



Aviation Investigation Final Report

Location: SANFORD, Florida Accident Number: MIA00LA111

Date & Time: March 17, 2000, 13:52 Local Registration: N5304V

Aircraft: Hiller UH-12B Aircraft Damage: Substantial

Defining Event: 1 Minor

Flight Conducted Under: Part 91: General aviation - Personal

Analysis

While climbing after takeoff, the pilot stated he experienced a 1 to 1 vibration. He lowered the collective and initiated an approach the surface. The vibration got worse and as he approached the surface and raised the collective the helicopter felt like there was no response from the controls. The helicopter hit hard and rolled onto it's side. Post crash examination of the helicopter by an FAA inspector showed no obvious mechanical defects in the rotors or flight control systems. The left engine magneto 'P' lead was found loose, rendering the magneto inoperative. The threads on the 'P' lead had no damage and the magneto was not damaged from impact.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper collective and cyclic control usage during an emergency descent, following the onset of a 1 to 1 vibration for undetermined reasons, resulting in the helicopter landing hard and rolling over.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: CLIMB

Findings

1. ROTOR SYSTEM - VIBRATION

2. REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: HARD LANDING

Phase of Operation: DESCENT - EMERGENCY

Findings

3. (C) CYCLIC - IMPROPER USE OF - PILOT IN COMMAND

4. (C) COLLECTIVE - IMPROPER USE OF - PILOT IN COMMAND

5. (C) DESCENT - EXCESSIVE - PILOT IN COMMAND

Page 2 of 6 MIA00LA111

Factual Information

On March 17, 2000, about 1352 eastern standard time, a Hiller UH-12B, N5304V, registered to a private owner, crashed while attempting a emergency landing at Sanford Airport, Sanford, Florida, while on a Title 14 CFR Part 91 personal flight. Visual meteorological conditions prevailed at the time and no flight plan was filed. The helicopter received substantial damage and the commercial-rated pilot received minor injuries. The flight originated from Sanford, Florida, a few minutes before the accident.

The pilot stated he was performing practice autorotations with power recoveries. While departing into the pattern, he began to experience a severe one per revolution vibration. He was climbing through about 50 feet. He immediately lowered the collective and tried to maintain an approach to the surface away from construction workers and equipment. As he got closer to the surface the vibrations intensity increased substantially to the point where he could hardly hold onto the controls or see outside the helicopter. He attempted to raise the collective as he neared the surface and felt as if there was no response or control of the helicopter at that point. After the helicopter hit the surface and rolled a few times, he unbuckled the seat belt and got out of the helicopter.

Postcrash examination of the crash site and helicopter was performed by a FAA inspector. The inspector stated the initial impact point of the helicopter was about 300 feet from the final stopping point, indicated by the two tail rotor blades lying where they had initially struck the ground and became separated from the tail rotor hub. There were skid marks from this point to the final spot where the helicopter rolled onto it's right side. There were no indications of more than one roll and no indication of a complete roll, only 90 degrees to end resting on the right side. The main rotor blades had been shattered from the impact, but the steel spar straps were intact and still attached to the rotor hub. One control paddle had been broken off at the hub from the impact. Control continuity was established for the main rotor and engine controls, but the tail rotor cables had been separated during the crash. They were still connected at the pedals and pitch change horn. No obvious mechanical defects could be detected. The "P" lead from the left magneto was hanging loose from the magneto. The threads on the "P" lead cap were not damaged and the magneto had no impact damage.

A witness located in a construction area on the airport, near the crash site, stated he observed the helicopter circle overhead practicing landings west of runway 18-36. He watched the helicopter land and then takeoff again. During takeoff and climb the helicopter sound changed and he watched the helicopter descend from about 200 feet, in level flight but coming down fast. The helicopter hit the ground and flipped over.

Page 3 of 6 MIA00LA111

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	31,Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	Helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medicalno waivers/lim.	Last FAA Medical Exam:	February 1, 2000
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	3000 hours (Total, all aircraft), 30 hours (Total, this make and model), 2900 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Hiller	Registration:	N5304V
Model/Series:	UH-12B UH-12B	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	575
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	October 1, 1999 Annual	Certified Max Gross Wt.:	3100 lbs
Time Since Last Inspection:	30 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	3998 Hrs	Engine Manufacturer:	Franklin
ELT:	Not installed	Engine Model/Series:	6V4-200-C33
Registered Owner:	LUIS DIAZ	Rated Power:	200 Horsepower
Operator:	ROBERT KIVLEN	Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

Page 4 of 6 MIA00LA111

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	SFB ,55 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	13:53 Local	Direction from Accident Site:	360°
Lowest Cloud Condition:	Scattered / 2100 ft AGL	Visibility	10 miles
Lowest Ceiling:	Overcast / 2800 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	320°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	26°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipita	ation	
Departure Point:	(SFB)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	VFR
Departure Time:	14:00 Local	Type of Airspace:	Class D

Airport Information

Airport:	SANFORD SFB	Runway Surface Type:	
Airport Elevation:	55 ft msl	Runway Surface Condition:	Dry;Vegetation
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	Simulated forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	

Page 5 of 6 MIA00LA111

Administrative Information

Investigator In Charge (IIC): Kennedy, Jeffrey

Additional Participating Persons:

Original Publish Date: December 4, 2000

Last Revision Date:

Investigation Class: Class

Note:

Investigation Docket: https://data.ntsb.gov/Docket?ProjectID=48814

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.

Page 6 of 6 MIA00LA111