# The Safety Wire

**November 2021**

**‘Spotter’** is a term that makes most of us cringe. It is a term that fails to relay the complexity and importance of the job. Even the slightly better term, ‘Observer’, maintains a narrow perspective on the position to simply someone who ‘looks for stuff.’ The offense taken by professionals is that the terms seem to indicate that the job is simple and requires little, if any, training. We know that the role of Tactical Flight Officer is far more than looking out the window and relaying what you see over the radio. Through the years of hosting aircrew roundtable discussions, industry bare minimums for TFO training generally require 40-80 hours of initial ground and aircraft training with 2-3 months of field training accompanied by a TFO instructor before even being considered capable of operating solo with a pilot. And this is assuming a proper application process has been used to get trainees with an applicable skillset and background. When asked how long it takes for a new TFO to really be good at the job, after training, most people say 1-2 years, depending on how much they fly. This is no simple ‘spotter’ position.

I would argue that what really makes a TFO professional is that they are not just a passenger with a job. Instead, a TFO is an aircrew member. Here is where the safety and mission efficiency aspects of our job are again, happily, inseparable. A TFO is trained to play a critical role in preparing the aircraft for flight and analyzing the hazards within the aircrew, aircraft and environment for the day. TFOs play an active role in avoiding dangerous situations in flight and responding to the hazards and emergencies

that may occur. Data shows that a trained TFO makes a huge impact on safety of flight as well as safety of the ground units they support. They understand how the aircraft works, have situational awareness of the airspace environment and are masters of the tactical application of air support. 'Looking for stuff' is an important TFO responsibility, but it is only part of their job. This is what separates a passenger with a job, and a professional aircrew member. If we are truly committed to having safe and effective air support services, we must strive to make our selection processes, training and operational structure worthy of the title Tactical Flight Officer.

***"Success flourishes only in perseverance – ceaseless, restless perseverance."***

***~ Baron Manfred von Richthofen***
***'The Red Baron'***

## SAFETY MANAGEMENT SYSTEMS

It's that time of year again to prepare an annual SMS report. Routine reports are essential for the Safety Assurance and the Safety Education and Promotion aspects of your program. The report gives you and your Safety Committee a chance to do a health check on the entire system while updating the people in your unit, as well as middle and upper management, on the status of safety work that has been done. The report does not need to be terribly complicated, or lengthy. Ideally, it will be interwoven into a general annual report on the unit that also covers topics such as flight hours, mission statistics, training, etc. Examples are

available in the SMS Installation Guide. Email me for those examples and more if you are interested. A few tips on the report:

1. Start with a one-page Executive Summary for those who will not read past the cover page.
2. Number, don't bullet, your summary points. Research shows people skip bulleted items more than numbered lists.
3. Instead of a 'safety report', make it an 'operational report' that includes safety.
4. Include color charts or graphics as much as possible to retain attention of readers.
5. Minimize the length of the report. It is a summary, not a thesis.
6. Review your 2021 goals and objectives.

## RESOURCES

FAA SAIB reference 5G impact on radar altimeters:
https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSAIB.nsf/dc7bd4f27e5f107486257221005f069d/27ffcbb45e6157e9862587810044ad19/$FILE/AIR-21-18.pdf

ATSB – SAR equipment review
https://www.atsb.gov.au/media/news-items/2021/rescue-hoist-operators/?utm_source=miragenews&utm_medium=miragenews&utm_campaign=news

FAA Safety Team Resources on the "Impossible Turn"
https://www.faasafety.gov/files/gslac/library/documents/2018/Nov/164492/P-8740-44.pdf
*Paragraph A.11*: https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_61-83J.pdf

NASA Aviation Safety Newsletter – Cold Weather Ops
https://asrs.arc.nasa.gov/publications/callback/cb_502.html

# 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.

***Maintenance:***
Wednesday, December 1, 2021
1:00 PM - 2:00 PM EST (1800 UTC)

***Natural Resources:***
Wednesday, December 15, 2021
1:00 PM – 2:00 PM EST (1800 UTC)

***UAS:***
Wednesday, January 12, 2022
1:00 PM - 2:00 PM EST (1800 UTC)

***Safety Officers:***
Friday, January 21, 2022
1:00 PM – 2:00 PM EST (1800 UTC)

***SAR:***
Wednesday, February 9, 2022
1:00 PM – 2:00 PM EST (1800 UTC)

# 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.

**Generator or Alternator failure in flight - at night - 25 miles from base**

*"No bird soars in a calm [wind]."*

~ Wilbur Wright

# 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: Bell 407**
**Injuries: None**
**AAIB Identification: 26758**
https://www.gov.uk/aaib-reports/aaib-investigation-to-bell-407-n120hh

The pilot collected the helicopter the day before the accident from Thruxton Aerodrome, Hampshire, where it had been undergoing an annual maintenance check. On the day of the accident the pilot intended to fly to meet a friend and take them on a short sightseeing trip before flying the helicopter back to the maintenance facility later the same day. It was a clear day, the temperature was approximately 28°C and there was a light easterly breeze. Figure 1 shows N120HH before the first flight on the day of the accident; there is no visual evidence of an oil leak on the helicopter. Before the first flight the pilot completed a walk-around, which included opening the engine cowlings and checking the fluid levels; he did not find any abnormalities. The engine oil level was showing as full on the sight glass1. Prior to the second flight he completed another walk-around and checked the engine oil level via the oil tank sight glass, which was still showing full.

Two witnesses noticed the helicopter as it was flying. He saw the helicopter flying towards him from the west and could see the helicopter clearly through his binoculars. He described seeing what looked like a "contrail" coming from above the cabin but below the rotor.

The first indication in the cockpit of a problem was an amber FADEC fault light on the Caution and Warning Panel (CWP). When the pilot checked the instruments, he saw the NR was at 100% and the NP was at 90%. Concerned by the apparent reduction in engine power the pilot wanted to check if he could still control the engine. He reduced the throttle slightly to match the throttle position to the NG then selected the FADEC mode to manual. He tried moving the throttle slightly and the engine responded as expected; he then selected the FADEC

back to automatic. A few seconds after he did this an amber FADEC degraded light illuminated on the CWP. He estimated that 45 seconds had elapsed since the initial warning. He recalled that the NR was still at 100% and the NP was at 90%. He increased the throttle slightly again to bring NP to just below NR to confirm he still had control of the engine. He then returned the throttle to the fly detent. At this stage the pilot recalled there had been no audible warnings and he just had the two cautions on the CWP.

The pilot estimated that approximately 27 seconds had elapsed after the second caution light when there was a “mechanical snapping noise”, a violent yaw to the left, the red engine out warning illuminated, the torque dropped to 3% and a horn was heard. He realized the engine had failed and immediately “fully” lowered the collective and moved the cyclic control rearwards to slow to 60 kt.

After landing, the main rotor blades severed the tail section and a fire took hold destroying the helicopter. The helicopter had not been fitted with the optional fire detection and warning system, so the pilot and passenger where not aware of the fire until after the helicopter had landed. Inspection of the engine established that there had been an uncontained failure of the GP turbine rotor discs.

The helicopter manufacturer added information to the supplementary material to the Bell 407 Rotary Flight Manual to inform pilots that unusual torque indications might be the result of a loss of engine oil.

**Safety Recommendation 2021-047**
It is recommended that Rolls-Royce Corporation includes the scenario of a loss of engine oil leading to the uncontained failure of both Gas Producer Turbine Discs in the Failure Mode and Effects Analysis for the Rolls-Royce M250 Series 4 engines.

**Aircraft: Cessna 208B**
**Injuries: None**
**AAIB Identification: 26959**
https://www.gov.uk/aaib-reports/aaib-investigation-to-cessna-c208b-super-cargomaster-n967fe

The pilot was operating a cargo flight from San Juan, Puerto Rico to Tortola, British Virgin Islands. He discontinued the first approach due to poor weather. Following the second approach the aircraft made a hard landing that was 795 m beyond the threshold of the 1,206 m runway. During the landing roll the aircraft veered off the runway damaging the wheels, landing gear and baggage pod.

Data from the aircraft showed that the approach did not meet the operator's stable approach criteria. It also showed that the engine was running below the normal flight idle speed during the last few moments of the flight. Examination and testing found no evidence of anomalies with the engine. It was not possible to determine why the engine was operating below the normal idle speed whilst in flight.


It is likely that the pilot was experiencing high workload due to the unstable approach and poor weather and this may have limited his ability to deal with the situation. The operator intends to update its operations manual to state explicitly the altitude by which stable approach criteria must be achieved for all types of approach.

Recorded data showed the engine speed reduced below high idle shortly before landing but this would not have prevented the engine accelerating. No evidence was found of a technical anomaly with the aircraft or its engine that would have contributed to the event. Although the FCU was removed due to a later issue, no attributable faults were found. However, a temporarily blocked sense line could cause these symptoms. No blockage was found, but the possibility of a temporary blockage could not be excluded.