring from lightning than in all other states combined!

It rains almost every afternoon in the summer and early fall. Lightning injuries are a favorite and all-too common story of the Florida media. I know this, so how did I end up here? I'd only *thought* about the risk factors. I did not consider alternatives or think about what my course of action should be in the worst case scenario. When the time came to deal with the situation, I reverted to how I had prepared for it, which was nothing.

We see this in our professional lives as aviators, as well. Often, we pay lip service to specific risks, recognizing their existence and possible interference in our operations. Other times, we discuss how we should respond to the situation, never actually practicing the procedure. We then wonder why pilots fail to respond to an unfolding disaster, like they are just along for the ride, despite an obvious need to break the chain of errors.

Sure, some of these procedures do not lend themselves to realistic or

safe practice in the aircraft. Others, however, can be safely taken into the realm of training. By doing this, we can revert to our training when confronted with a potentially life threatening situation. Anything less will not likely be strong enough to overcome the stress of a real life threatening situation and we will continue on our course, deeper into the clutches of the situation, like a runner caught in a lightning storm.

No matter where you may be in the world, the seasons are changing and that change often brings unique challenges. In many areas, late fall and winter weather increases the opportunity of getting caught in instrument flight conditions. While most of us are good about keeping our mechanical failure related emergency skills sharp, such as engine failure practice, we often fail to give IIMC (Inadvertent Instrument Meteorological Conditions) training the attention it deserves. Over the past four years, over 40% of the fatalities in law enforcement aviation have been attributed to CFIT (Controlled Flight Into Terrain) accidents following IIMC encounters. Yet, we often limit our training in this area to an occasional 'what if' discussion or a couple of simple maneuvers in the aircraft once or twice a year. No other category of accident type is more likely to kill us than IIMC/CFIT. While seasonal change is in the air, let's take the opportunity to refresh ourselves with the unique challenges Mother Nature has in store for us. Have a plan and, when safely able, practice that plan. It is too late to practice a response after the emergency starts.

And for those of you who think I got out of my jog scott-free…I also found out iPods are not very waterproof.

## From the Trenches

One of the seasonal issues I have discussed with several agencies over the past couple months is the negative effect cold weather can have on aircraft engines in winter. No less than three separate fixed-wing operators in North America told me about valves sticking or seizing up due to carbon build-up following low cylinder head temperature operations. Many of us operate aircraft with low throttle settings as we slowly burn holes in the sky orbiting around a call location. Those reduced engine settings tend to keep engine temperatures low, which when mixed with cold winter air can be too low to prevent the build-up of carbon and other deposits in the engine. Two of the agencies I spoke with had to make emergency landings due to this issue.

I would like to thank the members I spoke with who took the time to let me know about this issue so I can pass on the heads-up to all of our members. I hope this is a discussion we can all continue on the website.

## ALEA Webpage Safety Forum Question of the Month:


Those of you who make a posting on the October Safety Forum Question of the Month through Friday, November 16th, will be entered into a drawing for an ALEA Reno 2012 t-shirt.
*(Yes, international shipping is included if need be!)*


Congratulations to **Jordan Van Meter** of the
**California Highway Patrol – Metro Air Operations** for winning the t-shirt in September.

The Safety Forum Question for October is:

**How often do you practice IIMC procedures and/or how?**

The **Safety Forum** can be found at:
http://www.alea.org/forum/forum.aspx?c=General+Discussions&f=Safety

## IIMC Training Considerations:

While you are preparing your next IIMC training session at your agency, consider incorporating the information contained in the following two reports published this year.

The first report is from the AOPA Safety Institute on safety and training issues involving technically advanced aircraft. The report can be found here:
http://wwwaopa.org/asf/publications/taa_1_6.pdf

The second is the recent NTSB Safety Alert on In-Cockpit NEXRAD weather data. This alert reminds us that the time delay expressed on the screen in the cockpit is only the delay from when the service provider sent the information out. According to the alert, the time it takes for

the provider to obtain the information, process it, and then send it out to you can create an additional delay of up to 20 minutes. Two accident reports listed in the alert are copied below. The alert can be accessed here:

http://www.ntsb.gov/doclib/safetyalerts/SA_017.pdf


On March 25, 2010, a Eurocopter AS350 B3, N855HW, impacted terrain near Brownsville, Tennessee. During the flight, the pilot's cockpit display indicated that it had received one NEXRAD image roughly halfway through the flight that indicated it was about 1 minute old; however, the weather conditions were actually about 5 minutes old. The image indicated that the severe weather was about 7 miles away from the home base where the pilot was attempting to land, but the severe weather was actually just crossing over the home base at about the time the display received the NEXRAD image.

On December 19, 2011, a Piper PA-32-260, N3590T, collided with terrain following an in-flight breakup near Bryan, Texas. The pilot had been diverting to avoid weather and had likely received several NEXRAD updates in the minutes leading up to the accident. According to the NEXRAD data the pilot likely would have received, he was flying clear of the precipitation along the edge of the rain. Near the end of the flight, the pilot flew into a section of the developing rain shower. His display should have shown that he still remained clear of the precipitation. The last three NEXRAD updates that the pilot received should have each said that they were 1 minute old at the time they were received; however, the actual weather conditions at the time the images were received in the cockpit were about 6, 7, and almost 8 minutes old, respectively.

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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.*

Aircraft: Cessna 182P
Injuries: 1 Serious

The pilot reported he was on a routine fire detection mission and was about 10 to 12 miles from the airport when he detected a "hot electrical" odor. He stated that everything was operating normally with the airplane at the time, but he was concerned enough that he radioed his dispatch and told them he was going to return to the airport.

He reported the air was a little choppy and there was some convective turbulence in the area. While on final approach at a distance of 400 to 500 feet from the approach end of the runway, a

large puff of smoke was rapidly emitted from under the right side of the instrument paned near the circuit breaker panel. This momentarily distracted him. At almost the same time, the airplane hit turbulence that was severe enough that he hit his head on the ceiling and everything that was on the seats was thrown forward. He stated that the turbulence extended his distraction.

When he looked forward and turned his attention back to the airplane, the nose was down and all he could see was grass out of the windscreen. The airplane immediately hit the ground.

The nose gear broke off and the airplane slid forward up onto the runway. It continued to slide about 200 feet before it stopped. By time the airplane came to a stop, there were flames coming up into the cockpit. He suspected the flames were at least in part from damage sustained in the impact.

The pilot exited the airplane, at which time he noticed his legs were burned. The airplane continued to burn. The only portions of the airplane remaining were forward of the firewall, the wings from the fuel caps outboard, and a portion of the empennage.

Aircraft: AS350 B3
Injuries: 2 Uninjured

In a written statement, the pilot reported that he was maneuvering the helicopter in a 3 foot in-ground-effect hover in preparation for departure on a border patrol flight. He heard a loud "bang," which was immediately followed by a decay in the main rotor rpm and yaw to the right. The pilot performed an autorotation and, after touchdown, conducted the emergency shutdown procedures.

The initial examination of the helicopter revealed that the tail rotor moved independently of the main rotor. Further inspection disclosed that the aft flange of the main transmission drive shaft was liberated from its flex coupling at the engine output. The nuts that secure the flex coupling to the aft flange of the shaft were found loose and the bolts were sheared. The other three bolts that attach the spline coupling to the flex coupling were also sheared, but the nuts remained attached. Three loose, bent cotter pins were located in the vicinity.

***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,

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