



# Aviation Investigation Final Report

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<b>Location:</b>	Houston, Texas	<b>Accident Number:</b>	CEN15LA078
<b>Date &amp; Time:</b>	December 15, 2014, 10:30 Local	<b>Registration:</b>	N224JJ
<b>Aircraft:</b>	Piper PA 46 350P	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Landing gear collapse	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The pilot reported that, just after landing and as the nosewheel touched the runway, the airplane veered sharply left. The pilot applied right rudder; however, the airplane continued off the left side of the runway. The airplane's nose landing gear (NLG) collapsed, and the airplane came to rest in a grassy area 150 ft from the runway.

The examination of the airplane revealed a fractured engine mount in the area of the NLG actuator. As a result of similar accidents, the airplane's manufacturer had issued (about 12 1/2 years before the accident) a mandatory service bulletin (SB), which included a 100-hour recurring inspection to determine if cracks had developed on the engine mount in the area of the NLG actuator feet. The latest version of the SB was issued about 6 months before the accident. A review of the airplane's maintenance records revealed that maintenance personnel had completed the SB inspection during three previous annual inspections; however, there was no record that the SB inspection was conducted during the last annual inspection, which occurred about 6 months before the accident. The accident is consistent with an uncommanded left turn during landing as a result of a broken engine mount. Based on the evidence and the events, it's likely that maintenance personnel did not inspect the engine mount during the most recent annual inspection or that they did inspect the area and missed the cracks that had likely developed on the engine mount.

## Probable Cause and Findings

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

The nose landing gear collapse as a result of the fracture of the engine mount at the nose gear actuator attachment point in an area that a service bulletin (SB) recommended for inspection. Contributing to the accident was maintenance personnel's inadequate compliance with the SB.

## Findings

<b>Aircraft</b>	Nose/tail gear attach section - Fatigue/wear/corrosion
<b>Aircraft</b>	Nose/tail gear attach section - Inadequate inspection
<b>Aircraft</b>	Nose/tail gear attach section - Failure
<b>Personnel issues</b>	Scheduled/routine inspection - Maintenance personnel

## Factual Information

### History of Flight

<b>Prior to flight</b>	Aircraft inspection event
<b>Landing-landing roll</b>	Runway excursion
<b>Landing-landing roll</b>	Landing gear collapse (Defining event)
<b>Landing-landing roll</b>	Nose over/nose down

On December 15, 2014, about 1030 central standard time, a Piper PA-46-350P airplane, N224JJ, departed the left side of the runway at the Sugar Land Regional Airport (SGR), Houston, Texas. The commercial rated pilot was not injured. The airplane was registered to operated by Dilkara Leasing LLC, Las Vegas, Nevada under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed at the time of the accident and an instrument flight plan was filed. The airplane departed the Georgetown Municipal Airport (KGTU) Georgetown, Texas, about 0940.

The pilot reported that he crossed the runway threshold at 100 feet and 85 knots, and touched down on the runway about 80-85 knots. When the nosewheel touched the runway, the airplane veered sharply left. He applied right rudder; however, the airplane continued off the left side of the runway. The nose gear collapsed and the airplane came to rest about 150 feet from the runway.

The pilot stated that after the accident, an operations supervisor from the Fixed Based Operator (FBO) inspected the marks left on the runway. The pilot added that at the point where the nosewheel first contacted the runway, it appeared the wheel turned 90 degrees to the left.

Examination of the airplane revealed damage to the propeller, nose landing gear, lower cowling, and substantial damage to the firewall. An inspection of the engine compartment by the responding Federal Aviation Administration (FAA) Inspector, revealed the engine mount had broken at the nose landing gear actuator attach point.

Piper Aircraft, Inc., issued Service Bulletin 1103 on April 22, 2002, which addressed engine mount inspections of Piper Malibu and Mirage aircraft. The Service Bulletin requires Piper Malibu operators to inspect the engine mounts for cracks at the next scheduled maintenance event, and each 100 hours' time in service, or annual inspection thereafter. When cracks are observed, the engine mount is to be replaced with a newly designed model which incorporated a one-piece foot at the nose gear actuator attach point. The latest version is Service Bulletin 1103E, and was issued on June 5, 2014.

The accident airplane was a Piper PA-46-350P, serial number 4622155, manufactured in 1994. The airplane's last annual maintenance inspection was performed on July 1, 2014, at the time of the accident, the total aircraft time was 2,024.0 hours. According to the FAA inspector, Service Bulletin 1103 had been accomplished during the annual inspections on the following dates and times: June 2011-1,795

hours, June 2012-1,849 hours, May 2013-1,900 hours. The inspector added that in July 2014 (1,993 hours) a visual inspection was performed but was not documented in either the airframe or engine logs.

## Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	58
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	October 16, 2014
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	January 8, 2014
<b>Flight Time:</b>	1067.3 hours (Total, all aircraft), 112.1 hours (Total, this make and model), 898.5 hours (Pilot In Command, all aircraft), 49.7 hours (Last 90 days, all aircraft), 21.1 hours (Last 30 days, all aircraft), 1.1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N224JJ
<b>Model/Series:</b>	PA 46 350P	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1994	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	4622155
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	
<b>Date/Type of Last Inspection:</b>	July 1, 2014 Annual	<b>Certified Max Gross Wt.:</b>	4299 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2024 Hrs at time of accident	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	C126 installed	<b>Engine Model/Series:</b>	TIO-540 SER
<b>Registered Owner:</b>	DILKARA LEASING LLC	<b>Rated Power:</b>	310 Horsepower
<b>Operator:</b>	DILKARA LEASING LLC	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KSGR	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	10:43 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Scattered / 2000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 3000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	12 knots / 20 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	260°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30 inches Hg	<b>Temperature/Dew Point:</b>	23°C / 18°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Georgetown, TX (KGTU)	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Houston, TX (SGR)	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	09:40 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Sugar Land Regional SGR	<b>Runway Surface Type:</b>	Concrete
<b>Airport Elevation:</b>	82 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	17	<b>IFR Approach:</b>	RNAV
<b>Runway Length/Width:</b>	8000 ft / 100 ft	<b>VFR Approach/Landing:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	29.621944,-95.656944

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Hatch, Craig
<b>Additional Participating Persons:</b>	Carl Thomas; FAA FSDO; Houston, TX
<b>Original Publish Date:</b>	June 22, 2015
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=90502">https://data.ntsb.gov/Docket?ProjectID=90502</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).