



National Transportation Safety Board Aviation Accident Final Report

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|--------------------------------|--------------------------------------|-------------------------|-------------|
| Location: | Homer, LA | Accident Number: | CEN17LA228 |
| Date & Time: | 06/09/2017, 0830 CDT | Registration: | N335JT |
| Aircraft: | Thompson Angel Hawk II | Aircraft Damage: | Substantial |
| Defining Event: | Loss of engine power (total) | Injuries: | 1 Serious |
| Flight Conducted Under: | Part 91: General Aviation - Personal | | |

Analysis

The private pilot reported that, during the accident flight, he planned to take off and circle the experimental, amateur-built airplane above the runway to check engine operation. Just after takeoff, the engine began sputtering. He made a left 180° turn to return to the runway and during the turn, the engine experienced a total loss of power. He stated that the airplane stalled when he was in the turn and he did not have enough time to recover before impacting the ground. The airplane had accumulated about 47 hours of run time and was in the initial flight test stage when the accident occurred.

The pilot reported that he had been having trouble with increased cylinder head temperatures on the converted automotive engine. The engine had experienced a total loss of power during a previous flight, but the pilot was able to land the airplane without incident. Following that event, he replaced some ignition system components and adjusted the valves. He was then able to start the engine and reported that it "ran fine" during subsequent test runs.

Postaccident examination of the airplane revealed that the fuel mixture was not adjustable in the cockpit. Examination of the engine revealed that there was melted plastic material inside the distributor rotor and the distributor drive shaft. The condition of the spark plugs was consistent with an overly lean fuel mixture and/or high temperature operation. It is likely that the melted distributor rotor was the result of the engine's high operating temperatures; the degradation of the distributor and its drive shaft would have resulted in a shift in ignition timing and a subsequent loss of engine power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A total loss of engine power due to the engine's unresolved high operating temperatures, which resulted in failure of the distributor rotor and drive shaft, and the pilot's failure to maintain airspeed during the subsequent forced landing, which resulted in an aerodynamic stall and loss of control.

Findings

Aircraft

Magneto/distributor - Damaged/degraded (Cause)
Engine (reciprocating) - Related operating info (Cause)
Airspeed - Not attained/maintained (Cause)
Angle of attack - Capability exceeded (Cause)

Personnel issues

Aircraft control - Pilot (Cause)
Maintenance - Pilot (Cause)

Factual Information

On June 9, 2017, about 0830 central daylight time, an amateur built Angel Hawk II airplane, N335JT, collided with terrain during a forced landing near the Homer Municipal Airport (5F4), Homer, Louisiana. The pilot/airplane builder was seriously injured, and the airplane was substantially damaged. The airplane was registered to a private individual and was being operated by the pilot as a 14 *Code of Federal Regulations* Part 91 personal flight. Visual flight rules conditions existed near the accident site at the time of the accident, and a flight plan had not been filed for the local flight. The airplane departed 5F4 just before the accident.

The pilot reported that he had been having trouble with increased cylinder head temps on the engine, a VW Type 1. During one flight, the engine popped and quit when he was on downwind and he landed the airplane back on the runway. He couldn't get the engine to restart. He replaced some ignition system components and adjusted the valves which were too tight. He was then able to start the engine and it ran fine during run-up tests.

The plan for the accident flight was takeoff and circle above the runway to make sure the engine was running ok. Just after takeoff, the engine began sputtering. He made a left 180° turn to return to the runway and during the turn, the engine lost all power. He stated that the airplane stalled when he was in the turn and he did not have enough time to recover before contacting the ground.

The engine was originally a Volkswagen 1.6L Type 1, which had been converted by the pilot to a variation of the Volkswagen 1.9L Type 4. The fuel mixture adjustment was pre-set at the carburetor and not adjustable in the cockpit. The ignition system included a single battery, ignition coil, centrifugal advance distributor, points, condenser and one spark plug per cylinder. The lubrication system had an added external sump attached beneath the oil drain with steel braided hose connecting to a "spin-on" type oil filter mounted on the firewall. The engine had about 47 hours of operating time since new.

A postaccident examination of the engine was conducted by a Federal Aviation Administration airworthiness inspector. The examination revealed there was melted plastic material inside the distributor rotor and the distributor drive shaft. The inspector reported that the condition of the spark plugs was indicative of a lean fuel mixture/high temperature operation. The engine timing could not be determined.

History of Flight

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| Prior to flight | Aircraft maintenance event |
| Initial climb | Loss of engine power (total) (Defining event) |
| Approach | Aerodynamic stall/spin |
| Landing | Collision with terr/obj (non-CFIT) |

Pilot Information

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|---------------------------|--|-----------------------------------|------------|
| Certificate: | Flight Instructor; Commercial | Age: | 69, Male |
| Airplane Rating(s): | Single-engine Land | Seat Occupied: | Left |
| Other Aircraft Rating(s): | None | Restraint Used: | 4-point |
| Instrument Rating(s): | Airplane | Second Pilot Present: | No |
| Instructor Rating(s): | Airplane Single-engine | Toxicology Performed: | No |
| Medical Certification: | None | Last FAA Medical Exam: | |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | 11/02/2016 |
| Flight Time: | 946 hours (Total, all aircraft), 47 hours (Total, this make and model), 800 hours (Pilot In Command, all aircraft) | | |

Aircraft and Owner/Operator Information

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|-------------------------------|------------------------------|--------------------------------|-----------------|
| Aircraft Make: | Thompson | Registration: | N335JT |
| Model/Series: | Angel Hawk II | Aircraft Category: | Airplane |
| Year of Manufacture: | 2009 | Amateur Built: | Yes |
| Airworthiness Certificate: | Experimental | Serial Number: | 001 |
| Landing Gear Type: | Tailwheel | Seats: | 2 |
| Date/Type of Last Inspection: | 11/01/2016, Annual | Certified Max Gross Wt.: | 1200 lbs |
| Time Since Last Inspection: | | Engines: | 1 Reciprocating |
| Airframe Total Time: | 47 Hours at time of accident | Engine Manufacturer: | Thompson |
| ELT: | Installed, not activated | Engine Model/Series: | VW Tape I |
| Registered Owner: | On file | Rated Power: | 70 hp |
| Operator: | On file | Operating Certificate(s) Held: | None |

Meteorological Information and Flight Plan

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|----------------------------------|----------------------------------|---|-------------------|
| Conditions at Accident Site: | Visual Conditions | Condition of Light: | Day |
| Observation Facility, Elevation: | MNE, 278 ft msl | Distance from Accident Site: | 19 Nautical Miles |
| Observation Time: | 1335 UTC | Direction from Accident Site: | 240° |
| Lowest Cloud Condition: | Clear | Visibility | 10 Miles |
| Lowest Ceiling: | None | Visibility (RVR): | |
| Wind Speed/Gusts: | Calm / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29.98 inches Hg | Temperature/Dew Point: | 22° C / 16° C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | Homer, LA (5F4) | Type of Flight Plan Filed: | None |
| Destination: | Homer, LA (5F4) | Type of Clearance: | None |
| Departure Time: | 0827 CDT | Type of Airspace: | Class E |

Airport Information

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|----------------------|-------------------------------|---------------------------|----------------|
| Airport: | Homer Municipal Airport (5F4) | Runway Surface Type: | N/A |
| Airport Elevation: | 244 ft | Runway Surface Condition: | Unknown |
| Runway Used: | N/A | IFR Approach: | None |
| Runway Length/Width: | | VFR Approach/Landing: | Forced Landing |

Wreckage and Impact Information

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|---------------------|-----------|----------------------|-----------------------------|
| Crew Injuries: | 1 Serious | Aircraft Damage: | Substantial |
| Passenger Injuries: | N/A | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 1 Serious | Latitude, Longitude: | 32.789722, -93.006389 (est) |

Administrative Information

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|-----------------------------------|---|--------------|------------|
| Investigator In Charge (IIC): | Pamela S Sullivan | Report Date: | 11/15/2018 |
| Additional Participating Persons: | Michael Stanley; FAA; Baton Rouge, LA | | |
| Publish Date: | 11/15/2018 | | |
| Note: | The NTSB did not travel to the scene of this accident. | | |
| Investigation Docket: | http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=95366 | | |

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).