



National Transportation Safety Board Aviation Accident Final Report

Location:	Magnolia, AR	Accident Number:	CEN11LA005
Date & Time:	10/01/2010, 2100 CDT	Registration:	N152HS
Aircraft:	MAULE MXT-7-180A	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot was on a night cross-country flight when he heard a knocking sound in the engine. He immediately proceeded toward the nearest airport, declared an emergency, and noted that the oil pressure gauge read "0" and the oil temperature gauge read "high." When the airplane was about 5 miles south of the airport, and at an altitude of 1,700 feet, the engine seized. The pilot made a forced landing to a field and subsequently collided with a fence, causing substantial damage to the airplane. Examination of the engine revealed a large hole in the top of the crankcase and that the oil drain line for the No. 4 cylinder was not connected. A review of the engine logbook indicated that the No. 2 cylinder had been removed on the day of the accident, which would have required the No. 4 cylinder oil drain line to be disconnected. When the cylinder was placed back on the engine, the oil drain line was likely not reconnected and properly torqued per the manufacturer's maintenance manual.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The mechanic's failure to properly install an oil drain line after he replaced a cylinder, which caused the engine to seize in flight due to a lack of lubrication.

Findings

Aircraft	Eng oil dist (airframe furn) - Inadequate inspection (Cause)
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Factual Information

On October 1, 2010, at 2100 central daylight time, a Maule MXT-7-180-A, N152HS, sustained substantial damage during a forced landing after a total loss of engine power near Magnolia, Arkansas. The private pilot and a passenger were not injured. The airplane was registered to and operated by Henderson State University (HSU), Arkadelphia, Arkansas. Night visual meteorological conditions prevailed and no flight plan was filed for the flight that departed Monroe Regional Airport (MLU), Monroe, Louisiana, approximately 2030, and destined for Texarkana Regional Airport (TXK), Texarkana, Arkansas. The cross country flight was conducted under 14 Code of Federal Regulations Part 91 as part of HSU's commercial pilot curriculum.

According to the pilot, he was at 2,500 feet about 15 miles south of Magnolia Municipal Airport (AGO), Magnolia, Arkansas, when he heard a knocking sound in the engine. He immediately proceeded toward AGO, declared an emergency, and noted that the oil pressure gage read "0" and the oil temperature gage was "high." When the airplane was about 5 miles south of the airport and at an altitude of 1,700 feet, the engine seized. The pilot noted a small clearing and landed on a private horse farm. He said there was no visible moon and it was very dark outside, which made it difficult to see the terrain and he subsequently collided with corral fencing before coming to a full stop.

A Federal Aviation Administration (FAA) inspector performed an on-scene examination of the airplane, which revealed that the nosegear of the airplane collapsed and was pushed aft and the top of the fuselage center section was damaged. The firewall, left horizontal stabilizer and elevator sustained substantial damage. A large amount of oil was noted on the under side of the engine and belly of the airplane.

Examination of the engine revealed there was a large hole in the top of the crankcase and the oil drain line for the #4 cylinder was not connected. A review of the engine logbook revealed that the #2 cylinder had been removed on the day of the accident, which would have required the #4 cylinder oil drain line to be disconnected. When the cylinder was placed back on the engine, the oil drain line should have been reconnected and properly torqued per the manufacturer's maintenance manual.

In a written statement, the mechanic that replaced the #2 cylinder said that after he replaced the cylinder he performed an engine run and checked for leaks. No leaks were observed. The mechanic placed the cowling back on the engine, completed the 100-hour inspection paperwork and returned the airplane back to service. He stated that all work was performed in accordance with the Maule inspection guide, Lycoming direct drive overhaul manual, and a 4,313-lb torque wrench.

The pilot held a private pilot certificate for airplane single-engine land. His last Federal Aviation Administration (FAA) first class medical was issued on August 20, 2007. The pilot reported a total of 128 hours, of which, 34 hours were in the Maule.

History of Flight

Enroute-cruise	Loss of engine power (total) (Defining event)
Emergency descent	Loss of engine power (total)

Pilot Information

Certificate:	Private	Age:	21, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without Waivers/Limitations	Last Medical Exam:	08/20/2007
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	150 hours (Total, all aircraft), 150 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	MAULE	Registration:	N152HS
Model/Series:	MXT-7-180A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	21095C
Landing Gear Type:	Tricycle	Seats:	5
Date/Type of Last Inspection:		Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	O-360-C4F
Registered Owner:	HENDERSON STATE UNIVERSITY	Rated Power:	180 hp
Operator:	HENDERSON STATE UNIVERSITY	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	ELD, 277 ft msl	Observation Time:	2053 CDT
Distance from Accident Site:	20 Nautical Miles	Condition of Light:	Night
Direction from Accident Site:	90°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	16° C / 5° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	Light and Variable	Visibility (RVR):	
Altimeter Setting:	30.01 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:			
Departure Point:	Shreveport, LA (SHV)	Type of Flight Plan Filed:	VFR
Destination:	Arkadelphia, AR (M89)	Type of Clearance:	VFR
Departure Time:		Type of Airspace:	

Airport Information

Airport:	Magnolia Municipal (AGO)	Runway Surface Type:	
Airport Elevation:	319 ft	Runway Surface Condition:	
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	
Total Injuries:	2 None		

Administrative Information

Investigator In Charge (IIC):	Leah D Yeager	Adopted Date:	05/16/2011
Additional Participating Persons:	Sid Lemoine; FAA/FSDO; Little Rock, AR		
Publish Date:	05/16/2011		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=77490		

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