

# **Aviation Investigation Final Report**

Location:	SATARTIA, Missis	sippi	Accident Number:	ATL99LA131
Date & Time:	September 11, 19	99, 17:30 Local	Registration:	N212W
Aircraft:	Hiller	UH-12A	Aircraft Damage:	Substantial
Defining Event:			Injuries:	2 Minor
Flight Conducted Under:	Part 91: General a	viation - Personal		

### **Analysis**

The pilot decided to land in an open area next to a soybean field due to a physical urgency. He stated that during the approach, a 'loud noise occurred' and the helicopter became 'uncontrollable,' with the control stick moving forcefully in all directions. Upon impact, the helicopter rolled onto its right side, sustaining damage to the main rotor blades, the tail boom, the skids, and the fuselage. Examination of the helicopter disclosed that the forward engine/transmission mounts had separated from the airframe. Examination of the engine mounts, however, revealed the fracture surface was consistent with overstress separation.

### **Probable Cause and Findings**

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain control of the helicopter while on approach which resulted in the uncontrolled collision with the ground. A factor was the pilot's physiological condition.

#### **Findings**

Occurrence #1: LOSS OF CONTROL - IN FLIGHT Phase of Operation: APPROACH

Findings 1. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND 2. (F) PHYSIOLOGICAL CONDITION - PILOT IN COMMAND Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER Phase of Operation: DESCENT - UNCONTROLLED

### **Factual Information**

On September 11, 1999, at 1730 central daylight time, a Hiller UH-12A helicopter, N212W, collided with the ground while on approach to land in Satartia, Mississippi. The helicopter was operated by the commercial pilot under the provisions of Title 14 CFR Part 91, and visual flight rules. Visual meteorological conditions prevailed and no flight plan was filed for the local flight. The commercial pilot and one passenger received minor injuries, and the helicopter sustained substantial damage. The flight originated from a private airstrip in Satartia, Mississippi, at 1715.

According to the pilot, he departed the airstrip and flew north approximately two to three miles, and decided to land in an open area next to a soybean field due to a physical urgency. He stated that during the approach to the selected landing site, he flew on a westerly heading, then initiated a left turn toward the east. After completing 90 degrees of the turn, a "loud noise occurred" and the helicopter became "uncontrollable," with the control stick moving forcefully in all directions. At the time, the airspeed was approximately 30 mph with an altitude of 25 to 30 feet above ground level (agl). The helicopter began to turn to the left and the flight controls failed to respond to the pilot's control inputs. The helicopter impacted the ground in a slight right bank. Upon impact, the helicopter rolled onto its right side, sustaining damage to the main rotor blades, the tail boom, the skids, and the fuselage.

During the examination of the accident site, all helicopter parts and components were confined to a 300-foot radius of the main wreckage. The metal leading edge from one main rotor blade was located approximately 300 feet northwest of the accident site. The tail rotor blades had no leading edge damage. The forward section of the tail rotor drive shaft was located 250 feet southwest of the accident site. Six engine cooling fan blades were found beginning at a starting point approximately 250 feet northwest of the accident site, scattered along a 100-foot distance to the southeast. The forward upper engine/transmission mounts were found separated from the airframe and were subsequently sent off to the NTSB Materials Laboratory in Washington, D.C., for further examination.

An examination of the helicopter's maintenance records revealed that the helicopter was purchased as a military surplus aircraft on August 27, 1971, and was issued an FAA standard airworthiness certificate on that date. The last annual inspection was performed on December 1, 1998, and the helicopter had accrued 146.9 hours since the last inspection. According to the logbooks, the upper engine mounts had not been changed in accordance with the FAA Airworthiness Directive AD-56-27-02 which was issued in 1956 to address the repair of defective welds in the clamp lug area of engine mounts in all UH-12, UH12A, and UH-12B helicopters. All engine mounts that were not cadmium plated and were stamped with a "7" or "8" or no stamp at all were required to be removed and rewelded.

Metallurgical inspection of the two engine mounts revealed no evidence of cadmium in the clamp lug region as determined by energy dispersive x-ray spectroscopy. Also, no stamps were observed. No entries in the maintenance records indicating compliance with AD 56-27-02 were found. The fracture surfaces on the engine mounts were irregularly shaped, consistent with overstress separation failure.

#### **Pilot Information**

Certificate:	Commercial	Age:	54,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Center
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medicalw/ waivers/lim	Last FAA Medical Exam:	March 17, 1999
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	7644 hours (Total, all aircraft), 76 hours (Total, this make and model), 7560 hours (Pilot In Command, all aircraft), 250 hours (Last 90 days, all aircraft), 111 hours (Last 30 days, all aircraft)		

#### Aircraft and Owner/Operator Information

Aircraft Make:	Hiller	Registration:	N212W
Model/Series:	UH-12A UH-12A	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	237
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	December 1, 1998 Annual	Certified Max Gross Wt.:	2400 lbs
Time Since Last Inspection:	147 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1092 Hrs	Engine Manufacturer:	Franklin
ELT:	Not installed	Engine Model/Series:	6A4-200-C33
Registered Owner:	LUNGRIN FLYING SERVICE	Rated Power:	200 Horsepower
Operator:	CHARLES V. LUNGRIN	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
<b>Observation Facility, Elevation:</b>	GWO ,162 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	17:53 Local	Direction from Accident Site:	35°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	100°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	31°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	, MS (NONE)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	17:15 Local	Type of Airspace:	Class G

### **Airport Information**

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Full stop

## Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Minor	Latitude, Longitude:	32.619823,-90.629096(est)

#### **Administrative Information**

Additional Participating Persons:MEL ALLENATHEY; JACKSON M DAVIS; JACKSON , MSOriginal Publish Date:March 2, 2001Last Revision Date:Version Complexity	Investigator In Charge (IIC):	Wilson, Butch	
Original Publish Date: March 2, 2001   Last Revision Date: Variant 2, 2001	Additional Participating Persons:	MEL ATHEY; JACKSON , MS ALLEN M DAVIS; JACKSON , MS	
Last Revision Date:	Original Publish Date:	March 2, 2001	
	Last Revision Date:		
Investigation Class: <u>Class</u>	Investigation Class:	<u>Class</u>	
Note:	Note:		
Investigation Docket: https://data.ntsb.gov/Docket?ProjectID=47381	Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=47381	

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 <u>here</u>.