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Aircraft Accident Report Project

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Abstract

This paper delivers a compelling examination of the aircraft accident investigation process based on the case of a fatal accident involving Zonk Air aircraft 1980 PA-31-310. The plane, which had four passengers onboard besides the pilot, did not survive the accident, which the National Transportation Safety Board (NTSB) considered a crash where no one could survive. Besides, enormous blunt trauma was the definite cause of death.

1.0 Brief History of Flight

A PA-31-310 aircraft with four passengers on board departed run 18 on 7th November 2010. It was at sunset when it left Lake Tahoe Airport. Before its supposed return to Burbank, CA, the crew had to take brief photos around the Lake's region as articulated by the flight schedule. Concerning the weather aspect, the lowering clouds were about two miles in radius and a worsening 900 feet overcast at the moment of departure. An observer saw the plane withdrawing from clouds in a vertical left rolling-like bank post-its take roughly five miles off the runway. Besides, the observers noticed a trailing smoke from it. Before the airplane hit the surface four hundred feet from the bottom of a communication barbican, it initially impacted this tower's top. Investigators discovered a red tip light at the bottom of this 100-foot tower. A second ground impact was equally observed nearly a hundred feet far off the initial ground impact. It was here that a green tip light was sited. Ultimately, fifty feet a stretch the last effect, the plane came to a halt.

1.1 Scene Management Procedures

The "Go Team" from NTSB was directed to the scene at the point of the accident. By composition, the team consists of more than a dozen experts and 2-3 employees. They are obliged to respond to the scene as soon as possible. After their arrival, regardless of their location, they ought to be reachable around the clock. Every distinct member of the team equally as explicit tasks assigned to them. These tasks accompany survival aspects, operations, air traffic control, systems, structures, human performance, and weather. The above division of tasks prevents the investigator from being overwhelmed, enabling them to discretely concentrate on a specific accident section (NTSB, 2021). Preparation opens up field investigations. The latter appellation refers to all preliminary coordination processes, such as individual survival items,

evidence collection equipment, witness interviewing kit, diagramming, and plotting equipment. Likewise, initial actions range from conducting meetings, arranging security, safety regulations, establishing a base of operation, taking photographs to liaison with authorities. After all the above activities are thoroughly done, the aircraft wreckage should be investigated. Here, the team notes and calculates aspects that might have influenced the impact angle and velocity of the aircraft and the impacts of the terrain land.

1.2 On Scene Observation

The computed travel of downward angle was 75.96 degrees. These gradations were measured from the aircraft's first impact at the topmost part of the barbican to the earth's subsequent impact, four hundred feet off the tower. Since a red wingtip light was located in a scar on the ground, the debris at the second impact projected left-wing hitting the surface. A green wingtip light sited 100 feet from initial surface touchpoint impact indicated the right-wing came into contact with the earth at that point. The rubble was moderately scorched, crumpled, warped, and fused to a general area for the most part. The presence of vertical soot marks on the crumpled portions of the fuselage and wings led to the observation that the aircraft's impact caused a fire. Likewise, soot inscriptions were observed on the right engine nacelle. Inspection of the right engine was made almost impossible by the effects and fire on the suitable machine.

Nonetheless, cord-wise corrugations and span indicted by the prop on the right engine besides the trailing edges exhibiting several typical "S" compressions and blade tips being broken, indicating that the right engine was not only running but also running and developing power. The above observation cannot be replicated for the left engine. The left engine was making no significant power based on the gear's signatures and the cooled metal exhaust besides prop analysis. The left prop remained intact, whereas the props were bent at the rear. The

feathered blades depicted those of a typical flight. Engine prop bends forward when it impacts the ground and produces power (Risingup, 2021). However, the prop only turns at the rear upon making contact with the ground when it is not rotating.

1.3 Airport Information and Weather

Only in scarce circumstances does weather become a direct cause of an accident. In particular, all the weather does is add pressure besides stress to the flight crew. Considering the size of Lake Tahoe Airport, it is virtually small. It lies southwest of Lake Tahoe, CA. Based on Aviation's weather statistics verified by ATC, the weather on a fateful day that Zonk Air crushed was 900 feet overcast and deteriorating. Likewise, the lowering clouds around the airport stretched about a two-mile radius. At departure, visual flight rules (VFR) were requested by the pilot. They represent flight visibility of three statute miles and 500 feet below as the distance from the cloud. However, before Zonk Air took off, the air traffic controller advised the pilot that the conditions were barely for VFR. The airport then reported having switched to Instrument Flight Rules (IFR) a short while after the airplane left the ground.

1.4 Flight information and Mission

A clique of four individuals sourced Zonk Air Charters to fly around the Lake Tahoe region to enable them to take sunset photographs. The aircraft had two options after the scenic photographing. It was to either head to Burbank, CA, or return to Lake Tahoe. The choice regarding the aircraft's plan rested with the travelers who had to choose amidst their voyage. Similarly, this was an eleventh-hour flight besides being urgent. Initially, the company had sort for the service of another pilot to fly the charter.

Nevertheless, the “pilot called out sick on the day of the flight." Thus, compelling them to let someone else fly, who was on “short notice." A day before the accident, the plane landed at

Lake Tahoe. On the fateful day that the catastrophe occurred, fueling at Lake Tahoe and topped off in two tanks. Also, it reported the pilot seemed rushing besides being weather-nervous.

1.5 Aircraft Information

This accident involved "1980 twin-engine, turbo-charged Piper Navajo (PA-31-310)". The "Lycoming IO-540" reciprocation engines powered it with an ax weight. It had a gross weight of around 6,500 pounds as well as an empty weight of around 3,900 pounds. Ten years before this mishap, the same airplane had been held by DEA. Also, before being auctioned to Zonk Air, it had sat in the store for two years. Thus, it was not easy to follow the maintenance paperwork over the aircraft's lifespan since they could not be traced. Besides having an FAA registration, Zonk Air, the current owner, regarded the aircraft as airworthy. The airframe's flight hours had clocked fifteen thousand and above "with engines being reassembled and now within ten hours" to repair. An organization dealing with similar flights as Zonk Air had been outsourced for the aircraft's maintenance. During pre-flight that had been undertaken ten days before the accident, the pilot had stated trivial fuel dewdrops underneath the right engine besides the possible loss of power at the same section. However, nothing was noted during the op-check. To correct an insignificant fuel leak, maintenance had been done to the right engine. This was an acknowledged problem that the "engine was rough running and chalked up to how it ran." Maintenance was done by a mechanic who had an up-to-date Airframe and Power Plant license. Early in the day of the crash, an aeronaut had noticed the right engine oozing droplets of fuel. However, Zonk Air told the pilot that it was a known issue that when older airplanes fuel, they drip some fuel. Three days before the accident, an Air Worthiness Directive had been issued. The plane had to follow airworthiness directive for "cracking of fuel line support brackets." No statistics of the latter being completed were found. Correspondingly, a deferred maintenance list

of problems was revealed by the maintenance logs. They entailed the “right engine's loose cooling baffling, cockpit power quadrant's tightening friction controls pilot's seat locking travel adjustment slide, and adjusting the pilot's seat springs."

1.6 Pilot Information

Reports from Zonk Air’s archives, this pilot was relatively new. He pilot had 300 flight hours, among which 15 hours had been logged in Piper Navajo and 50 hours in a twin-engine plane. Zonk Air had received the pilot's service for almost a year since joining them. He “had flown 5 hours of instrument meteorological conditions (IMC)” besides having “a commercial multi-engine instrument rating."

According to witness interrogated by the firm workforces, this pilot was a virtuous worker however frequently exhibited fatigue signs (erau.instructure, n.d). Besides, it was revealed that he had recently terminated his relationship with his girlfriend. Before various flights, he was often observed sleeping in the crew lounge to avoid going home. He had reported of fatigue to Zonk Air's proprietor, but he still wanted to make this trip (erau.instructure, n.d). Correspondingly, proprietor stated that the pilot had no mountain experience and he was not entirely convinced that he had flown around the Lake Tahoe area.

1.7 Company Information

According to the organization’s financial statements, the firm trailed behind in reimbursing fees for maintenance checkups and fuel bills. After it was established, Zonk Air was on verge of “filing for Chapter 11 bankruptcy” issued for auction 2 years before. Notably, the firm was struggling finically. The company records showed no 135 check ride signoffs as well as incomplete pilot records. This contrasts with the proprietor's competence of being an airman

affiliated to 135 checks. Hence he was supposed to certify the logging and completion of all training and flights by expertise.

1.8 Final Analysis

Relative to manifold accidents, several failures result in a mishap, contrary to the belief that only a single loss contributes to an accident. Therefore, several events led to the unfortunate but avoidable Zonk Air Charter's accident. These aspects are pilot fatigue, lack of pilot training on aircraft loading, no experience by the pilot, lack of a definite plan for the flight, past-due 135 check ride, incomplete records which could indicate noncompliance with maintenance or check ride; Permitting a plane with a rough running engine to get airborne and operating the airplane to the final moment of prerequisite examinations.

2.0 Conclusion

Although it could quickly be concluded that the failure of the right engine caused the accident involving Zonk Air aircraft PA-31-310, dual-engine planes can continue flying on a single-engine. The pilot permitted the plane to fly out of the stipulated weight limit. This is because the empty plane was 3,900 pounds, the cargo weight was about 900 pounds, the pilot was 180 pounds, passengers hit 800 pounds, and fuel weight was 1000 pounds. Thus, the total operating weight was 6,780 pounds which exceeded the maximum weight by 280 pounds. Thus, the latter surplus weight fell outside the typical center of gravity bracket.

The steep angle observed while the aircraft was departing just after take-off could have been due to the weight being closer to its tail and a shift of the cargo amidst the flight since it was not tied down. The latter conclusion was confirmed by failure to locate straps at the accident scene beside the observer's testimony helping in cargo loading. Therefore, an accident is bound

to occur when a combination of factors such as incorrect cargo loading, overweight aircraft, failure of the right engine, and a crew in a hurry to beat the weather prevails.

2.1 Recommendations

Although FAA has always endeavored to ensure the planes being flown are safe. The challenge arises when the body cannot guarantee its inspectors are everywhere all the time. All other aspects of FAA advertisement counting fuel brackets, minimum prerequisites for pilots, and aircraft maintenance intermissions must be followed and logged in their appropriate documents. However, I would recommend grounding any aviation company that is filing for bankruptcy. My recommendation is conscious that not all default is a trigger for a proprietor to lose their firm. However, if the latter inclination holds, the company should remain grounded until thorough FAA inspection for proper documentation. This recommendation is based on the understanding that a financially struggling company is more like to fall for evasion tactics, increasing each day. Lastly, regardless of practical VFR requirements, in the event of worsening conditions and ATC, it is mindful that if the IFR rules are eminent, ATC must safeguard the go-ahead for Instrument Flight Rules.

References

Risingup. (2021). Federal Aviation Regulations (FAR). http://www.risingup.com/fars/info/part91-155-FAR.shtml

NTSB. (2021). The NTSB Investigation Process. https://www.ntsb.gov/investigations/process/Pages/default.aspx

erau.instructure. (n.d). SFTY 330 – Aircraft Accident Investigation: *Embry-Riddle Aeronautical University*. https://erau.instructure.com/courses/32703/pages/project room?module_item_id=1359862

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