The Safety Wire

November 2012

Safety First

"Balance." The elusive state of almost any endeavor is finding balance between ever present opposing forces. Clinging to one extreme usually sacrifices effectiveness for ideology. Aviation Safety is no different. It is hard sometimes to balance idealism in aviation, especially with the emotional baggage attached to many of the subjects. Examples are: balancing flight safety against the requirements of the mission or weighing the risk in training against the need to train. Accidents can be a great source of difficulty in balancing safety issues. We want to have quick, timely information following an incident to make sure problems are addressed before they hurt others. Yet, we often need to wait for the results of lengthy investigations to get the real story. More difficult is the need to address accidents directly related to public safety aviation while respecting the memory of fallen officers who deserve our respect. This is the difficult place I find myself in. I work hard to make sure we can get these incredibly important lessons in a respectful manner.

I do not feel it is right for me to look at the factors in anyone else's accidents without first discussing my own. Yes, out of the two accident categories, "those who will" and "those who have," I unfortunately belong to the latter. I say unfortunately, because I believe that there is a third, "those who by luck or wisdom never will" category, which I hoped to be part of. Since that is not the case, I can either pretend it never happened or try to make something good come from it.

Some time ago, I was giving instruction in a MD 500. I had never flown with the pilot, but he was an experienced aviator with a background in both the military and civilian worlds. The aircraft we were flying was one he flew in frequently. We were going to do some standard emergency procedure refresher training; nothing out of the ordinary and nothing that either of us had not done many times before. The day was beautiful with no wind, a bright sunny sky and cool temperatures. We'd both slept well the night before, had a good lunch and were generally having a fine day of training. We took off and started with some basic maneuvers to get the pilot juju flowing. I like to start an emergency maneuver training sortie with a few approaches

and trips around the pattern to get a feel for the pilot, winds, density altitude, aircraft, etc. He flew very well and even performed the first few emergency maneuvers with no difficulty. Then came time to practice the response to a tail rotor failure from a hover. There are different schools of thought on the value of doing this maneuver, but I had always found it to be fairly easy in an aircraft with a twist grip throttle and never had an issue with the maneuver before. Does anyone see the lead factors piling up? Neither one of us did. Everything was going smoothly with two experienced pilots in the aircraft…and that was the problem.

The first attempt at the tail rotor failure response did not go so well. Despite only introducing a small amount of yaw, it took a little too long to get the throttle rolled off enough to stop our rotation. As we touched down with a bit of chatter I was already thinking about how to walk him through the next attempt. WHOA! Like a slap in the face, we were suddenly back up in the air and spinning like a top. My body straining laterally against the straps, I tightened my grip on the throttle and found it was rotated back to the wide open position. Snapping it shut instantly brought the blur outside our window back into focus. What we saw was the ground about ten feet away. That was too far away to be with the throttle off and rotor RPM deep into the yellow arc. One side of the skids collapsed on impact and, well, you can see the picture. Fortunately, nobody was hurt and the aircraft was repaired and flew again. The owners not only refrained from hanging me from the nearest tree, they were relieved that nobody was hurt and ended up being more forgiving to me than I was with myself. We continue to talk to this day and a finer group of aviators I have never met.

So, what happened? Something that sets itself up in law enforcement aviation every day across the globe finally caught up with us. We had two experienced pilots in the cockpit. It was a beautiful day and nothing about his flying even remotely set off any alarms in my head. We were doing a maneuver that never caused me concern before. I got complacent and loosened my grip on the controls. When the pilot misinterpreted what was happening and the throttle was applied, I was not in a position to stop it. I wasn't even in a position to comprehend it. Had it been a new pilot, a maneuver I considered more dangerous, or less favorable weather, I would have likely had a tighter grip on the controls and a better mindset.

What happened? The CFI…me, failed. It would be easier if I could blame the other pilot, but the instructor is there to contain the mistakes that are inevitable in training. My pride would like to erase that fact, and this incident, from the history books. The months following the incident were filled with stressful interaction with the FAA and the psychological injury that follows even a relatively minor incident such as this ('minor' in terms of there being no injury and the aircraft was repairable). To pretend that it never happened however, would be to miss out on the potentially lifesaving lessons that could keep myself or others from having a similar incident, or worse, in the future. **Increased safety must be more important than pride.** If I am going to talk such talk, I need to walk the walk too. So what lessons can I pass on?

- Be cautious of the unique risks specific to having two similarly experienced pilots in the cockpit.

- Instructors: expect that every student is going to try and kill you…not just the new guys!

- Everyone: training is training…not testing.

    - Make the check ride or proficiency check flights separate sorties, or at least separate defined portions of the flight. If training is perceived as a test, we are less willing to ask questions or request that we do the maneuver until we are completely comfortable with it.

    - When flying with the instructor, be sure to designate a time when we recognize it is appropriate to say, "Hey, I'm a little rusty on this, can we practice that?", or "I've never been really comfortable with this, can we go over it?"

- Instructors need to be sure to have a way to monitor how a maneuver is going. Have a checklist before starting a maneuver and a short intermediate checklist. The intermediate check will allow you to recognize and abort the maneuver if it is not going as planned. This is very important for engine failure training.

- Have a briefing before every training flight that reviews every maneuver. This will allow for questions before you saddle up and will clear up any uncertainties or misconceptions about how both parties expect the maneuvers to be performed.

To obtain maximum attention,

it is hard to beat a good big mistake.

~David D. Hewitt

From the Trenches

Recently, an ALEA member brought an issue to my attention that was of great concern to him and he hoped I could pass it on to the rest of the membership for discussion. Such discussions are one of the most powerful benefits of being an ALEA member.

The discussion will be of special interest to anyone operating a Cessna T206H with the Lycoming TIO 540 engine. The concern is not simply maintenance; it is the possibility of power not being available following a throttle increase while initiating a go-around, in addition to other issues.

Anyone flying, maintaining or managing a unit using this aircraft/engine combination, please take the time to read the posting and share information.

ALEA Webpage Safety Forum Question of the month:

Congratulations to **Dan Bitton** of the
Law Enforcement Aviation Coalition for winning the t-shirt in October.

The Safety Forum Question for November will be the discussion listed in the above "From the Trenches"

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

Fallen Brothers:

As many of you have heard, we lost two fellow law enforcement aviators this month. On Nov. 3rd , an Atlanta Police Department OH-6 crashed while searching for a missing 9-year-old child. Officers Richard Halford and Shawn Smiley were fatally injured. Portions of the aircraft's skids were found hanging in wires near the crash site. What happened prior to hitting the wires is still unknown, but those questions will hopefully be answered through the ongoing NTSB investigation.

I had the honor of attending the funerals for both officers. The members of the APD Air Unit deserve credit for making sure their lost comrades received a hero's send off. Please keep them and their families in your thoughts and prayers as they work to recover from this terrible tragedy.

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 407
Injuries: 1 Fatal

A Bell 407 helicopter, was substantially damaged when it collided with terrain shortly after takeoff. The commercial pilot, who was the sole occupant, was fatally injured. Day instrument meteorological conditions prevailed for the post-maintenance flight that was originating at the time of the accident.

According to the operator, the pilot was performing the post-maintenance flight to identify if there was any residual oil left behind during a routine phase check that had been completed the previous evening. One witness reported that she saw the helicopter depart on the runway heading and disappear into fog or a low cloud ceiling. Several witnesses reported hearing a sound consistent with a ground impact shortly after the helicopter had departed toward the southwest.

The automated weather reported the following weather conditions: calm wind, visibility 1/4 mile with fog, overcast ceiling 200 feet above ground level, **temperature 20** degrees Celsius, **dew point 20** degrees Celsius.

Aircraft: Cessna 182P
Injuries: 1 Fatal

A Cessna 182P collided with terrain near Yucca, Arizona. The certificated private pilot sustained fatal injuries; the airplane sustained substantial damage from impact forces and a post-crash fire. Visual meteorological conditions prevailed.

This was the first flight following an annual inspection. A witness talked with the pilot about the work just completed, and accompanied the pilot to the airplane. He observed the pilot check the level of the fuel tanks prior to departure, and said the pilot indicated that there were 30 gallons in the left fuel tank and 26 gallons in the right fuel tank. They discussed the beautiful weather, and the differences between this airplane and the pilot's previous airplane. The pilot then boarded the airplane and taxied for takeoff.

A witness driving on nearby Interstate 40 observed the airplane fly into the mountain, and burst into flames.

Aircraft: Cessna 182P
Injuries: 1 Minor

A UH-1H, made a forced landing following separation of the tail rotor gearbox. The commercial pilot sustained minor injuries and the helicopter was substantially damaged. Visual meteorological conditions prevailed.

The pilot reported that when in straight and level flight, during the return flight from ~~the~~ firefighting efforts, he heard a loud noise followed by an abrupt, hard yaw to the right. The pilot

immediately initiated a descending right hand turn towards the valley below. During the descent, he heard another loud noise followed by severe vibration. The low rotor RPM horn and ~~M~~ master caution lights illuminated. The pilot continued to descend until the helicopter impacted terrain.

On-scene examination of the helicopter by a Federal Aviation Administration inspector revealed that the tail rotor gearbox was separated from the helicopter and not present.

Aircraft: Bell 206B
Injuries: 1 Fatal

According to a witness performing maintenance on a broadcast tower, he initially observed ~~the~~ a helicopter ½ mile to the east of the broadcast tower, flying towards the broadcast tower. When the helicopter was approximately **60 feet** from the broadcast tower, the helicopter banked to the left, as if to avoid hitting the broadcast tower and subsequently struck the No. 4 guy-wire on the south side of the broadcast tower. When the helicopter struck the wire, the helicopter veered back to the right and started to descend towards terrain. The witness did not observe or hear anything abnormal with the helicopter prior to the impact with the wire. Visual meteorological conditions prevailed.

Aircraft: CESSNA 310
Injuries: 2 Fatal

The airplane's right engine was recently overhauled and this was the first flight after the new engine was installed. [The witness] said the pilots had originally planned to fly on November 2nd , but had to postpone the flight because the left main landing gear brake was "soft" during the engine run-up. The witness, who was also a pilot, said that in addition to the left main landing gear brake problem, the nose landing gear strut was also flat. According to the mechanic, who was hired to overhaul the engine, the pilot-rated passenger asked him if he would fix the nose gear. The mechanic told him it would take at least a day to do the repair. Since the owner planned to fly the airplane later that week, he told the mechanic he would have the gear fixed then. In the meantime, he would have to fly with the landing gear extended or "stiff-legged" because he was concerned the gear would get stuck in the nose well.

The witness said the flight was rescheduled for November 4th. The witness said the two pilots boarded the accident airplane, started the engines, and taxied toward the runway. The airplane stopped on the taxiway and the engines were run-up three or four times. He said the pilots then taxied back to the hangar and shut the engines down. The commercial pilot got out of the airplane and said the right engine was not "feathering" and it needed to be fixed. The pilot-rated passenger called the same mechanic and asked him if he could look at the problem. The mechanic arrived 30-40 minutes later and opened the right inboard cowling on the right engine. About five minutes later, the mechanic said they were, "Good to go."

According to the mechanic, the pilot-rated passenger called him at 1648 and told him that the right propeller control lever was not moving smoothly through its full range of travel. The mechanic said he was surprised that they were planning to do an **engine flight test at night.** About 30-40 minutes later he arrived at the airport and opened up the right inboard cowling for the right engine. The mechanic asked one of the pilots to move the propeller control lever in the

cockpit through its full range of travel. The mechanic said the arm on the propeller governor moved smoothly from stop to stop as the lever was moved. He told one of the pilots to adjust the friction lock for the lever, which eased the tightness of the lever. He also noticed the nose gear strut was flat again.

The witness said he heard the two pilots discussing if they should postpone the flight because it was getting dark. They originally were going to make a few circuits around the traffic pattern before they flew to Miller. However, **since they were delayed, they agreed to just fly to Miller**. After the accident airplane departed, the witness departed in another airplane and followed them.

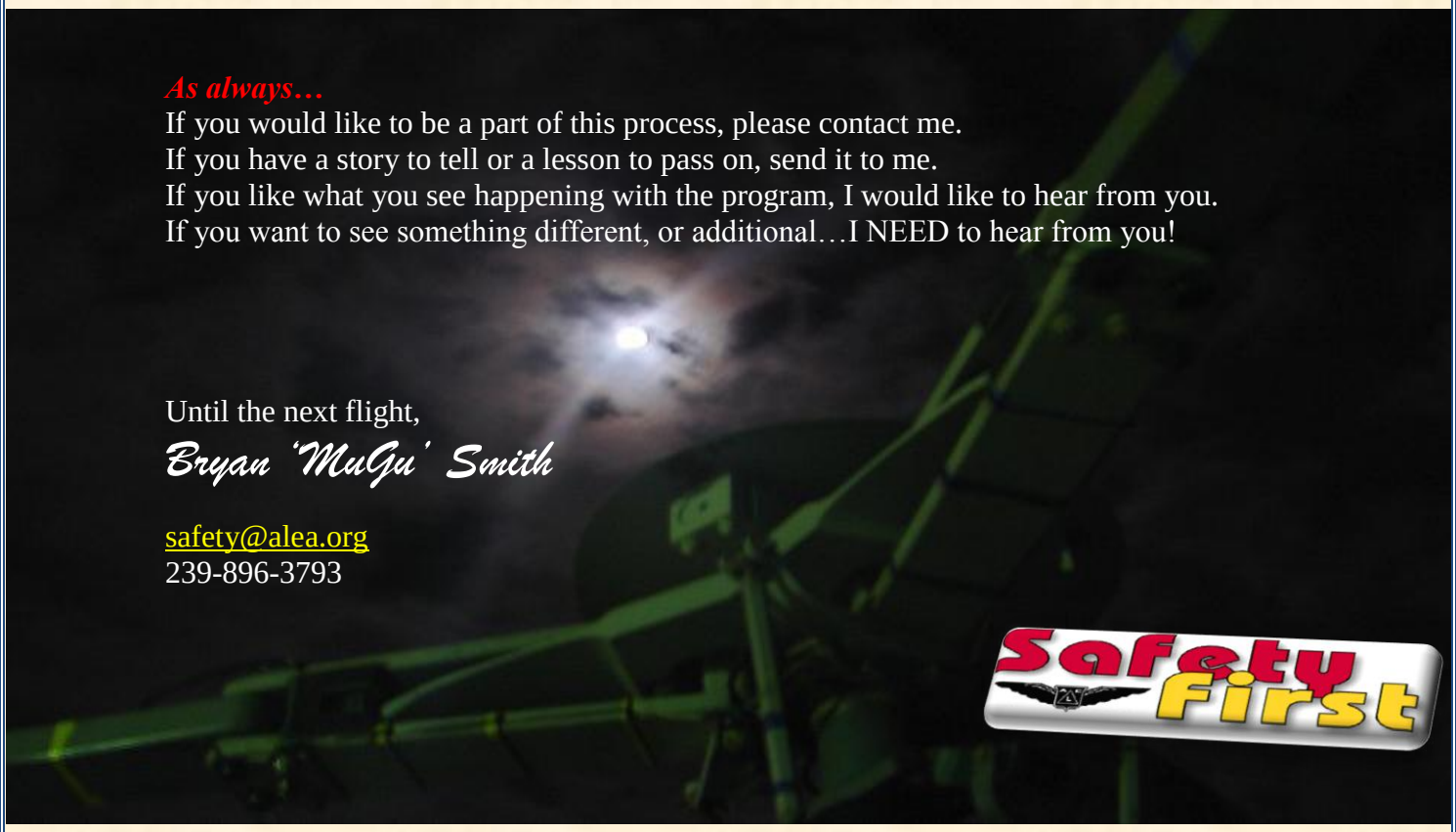
In an interview, the assistant [at the destination airport] said he received a call from the mechanic at 1738. **He was surprised that anyone would attempt to land on an unlighted grass airstrip at night.** The assistant said that by the time he and his girlfriend walked over to the runway, he could see the airplane approaching from the west.

According to the witness, once he departed, he established communication with the other pilots. Shortly after, the pilot-rated passenger said that “fuel or oil” were coming out of the right engine. He asked the witness to arrange for a fire extinguisher to be available when they landed, which he did. A few minutes later, the pilot-rated passenger asked the witness where the private airstrip was located, and the witness told him they were "right on top of it." The pilot-rated passenger said they informed him that they were losing oil pressure and were returning to Monett, followed by, “We shut the engine down.”

According to the witness, when the accident airplane was approximately a mile south of the private strip, the pilot-rated passenger announced, “110 knots.” About 30 seconds later, he said they were having trouble gaining altitude, followed by they were not able to maintain altitude. The pilot-rated passenger informed the witness that they were not able to maintain altitude. The witness said he could see the airplane losing altitude and advised them that Interstate 44 was one mile ahead. The commercial pilot then announced they were going to land on the interstate.

The witness said the accident airplane continued to lose altitude. The pilot rated-passenger then said, “Oh my God, I think we are going to crash.” This was followed by, “We’re going to crash.” The witness said he saw the light on the accident airplane's nose gear come on and illuminate the trees in front of them. He then said the nose of the airplane pitched up, rolled slightly to the right, and then pitched forward, followed by flames and a fireball.

The commercial pilot held a commercial pilot certificate for airplane single and multi-engine land, and instrument airplane. He was also a certified flight instructor for airplane single and multi-engine land, and instrument airplane. In addition, he held an airframe and power plant certificate. A review of his logbook revealed that as of October 6, 2012, he had a total of 3,299 flight hours.



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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