Aviation Investigation Final Report

Location:	Riverview, Florida	**Accident Number:**	ERA12LA524
Date & Time:	August 23, 2012, 09:05 Local	**Registration:**	N362DM
Aircraft:	Piper PA-32R-301T	**Aircraft Damage:**	Substantial
Defining Event:	Powerplant sys/comp malf/fail	**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane experienced an electrical discrepancy shortly after an instrument departure. The pilot advised the air traffic controller that he would be returning to the airport. While en route, the pilot noted a film of oil on the windshield. It became more pronounced, and the engine oil pressure dropped to "0." The pilot declared an emergency and landed the airplane on an interstate highway median. An 8-foot section of the left wing separated when it collided with a highway traffic sign during the landing roll. The postaccident engine examination revealed that the oil leak was from the propeller governor gasket; specifically, the leak originated from the lower left lock nut area that secures the control cable tube end support bracket to the governor's engine-mounted stud. The nut and lock washer were not properly seated and anti-tamper putty was present. The disassembly of that area revealed that the lower left corner of the gasket had several cracks promulgating to that lower left section of the gasket, which permitted the oil to escape. The top section of the tube end of the support bracket was missing (broken off), which would not allow for an even mounting torque pressure between the gasket, the propeller governor, and the engine surfaces.

A review of the airplane's maintenance records revealed no history of any discrepancies that would require the removal of the control cable support bracket tube end. Based on physical damage to the control cable bracket tube end, it is likely that, at an unknown time, the tube end was removed from the stud and damaged during installation. This did not permit a proper seal of the gasket, which created the leak.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Damage to the propeller governor gasket during installation by unknown persons, which resulted in a total loss of engine oil in flight and a subsequent forced landing.

Findings

Aircraft	Recip eng oil sys - Malfunction
Personnel issues	Installation - Maintenance personnel

Factual Information

History of Flight

Prior to flight	Aircraft maintenance event
Initial climb	Powerplant sys/comp malf/fail (Defining event)
Emergency descent	Off-field or emergency landing
Landing-landing roll	Collision with terr/obj (non-CFIT)

On August 23, 2012, about 0905 eastern daylight time, a Piper PA-32R-301T, N362DM, sustained substantial damage during a force landing on a highway near Tampa, Florida. The commercial pilot and two passengers were not injured. Visual meteorological conditions prevailed and an instrument flight rule flight plan was filed for the Title 14 Code of Federal Regulations Part 91, personal flight. The flight originated from the Peter O Knight Airport (TPF), Tampa, Florida, at 0900.

The pilot stated that during his preflight inspection he noted the engine required two quarts of oil, which was added before the flight. The ground run up check and the initial climb was uneventful. At approximately 4,000 feet means sea level the “Low Voltage” warning light on the instrument panel illuminated. He cycled the alternator; however, the warning light continued. The pilot communicated with the air traffic controller of the situation and was vectored back to TPF. During the return, it was noted that the windshield was accumulating a film of oil. At first, it seemed to be nothing more than a fine spray; however, it quickly covered the windshield on the pilot side. A stream of oil coming from the front of the engine cowling was observed. The pilot communicated to the controller of the loss of engine oil and was not sure that the airplane would be able to reach TPF. At this time the engine oil pressure indication was “0”. The pilot declared an emergency and advised his intentions on landing on a section of the interstate highway (I-75). The pilot maneuvered the airplane and landed on the median area between the north and south bound lanes. During the landing roll the left wing made contact with a highway sign before coming to a stop. All onboard were able to exit the airplane on their own.

An examination of the wreckage by the responding Federal Aviation Administration (FAA) inspector revealed an eight foot section of the outer left wing was separated. Engine oil was observed leaking from the forward section of the engine.

A postaccident engine examination by an FAA inspector revealed a noticeable cut on the lower left side of the propeller governor gasket. In addition, the lower left lock nut which secures one of three control cable bracket tube ends and propeller governor did not appear to be properly seated and the anti-tamper putty was present. The engine was serviced with six quarts of engine oil and the spark plugs were removed. The oil residue on the propeller governor was cleaned off to observe of any leaks. The engine was rotated several times with the starter.

Fresh engine oil started seeping immediately from the area where the gasket was cut. The bracket, governor, and gasket were removed for examination. The lower left corner of the gasket broke off during removal. Several cracks were observed promulgating down to the lower section of the gasket where the oil leak was concentrated. The control cable support bracket tube end where the oil leak was from was observed with its top section missing (broken off). The other two tube ends were intact.

The airplane's owner stated to the FAA inspector that the airplane had no history of any discrepancies with the airplane's engine that would require the removal of that control cable support bracket. He did mention, a few years ago he had a maintenance facility correct an engine oil leak during an overnight stay. The mechanic on duty was not familiar with general aviation piston engines. The work order for that oil leak trouble shooting, dated November 4, 2007, was obtained by the FAA inspector. The replacement of an oil temperature sensor gasket and a repair to the breather tube corrected the leak. The engine has since then accumulated about 650 operational hours before the accident. A review of the airplane's maintenance logbooks by FAA did not reveal documentation of the work performed on November 4, 2007. In addition, there were no entries that would account for the removal of the control cable support bracket tube ends from the propeller governor attachment engine mounted studs.

Pilot Information

Certificate:	Commercial; Private	**Age:**	64,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	June 1, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	February 14, 2012
Flight Time:	4808 hours (Total, all aircraft), 4610 hours (Pilot In Command, all aircraft), 43 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N362DM
Model/Series:	PA-32R-301T	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	3257362
Landing Gear Type:	Tricycle	**Seats:**	7
Date/Type of Last Inspection:	August 6, 2012 Annual	**Certified Max Gross Wt.:**	12499 lbs
Time Since Last Inspection:	10 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1411 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	C91A installed, not activated	**Engine Model/Series:**	TIO 540 SER
Registered Owner:	On file	**Rated Power:**	250 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:	TPK,7 ft msl	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:	08:55 Local	**Direction from Accident Site:**	270°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.1 inches Hg	**Temperature/Dew Point:**	25°C / 21°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Tampa, FL (TPF)	**Type of Flight Plan Filed:**	IFR
Destination:	Opa-Locka, FL (OPF)	**Type of Clearance:**	IFR
Departure Time:	09:00 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	27.878334,-82.346664(est)

Administrative Information

Investigator In Charge (IIC):	Obregon, Jose
Additional Participating Persons:	Hector Diaz; FAA/FSDO; Tampa, FL Robert Martellotti; Piper Aircraft Inc.; Vero Beach, FL
Original Publish Date:	August 13, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=84778