AIRBORNE PUBLIC SAFETY ASSOCIATION

The Safety Wire

August 2018

Fate is the Hunter by Ernest Gann is one of the best aviation books I have ever read. Ernest was an airline pilot who started his career before WWII. During the war, he was one of many airline pilots who flew cargo and passengers as part of the Air Transport Command. His poetic delivery of the incredible events covering his career have held my attention with great force. Of the many topics covered in the book, he discusses the different teaching styles of his instructors and captains during his time as a first officer. The descriptions are often of what I have less eloquently referred to as jerk instructors. Jerk instructors are fantastic characters for movies and books. The salty, crabby pilot with a permanent sour face that emits only insult and sharp rebuke for anyone unfortunate enough to infect his time with imperfection. Most of us have had an instructor like this, if not in the cockpit then on the maintenance floor or in law enforcement training.

Unfortunately, the stereotype is so glorified by Hollywood and culture that many otherwise good- natured people emulate the jerk instructor because they think those are the skills and temperament of an experienced guru. Even Ernest Gann recognized the limitations of this brash kind of instruction.

The key to instruction is communication. An instructor has information in their head that needs to transmitted into the student's head. That is only one side of the equation, though. Communication is like an electrical circuit and needs to travel in a loop. If the loop is not completed, neither electricity nor communication can function. It is rare that a student asks a question or actively seeks knowledge from a jerk

instructor. When overtasked or stressed, a student can get into an Observe, Orient, Decide and Act (OODA) Loop short circuit, where communication ceases, along with most other decision-making tasks. Being a tyrant is not the only cause for the communication loop breakdown. Instructors need to pay attention to the return side of the loop to make sure they are being effective. When the questions stop, something needs to be changed because learning is not being achieved no matter how correct the instructor's information is.

What a good instructor teaches, however, is the performance of a skill, not how to listen really well to the instructor. If all we learn to do is listen to what the instructor is saying and do whatever they say, what will we do when they are no longer there? Aviation professionalism is far more than simply following a list of memorized instructions. In the *Flight Instructor's Manual,* William Kershner describes how the instructor must cultivate a student's insight into their relationship with the aircraft and the flight environment by developing the ability to perceive, correctly, the elements around them. If we constantly force their attention towards us, we reduce the attention they can direct towards the aircraft, environment or maintenance task they are performing. If we are constantly telling them what to do, they are not compelled to apply insight towards making decisions and applying skills. As an instructor, I try not to be a jerk, but in that process I think I sometimes talk too much. My intention is to provide as much information as I possibly can. In doing so, I may be robbing my students from communicating with me. I may also be diverting too much attention from the aircraft and flight environment. So, I'm going to try and talk less. If you're relieved by that, thank the spirit of Ernest Gann.

Every once in a while the genie of luck takes a leak on the pillar of science.

~ Ernest Gann
Fate is the Hunter

Resources

US Helicopter Safety Team – 8 Ways to Enhance Training
http://www.ihst.org/portals/54/Facts8SETraining.pdf

US Helicopter Safety Team – Fact Sheets
http://www.ihst.org/Default.aspx?tabid=3056

European Helicopter Safety Team – Training of Emergency Procedures
https://www.easa.europa.eu/document-library/general-publications/ehest-leaflet-he-11-training-and-testing-emergency-and

National Law Enforcement Officers Memorial – Mid-Year Fatalities Report
http://www.nleomf.org/facts/research-bulletins/

NTSB Safety Bulletin – Low Level Turbulence
https://www.ntsb.gov/investigations/AccidentReports/Reports/ASR1803.pdf

APSA Online Meetings

The schedule for upcoming APSA online meetings is as follows.
If you would like to join, send an email to: Safety@PublicSafetyAviation.org

UAS:
Wednesday, Sept 12, 2018
1:00 PM - 2:00 PM EDT (1800 UTC)

Safety Officers:
Friday, Sept 14, 2018
1:00 PM - 2:00 PM EDT (1800 UTC)

Maintenance:
Friday, Sept 7, 2018
1:00 PM - 2:00 PM EDT (1800 UTC)

Friday, Sept 21, 2018
1:00 PM - 2:00 PM EDT (1800 UTC)

Where am I?

~ Charles Lindbergh
Upon his arrival in Paris...

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.*

Recent Events:

Little Rock Police TH-67 crash:

https://katv.com/news/local/little-rock-police-helicopter-crashes-injuries-unknown

Japanese B412 SAR crash – 9 Fatalities:

https://www.channelnewsasia.com/news/asia/all-nine-people-aboard-crashed-japan-helicopter-confirmed-dead-10608912

Aircraft: Cessna 185B

Injuries: 4 Fatal

New Zealand TAIC Report ZK-CMV

https://www.caa.govt.nz/assets/legacy/Accidents_and_Incidents/Accident_Reports/ZK-CMV-Fatal.pdf

The Civil Aviation Authority (CAA) was notified of the accident at 1343 hours on Monday 16 March 2015 by the Rescue Coordination Centre New Zealand. A pilot flying a helicopter along the Motatapu River North Branch near Wanaka, had spotted the wreckage of an aircraft. The CAA safety investigation found that the aircraft had collided with terrain during a poor visibility reversal turn in the Motatapu River North Branch, 1.3 nautical miles from the saddle at the head of the valley. The impact forces involved during the accident were not survivable.

Figure 5. Overview of impact and wreckage sites (Photograph taken later the same day).

On board the aircraft were a husband and wife and their two children. Both the husband and wife were licensed pilots and experienced in mountain flying. The wife held a current B Category Instructor Rating with mountain flying and terrain awareness ratings. The safety investigation was unable to determine who was acting as pilot-in-command for the flight.

The forecast weather conditions, were not conducive for flight under Visual Flight Rules (VFR) for the intended route to be flown. There was no evidence to suggest that the pilots were subjected to any time pressure to reach the destination.

The CAA safety investigation determined that the actions and decision making by the pilots prior to and during the flight, including the breaching of CAA rules and not following recommended practices, contributed to the accident.

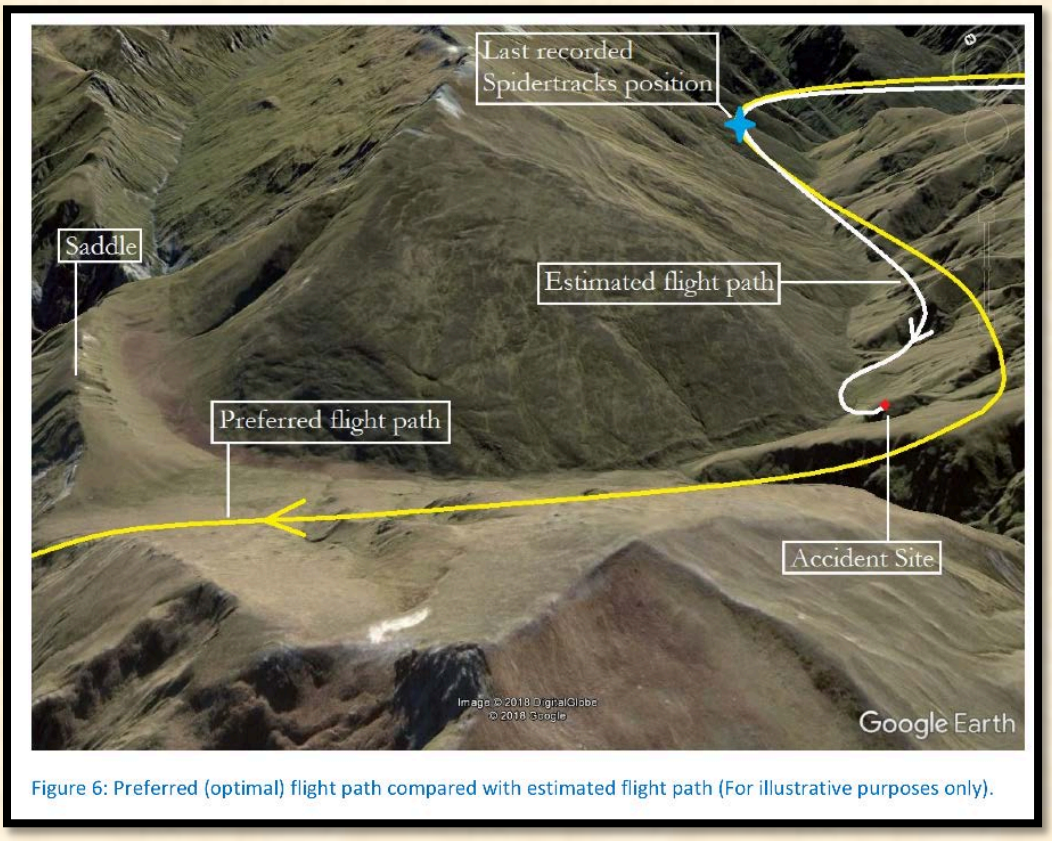

Figure 6: Preferred (optimal) flight path compared with estimated flight path (For illustrative purposes only).

Aircraft: Airbus EC-135

Injuries: None

NTSB#: GAA16LA056

https://app.ntsb.gov/pdfgenerator/ReportGeneratorFile.ashx?EventID=20151119X93456&AKey=1&RType=Final&IType=LA

According to the airline transport pilot, firefighting personnel were using the helicopter for training to simulate patient loading and unloading. The training consisted of multiple takeoffs and landings from the training center landing site. The pilot reported that, during the third landing, when the helicopter was between 2 and 3 ft above ground level, he felt it shudder unexpectedly. The pilot immediately landed and shut down the helicopter without further incident. The pilot reported that there were no preimpact mechanical failures or malfunctions with the airframe or engine that would have precluded normal operation.

A postflight examination revealed that a towel had been ingested into the fenestron, which resulted in substantial damage to the fenestron tail rotor blades, fenestron housing body, tailboom, and tail rotor drive shaft flex couplings. The pilot reported that the towel had migrated from an unsecured storage container near the landing site. The investigation revealed that, when the towel was ingested, the fenestron hub fairing detached from the hub body, which was then ingested by the fenestron tail rotor blades. The operator's director of maintenance reported that a postaccident examination revealed that all of the main rotor blades "received a small amount of [foreign object damage] FOD...at middle cord line near the tips" and that the "damage was the result of FOD from the Fenestron [hub fairing ingestion] after the towel was ingested." This evidence indicates that the hub fairing body becoming detached due to the ingestion of the towel contributed to the severity of the damage.

Aircraft: Cessna R172K

Injuries: 2 Fatal

New Zealand CAA#: 99/3689

https://www.caa.govt.nz/assets/legacy/Accidents_and_Incidents/Accident_Reports/ZK-FGF_Fatal_25Dec1999.pdf

The pilot's plan was to fly a friend from Rotorua to Wellington and return, so that the friend could spend some time with family in Wellington on Christmas Eve.
[The flight] took off from runway 16 at 0117 hours and climbed to the flight planned altitude of 9000 feet. In the Paraparaumu area, some communications difficulties were experienced between FGF and Christchurch Control, and were partially alleviated by a frequency change. The pilot requested some weather information (via the controller) from a Convair inbound to Palmerston North, and on receipt of this, amended his cruise altitude to 6000 feet.

During the descent of FGF from 9000 to 6000 feet, the controller remarked that on radar, FGF appeared to be having some tracking difficulties, and it seemed at one point that the aeroplane was turning back to Wellington. This occurred during a short period of communication problems, so the reason for the track excursions was not established. However, the flight proceeded normally from this point.
At 0245 hours, the pilot made a distress call: "Mayday Mayday Mayday, Foxtrot Golf Foxtrot engine trouble thirty three to the north of Maxwell". The controller immediately advised FGF that the radar lowest safe altitude in the area was 3000 feet and that the nearest aerodrome was New Plymouth, 26 miles to the west.

The pilot subsequently reported that he had partial power, but was still descending and was not going to reach New Plymouth. He asked the controller the distance to the coast; this information was not passed, but at this point the distance was about 18 nm. Shortly after this, radio reception from FGF became intermittent and ceased as the aeroplane descended out of coverage, the radar return fading at 0246 with the last indicated altitude 4700 feet and groundspeed 67 knots. Although the NRCC was advised immediately, and an aerial search commenced at first light, it was not until about 1115 hours that a Te Wera resident noticed the wreckage of FGF near their property and called the Police. The aeroplane had struck the side of a ridge and had burnt out. Both occupants were found dead in the wreckage.

The number 6 connecting rod was found to have fractured about halfway along its shank. A second, severely hammered, fracture just above the big end was also evident. The intervening portion of the shank (some 50 mm) was missing, as was the big-end cap, although both bearing shells were found in the crankcase, in a flattened condition. During dismantling of the engine, the torque values for all other big end cap nuts were checked and found to be at the specified figure.

The damage patterns indicated that the fracture about the mid-point was the initial failure, the remainder of the rod then being free to flail within the crankcase while still attached to its crankpin. The flailing end of the rod perforated both crankcase halves at the top, gouged the case adjacent to number 5 cylinder, striking both the (number 5) cylinder and piston skirts, and breaking out a piece of the piston. Strike damage consistent with the flailing rod was also evident on the number 6 cylinder skirt, in the normal plane of rotation of the rod. The rod had subsequently failed again, close to the big end, but no clear fracture surface was visible owing to severe and repetitive impact damage.