



Aviation Investigation Final Report

Location:	Bath, Pennsylvania	Accident Number:	IAD05LA083
Date & Time:	June 23, 2005, 16:13 Local	Registration:	UNREG
Aircraft:	Titan Tornado	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot owner completed a preflight inspection of his unregistered, homebuilt airplane, and departed from the airstrip. The rotation and takeoff were at their customary points on the strip, and the airplane climbed on a "normal gradient." About 400 feet above ground level, the engine "burbled," and then the airplane "rocked a little" in the pitch and roll axis. The engine continued the burbling sound as it ran, and the airplane continued flying for 10 to 12 seconds before it "fell off on the left wing," descending almost vertically to the ground. Examination of the two-cylinder engine revealed that the forward spark plug of the rear cylinder was still attached to its ignition lead, but the plug was not installed, and hung next to the cylinder. The spark plug remained completely intact. Examination of the corresponding cast aluminum spark plug hole revealed stripped threads. The plug was reinserted into the hole, moved "side to side," and then withdrawn from the hole by hand. The pilot held a private pilot certificate with a rating for airplane single engine land. His most recent application for a medical certificate was denied 16 years before the accident for "Administrative or Legal" reasons. The pilot reported 110 hours of total flight experience on that date.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot/owner's failure to maintain adequate airspeed following a loss of engine power, which resulted in an inadvertent stall/spin. Factors in the accident were the stripped spark plug threads, and an inadequate preflight inspection by the pilot/owner.

Findings

Occurrence #1: LOSS OF ENGINE POWER

Phase of Operation: MANEUVERING

Findings

1. (F) IGNITION SYSTEM, SPARK PLUG - STRIPPED THREAD
2. (F) AIRCRAFT PREFLIGHT - INADEQUATE - OWNER/PILOT MECHANIC

Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: DESCENT - EMERGENCY

Findings

3. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
4. STALL/SPIN - INADVERTENT - PILOT IN COMMAND

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. TERRAIN CONDITION - GROUND

Factual Information

On June 23, 2005, at 1613 eastern daylight time, an unregistered, homebuilt Titan Tornado airplane, was destroyed when it impacted terrain following an uncontrolled descent near a private grass strip in Bath, Pennsylvania. The certificated private pilot/owner was fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed, for the local personal flight conducted under 14 CFR Part 91.

In a telephone interview, the owner of the grass strip said that he witnessed the accident flight. He was well acquainted with the pilot/owner of the accident airplane, and the accident airplane was based at his strip for about one year.

The owner of the strip watched the pilot perform a preflight inspection of his airplane, then they both went for coffee. After they returned, the pilot climbed in his airplane, started the engine, taxied, and then took off.

The rotation and takeoff were at their customary points on the strip, and the airplane climbed on a "normal gradient." About 400 feet above ground level, the engine "burbled," and then the airplane "rocked a little" in the pitch and roll axis. The engine continued the burbling sound as it ran, and the airplane continued flying for 10 to 12 seconds before it "fell off on the left wing," descending almost vertically behind a stand of trees.

The owner of the strip was asked about available forced landing areas surrounding the strip, and he replied, "There was no reason for the accident. He had plenty of altitude to return to the strip. Besides that, he was directly over a 45-acre field. He should have landed without harming himself or the airplane. I was yelling out of the car window, 'Push the nose down!' but he never did."

In a telephone interview, a second witness said he was riding in a car with his family when he noticed an airplane flying at low altitude. He could not estimate the exact altitude, but said the airplane was "unusually low" and "just above the trees." As he watched the airplane, he noticed that it was descending and that the wings were "wobbling" from side to side, and he called out to his sister. They both watched the airplane make a sharp turn to its right, and descend "straight down in a nosedive."

In a telephone interview, the third witness provided a statement consistent with her brother's, and repeated that she watched the airplane "go straight down in a nosedive."

The airplane descended out of sight behind a line of trees. They then searched for the airplane, but could not find it. Neither witness heard the airplane during the flight or its descent.

The Titan Tornado was originally a two-seat, ultralight-type airplane that could be registered with the Federal Aviation Administration (FAA) as an experimental airplane. It could also be operated without registration as an ultralight training vehicle, provided it complied with the criteria of FAA exemption 6080G.

According to the owner of the grass strip, the pilot/owner assembled the airplane approximately 2 years before the accident, and it had accrued about 200 total flight hours in that time. A Rotax engine powered the airplane for the first 120 hours, then the pilot/owner installed a Hirth Moteren engine.

On June 23, 2005, FAA aviation safety inspectors spoke to witnesses and examined the airplane at the scene. They determined that, due to the weight and configuration of the airplane, that it was not an ultralight.

Only one inspector was available for a telephone interview. He read his colleague's written statement regarding the examination of the airplane over the telephone.

Examination of the Hirth Motoren two-cylinder engine revealed that the forward spark plug of the rear cylinder was still attached to its ignition lead, but the plug was not installed, and hung next to the cylinder. The spark plug remained completely intact.

Examination of the corresponding cast aluminum spark plug hole revealed stripped threads. The inspector reinserted the spark plug into the hole, and he moved the plug "side to side." The plug could then be withdrawn from the hole by hand.

Examination of the carburetor revealed that both throttle control linkages were loose at the carburetor attachment points.

The pilot held a private pilot certificate with a rating for airplane single engine land. His most recent application for a medical certificate was denied on July 7, 1989, for "Administrative or Legal" reasons. The pilot reported 110 hours of total flight experience on that date.

Toxicology testing was performed at the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma.

At 1551, the weather reported at Lehigh Valley International Airport, Allentown, PA, 6 miles southwest of the accident site, included scattered clouds at 5,500 feet, with 10 miles of visibility, and wind from 200 degrees at 10 knots.

Pilot Information

Certificate:	Private	Age:	66, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Front
Other Aircraft Rating(s):	Glider	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	None None	Last FAA Medical Exam:	July 1, 1989
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	110 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Titan	Registration:	UNREG
Model/Series:	Tornado	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	T00503S0HK0375
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	200 Hrs at time of accident	Engine Manufacturer:	Hirth
ELT:	Not installed	Engine Model/Series:	
Registered Owner:	Elmer P. Bergsman	Rated Power:	50 Horsepower
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	ABE,394 ft msl	Distance from Accident Site:	6 Nautical Miles
Observation Time:	15:51 Local	Direction from Accident Site:	240°
Lowest Cloud Condition:	Scattered / 5500 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.11 inches Hg	Temperature/Dew Point:	31°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Moore Township, NJ (NONE)	Type of Flight Plan Filed:	None
Destination:	(NONE)	Type of Clearance:	None
Departure Time:	16:10 Local	Type of Airspace:	

Airport Information

Airport:	None	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	40.741111,-75.408607

Administrative Information

Investigator In Charge (IIC):	Rayner, Brian
Additional Participating Persons:	Tom Lahovski; FAA/FSDO; Allentown, PA
Original Publish Date:	April 25, 2006
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=61919

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