



The

Safety

Wire

February 2015

GUNFIRE is sometimes a unique part of our flight risk assessment in law enforcement. And just like those we support on the ground, the presence of flying bullets does not always mean it is time to clear the area, but often quite the opposite. At Heli Expo next month from the US Park Police crew of 'Eagle 1', in Washington D.C., will receive the MD Helicopters Law Enforcement Award for their role in responding to an active shooter call. This will not be the first time they have been honored for this incident. ALEA recognized the same crew with the 2014 Capt. "Gus" Crawford Aircrew of the Year award. Just a couple weeks ago another crew with the Austen Police Department worked an active shooter call that had all the markings of an attempt to ambush responding ground units. The crew stayed on scene despite the danger to themselves.

In both of these cases the crews intentionally flew in hazardous conditions not for the sake of bravado, but to save lives and protect our own brothers and sisters on the ground. They were necessary missions, and not done without the crews discussing how to mitigate the risks as much as possible. These are not simple safety calculations. It is professional level risk management. What makes this work is the intentional process of recognizing and then mitigating risk before finally accepting what risk is left over.



Formalizing the process of risk management does not mean we remove decisions from the aircrew. It means we focus the knowledge, experience and skills of the aircrew using tools that simultaneously minimize human error. When done right, we see successful outcomes to critical missions, even in the face of such powerful risks as direct gunfire.

Recently, during a roundtable discussion at an ALEA Safety Seminar, one agency talked about their tactic of doing 'ambush checks' to protect the ground units. They suggested checking near perimeter units for a bad guy hiding within striking distance. I know I have personally seen bad guys hiding in bushes within a stone's throw of an unsuspecting officer on the perimeter.

The people we are supporting need us for something more than just our ability to help them work a call. They need us to keep them safe. To do that, we certainly need to be good at the technical skills of working a call. However, we also need to know how to do professional risk management. That way we can be there for them when the risks are high, but manageable; or make the right decision to stay on the ground when the risks are beyond reasonable control, so we do not become additional casualties.

**ONE COOL JUDGMENT IS WORTH A DOZEN HASTY COUNCILS.
THE THING TO DO IS TO SUPPLY LIGHT AND NOT HEAT.**

~ WOODROW WILSON

Practical SMS

During the last online safety officer meeting we discussed numerous topics, including on eof the current hot button issues: Flight Risk Assessment Tools.

Some quick things to pass on as you develop and utilize a FRAT at your operation.

1. The FRAT is about the process of risk mitigation, not just trying to calculate a total rick score. Once you identify the risks, you need to think of a way to lower them, especially the highest scoring items. You should do this as a crew. Once you lower the risks that you can mitigate, the updated number is what you use to plug into the Go/No-Go decision. Your FRAT must have a means of addressing the risks that are identified.

- Pre-load your mitigation section with some choices. For example, if the weather is marginal, but still within policy, mitigate the risk by reviewing IIMC procedures, or setting up the cockpit for instrument flight.

B	C	D	E	F	G	H
Daily STATIC Scores			Initial Score	MITIGATION	Final Score	
		0			0	
		1			1	
		2			2	
PILOT						
Illness/Physical Condition	No problems. Physically/mentally in shape.					
	Nausea, minor pain, illness or minor mental stress	X	1	Discuss CRM methods to minimize errors caused by degraded health		X
	Illness requiring medication / Persistent pain or discomfort / Major mental stress			Stop!! Get released for duty by medic		0
Medication (NO GO with any unapproved prescription meds)	No medications in the last 24 hours.					
	Unit approved OTC meds	X	1	Limit flight activity is possible. Get rest during shift if possible, review effects of meds with unit aeromedical contact		X
Fatigue	Approved prescription meds					
	No fatigue. 6-8 hours sleep	X				X
	Some fatigue. Less than 6 hours sleep		0	Get rest during shift if able		
Total flight time	Mentally or physically fatigued. Less than 4 hours sleep			Consider temp grounding until rested or relieved by back up crew		
	Over 3000 hours total flight time.	X				X
	Between 3000 and 1000 hours total flight time.		0	Set higher margins of safety in weather, mission profile, etc.		
Flight time in make/model	Below 1000 hours total flight time.			Pairing with more experienced TFO or Copilot		
	Over 1000 hours flight time in make/model	X				X
	Between 500 and 1000 hours flight time in make/model		0	Review section of POH daily (i.e. emergency procedure for the day)		
Currency Training	Below 500 hours flight time in make/model			Limit mission profiles, weather limits, etc.		
	Previous 6 months (factory, sim, recurrent training, etc.)					
	Training conducted 6-12 months prior	X	1	Review emergency procedures or performance limitations		X
IIMC Preparedness	None in last 12 months			Not considered current for missions		
	IFR Current - IIMC training within last 6 months					
	IFR currency 6 months old - IIMC training more than 6 months prior		4	Refresh IIMC procedures with flight or sim		X
	No IFR currency or IIMC training in last 12 months	X		Flight only if 5000' ceiling and 10 miles visibility, and no forecast change. Nighttime only in well lit urban areas		1
TFO or Copilot						

- We should not assume that we have identified all hazards that could potentially come up during a mission or maintenance task. Include an 'open' or 'other' category that the crew can use to enter a hazard that is not already on the FRAT. Again, the tool is there to help identify and then mitigate risks through planning and briefing.

Day/Night/Aided	Daytime mission	X		
	Night mission - NVG's utilized		0	
	Night mission - unaided			Use higher w...
Other			0	
External Pressure	Flight easily cancelled - no risk of death or injury to persons on call			
	Risk of injury or death without help from aviation.	X	1	
	Significant pressure from agency leadership to launch			Stop! Cancel the flight if n...



LED LIGHTING

LED obstruction and airport lighting is an issue that poses a significant hazard for many of us. The FAA has put together a workgroup to study the issue. Please take a few moments to fill out the survey below so we can try and have this issue resolved in a manner that benefits our industry.

This questionnaire is being presented to the aviation community in conjunction with the FAA, multiple professional pilot groups, general aviation pilot groups, and air traffic controllers. The purpose of this questionnaire is to understand your experience with Light Emitting Diode (LED) airport/heliport lighting (not LED lighting as installed on the aircraft) during approach, landing, ground movement, and take-off phases of flight and will take approximately 15 minutes of your time. Participation is completely voluntary and most appreciated.

<https://www.surveymonkey.com/s/DLPPWKB>

**WHAT IS CHIEFLY NEEDED IS SKILL
RATHER THAN MACHINERY.**

~ WILBUR WRIGHT, 1902

RESOURCES

NTSB animation of Alaska DPS fatal crash

<https://www.youtube.com/watch?v=o4QELOGXxPc>

Newest NASA Callback newsletter. This one is interactive:

http://asrs.arc.nasa.gov/publications/callback/cb_421.html

5 Videos That Every Helicopter Pilot Needs to Watch

FAA Safety Team | Safer Skies Through Education

Notice Number: NOTC5832

Movies can be heartwarming, funny, or motivational, but only a few take aim to save lives. Following are five videos that the International Helicopter Safety Team (<http://www.ihst.org/>) encourages helicopter pilots to watch and take to heart in order to enhance helicopter safety and reduce accidents.

That Others May Live – This video is a case study by Airbus Helicopters and offers a pilot's account of an actual inadvertent IMC encounter that occurred at night in a VFR equipped AS350 helicopter. <https://www.youtube.com/watch?v=EMxuO77mdQo>

No Greater Burden - Much research has been done on the negative effects of stress on our physical and psychological well-being. The more stress we experience, whether we know it or not, the more inclined we are to lose concentration, forget things, and perform poorly on tasks that should be familiar and easy for us. More often than not, those effects have little impact upon our day-to-day life, however, such effects while flying could lead to a disastrous outcome. The Aircraft Owners and Pilots Association (AOPA) developed this video.

<http://www.aopa.org/Education/Safety-Videos/No-Greater-Burden>

178 Seconds to Live - This brief but frightening AOPA video warns us, “Don’t get lured into the trap.” <http://www.aopa.org/AOPA-Live.aspx?watch=%7BCCA30EA1-A94D-4E45-ABCD-3AD4074403E0%7D>

Degraded Visual Environment and Loss of Control - Experience demonstrates that disorientation is the largest single cause of fatal and serious injury helicopter accidents. The European Helicopter Safety Team produced this video. <http://vimeo.com/15479359>

Autorotations: Reality Exposed – The Helicopter Association International gathered helicopter safety experts for this video to help pilots gain a better understanding of the autorotation process. <http://ihst.org/Default.aspx?tabid=3159&language=en-US>



SAFETY OFFICER MUTUAL AID

The next ALEA safety online meeting will be on March 12th at 10:00 am EST. I am going to try varying the time

for the meetings to accommodate people in different time zones. Please send me an email if you are not on the mailing list and would like to attend. The minutes from previous meetings are also available. safety@alea.org

March 12th, 2015
10:00am EST (1500UTC)

REALITY CHECK...

Note: The following reports are taken directly from the reporting source and edited for length. The grammatical format and writing style of the reporting source has been retained. My comments are added in red where appropriate. The goal of publishing these reports is to learn from these tragic events and not to pass judgment on the persons involved.

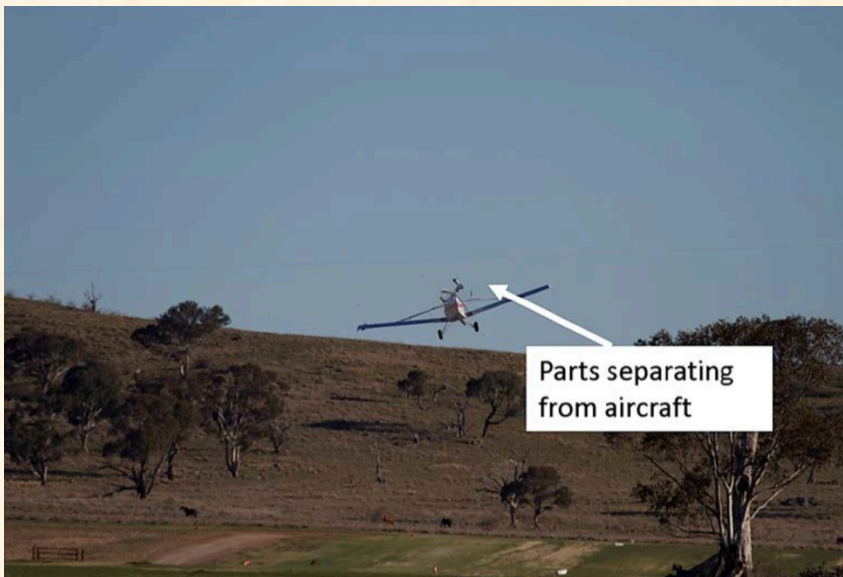
Aircraft: Piper PA 25

Injuries: None

ATSB Identification: AO-2014-153

<http://www.atsb.gov.au/media/5192538/AO-2014-153%20Final.pdf>

On 20 September 2014, the pilot of a Piper PA-25 aircraft, conducted a ferry flight from Camden to Bunyan, New South Wales. About 10 km south of Michelago, the pilot intended to overfly a private airstrip to assess its condition and suitability as a potential out-landing site.



The aircraft was heading south and as the airstrip was oriented approximately north-south, the pilot elected to overfly the runway. The pilot observed the windsock indicating a southerly wind of about 8-10 kt. When about 300 m beyond the runway threshold, the aircraft struck powerlines that crossed the runway about 15 m above ground level, dislodging the windscreen and canopy. The top of the fin was severed by the powerlines.

The ability of pilots to detect powerlines depends on the physical characteristics of the powerline such as the spacing of power poles, the orientation of the wire, and the effect of weather conditions, especially visibility.

Depending on the environmental conditions, powerlines may not be contrasted against the surrounding environment. Often the wires will blend into the background vegetation and cannot be recognized. In addition, the wire itself can be beyond the resolving power of the eye: that is, the size of the wire and limitations of the eye can mean that it is actually impossible to see the wire. As such, pilots are taught to use additional cues to identify powerlines, such as the associated clearings or easements in trees or fields that can underlie the powerline, or the power poles and buildings to which the powerlines may connect.

The ATSB publication, *Avoidable Accidents No. 2 – Wirestrikes involving known wires: A manageable aerial agriculture hazard*, www.atsb.gov.au/publications/2011/avoidable-2-ar-2011-028.aspx advises pilots to always conduct an aerial reconnaissance to confirm wire locations and other hazards.

Aircraft: Airbus AS350 BA
Injuries: 2 Fatal
New Zealand CAA Occurrence Number: 11/5349

http://r.search.yahoo.com/_ylt=A0LEVzdLxepUHpkAwsBXNyoA;_ylu=X3oDMTEExcjZhcGFzBGNvbG8DYmYxBHBvcwMxBHZ0aWQDVUIDMV8xBHNlYwNzeg--/RV=2/RE=1424700875/RO=10/RU=http%3a%2f%2fwww.caa.govt.nz%2fAccidents_and_Incidents%2fAccident_Reports%2fZK-IMB_Fatal.pdf/RK=0/RS=Jf70qVlkYyXllg9YE.Vxfwh5uxk-

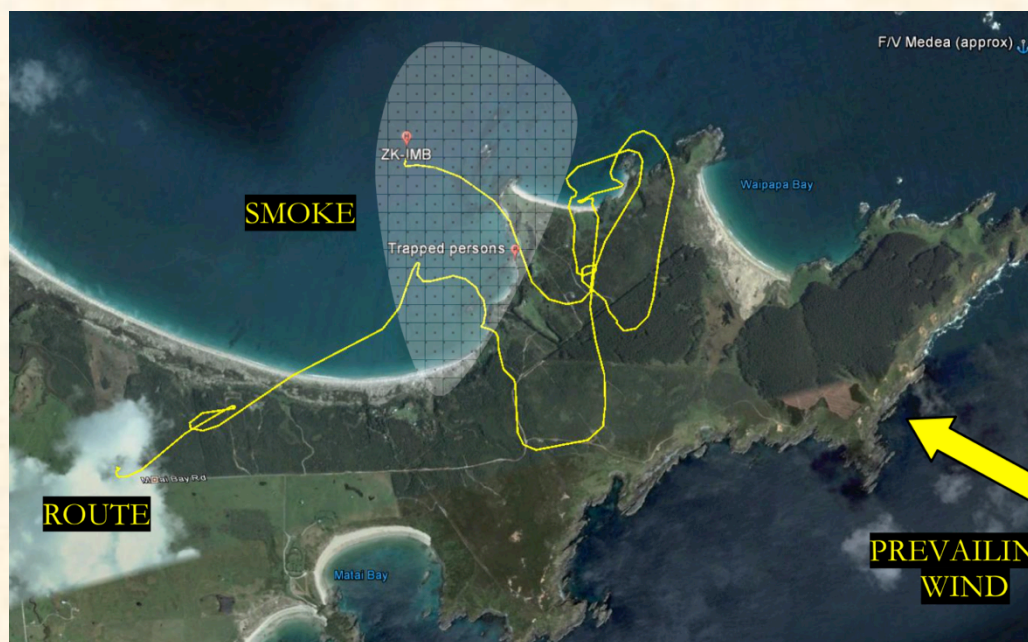
[An AS350 BA] was being used for fire-fighting in conjunction with the Northern Rural Fire Authority (NoRFA). Once airborne the pilot contacted his CEO who was to act as ground crew, advising that he was heading to the operation, the monsoon bucket was okay and commenting that “...*the weather didn’t look good...I don’t know how much I am going to get done...*”

Approximately one hour into the aerial fire-fighting operation, the pilot received information reporting that there were members of the public going into the sea to escape the fire and they required urgent evacuation. The pilot ceased fire-fighting operations and along with a NoRFA Rural Fire Officer (the Passenger), attempted to assist the trapped people. The pilot is reported to have commented that the situation was “...*tricky...*” and arranged to meet the passenger on the ground. Wind conditions at this time were reported to be between 35-40 kts.

During the attempt to assist the trapped people, communication was lost with the helicopter. Eyewitnesses on the beach heard the helicopter pass overhead, but due to the poor visibility caused by intense smoke, they could not see it. This was the last reported position of the helicopter.

A search that night failed to locate the helicopter. This SAR operation was also hampered by the windy conditions and smoke affecting the use of NVG. The following morning it was located approximately 0.37 NM from shore on the sea floor at a depth of 7m. Both the pilot and the passenger were found deceased in the helicopter. The investigation did not identify any mechanical defects which may have contributed to the accident.

The CAA investigation considers that the pilot probably experienced the effects of spatial disorientation resulting in a loss of control at low level over the sea.



The investigation identified that there were two definitive operations, therefore two different roles, being carried out by the helicopter: one role as fire-fighting, the other as SAR. The pilot had extensive experience carrying out fire-fighting operations. The character traits of the pilot, as described by the CEO, identify a person not likely to make impulsive or unplanned decisions. Similar traits were identified of the passenger. It is therefore reasonable to conclude that due to the apparent urgency of the information provided to the pilot and passenger, that they did not fully appreciate the changeover from one role to the other. As such they were not in a position to fully assess and mitigate the possible risks associated with the SAR

It is likely that the use of the rotating beacon and the helicopter landing

light contributed to the pilot's disorientation. The reflection of the lights against the smoke would have been similar to driving through fog creating an adverse effect on the pilot's night vision along with possible flickering effects.

There are no new ways to crash an aircraft...

...but there are new ways to keep them from crashing.

Safe hunting,

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