



Aviation Investigation Final Report

Location:	HYANNIS, Massachusetts	Accident Number:	NYC82FNA17
Date & Time:	June 23, 1982, 09:10 Local	Registration:	N3601U
Aircraft:	S.N.I.A.S. SA-330J	Aircraft Damage:	Substantial
Defining Event:		Injuries:	13 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled		

Analysis

THE PILOT REPORTED THAT HE TOOK OFF, AND DURING A CLIMB THROUGH ABOUT 800 FT, HE HEARD A LOUD SNAP AND IMMEDIATELY FELT SEVERE LATERAL VIBRATIONS. HE DECLARED AN EMERGENCY AND LANDED WITHOUT FURTHER INCIDENT. AN INVESTIGATION REVEALED THAT THE INBOARD TRAILING EAR OF THE MAIN ROTOR SLEEVE/SPINDLE ASSEMBLY, PN 330A31-002607, FOR THE BLUE BLADE, HAD FAILED. EVIDENCE OF FATIGUE WAS FOUND OVER MOST OF THE FRACTURE SURFACE AND EVIDENCE OF FRETTING CORROSION WAS FOUND AT THE ORIGIN OF THE FATIGUE. ALSO, AN AREA OF FRETTING CORROSION WAS FOUND ON THE TRAILING SIDE FLANGE OF THE HINGE PIN, ON A SURFACE CLAMPED BY THE TORQUE OF THE HINGE PIN NUT. RECORDS SHOWED THAT THE AEROSPATIALE SERVICE BULLETIN 01.35 HAD BEEN COMPLIED WITH ON 3/30/82, AND THAT THE HINGE PIN HAD BEEN REPLACED ON 4/10/82, ABOUT 100 FLIGHT HOURS BEFORE THE FAILURE. A SPOT CHECK OF THE MAINTENANCE FACILITY REVEALED THAT 2 OUT OF 3 TORQUE WRENCHES WERE OVERDUE A CALIBRATION CHECK. THE THIRD PROVIDED 54 INCH LBS WHEN SET FOR 120.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

Findings

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

Phase of Operation: CLIMB

Findings

1. (C) ROTOR SYSTEM,MAIN ROTOR HUB YOKE(SPINDLE) - UNDERTORQUED
2. (C) MAINTENANCE - IMPROPER - COMPANY MAINTENANCE PERSONNEL
3. (C) ROTOR SYSTEM,MAIN ROTOR HUB YOKE(SPINDLE) - CHAFED
4. (C) ROTOR SYSTEM,MAIN ROTOR HUB YOKE(SPINDLE) - FATIGUE

Factual Information

Pilot Information

Certificate:	Airline transport	Age:	37, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Unknown
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	January 11, 1982
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	9469 hours (Total, all aircraft), 1306 hours (Total, this make and model), 6092 hours (Pilot In Command, all aircraft), 31 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	S.N.I.A.S.	Registration:	N3601U
Model/Series:	SA-330J SA-330J	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:		Serial Number:	
Landing Gear Type:		Seats:	19
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	14900 lbs
Time Since Last Inspection:	53 Hrs	Engines:	2 Turbo shaft
Airframe Total Time:	2205 Hrs	Engine Manufacturer:	TURBOMECA
ELT:	Not installed	Engine Model/Series:	IVC
Registered Owner:	PETROLEUM HELICOPTERS	Rated Power:	1170 Horsepower
Operator:	PETROLEUM HELICOPTERS	Operating Certificate(s) Held:	On-demand air taxi (135)
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:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Scattered / 1000 ft AGL	Visibility	3 miles
Lowest Ceiling:	Unknown	Visibility (RVR):	
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	220°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	63°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	HYANNIS , MA (HYA)	Type of Flight Plan Filed:	VFR
Destination:	HYANNIS , MA (HYA)	Type of Clearance:	
Departure Time:	09:00 Local	Type of Airspace:	

Airport Information

Airport:	BARNSTABLE MUNICIPAL HYA	Runway Surface Type:	Asphalt
Airport Elevation:	0 ft msl	Runway Surface Condition:	Dry
Runway Used:	0	IFR Approach:	
Runway Length/Width:	0 ft / 0 ft	VFR Approach/Landing:	Straight-in

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	11 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	13 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):

Additional Participating Persons:

Original Publish Date: June 23, 1983

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=71134>

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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](#).