



Aviation Investigation Final Report

Location:	Hiram, Georgia	Accident Number:	MIA08LA106
Date & Time:	May 21, 2008, 10:04 Local	Registration:	N417AE
Aircraft:	Eurocopter France AS350 B2	Aircraft Damage:	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	Injuries:	3 None
Flight Conducted Under:	Part 91: General aviation - Positioning		

Analysis

The pilot stated that after engine start, the helicopter shook violently as the throttle was advanced to flight rpm. He conducted an emergency shutdown, inspected the helicopter, and discovered that the tail rotor boom was buckled. Further inspection revealed that the main rotor starflex arm was broken. According to the director of maintenance, the starflex arm was overlooked during a conformity inspection. As a result, it was overflown by 586 hours. A review of a manufacturer service bulletin revealed that the service life on the starflex arm was 2,200 hours. At the time of the accident, the total time on the starflex arm was 2,786 hours. Due to the operator's record keeping process, the complex component life limit historical records were overlooked.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the starflex arm during engine run-up due to inadequate inspection by maintenance personnel.

Findings

Personnel issues	Scheduled/routine inspection - Maintenance personnel
Aircraft	(general) - Failure

Factual Information

History of Flight

Standing-engine(s) operating	Sys/Comp malf/fail (non-power) (Defining event)
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On May 21, 2008, at 1004 eastern daylight time, a Eurocopter AS350 B2, N417AE, was substantially damaged during engine run-up, prior to takeoff at Caffery Heliport, Hiram, Georgia. The certificated commercial pilot and two passengers were not injured. Visual meteorological conditions prevailed and a company flight plan was filed for the positioning flight to Austell, Georgia. The helicopter was registered to GE Business Financial Services Incorporated, and operated by Omniflight under the provisions of Title 14 Code of Federal Regulations (CFR) Part 91.

The pilot stated that after he conducted a preflight inspection, he started the helicopter. As he advanced the throttle from idle to flight rpm, the helicopter shook violently. He said that he immediately conducted an emergency shutdown and inspected the helicopter. During the inspection, he discovered that the tail rotor boom was buckled, and the main rotor starflex arm was broken.

Based on information from the director of maintenance (DOM), the recent maintenance history and inspection status of the helicopter was reviewed. The review revealed that the starflex was not listed on the Aircraft Status Report for the accident aircraft. The DOM further stated that the record keeping process was prone to error, because interpretation of complex component life limit historical records were done by "lesser qualified personnel." An audit of the starflex's life limit status was conducted, and it was discovered that the life limit of 2,200 hours of the starflex had been exceeded by 586.4 operating hours. At the time of the accident, the total time on the starflex arm was 2,786 hours. When the accident aircraft was purchased, the starflex time in service was 2,588 hours. At that time, the operator's conformity inspection failed to discover the excess hours. After the accident the operator immediately audited the time in service of all the starflexes on the remainder of their fleet. No other starflexes were found to have exceeded their life limit.

Pilot Information

Certificate:	Commercial	Age:	59, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Helicopter	Second Pilot Present:	No
Instructor Rating(s):	Instrument helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	February 1, 2008
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	May 1, 2008
Flight Time:	6922 hours (Total, all aircraft), 11 hours (Total, this make and model), 5190 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Eurocopter France	Registration:	N417AE
Model/Series:	AS350 B2	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	9032
Landing Gear Type:	High skid	Seats:	4
Date/Type of Last Inspection:	April 1, 2008 Continuous airworthiness	Certified Max Gross Wt.:	4961 lbs
Time Since Last Inspection:	51 Hrs	Engines:	1 Turbo shaft
Airframe Total Time:	2786 Hrs at time of accident	Engine Manufacturer:	Turbomeca
ELT:	Installed, not activated	Engine Model/Series:	Arriel 1D1
Registered Owner:	GE Business Financial Services	Rated Power:	732 Horsepower
Operator:	OMNIFLIGHT HELICOPTERS INC	Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:		Operator Designator Code:	RMXA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KATL,1026 ft msl	Distance from Accident Site:	21 Nautical Miles
Observation Time:	12:52 Local	Direction from Accident Site:	134°
Lowest Cloud Condition:	Few / 4500 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	15 knots / 19 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	260°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.76 inches Hg	Temperature/Dew Point:	23°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hiram, GA (00GE)	Type of Flight Plan Filed:	Company VFR
Destination:	AUSTELL, GA (34GA)	Type of Clearance:	None
Departure Time:	10:04 Local	Type of Airspace:	

Airport Information

Airport:	Caffery Heliport 00GE	Runway Surface Type:	
Airport Elevation:	957 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

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:	33.874443,-84.743057

Administrative Information

Investigator In Charge (IIC):	Alleyne, Eric
Additional Participating Persons:	Eric Morey; FAA/FSDO; Atlanta, GA
Original Publish Date:	September 26, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=68105

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