Tim McQuain: Airworthiness Safety Inspector

Federal Aviation Administration
Greensboro Flight Standards District Office
1301 South Terminal Service Road
Greensboro, North Carolina

[redacted]

Incident Aircraft Examination Inspector Report
Date of report: 07/20/2021
Incident Aircraft: N31062, Piper PA46-500TP, S/N 4697208
Single Engine Land Plane

At approximately 15:08 EST, on 07/06/2021 Piper PA 46-500TP, S/N 469 7208 departed KMQI from runway 35 and encountered engine power loss just after take off. After the pilot began emergency procedures, the engine regained power. Shortly after, the engine again lost power. The pilot decided to attempt to make runway 35 to land and did not think it was possible. The engine again regained power momentarily and lost power again. The aircraft landed approximately 45 degrees to runway 35 in the grassy area of the airport. The aircraft was traveling at a fast speed upon landing. After landing on the grassy area, the aircraft crossed runway 35 and became airborne and landed on the turf passed the runway. The right wing tip contacted the runway when crossing and sustained slight damage.
There were two persons on board with no injuries. Egress from the aircraft was normal.

This examination was also attended by Pratt and Whitney Field Support Representative, Robert Fregeau.

- **The nose landing gear retraction mechanism was sheared and allowed the nose of the aircraft to contact the ground and slide on the ground, until the aircraft stopped.**
    - **The nose gear doors were crushed as well as some slight damage to surrounding structure of the nose wheel well.**
    - **After the incident, the nose gear was temporarily secured with a fabricated steel brace for towing to a local hangar.**
- **The propeller also struck the ground, bending all 4 blades towards an aft position.**
    - **The propeller turned freely until the bent blades contacted the engine cowling. (about 45 degrees of prop rotation).**

- **The aircraft fuel tanks were filled at MQI with 88 gallons of Jet A fuel before the incident flight from MQI.**
    - **Fuel samples were taken at the main sump drains (4 each), with no evidence of contamination.**
    - **The filter drain was sampled and produced a small amount of what appeared to be water (approximately ½ to 1 teaspoon).**
        - **The fuel valve was turned on while the filter was removed and fuel flowed freely from the open filter housing.**
        - **The filter was clean with no contamination observed.**
    - **The engine fuel control unit filter bowl was examined with no evidence of contamination observed.**
    - **The engine fuel filter was clean with no contamination observed.**
- **An antenna was broken from the bottom of the aircraft, just inches aft of the firewall.**
- **The engine mount showed no evidence of damage.**
- **The firewall showed no evidence of damage.**
- **All hoses and lines in engine compartment showed no evidence of damage or leaks.**
- **The engine power lever, condition lever and Manual Override controls were operated and full travel was verified.**
- **External oil pressure and scavenge tubes were in place with no indication of leaks or damage.**
- **P3 and PY lines were inspected and no evidence of failures or leaks were present.**
- **Alternator and air conditioner compressor mounting ears were cracked as well as some parts of the attach brackets.**
    - **This damage is not uncommon during an impact.**
- **The oil cooler/fuel heater was slightly loose on its mounting surfaces.**
    - **This could also be impact damage.**

- **No oil leakage was evident in the aft accessory gearbox area.**
- **Inspection of the propeller reduction gearbox produced no evidence of damage except for wires at the bottom of the engine cannon plugs.**
    - **Believed to be for the chip detector.**
- **The exhaust duct was intact and no evidence of damage found.**
- **Oil leakage was evident in the engine inlet area.**
- **The gas generator inlet struts were all broken.**
    - **This allowed oil to egress from the engine possibly from the compressor seals because of compressor misalignment due to the broken support struts.**
- **Oil levels in the site glass and on the dipstick indicated no oil in sump.**
    - **An inspection of where the aircraft came to rest area of the crash site indicated oil on the ground.**
    - **This was believed to be caused by the impact rupturing the inlet struts and allowing compressor seals to leak oil at the resting place of the aircraft.**
- **All fuel nozzles and transfer tubes were intact with no evidence of defects or leaks.**

The engine is scheduled to be removed and delivered to the Pratt and Whitney facility located in Bridgeport WV for further investigation.

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