



Aviation Investigation Final Report

Location:	GREENSBORO, North Carolina	Accident Number:	ATL91LA002
Date & Time:	October 7, 1990, 19:21 Local	Registration:	N9315V
Aircraft:	MOONEY M20E	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE PILOT WAS IN PREPARATION FOR LANDING WHEN HE WAS UNABLE TO GET A DOWN AND LOCKED INDICATION ON THE LANDING GEAR. AFTER MANEUVERING THE AIRCRAFT, THE GEAR APPEARED TO BE VISUALLY DOWN, HOWEVER NO DOWN AND LOCKED INDICATION WAS SHOWN IN THE COCKPIT. UPON TOUCHDOWN, ALL THREE GEAR COLLAPSED. THE INVESTIGATION REVEALED THAT A RUBBER/METAL COUPLING IN THE LANDING GEAR ACTUATOR ASSEMBLY HAD FAILED, DISABLING NORMAL AND ALTERNATE GEAR EXTENSION CAPABILITY.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE FAILURE OF THE RUBBER/METAL COUPLING IN THE LANDING GEAR ACTUATOR ASSEMBLY, WHICH RESULTED IN THE INABILITY OF THE PILOT TO LOWER AND LOCK THE LANDING GEAR.

Findings

Occurrence #1: GEAR NOT EXTENDED
Phase of Operation: APPROACH

Findings

1. (C) LANDING GEAR,NORMAL RETRACTION/EXTENSION ASSEMBLY - FAILURE,PARTIAL
2. (F) GEAR EXTENSION - ATTEMPTED - PILOT IN COMMAND

3. (F) GEAR DOWN AND LOCKED - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #2: GEAR COLLAPSED
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Factual Information

Pilot Information

Certificate:	Private	Age:	56, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	June 21, 1990
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	968 hours (Total, all aircraft), 104 hours (Total, this make and model), 968 hours (Pilot In Command, all aircraft), 23 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	MOONEY	Registration:	N9315V
Model/Series:	M20E M20E	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	700008
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	January 5, 1990 Annual	Certified Max Gross Wt.:	2575 lbs
Time Since Last Inspection:	52 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1518 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	IO 360 A1A
Registered Owner:	HAL D. ALLMAN, SR	Rated Power:	200 Horsepower
Operator:		Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	GSO ,926 ft msl	Distance from Accident Site:	
Observation Time:	18:50 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Scattered / 2500 ft AGL	Visibility	15 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	210°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	19°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	SALISBURY , NC (RUQ)	Type of Flight Plan Filed:	None
Destination:	(GSO)	Type of Clearance:	None
Departure Time:	17:30 Local	Type of Airspace:	Class D;Class E

Airport Information

Airport:	PIEDMONT TRIAD INT'L GSO	Runway Surface Type:	Asphalt
Airport Elevation:	926 ft msl	Runway Surface Condition:	Dry
Runway Used:	14	IFR Approach:	None
Runway Length/Width:	6380 ft / 150 ft	VFR Approach/Landing:	Full stop;Straight-in

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:	36.119667,-79.889968(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	DENNIS SCARFEO; WINSTON-SALEM , NC
Original Publish Date:	September 15, 1992
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=8348

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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](#).