The Safety Wire

June 2021

Gray is Dangerous

Sure, we traditionally think of dangerous items in aviation in terms of red warning lights, bold red letters in checklists or red markings on instruments. I do not dispute that those items deserve their noteworthy status. However, when something marked red shows up in front of us, there is rarely any dispute that we need to shift into high gear and deal with a serious issue. Even if the alert proves to be a false alarm, we must go through, at minimum, a precautionary process to determine that.

When things are gray, however, we tend to hesitate and underestimate the potential for disaster. These are the unclear situations created by events that don't exactly fit into the emergencies we have previously stamped as 'red'. Examples include marginal weather conditions, the failing component that's still at least partially functional, the new organizational situation we've never faced before.

In 2020, the US Air Force, like many aviation organizations, significantly cut back on flight operations in response to COVID-19. Training flights were one of the areas impacted and new pilots were being allowed through the programs with less flight training covering fewer scenarios than previous classes. When an F-16 pilot was killed during a night air refueling exercise, the accident review board reported that, "the loss of proficiency was a result of reduced flying operations over multiple months." Additionally, this training flight was conducted at

night although the pilot had never practiced during the day. The report states that, “USAF directives require that students not execute events, such as [air-to-air refueling], at night until they have demonstrated proficiency in similar events during the day.” The student’s supervisors were aware that the accident pilot had not practiced during the day, but stated they were not aware regulations prohibited initial training at night. The accelerated training regimen likely led to the decision to combine a night combat training mission with the refueling practice. So, while there were good mitigations designed to avoid this type of incident, the people who needed to activate them failed to do so.

This case highlights how small, seemingly harmless changes to normal operations can pile up and cause an accident. The student was upset about his poor performance during the training, and he actually crashed while trying to land, not while refueling. As we deal with similar changes in our operations, an expert safety officer will stay alert to these sneaky traps lying in the shadows in addition to the unmistakable, bright red alerts.

Additionally, we are reminded that it is not as important to have a great safety system in place as it is to have people with the knowledge and willingness to utilize that system out in the field.

“Just having a gun doesn’t make you armed anymore than having a guitar makes you a musician.”

~ Lt. Col. Jeff Cooper

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

The schedule for upcoming APSA online meetings is as follows.

UAS:
Wednesday, July 7, 2021
1:00 PM - 2:00 PM EDT (1700 UTC)

Safety Officers:
Friday, July 16, 2021
1:00 PM – 2:00 PM EDT (1700 UTC)

SAR:
Wednesday, August 11, 2021
1:00 PM – 2:00 PM EDT (1700 UTC)

Maintenance:
Wednesday, August 25, 2021
1:00 PM - 2:00 PM EDT (1700 UTC)

Natural Resources:
Wednesday, October 6, 2021
1:00 PM – 2:00 PM EDT (1700 UTC)

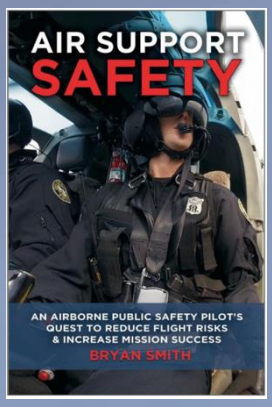
"Opportunity is missed by most people because it is dressed in overalls and looks like work."

~ Thomas Edison

RESOURCES

NEW RELEASE - Air Support Safety
https://store.bookbaby.com/book/AirSupportSafety

NASA Callback – UAS Reports
https://asrs.arc.nasa.gov/docs/cb/cb_496.pdf



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.

Odor of fuel in the cockpit

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:	**F-16 Falcon**
Injuries:	**1 Fatal**
USAF#:	**T/N 94-0043**

https://www.afjag.af.mil/Portals/77/AIB-Reports/2020/June/F-16%20Mishap%20AIB%2030%20June%202020%20Shaw%20AFB%20(ACC).pdf

On 30 June 2020, the mishap pilot (MP), flying F-16CM tail number (T/N) 94-0043, engaged in a night mission qualification training (MQT) flight near Shaw AFB. During

the recovery and landing phase of the mission, at approximately 2226 local time (L), the mishap aircraft's (MA) landing gear was damaged in an initial landing attempt at Shaw AFB. In a subsequent landing attempt, at approximately 2259L, the MA departed the runway and the MP was fatally injured during an unsuccessful ejection.

The mishap flight was planned as a 4-ship night MQT suppression of enemy air defenses mission with pre-strike air-to-air refueling from a KC-135. The first three F-16s of the mishap flight, which included the mishap flight lead, mishap wingman, and mishap element lead (MEL) refueled without incident. However, the MP was unable to refuel, requiring the MEL and MP to return to Shaw AFB.

During the final phase of landing on runway 22R, the MA struck the localizer antenna array short of the runway threshold, severely damaging the left main landing gear. After briefly touching down in the underrun, the MP executed a go-around and alerted the MEL and air traffic control personnel of the situation. Following more than twenty minutes of discussion between the supervisor of flying (SOF), the MEL, and MP it was decided to attempt an approach-end cable arrestment on runway 04L. During the maneuver, the MA's tail hook did not catch the cable and the left wing fell to the runway, dragging the MA to the left. The MP ejected from the MA, but the ejection seat malfunctioned and the parachute did not deploy. The MP was fatally injured and the MA was destroyed.

[We] believe the MP was distracted and dwelling on his earlier unsuccessful AAR attempt, which may have contributed to misinterpreting runway visual cues. On the night of the mishap, the direct impact of the MP's unsuccessful AAR was two aircraft returning home early, meaning the entire mission was ineffective for training purposes. The MP was a distinguished graduate from undergraduate pilot training and had a solid performance record. I believe he did his absolute best during his first ever AAR attempt, and was disappointed with his performance. The MP twice verbally expressed frustration with himself, as heard on the MA's cockpit voice recording. The first time was during his AAR attempt and again while descending for the final approach to Shaw AFB. In addition, the MEL made two supportive comments on the way back to Shaw AFB because he knew the MP was disappointed they were returning home early. The first was a lighthearted comment, "that was not the way to start your tanking experience," followed by "that was really challenging." The MP responded to these comments in a lighthearted tone by saying, "no excuse." These comments were made eight minutes before damage to the MA occurred, so the AAR failure was still in the forefront of the MP's thoughts.

Aircraft: **Unknown UAS**
Injuries: **None**

https://asrs.arc.nasa.gov/docs/cb/cb_496.pdf

I was operating my drone under Part 107 during an aerial photography mission. On initial setup, I checked the FAA B4UFLY app and noticed that the area I was currently in was restricted.... I checked under the reasons why, and it informed me that it was due to Alert Area A-231. I then checked my terminal area chart on ForeFlight to see what the restrictions were for A-231 and found out that it was from 500 feet AGL to 6,500 feet MSL. The operation I intended to perform was only going to be up to 100 feet AGL, and I quickly glanced to make sure I was not in conflict with any other airspace and [that I was] under the [Class] B shelf.

After no conflicts and completing the flight, I then proceeded to another property located a street over. Again, I was prompted that the flight was restricted due to A-231. Again, I continued to proceed cautiously. After performing three operations all within the same area, I stopped for the day.

Later that evening I looked at the terminal chart once again. I then noticed that next to the A-231 boundary, there is a Special Air Traffic Rule (SATR) starting at the surface and [extending] up to 4,000 feet. The SATR states that all aircraft need to establish and maintain two-way communication with Luke Approach while operating in the airspace. It is then, that I realized that I may have been in conflict with this SATR. My previous flight experience in the area led me into a trap of not checking the airspace as closely as I should have.

Aircraft:	**F-16 Falcon**
Injuries:	**1 Fatal**
USAF#:	**T/N 86-0317**

https://www.afjag.af.mil/Portals/77/AIB-Reports/2020/8%20December%202020%20-%20ACC%20-%20Michican%20-%20F-16%20-%20AIB%20Report_Redacted.pdf

On the night of 8 December 2020, at approximately 19:17 local time (L), the mishap aircraft (MA), an F-16C, tail number (T/N) 86-0317, crashed into a wooded area in the Hiawatha National Forest in Michigan. Upon impact, the mishap resulted in fatal injuries to the MP and destruction of the MA.

The mishap flight was planned as a 2-ship night practice mission, to include an air-to-air intercept supported by the WI Civil Air Patrol (CAP) as a Track of Interest. Due to weather conditions in Green Bay, the small CAP aircraft cancelled the intercept portion of the flight and the mishap sortie launched as a 2-ship practice scramble on a back-up instrument profile. Shortly after takeoff, upon terminating the practice scramble, the MP observed a global positioning system (GPS) degradation due to the absence of satellite tracking data. The MP elected to perform an inflight alignment of the inertial navigation system (INS). While troubleshooting the GPS no track and during the inflight alignment, the mishap element performed a lead swap. Shortly after a positive change in roles, the MA entered weather conditions, and the MP lost visual contact with the mishap wingman (MW). The MP and MW established de-confliction via vertical and horizontal means. Subsequently, the MA went into a series of heading, altitude, and attitude changes. Estimated outer boundaries of the flight envelope included 90 degrees nose

low attitude, 135 degrees of right bank, and 600 knots airspeed, culminating with an extreme attitude that terminated with controlled flight into terrain. There was no attempt to eject by the MP.

The Accident Investigation Board President found, by a preponderance of the evidence, the cause of the mishap was the MP's failure to effectively recover from spatial disorientation. Further, the combination of night, weather conditions, the use of NVGs, low illumination, the MA's altitude, attitude and airspeed, as well as the MP's breakdown in visual scan of the available primary and standby instrumentation impacted the MP's ability to recognize, confirm, and recover from the unusual attitude created by the spatially disorienting event. The Board President also found, by a preponderance of the evidence, two substantially contributing factors: fixation and a degraded GPS satellite tracking system.