



National Transportation Safety Board Aviation Accident Final Report

Location:	RUSSELL, MA	Accident Number:	NYC89DNE01
Date & Time:	12/02/1988, 1015 EST	Registration:	N163B
Aircraft:	BELL 47D1	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal

Flight Conducted Under: Part 91: General Aviation - Instructional

Analysis

THE BELL 47D1 WAS ON A SOLO X-COUNTRY FLIGHT WITH A COMMERCIAL RATED (NON-ROTORCRAFT RATED) PILOT WHO WAS WORKING ON HIS ROTORCRAFT RATING. THE HELICOPTER CRASHED IN A WOODED AREA WITH DEBRIS SPREAD ALONG THE FLIGHT PATH FOR OVER 1/4 MILE. POST CRASH EXAMINATION SHOWED THAT ONE STABILIZER BAR WAS MISSING FROM THE ROTOR HEAD AND HAD FAILED OPPOSITE THE DIRECTION OF ROTATION. THE STABILIZER BAR WAS NOT RECOVERED. THERE WAS EVIDENCE OF BLADE FLAPPING AND LOW ROTOR RPM CONDITIONS. NO EVIDENCE OF A FAILURE ON THE FLIGHT CONTROL SYSTEM, OTHER THAN THE MISSING STABILIZER CONTROL BAR WAS FOUND. NO EVIDENCE OF A ENGINE FAILURE WAS NOTED, ALTHOUGH CONDITIONS WERE PRESENT FOR THE FORMATION OF CARBURETOR ICE.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A PILOT INDUCED LOW ROTOR RPM CONDITION, FOLLOWED BY BLADE FLAPPING AS THE MAIN ROTOR BLADE CONTACTED THE TAIL OF THE HELICOPTER.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CRUISE

Findings

1. (C) ROTORCRAFT FLIGHT CONTROLS - IMPROPER USE OF - PILOT IN COMMAND
2. (C) ROTOR RPM - NOT MAINTAINED - PILOT IN COMMAND
3. AIRCRAFT HANDLING - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings

4. TERRAIN CONDITION - HIGH VEGETATION

Factual Information

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	46, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	09/29/1988
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	1218 hours (Total, all aircraft), 42 hours (Total, this make and model), 21 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BELL	Registration:	N163B
Model/Series:	47D1 47D1	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	17
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	11/18/1988, 100 Hour	Certified Max Gross Wt.:	2950 lbs
Time Since Last Inspection:	12 Hours	Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	FRANKLIN
ELT:	Not installed	Engine Model/Series:	6V-335-A
Registered Owner:	ASSOCIATED AIR SERVICES, INC.	Rated Power:	200 hp
Operator:	ASSOCIATED AIR SERVICES, INC.	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Unknown	Condition of Light:	Day
Observation Facility, Elevation:	BAF, 271 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	0945 EST	Direction from Accident Site:	100°
Lowest Cloud Condition:	Unknown / 3000 ft agl	Visibility	35 Miles
Lowest Ceiling:	Unknown / 3000 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	13 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	300°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	0°C / -8°C
Precipitation and Obscuration:			
Departure Point:	WESTFIELD, MA (BAF)	Type of Flight Plan Filed:	None
Destination:	GRT. BARRINGTON, MA (GBR)	Type of Clearance:	None
Departure Time:	1000 EST	Type of Airspace:	Class G

Airport Information

Airport:	UNKNOWN	Runway Surface Type:	
Airport Elevation:	0 ft	Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	JAMES W GEBRYEL	Report Date:	06/11/1990
Additional Participating Persons:	JOSE SANTOS; WINDSOR LOCKS, CT DAVID HUNTZINGER RAYMOND R CLOUTIER		
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 pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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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](#).