Aviation Investigation Final Report

Location:	SATARTIA, Mississippi	**Accident Number:**	ATL99LA131
Date & Time:	September 11, 1999, 17:30 Local	**Registration:**	N212W
Aircraft:	Hiller UH-12A	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Minor
Flight Conducted Under:	Part 91: General aviation - 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 Medical--w/ 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
Observation Facility, Elevation:	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

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