



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Atlanta, Georgia	<b>Accident Number:</b>	ERA11LA507
<b>Date &amp; Time:</b>	September 28, 2011, 17:15 Local	<b>Registration:</b>	N344KL
<b>Aircraft:</b>	Mitsubishi MU-2B-25	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Sys/Comp malf/fail (non-power)	<b>Injuries:</b>	3 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Executive/Corporate		

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## Analysis

The pilot stated that after landing, the nose landing gear collapsed. Examination of the airplane nose strut down-lock installation revealed that the strut on the right side of the nose landing gear trunnion was installed incorrectly; the strut installed on the right was a left-sided strut. Incorrect installation of the strut could result in the bearing pulling loose from the pin on the right side of the trunnion, which could allow the nose landing gear to collapse.

A review of maintenance records revealed recent maintenance activity on the nose gear involving the strut. The design of the strut is common for the left and right. Both struts have the same base part number, and a distinguishing numerical suffix is added for left side and right side strut determination. If correctly installed, the numbers should be oriented facing outboard.

The original MU-2 Maintenance Manual did not address the installation or correct orientation of the strut. The manufacturer issued MU-2 Service Bulletin (SB) No. 200B, dated June 24, 1994, to address the orientation and adjustment. Service Bulletin 200B states on page 8 of 10 that the "Part Number may be visible in this (the) area from the out board sides (Inked P/N may be faded out)."

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The improper installation of the nose landing gear strut and subsequent collapse of the nose landing gear during landing.

## Findings

Personnel issues	Installation - Maintenance personnel
Aircraft	Nose/tail gear strut/axle - Inadequate inspection
Organizational issues	Design of document/info - Manufacturer
Aircraft	Nose/tail landing gear - Incorrect service/maintenance

## Factual Information

On September 28, 2011, at 1715 eastern daylight time, a Mitsubishi MU-2B-25, N344KL, registered to Laurel Mountain Aviation LLC, experienced a nose landing gear collapse during landing roll out at Cobb County Airport-McCollum Field (RYY), Atlanta, Georgia. Visual meteorological conditions prevailed and an instrument flight rules flight plan was filed. The corporate flight was operated under the provisions of 14 Code of Federal Regulations Part 91. The airplane received structural damage to the airplane nose and structure aft of the primary bulkhead. The certificate airline transport rated pilot and two passengers reported no injuries. The flight originated from Huntsville International Airport-Carl T. Jones Field (HSV), Huntsville, Alabama, at 1541 central daylight time.

The pilot stated that after departing HSV, he climbed to his cruise altitude of 11,000 feet mean sea level. Upon arrival in the vicinity of RYY, he was cleared for a visual approach to runway 27. He entered a right closed traffic pattern and completed all required checklist items. The airplane touched down on the runway and the nose landing gear collapsed. The airplane came to rest upright on the runway.

Examination of the airplane nose strut down lock installation revealed the strut, part number (PN) 010A-39117-11, that was installed on the right side of the nose landing gear trunnion, was installed incorrectly. The bearing "stake marks" should have been on the outboard side of the 010A-39117 strut. Incorrect installation of the strut could result in the bearing pulling loose from the pin on the right side of the trunnion.

A review of maintenance records revealed recent maintenance activity on the nose gear involving the strut. The design of the strut is typical for the left and right. Both struts have the base PN 010A-39117, permanently marked by cast numbers on the outboard side of the strut. According to the manufacturer, the part should display the PN 010A- 39117-12 for the right and -11 for the left. The manufacturer issued MU-2 Service Bulletin (SB) No. 200B, dated June 24, 1994, to address the orientation and adjustment. The MU-2 Maintenance Manual did not address the installation or correct orientation of the strut. Service Bulletin 200B states on page 8 of 10 that the "Part Number may be visible in this (the) area from the out board sides (Inked P/N may be faded out)". The accident strut only exhibited the base number. The left strut was installed in accordance with the SB.

The last annual and 200-hour inspection was conducted on July 11, 2011, 10 hours before the accident. The airplane was flown to a repair station for additional maintenance prior to the accident. The airplane had a previous nose landing gear failure and had been repaired by the pilot's mechanic.

A mechanic at the repair station looked at the nose landing gear down lock and observed it only had a 2 millimeter clearance. The mechanic called the pilot and informed him the airplane did not have enough down lock engagement. The pilot informed the mechanic to fix the problem. The mechanic installed a short block PN 010A-39108-125 to get the proper engagement as outlined in the maintenance manual. A review of the logbooks revealed no determination could be made as to who had previously worked on the drag strut.

## History of Flight

Prior to flight	Aircraft maintenance event
Landing	Sys/Comp malf/fail (non-power) (Defining event)
Landing-landing roll	Landing gear collapse

## Pilot Information

Certificate:	Airline transport; Commercial; Flight instructor	Age:	37, 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 1 Without waivers/limitations	Last FAA Medical Exam:	August 18, 2011
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	May 2, 2011
Flight Time:	11100 hours (Total, all aircraft), 1500 hours (Total, this make and model), 10800 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Mitsubishi	Registration:	N344KL
Model/Series:	MU-2B-25	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	257
Landing Gear Type:	Tricycle	Seats:	10
Date/Type of Last Inspection:	June 27, 2011 100 hour	Certified Max Gross Wt.:	9970 lbs
Time Since Last Inspection:	10 Hrs	Engines:	2 Turbo prop
Airframe Total Time:	6196 Hrs at time of accident	Engine Manufacturer:	Honeywell
ELT:	C91 installed, not activated	Engine Model/Series:	TPE331-6-251M
Registered Owner:		Rated Power:	715 Horsepower
Operator:		Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	RYY, 1041 ft msl	Distance from Accident Site:	
Observation Time:	17:48 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Scattered / 2500 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.9 inches Hg	Temperature/Dew Point:	19 °C / 16 °C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hunstville, AL (HSV )	Type of Flight Plan Filed:	IFR
Destination:	Atlanta, GA (RYY )	Type of Clearance:	IFR
Departure Time:	15:41 Local	Type of Airspace:	Class D

## Airport Information

Airport:	Cobb County Airport Mc Collum RYY	Runway Surface Type:	Asphalt
Airport Elevation:	1041 ft msl	Runway Surface Condition:	Dry
Runway Used:	27	IFR Approach:	None
Runway Length/Width:	6311 ft / 100 ft	VFR Approach/Landing:	Traffic pattern

## 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:	33.013889, -84.61222(est)

## Administrative Information

Investigator In Charge (IIC):	Smith, Carrol
Additional Participating Persons:	Stephen DaCosta; FAA Atlanta FSDO; Hateville, GA
Original Publish Date:	October 9, 2012
Note:	
Investigation Docket:	<a href="https://data.nts.gov/Docket?ProjectID=81926">https://data.nts.gov/Docket?ProjectID=81926</a>

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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](#).