



Aviation Investigation Final Report

Location:	HANSON, Massachusetts	Accident Number:	NYC90DNA04
Date & Time:	August 1, 1990, 07:30 Local	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:	Commercial; Flight instructor	Age:	32, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
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:	September 1, 1989
Occupational Pilot:	Yes	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:	
Airworthiness Certificate:	Normal; Restricted (Special)	Serial Number:	3822
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	July 14, 1990 100 hour	Certified Max Gross Wt.:	2950 lbs
Time Since Last Inspection:	11 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	5306 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, aided in locating accident	Engine Model/Series:	TV0-435-B1A
Registered Owner:	ASHLEY CRANBERRY ENTERPRISE	Rated Power:	260 Horsepower
Operator:		Operating Certificate(s) Held:	
Operator Does Business As:	FIREFLY INC.	Operator Designator Code:	FIWG

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:	Clear	Visibility	
Lowest Ceiling:	None	Visibility (RVR):	
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:	No Obscuration; No Precipitation		
Departure Point:	WAREHAM , MA (NONE)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	00:00 Local	Type of Airspace:	Class G

Airport Information

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

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC): Gagliardi, John

Additional Participating Persons: ANDRE LAMARRE;

Original Publish Date: December 14, 1992

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.ntsb.gov/Docket?ProjectID=36505>

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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](#).