



National Transportation Safety Board Aviation Accident Final Report

Location:	Maynardville, TN	Accident Number:	ERA16LA272
Date & Time:	07/06/2016, 1530 EDT	Registration:	N67WH
Aircraft:	HARRITY WILLIAM V GLASAIR (SH2F)	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

While the airplane was climbing to 7,500 ft mean sea level, the private pilot noted that the engine oil temperature was getting high, so he leveled off for a few minutes to cool down the engine before resuming the climb. When the airplane was passing through 6,000 ft, the engine shuddered and lost all power; smoke started filling the cockpit. The pilot declared an emergency, shut down the engine, and selected an uncongested two-lane highway for landing. During his final approach, after maneuvering to avoid power lines, he pulled back to flare the airplane, but the airplane "pancaked" onto the road, which resulted in substantial damage to the fuselage. Postaccident examination of the engine revealed that the No. 3 cylinder connecting rod had separated from the piston near the wrist pin. The investigation could not determine the reason for the separation.

Probable Cause and Findings

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

The in-flight failure of the No. 3 cylinder connecting rod for reasons that could not be determined during postaccident examination.

Findings

Aircraft	Recip engine power section - Failure (Cause) Recip engine power section - Damaged/degraded (Cause)
Not determined	Not determined - Unknown/Not determined (Cause)

Factual Information

On July 6, 2016, about 1530 eastern daylight time, an experimental amateur-built Glasair, N67WH, was substantially damaged following a forced landing following a total loss of engine power near Maynardville, Tennessee. The private pilot was not injured. The airplane was registered to and operated by Mainpro Inc. under the provisions of 14 *Code of Federal Regulations* Part 91 as a personal flight. Visual meteorological conditions prevailed about the time of the accident and no flight plan was filed for the flight that was destined for Clermont County Airport (I69), Batavia, Ohio.

The pilot flew from I69 to DKX earlier in the morning without incident and he was returning to I69 when the accident occurred. He reported that the preflight inspection, taxi, and runup were normal and the climb to 5,500 ft mean sea level (msl) was uneventful; however, while passing through 5,500 ft msl the engine oil temperature was getting high, so he elected to level off for a few minutes to let it cool down. About 5 minutes later, he resumed his climb to 7,500 ft msl and while passing through 6,000 ft msl, the engine "blew." He stated that the engine "broke" and started to shudder "like it was out of balance." In addition, smoke started filling up the cockpit. The pilot declared an emergency, shut down the engine and scanned the area for a suitable place to land. While descending through 4,000ft msl, he reported the terrain was hilly and unsuitable for landing to the north, but to the south it was less congested and a better option for landing; the road was a two-lane state highway.

After turning and getting established on a final approach to the southbound lanes of the highway, the pilot noticed electrical transmission wires crossing the road about 80 feet above ground level. The pilot pushed the stick forward and flew under the wires by going into an abrupt descent, then attempted to flare for landing, but the airplane "pancaked" onto the road, collapsing the main gear and shearing off the nose gear. The airplane skidded about 200 feet before coming to rest on a business property adjacent to the road.

The pilot held a private pilot certificate with ratings for airplane single-engine land and instrument airplane. His last flight review was completed on July 20, 2014. He held a third-class airman medical certificate issued on April 21, 2015. The pilot reported 2,055 hours total time with 1,320 of those hours in the same make and model as the accident airplane. In addition, he reported 42 hours and 24 hours in the previous 90 and 30 days, respectively.

According to FAA airworthiness and airplane maintenance records, the two-seat, low wing, retractable tricycle landing gear airplane was manufactured in 1991 and was issued a special airworthiness certificate for experimental amateur-built aircraft. It was powered by a Lycoming IO-360, 200-hp engine and equipped with a Hartzell two-blade constant speed propeller. The engine had accumulated 680 hours of operation since overhaul and 25 hours since the last condition inspection on April 15, 2014.

DKX was located about 15 miles south of the accident site. The DKX weather at 1353 included wind from 240° at 10 knots, visibility 10 statute miles, few clouds at 3,400 ft, temperature 31°C, dewpoint 19 ° C, and the altimeter setting was 30.03 inches of mercury.

An inspector with the Federal Aviation Administration (FAA) responded to the accident site and examined the wreckage. The airplane and all major components were accounted for at the scene. There was substantial damage to the underside of the fuselage where the landing gear had collapsed. Both blades of the propeller were bent aft and that engine case was breached. Oil streaks were observed on the underside of the engine cowling and fuselage.

Subsequent examination of the engine revealed engine case was breached above the No. 4 and No. 3 cylinders. Fragments of the case material were discovered in the engine baffle. Some corrosion was present on the mounting surface of the cylinders. The No. 3 cylinder exhibited damage to the connecting rod where it attached to the crankshaft and had fractured off completely near the wrist pin. The No. 3 cylinder skirt base was damaged at two points perpendicular to the wrist pin. The remainder of the connecting rod sustained damage and was deformed and bent back toward the crankshaft. The No. 4 cylinder was jammed and canted several degrees and could not be removed from the case but a visual inspection from the opposing cylinder revealed internal damage to parts of the connecting rods and engine case. The No. 1 and No. 2 cylinders showed no damage to the piston, rods, cylinders or surrounding case. Automotive spark plugs and a wiring harness were observed on the bottom cylinders and no engine data plate was found on the engine.

History of Flight

Enroute-climb to cruise	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Landing-flare/touchdown	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Private	Age:	63, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Without Waivers/Limitations	Last FAA Medical Exam:	04/21/2015
Occupational Pilot:	No	Last Flight Review or Equivalent:	07/20/2014
Flight Time:	(Estimated) 2052.8 hours (Total, all aircraft), 1320 hours (Total, this make and model), 1957 hours (Pilot In Command, all aircraft), 42 hours (Last 90 days, all aircraft), 24 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	HARRITY WILLIAM V	Registration:	N67WH
Model/Series:	GLASAIR (SH2F) FT	Aircraft Category:	Airplane
Year of Manufacture:	1991	Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	1020
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	04/15/2014, Continuous Airworthiness	Certified Max Gross Wt.:	2150 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	LYCOMING
ELT:	C91 installed, activated, did not aid in locating accident	Engine Model/Series:	IO-360
Registered Owner:	MAINPRO INC	Rated Power:	200 hp
Operator:	MAINPRO INC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KDKX, 833 ft msl	Distance from Accident Site:	15 Nautical Miles
Observation Time:	1353 EDT	Direction from Accident Site:	170°
Lowest Cloud Condition:	Few / 3400 ft agl	Visibility	10 Miles
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	240°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.03 inches Hg	Temperature/Dew Point:	31 °C / 22 °C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	KNOXVILLE, TN (DKX)	Type of Flight Plan Filed:	None
Destination:	BATAVIA, OH (I69)	Type of Clearance:	None
Departure Time:	1345 EDT	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	36.170000, -83.905556

Administrative Information

Investigator In Charge (IIC):	Lawrence A Mccarter	Report Date:	04/13/2020
Additional Participating Persons:	Aaron deVogel; FAA FSDO; Nashville, TN		
Publish Date:	04/13/2020		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=93684		

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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](#).