



National Transportation Safety Board Aviation Accident Final Report

Location:	HANSON, MA	Accident Number:	NYC90DNA04
Date & Time:	08/01/1990, 0730 EDT	Registration:	N34691
Aircraft:	BELL 47G-3B-1	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

THE PILOT STATED THAT WHILE HE WAS OPERATING THE HELICOPTER AT 100 FEET ABOVE THE GROUND IN AERIAL APPLICATION ACTIVITIES, THERE WAS A LOSS OF TAIL ROTOR CONTROL. THE HELICOPTER ENTERED A 'SLOW SPIN' AND DESCENDED INTO THE GROUND. POST-ACCIDENT INVESTIGATION REVEALED THAT THE TAIL ROTOR DRIVE SHAFT WAS 'SHEARED OFF' BETWEEN THE NUMBER 5 AND NUMBER 6 BEARINGS.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S LOSS OF CONTROL OF THE HELICOPTER DUE TO THE FAILURE OF THE TAIL ROTOR DRIVE SHAFT.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. (C) ROTOR DRIVE SYSTEM, TAIL ROTOR DRIVE SHAFT - FAILURE, TOTAL

Occurrence #2: HARD LANDING
Phase of Operation: DESCENT - UNCONTROLLED

Findings

2. TERRAIN CONDITION - GRASS

Factual Information

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	32, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	Instrument Airplane; Instrument Helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	09/01/1989
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	4100 hours (Total, all aircraft), 2000 hours (Total, this make and model), 3700 hours (Pilot In Command, all aircraft), 150 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BELL	Registration:	N34691
Model/Series:	47G-3B-1 47G-3B-1	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Restricted; Normal	Serial Number:	3822
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	07/14/1990, 100 Hour	Certified Max Gross Wt.:	2950 lbs
Time Since Last Inspection:	11 Hours	Engines:	1 Reciprocating
Airframe Total Time:	5306 Hours	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, aided in locating accident	Engine Model/Series:	TV0-435-B1A
Registered Owner:	ASHLEY CRANBERRY ENTERPRISE	Rated Power:	260 hp
Operator:	ASHLEY CRANBERRY ENTERPRISE	Operating Certificate(s) Held:	
Operator Does Business As:	FIREFLY INC.	Operator Designator Code:	FIWG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0000	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	0 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	350°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	22° C
Precipitation and Obscuration:			
Departure Point:	WAREHAM, MA (NONE)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	0000	Type of Airspace:	Class G

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	JOHN GAGLIARDI	Report Date:	12/14/1992
Additional Participating Persons:	ANDRE LAMARRE		
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 pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).