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ASI
ERA-AS

Date: 6/7/2022
Subject: ERA22LA254, Accident investigation notes
Contact: Gary Brown, FAA Inspector

The notes below were taken by inspector Brown during the examination of N432CP.

"N432CP Accident Notes:

06/01/2022: Received notification from ROC by telephone at 16:13 local of aircraft accident at St. David's Golf Club in Wayne, PA, 2 souls on board, both walking around and alert, however, initially found unconscious per Treddyfin, PA PD. Contacted Treddyfin PD Corporal Reynolds by telephone for update. Corporal Reynolds advised that per witnesses, aircraft was Eastbound and turned South, then crash landed between holes 14 and 15 on the golf course. Inspector spoke with Officer Middleton, who stated both occupants were scraped up with one complaining of ankle pain. Officer Middleton stated that, per the pilot, aircraft left Fort Myers, FL, stopped at Georgetown, SC for fuel, and was on an ILS approach at LOM. Pilot stated that he had contacted PHL traffic and lowered power, when he reapplied power, nothing happened. He then realized he would not make LOM, and decided the golf course was the best place to land. Corporal Reynolds noted that due to fuel smell, local FD was also to stay on-site until our arrival. No smoke or flames were noted.

Notified FLM PWB and DKF; decided for Inspector MDB to support this evening.

Received 8020-9 from ROC.

Notified by Inspector MDB of arrival on scene and obvious smell of fuel. MDB also pinned CAPS parachute, shut-off ELT and disconnected battery. Noted that both occupants had been taken to the hospital.

06/02/2022:

Inspector MDB forwarded local PD report. Arrived at accident scene with inspectors CRC and MDB. Observed debris field and aircraft resting up against large pine tree at left wing root. Noted substantially damaged aircraft with damage to left wing root and surrounding forward left fuselage area, and the empennage was partially separated from the fuselage. It appears that tree is ultimately what stopped aircraft's momentum. Left and right main landing gear and two propeller blades were found in debris field, separated from aircraft wreckage, and nose wheel was separated and found forward and to the right of the main aircraft wreckage. All three propeller blades showed scarring indicative of rotation upon impact, but not high power. Two slash marks were noted at the initial ground contact location.

Checked left and right wing fuel levels at fuel cap location and noticed that left wing tank was empty, and right wing was showing some fuel remaining. It was noted that fuel selector was in the left position.

Observed engine partially attached, with upper mounts fully broken, and lowers tweaked and/or broken. Engine was in a nose down, and right tilt attitude. Noted one fuel drain hose disconnected from tee below gascolator, however, fuel system appeared to be otherwise intact. Drain hoses and overboard vent were dry. Removed fuel hose from spider, and found connection to be dry. Loosened one cylinder pressure line from spider, and found to be dry. Removed inlet/outlet lines from gascolator, and found to be dry. Removed gascolator from aircraft and drained into clean canister by turning it upside-down. Only a few drops of fuel were noted; however, fuel appeared to be clean. It was also noted that the identification plate on the gascolator was not legible, with the only evidence of previous identification being the faint remains of a final inspection stamp.

Engine and magnetos appeared overall in good condition with oil pan and engine cases intact. When oil was checked, it indicated 1 quart of oil in the crankcase. The only anomaly with the oil system was the pressure line broken from the right turbocharger. An oil spot directly under the broken line was noted approx. 1.5" in diameter. Engine oil appeared to be in normal, serviceable condition with no smell or indication of burning or contamination. Both upper and lower engine cowling remains, along with the rest of the engine compartment were inspected with no additional indication of oil leakage.

Inspection of the engine controls revealed the throttle lever slightly loose on the throttle shaft/throttle body, allowing slippage through ratcheting. Further investigation revealed a bent throttle shaft and broken throttle cable; cable had pulled out of ferrule, and casing had pulled through baffling, apparently due to the force of the crash and the engine inertia. Throttle lever nut was tightened by Inspector GLB, about 1/8 turn to fully engage. Throttle lever was then removed for inspection with no defects noted. Throttle lever was reinstalled. It was noted that the direction of pull that separated the cable is the same direction that could cause the nut to loosen. Throttle and mixture continuity checks were performed, with both showing cockpit control and cable continuity; however, both cables had broken free from the engine.

A flight control continuity check was performed, and it was noted that though the elevators and rudder had continuity, the ailerons did not. Further investigation revealed that both outer aileron quadrants had bent forward, separating the spherical bearing from the aileron drive pin on each side.

Flight path was inspected back to tree line with no indication of contact with trees while airborne. Debris field found to be approx. 175 feet in length.

The left wing root tree contact area was inspected as well as possible, with no indication of current fuel leakage; however, surrounding ground area was damp with the smell of fuel and TKS fluid (alcohol). A check inside the leading edge, forward of the spar, with a flashlight indicated the area was dry, with no indication of staining or dampness. It was noted the left upper and lower skins were separated from the spar at the wing root, with visible separation emanating less than a couple inches on the root closeout rib, and a few inches along the spar.

Inspector MDB coordinated with NTSB inspector Alleyne to salvage aircraft.

06/03/2022:

Arrived on-scene with salvage crew. Inspected left wing/tree contact area, with no evidence of additional fuel leakage. Inspector and salvage crew sumped both wings, removing approx. 1-2 pints from the left wing, and approx. 20 gallons from the right wing. The removed fuel was sampled, with no indication of water or contamination.

When salvage crew began to raise aircraft, approximately 1 pint of fuel was noted leaking from left wing root, along with approx. 1 pint of TKS fluid, though it could not be determined where either was leaking from. An additional approx. 1 pint of fuel was noted leaking from the fuel inlet line previously removed from the gascolator. Once the engine was longitudinally visually level, the oil level was again

checked, indicating approx. 2 quarts of oil. Inspection of the bottom and left side of the engine indicated no oil or fuel, and the cases and pan appeared intact, with the oil system closed. It was also noted that one line had sheared from a pump or regulator mounted on the firewall. The fuel line from the spider to the throttle body was removed and found to contain residual fuel.

The entire area where the aircraft had rested was again inspected, with no indication of oil or fuel on the ground under the engine. A damp area was noted where the left wing root had come to rest. The area was approx. 18" x 36", with the wettest area approx. 12" x 18", from the earlier fuel leakage during aircraft movement. A depth check of the ground indicated soft (moist) dirt approx. 6" deep.

Further inspection of the aircraft from below revealed the left aft wing mount sheared, with the bolt pulling through the mount. Aside from the separated skins, there was no indication of the source of the TKS or fuel leaks. All fuel and TKS lines were found intact, however, the main fuel line was kinked at the AN fitting between the left wing and fuselage attachment, to the point where the diameter was approx. 50% of the diameter of the collar. The fitting appeared dry and there was no indication of a cracked line. Inspector removed line at AN fitting, which either cracked or developed at kink. Removal indicated no damage to the flare. Line was loosely reinstalled. Gauge on left wing root closeout rub indicated "E". Upon wing removal, the left NACA vent scoop indicated leakage, however, what surrounded it smelled like alcohol. Any remaining wet spots on the left wing root closeout rib were inspected using smell and a Pig Mat to indicate blue dye, and all indications were that anything remaining was TKS fluid or rain water, but no indication of fuel."