



Aviation Investigation Final Report

Location:	LAKEHURST, New Jersey	Accident Number:	NYC86FHD01
Date & Time:	July 1, 1986, 19:00 Local	Registration:	N1897Z
Aircraft:	Piasecki Acft. Corp. HELISTAT 97-34J	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal, 3 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation		

Analysis

THE HELISTAT, A HYBRID A/C WITH 4 H-34 MAIN FUSELAGES ATTACHED TO A FRAME ALONG WITH A ZPG-2 HELIUM FILLED ENVELOPE HAD JUST COMPLETED IT FIRST HOVER TEST FLT SUCCESSFULLY AND LANDED. A PWR LOSS WAS NOTED ON THE NO. 3 HELICOPTER AND THE TEST WAS TERMINATED AND THE MOORING MAST CALLED FOR. PRIOR TO RE-MOORING A WIND SHIFT CAUSED AN UNCOMMANDED LEFT TURN WHICH THE PILOT COULD NOT CONTROL WITH THE FLT CONTROLS. WITH A TAILWIND, NO WHEEL BRAKES OR GND STEERING A TAKEOFF WAS ATTEMPTED. THE 4 MAIN LANDING GEAR WHICH HAD NO SHIMMY DAMPNERS STARTED TO SHIMMY. THE FOUR HELICOPTERS STARTED TO REACT TO THE SHIMMY WITH GROUND RESONANCE. AS THE HELISTAT FINALLY LIFTED OFF, THE FOUR INDIVIDUAL HELICOPTERS BROKE OFF AND FELL TO THE GROUND. ONE PILOT RECEIVED FATAL INJURIES, 3 RECEIVED SERIOUS INJURIES AND ONE MINOR INJURIES. THE HELISTAT WAS DESTROYED. THE PRW LOSS ON THE NO. 3 HELICOPTER WAS TRACED TO A MISSING THROTTLE LINKAGE CORRELATION PIN. WHY THE PIN WAS MISSING WAS NOT DETERMINED.

Probable Cause and Findings

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

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF
Phase of Operation: TAXI - FROM LANDING

Findings

1. (C) THROTTLE/POWER LEVER, LINKAGE - DISCONNECTED
2. OBJECT - AIRCRAFT MOVING ON GROUND

Occurrence #2: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: TAXI - FROM LANDING

Findings

3. (C) ROTORCRAFT FLIGHT CONTROL - INADEQUATE
4. (C) ACFT/EQUIP, INADEQUATE DESIGN - MANUFACTURER
5. (F) LANDING GEAR, NORMAL BRAKE SYSTEM - LACK OF
6. (C) ACFT/EQUIP, INADEQUATE HANDLING/PERF CAPABILITIES - MANUFACTURER
7. (F) LANDING GEAR, STEERING SYSTEM - LACK OF
8. WEATHER CONDITION - TAILWIND

Occurrence #3: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

9. (F) LANDING GEAR, MAIN GEAR - VIBRATION
10. RUNNING TAKEOFF - ATTEMPTED - PILOT IN COMMAND
11. (F) ROTOR SYSTEM - VIBRATION

Factual Information

Pilot Information

Certificate:	Airline transport; Flight instructor	Age:	58, Male
Airplane Rating(s):	Single-engine land	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-w/ waivers/lim	Last FAA Medical Exam:	March 3, 1986
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	20500 hours (Total, all aircraft), 1 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piasecki Acft. Corp.	Registration:	N1897Z
Model/Series:	HELISTAT 97-34J HELISTAT 9	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Experimental (Special)	Serial Number:	0001
Landing Gear Type:	Hull	Seats:	8
Date/Type of Last Inspection:	July 1, 1986 Unknown	Certified Max Gross Wt.:	111917 lbs
Time Since Last Inspection:	2 Hrs	Engines:	4 Reciprocating
Airframe Total Time:	5 Hrs	Engine Manufacturer:	WRIGHT
ELT:	Not installed	Engine Model/Series:	R-1820-84C
Registered Owner:	PIASECKI AIRCRAFT CORP.	Rated Power:	1525 Horsepower
Operator:		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:	KNEL,103 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	23:02 Local	Direction from Accident Site:	40°
Lowest Cloud Condition:	Unknown / 5000 ft AGL	Visibility	7 miles
Lowest Ceiling:	Broken / 5000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	6 knots / 12 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	23°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	19:00 Local	Type of Airspace:	Class E

Airport Information

Airport:	LAKEHURST NAEC KNEL	Runway Surface Type:	Asphalt
Airport Elevation:	103 ft msl	Runway Surface Condition:	Dry
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal, 3 Serious, 1 Minor	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal, 3 Serious, 1 Minor	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC): Michaels, R

Additional Participating Persons:

Original Publish Date:

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=30217>

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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](#).