Aviation Investigation Final Report

Location:	DOVER, Tennessee	**Accident Number:**	MIA99LA134
Date & Time:	April 19, 1999, 10:30 Local	**Registration:**	N1194K
Aircraft:	DURRWACHTER WITTMAN TAILWIND	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Witnesses saw the homebuilt airplane takeoff and attain an altitude of about 200 feet agl, appear to lose power, and attempt a descending left turn toward the runway. The witnesses heard the engine 'popping', before the airplane crashed into a pasture short of the runway. Postcrash inspection of the wreckage by FAA inspectors revealed the presence of uncontaminated automotive fuel, control path continuity in all three axis, and no airframe abnormalities. Subsequent removal and functional test of the automotive engine revealed no abnormalities.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power for undetermined reasons

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: TAKEOFF

Findings
1. REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING

Findings
2. TERRAIN CONDITION - HIGH VEGETATION

Factual Information

On April 19, 1999, about 1030 central daylight time, an experimental Durrwachter Wittman Tailwind W-10, N1194K, registered to a private individual, operating as a Title 14 CFR Part 91 personal flight, crashed on takeoff climb from a private grass airstrip about 5 miles east of Dover, Tennessee. Visual meteorological conditions prevailed and no flight plan was filed. The airplane received substantial damage and the commercially-rated pilot and a passenger received serious injuries. The flight originated from the airport about 5 minutes before the accident.

According to an eyewitness, one of the pilot's sons who was videotaping the flight, he heard a "popping" sound and it appeared as if the airplane lost power and crashed in a pasture. He stated that he ran over to the crash and disabled the electric fuel pump that was gushing fuel from a broken fitting. He stated the aircraft was actually based at Humphrey's County Airport, Waverly, Tennessee, and his father was demonstrating the newly completed airplane to his sons.

Another eyewitness stated the aircraft was about 200 feet agl, in a takeoff climb when it appeared to lose power and commence a descending left turn. He said he thought the pilot had a problem and was trying to make it back to the runway and didn't quite make it. He made his way over to the crash site and extricated the two occupants. He stated there was a strong fuel smell and he could hear something continue to operate.

According to FAA inspectors, postcrash examination of the aircraft and accident site revealed the site smelled heavily of automotive fuel, and the airplane's fuel filter contained uncontaminated fuel. Flight control path continuity in all axes appeared intact and functional. The engine was a Subaru automotive 2.2 liter displacement, 4-cylinder inline configuration utilizing liquid cooling, electronic ignition and electronic fuel injection.

Subsequent engine removal and remounting to a specially made engine stand by an FAA inspector/ Subaru automotive technician produced an immediate start and smooth operation for six successive starts and shutdowns. Because the airplane installation used a specially designed radiator that was destroyed in the crash, the test runs were conducted without liquid cooling and were time limited. To simulate conductive and advection heating of all peripheral components by the core engine as would occur in airborne operation, a heat gun was used on the components, and especially the electronic modules, to heat their integrated circuits to high operating temperatures. The engine was run to near maximum power with no abnormalities noted. Because the boost pump, ignition, and fuel injection systems were electronically controlled and powered, all circuits were tested for security of connections and specified volts and amperes. The alternator output was checked and produced a steady 12 volts.

Pilot Information

Certificate:	Commercial	**Age:**	77,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	September 26, 1998
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1000 hours (Total, all aircraft), 55 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	DURRWACHTER	**Registration:**	N1194K
Model/Series:	WITTMAN TAILWIND WITTMAN TA	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	1051
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	July 18, 1998 Annual	**Certified Max Gross Wt.:**	1300 lbs
Time Since Last Inspection:	55 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	55 Hrs	**Engine Manufacturer:**	Subaru
ELT:	Installed, activated	**Engine Model/Series:**	2.2L EFI CDI
Registered Owner:	JOHN C DURRWACHTER	**Rated Power:**	130 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	HOP ,573 ft msl	**Distance from Accident Site:**	22 Nautical Miles
Observation Time:	10:50 Local	**Direction from Accident Site:**	45°
Lowest Cloud Condition:	Clear	**Visibility**	7 miles
Lowest Ceiling:	Broken / 13000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	210°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	19°C / 4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	10:24 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	Dry;Rough;Vegetation
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	36.480216,-87.839576(est)

Administrative Information

Investigator In Charge (IIC):	Stone, Alan
Additional Participating Persons:	ROBERT HILL; NASHVILLE , TN
Original Publish Date:	June 22, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=46145

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, "accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties … and are not conducted for the purpose of determining the rights or liabilities of any person" (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB's statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available here.