



Aviation Investigation Factual Report

Location:	KAUPO, Hawaii	Accident Number:	LAX95LA019
Date & Time:	October 24, 1994, 08:30 Local	Registration:	N5771L
Aircraft:	EUROCOPTER AS-350D	Aircraft Damage:	Substantial
Defining Event:		Injuries:	4 Minor
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled - Sightseeing		

Factual Information

On October 24, 1994, at 0830 hours Hawaii standard time, an Eurocopter AS-350D, N5771L, collided with trees after a loss of power near Kaupo, Hawaii, on the island of Maui. The helicopter was being operated as a sightseeing flight under 14 CFR Part 135 by Papillon Helicopter, Ltd., Honolulu, Hawaii. The helicopter was substantially damaged. The certificated commercial pilot and three passengers received minor injuries. The flight originated in Kahului, Maui, about 0800 hours. Visual meteorological conditions prevailed and a company visual flight rules flight plan was filed.

The pilot reported he heard an explosion followed by the engine out horn while flying at 2,500 feet above mean sea level while over mountainous terrain. The engine temperature (T4) gauge was noted by the pilot at 900 degrees Celsius and the engine chip detector light illuminated. The pilot accomplished an autorotative landing in trees.

The engine, a Lycoming LTS 101-600A3, was examined and partially disassembled on October 25, 1994, under the supervision of the Federal Aviation Administration. Preliminary information from the examination indicated the engine had sustained damage to the axial compressor, compressor stator vanes, and the impeller. The engine was shipped to the National Transportation Safety Board Southwest Regional Office for further examination.

The engine was examined on January 10th and 11th, 1995, by the Safety Board, the Federal Aviation Administration, and the engine manufacturer at a metallurgical laboratory, Fowler, Inc., in Gardena, California. According to the examining metallurgists, portions of the impeller blades were examined microscopically revealing evidence of metal fatigue. The precise origin of the fatigue could not be determined due to smearing of the fracture surface. Pitting was evident throughout the impeller blades. Energy dispersive x ray showed the presence of sulfur and chlorine in corrosion deposits in the pits.

Review of the engine logbook revealed the engine was removed from another airframe (serial No. 1186) on June 12, 1994, and installed in the accident helicopter on September 13, 1994. During the period the engine was not installed in an airframe, a 1,200-hour inspection was performed and several components were replaced. According to the records, the impeller, axial compressor, and compressor stator were not replaced.

The engine logbook records subsequent inspections of the engine on October 6th and 11th, 1994. On October 6, 1994, a 100-hour inspection was performed, and on October 11, 1994, a 100/300-hour inspection was performed. The maintenance manual for the Lycoming LTS 101 engine lists a visual inspection of the compressor section every 100 hours. The inspection details removal of the upper inlet scroll which houses the compressor and inspecting for foreign object damage and cracks.

The maintenance manual also prescribes a daily compressor water rinse to remove salt deposits, followed by inspecting the compressor for cleanliness.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	38,Male
Airplane Rating(s):	None	Seat Occupied:	Right
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 Medical--no waivers/lim.	Last FAA Medical Exam:	October 15, 1993
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	3216 hours (Total, all aircraft), 2100 hours (Total, this make and model), 3150 hours (Pilot In Command, all aircraft), 236 hours (Last 90 days, all aircraft), 96 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	EUROCOPTER	Registration:	N5771L
Model/Series:	AS-350D AS-350D	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	1343
Landing Gear Type:	Skid	Seats:	7
Date/Type of Last Inspection:	October 12, 1994 Annual	Certified Max Gross Wt.:	4300 lbs
Time Since Last Inspection:	53 Hrs	Engines:	1 Turbo shaft
Airframe Total Time:	9146 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	LTS-101-600A3
Registered Owner:	PAPILLON HELICOPTER, LTD	Rated Power:	531 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:		Operator Designator Code:	ILNA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	OGG ,54 ft msl	Distance from Accident Site:	28 Nautical Miles
Observation Time:	07:54 Local	Direction from Accident Site:	300°
Lowest Cloud Condition:	Clear	Visibility	15 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	40°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	24°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	KAHULUI (OGG)	Type of Flight Plan Filed:	Company VFR
Destination:		Type of Clearance:	None
Departure Time:	08:00 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:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	3 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 Minor	Latitude, Longitude:	20.769802,-155.990142(est)

Administrative Information

Investigator In Charge (IIC):	Wilcox, Thomas
Additional Participating Persons:	RICHARD NELSON; HONOLULU MICHAEL J GAMBONE; STRATFORD , CT
Report Date:	June 28, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=28970

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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](#).