Aviation Investigation Final Report

Location:	Oxford, Mississippi	**Accident Number:**	MIA08LA169
Date & Time:	August 4, 2008, 18:30 Local	**Registration:**	N532MJ
Aircraft:	Piper Aircraft PA-32R-301	**Aircraft Damage:**	Substantial
Defining Event:	Fuel starvation	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

According to the pilot, he was picking up the airplane following an engine overhaul. About 20 minutes into the flight home, the engine went to idle. The pilot set up for best glide and prepared for an emergency landing into a field. During the landing roll the airplane sustained substantial damage. During the visual examination of the engine, the lower fitting of the fuel supply line from the fuel injector servo to the fuel flow divider was observed loose. The "B" nut was marked and then tightened; the number of flats on the nut were counted and the nut was turned 8 flats before it was secure and tight. The loose "B" nut would have interfered with the fuel supply, resulting in a loss of engine power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power due to fuel starvation as a result of maintenance personnel's failure to tighten a fuel line fitting.

Findings

Aircraft	(general) - Incorrect service/maintenance
Personnel issues	Installation - Maintenance personnel
Environmental issues	Rough terrain - Contributed to outcome

Factual Information

History of Flight

Prior to flight	Aircraft maintenance event
Enroute	Fuel starvation (Defining event)
Enroute	Loss of engine power (partial)
Emergency descent	Off-field or emergency landing

On August 4, 2008, about 1830 central daylight time, a Piper PA-32R-301, N532MJ, registered to J-Com Inc., crashed into a bean field while attempting a forced landing following a loss of engine power in Oxford, Mississippi. The certificated private pilot was not injured, and the airplane sustained substantial damage. The flight was operated as a personal flight under the provisions of 14 Code of Federal Regulations (CFR) Part 91, and no flight plan was filed. Visual meteorological conditions prevailed at the time of the accident. The flight originated from the Holly Springs-Marshall County Airport (M41), Holly Springs, Mississippi, about 1800, on the same day.

According to the pilot, he was picking up the airplane following an engine overhaul. He took off and was heading for the Bruce Campbell Field (MBO), Madison, Mississippi. About 20 minutes into the flight the engine went to idle. The pilot set up for best glide, and prepared for an emergency landing into a bean field about 5 miles northwest of the University-Oxford Airport (UOX), Oxford, Mississippi. During the landing roll the airplane sustained substantial damage to both wings, their control surfaces, and the fuselage.

Examination of the airplane by a Federal Aviation Administration (FAA) inspector found all three blades of the propeller were bent aft about 90 degrees near mid span and the leading edges of the blades were "worn and abraided [sic]." The fuselage had been placed on stands for further examination. The right main gear was broken and separated. The left main gear had collapsed and was in the wheel well. The nose gear door was loose and bent and the top right corner of the firewall was buckled.

On August 13, 2008, an engine examination and run was conducted at the facilities of Dallas Air Salvage in Arlington, Texas. Present at the examination was a FAA representative from the Dallas FSDO, a representative from Piper Aircraft, a representative from Lycoming Engines, and the owner of John Jewell Aircraft, Inc.

Examination of the engine logbooks found that it had been installed following a Lycoming factory overhaul and had about 35-45 minutes of operating time since the instillation. The installation was performed by John Jewell Aircraft, Inc., 162 A. Q. Greer Dr. Holly Springs, Mississippi, 38635. The Hobbs meter at the time of the installation was 1035.8 hours.

Examination of the engine found no visible damage to the accessories section. About eight quarts of clean engine oil was present in the oil sump. All of the top spark plugs were removed and the cylinders were inspected using a lighted borescope, no anomalies were noted.

During the visual examination of the engine, the lower fitting of the fuel supply line from the fuel injector servo to the fuel flow divider was observed loose. The "B" nut was marked and then tightened, the number of flats on the nut were counted, and the nut was turned 8 flats before it was secure and tight.

After securing the "B" nut the damaged propeller was removed and a two-bladed test propeller was installed. The engine was rotated by hand and the impulse couplings were heard snapping and continuity was observed throughout the rotating assembly.

A temporary fuel supply was connected to the fuel selector valve and the engine was started using onboard power.

The engine performed normally through mid range, a magneto check was performed with normal readings, and then the revolutions per minute (RPM) were increased to maximum RPM (2400), which was governor limited with the temporary propeller.

The "B" nut was loosened on the fuel flow divider source line at the flow divider and an immediate drop in fuel flow and RPM was noted. This was consistent with what the pilot had experienced during the accident flight. The "B" nut was again secured and the engine resumed its normal operation.

Following the engine shut down, the representative from John Jewell Aircraft Inc., was asked if the mechanic recalled securing that subject line, he stated that the mechanic did not check the line as it was already installed by Lycoming before the engine was shipped to him, and he had assumed that it was secure.

According to Lycoming, this engine was a custom overhauled under HENPL-RT9591. This HENPL requires that the fuel servo be shipped loose, meaning that the fuel injector should have been provided in a box on the skid with the engine. The injector would have had to have been installed by a mechanic in the field and the subject hose would also have had to have been connected in the field.

Pilot Information

Certificate:	Private	**Age:**	52,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 With waivers/limitations	**Last FAA Medical Exam:**	July 16, 2008
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	August 7, 2006
Flight Time:	1495 hours (Total, all aircraft), 1217 hours (Total, this make and model), 1323 hours (Pilot In Command, all aircraft), 23 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper Aircraft	**Registration:**	N532MJ
Model/Series:	PA-32R-301	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	3246203
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	August 4, 2008 100 hour	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	0 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1036 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	IO-540-K1G5
Registered Owner:	On file	**Rated Power:**	300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	TUP,452 ft msl	**Distance from Accident Site:**	5 Nautical Miles
Observation Time:	17:53 Local	**Direction from Accident Site:**	214°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	31°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Holly Springs, MS (M41)	**Type of Flight Plan Filed:**	None
Destination:	Madison, MS (MBO)	**Type of Clearance:**	None
Departure Time:	18:00 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	34.427776,-89.61972

Administrative Information

Investigator In Charge (IIC):	Wilson, Ralph
Additional Participating Persons:	Melvin R Athey; FAA/FSDO; Jackson, MS John Butler; Lycoming Engines; Dallas, TX Mike McClure; Piper Aircraft; Arlington, TX
Original Publish Date:	June 22, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=68752