



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	LAKEHURST, NJ	<b>Accident Number:</b>	NYC86FHD01
<b>Date &amp; Time:</b>	07/01/1986, 1900 EST	<b>Registration:</b>	N1897Z
<b>Aircraft:</b>	Piasecki Acft. Corp. HELISTAT 97-34J	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal, 3 Serious, 1 Minor
<b>Flight Conducted Under:</b>	Part 91: General Aviation -		

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## 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 DAMPERS 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

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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

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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

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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

<b>Certificate:</b>	Airline Transport; Flight Instructor	<b>Age:</b>	58, Male
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Helicopter	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--w/ waivers/lim.	<b>Last FAA Medical Exam:</b>	03/03/1986
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	20500 hours (Total, all aircraft), 1 hours (Total, this make and model)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piasecki Acft. Corp.	<b>Registration:</b>	N1897Z
<b>Model/Series:</b>	HELISTAT 97-34J HELISTAT 9	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Experimental	<b>Serial Number:</b>	0001
<b>Landing Gear Type:</b>	Hull	<b>Seats:</b>	8
<b>Date/Type of Last Inspection:</b>	07/01/1986, Unknown	<b>Certified Max Gross Wt.:</b>	111917 lbs
<b>Time Since Last Inspection:</b>	2 Hours	<b>Engines:</b>	4 Reciprocating
<b>Airframe Total Time:</b>	5 Hours	<b>Engine Manufacturer:</b>	WRIGHT
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	R-1820-84C
<b>Registered Owner:</b>	PIASECKI AIRCRAFT CORP.	<b>Rated Power:</b>	1525 hp
<b>Operator:</b>	PIASECKI AIRCRAFT CORP.	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KNEL, 103 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	2302 EST	Direction from Accident Site:	40°
Lowest Cloud Condition:	Unknown / 5000 ft agl	Visibility	7 Miles
Lowest Ceiling:	Broken / 5000 ft agl	Visibility (RVR):	0 ft
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:			
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	1900 EST	Type of Airspace:	Class E

## Airport Information

Airport:	LAKEHURST NAEC (KNEL)	Runway Surface Type:	Asphalt
Airport Elevation:	103 ft	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:	N/A	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):	R J MICHAELS	Report Date:	
Additional Participating Persons:			
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).