



**The**

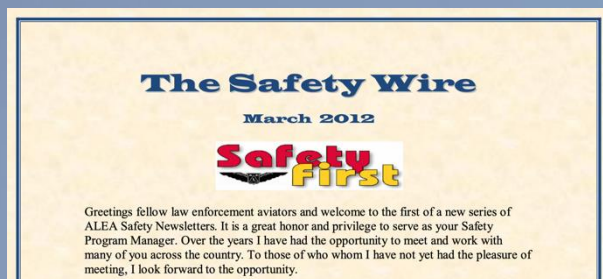
**Safety**

**Wire**

**March 2022**

## **Ten years ago...**

My first safety newsletter went out to the membership. Quite a bit has changed in the last decade in relation to safety in our industry. Modern safety management techniques were just starting to find their way into our world in 2012. Now, approximately 80% of public safety aviation uses Safety



Management Systems, Flight Risk Assessment Tools and trained Aviation Safety Officers. In the four years leading up to 2012, we lost eight people to IIMC in four accidents. That rate is much lower in 2022 and, in fact, we have been fortunate not to lose one person to IIMC in North America since 2014. That may have something to do with 86% of our membership conducting IIMC training for aircrews, which is a number that increases every year.

A couple months later, in July, 2012, I listed some of the top concerns membership had relayed through a safety survey:

1. Education of new unit managers/supervisors (especially safety management)
2. Concerns of quality of maintenance due to budget issues



3. Training reduction due to reduced budgets (reduction in quality and/or frequency)
4. Shift coverage issues due to insufficient or loss of personnel (leading to fatigue)
5. Lack of Night Vision Goggles
6. Continued practice of single pilot operations during public safety operations
7. Safety being practiced as an optional 'add-on' to operations, practiced only when convenient

As you can see, some things have improved while some are, unfortunately, the same old fight.

Again, I'm happy to say that in 2022, approximately 70% of public safety aviation units are utilizing NVGs, and over 80% use a TFO or trained second pilot during operations. Some of the other items, unfortunately, continue to be struggles for many.



One other thing that still echoes loudly from that first safety newsletter is, "Like many of you, I do not track law enforcement accidents in numbers, I track them in names. Never can the loss or injury of one of our own be an acceptable margin of error."

Know the name Nicholas Vella and keep his family, friends, partner in the aircraft that night, and the Huntington Beach Police Department in your thoughts and prayers as they go through the terrible tragedy they suffered on February 19<sup>th</sup>.

*"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 Shaw*

## ONLINE MEETINGS

APSA conducts regularly scheduled online meetings for safety officers, maintenance technicians, SAR personnel, UAS operators and natural resource personnel via a conference call you can join using your computer, mobile device or phone. Online meetings are open to any APSA member. Contract maintenance providers to APSA members are welcome to participate in the maintenance meeting as well. If you would like to join, send an email to: [safety@publicsafetyaviation.org](mailto:safety@publicsafetyaviation.org)

The schedule for upcoming APSA online meetings is as follows.



### **Maintenance:**

Wednesday, April 6, 2022

1:00 PM - 2:00 PM EDT (1700 UTC)

### **SAR:**

Wednesday, April 20, 2022

1:00 PM - 2:00 PM EDT (1700 UTC)

### **UAS:**

Wednesday, May 11, 2022

1:00 PM - 2:00 PM EDT (1700 UTC)

### **Safety Officers:**

Friday, May 27, 2022

1:00 PM - 2:00 PM EDT (1700 UTC)

### **Natural Resources:**

Wednesday, June 29, 2022

1:00 PM - 2:00 PM EDT (1700 UTC)

## Safety Management Systems

A Risk Matrix is a means of quantifying risk associated with a hazard. It is an essential tool in modern risk management. The goal is to remove opinion and base the risk assessment in fact. That factual, quantified amount can then be attacked in a logical manner for the purpose of reducing the risk in a manner that can be proven and not assumed. To do this, your risk matrix needs two things. First, it needs to be defined by numbers. You can see the relationship of different risk levels and track changes easily with numbers. Second, you need to define each category for severity and probability. Without definitions for these categories, risk will be assigned random and subjective numbers based on the assumptions and opinions of the person making the assessment.

		Probability				
		5	4	3	2	1
Severity		Frequent	Probable	Occasional	Remote	Improbable
5	Catastrophic	25	20	15	10	5
4	Critical	20	16	12	8	4
3	Marginal	15	12	9	6	3
2	Negligible	10	8	6	4	2
1	Reputation/ Brand/Support	8	6	4	2	1

**SEVERITY**  
 5 Severe bodily injury/death or loss of aircraft  
 4 Serious bodily injury or > \$100,000  
 3 Injury needing medical attention or \$50,000-\$100,000  
 2 Injury not req medical attention or <\$50,000  
 1 Damage to reputation, brand, reputation

**PROBABILITY**  
 5 Every flight  
 4 Every day  
 3 Monthly  
 2 Yearly  
 1 Never happened

A risk matrix is available in the SMS Installation Guide or by simply emailing me. An example is included here, but remember, the category definitions will be different for different types of operations. This is only an example.

*“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*

## EMERGENCY PROCEDURE OF THE MONTH

In each monthly emergency situation, discuss what you would do, as a crew, to respond to the following emergency. If the EP does not apply to your specific aircraft, think of something similar.

**Aviation Radio Inoperative (in flight)**

## 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:** AS350 B2  
**Injuries:** 3 Uninjured  
**NTSB#:** ANC15LA015

<https://data.nts.gov/carol-repge/api/Aviation/ReportMain/GenerateNewestReport/90869/pdf>

During an interview with the National Transportation Safety Board (NTSB) investigator-in-charge, the pilot stated that while en route, about 1,000 feet above ground level (AGL), he felt a "clunk" in the tail rotor control pedals and the helicopter began to yaw to the left. When he attempted to counteract the yaw by depressing the right tail rotor control pedal, there was no reaction from the helicopter and the right pedal travelled to the forward stop. The pilot declared an in-flight emergency with air traffic control and executed an emergency run-on landing.

A post flight examination of the helicopter revealed the tail rotor pitch change spider assembly, part number 350A33-2030-00, had fractured into multiple pieces, all with rotational scarring present along the fractured surfaces. The inside of the spider assembly contained dark discoloration consistent with thermal damage. Light circumferential scarring was present on the tail rotor gear shaft about three inches outboard of the tail rotor gear box, approximately one inch wide.

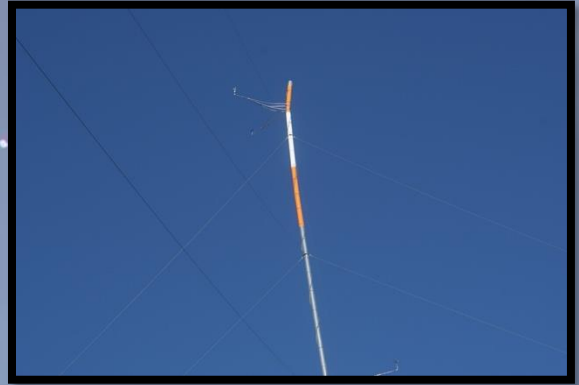
The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The failure of the ball bearing within the pitch change spider assembly due to its operation with no grease within the bearing, which resulted in the subsequent fracture of the spider assembly and a loss of tail rotor control authority. Also causal to the accident were the overhaul facility's failure to follow the helicopter manufacturer's spider assembly overhaul procedures, which resulted in the assembly leaving the facility with no grease in the bearing, and the mechanic's failure to complete all of the tasks on the 600-flight-hour/24-month inspection checklist, which led to the lack of grease in the bearing going undetected.

**Aircraft:** Air Tractor AT-400  
**Injuries:** 1 Fatal  
**NTSB#:** CEN13FA465

<https://data.nts.gov/carol-repge/api/Aviation/ReportMain/GenerateNewestReport/87699/pdf>

The commercial pilot was en route from a private airstrip to a nearby field to apply herbicide and flying about 150 feet AGL, when the airplane struck a 197-foot [temporary] meteorological tower (MET) about 35 feet from its top. A survey of the accident scene revealed that the sun was ahead of and to the right of the airplane's flight path and likely obstructed the pilot's ability to see the tower. An examination of the airplane did not reveal any preimpact anomalies.



The NTSB recently concluded that, due to their rapid construction and lack of conspicuity, METs pose a threat to pilots who conduct low-altitude operations and recommended required registration, marking, and—where feasible—lighting of these structures in order to aid pilots in avoiding them.

*There are no new ways to crash an aircraft...  
...but there are new ways to keep them from crashing.*

*Bryan 'MaGu' Smith*

Safety@PublicSafetyAviation.org

407-222-8644

