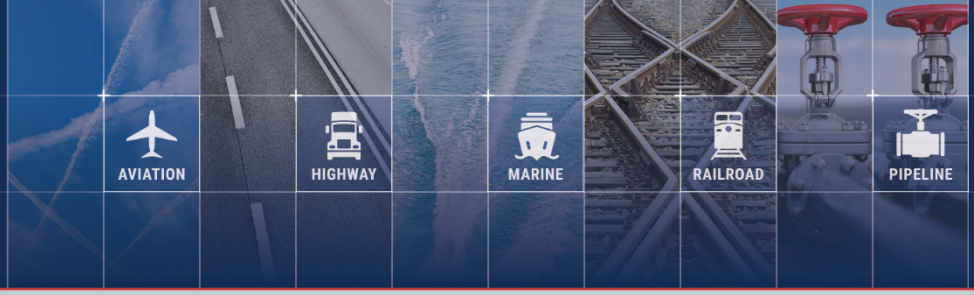

Aviation Investigation Final Report

Location:	POMPANO BEACH, Florida	**Accident Number:**	MIA96LA061
Date & Time:	January 11, 1996, 09:30 Local	**Registration:**	N33HF
Aircraft:	BELL 206B	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

THE RATED STUDENT PILOT WAS DEMONSTRATING A STRAIGHT-IN AUTOROTATION. HE ENTERED THE MANEUVER AT ABOUT 500 FEET AGL, AND A FLARE WAS INITIATED AT ABOUT 50 FEET AGL. INITIAL COLLECTIVE PITCH APPLICATION WAS MADE BETWEEN 15 TO 20 FEET AGL, AND HE DID NOT LEVEL THE HELICOPTER WITH CYCLIC. THE FLIGHT INSTRUCTOR (CFI) ATTEMPTED TO LEVEL THE HELICOPTER WITH CYCLIC CONTROL, BUT WAS UNABLE TO COMPLETELY LEVEL THE HELICOPTER DUE TO A PREMATURE APPLICATION OF ALL COLLECTIVE PITCH BY THE RATED STUDENT PILOT AND LOW ROTOR RPM. THE HELICOPTER COLLIDED WITH THE GROUND IN A NOSE HIGH ATTITUDE ON THE HEELS OF THE SKIDS. THE NOSE OF THE HELICOPTER THEN PITCHED DOWN, AND THE MAIN ROTOR BLADE COLLIDED WITH THE TAILBOOM ASSEMBLY.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: IMPROPER FLARE BY THE RATED STUDENT PILOT, AND INADEQUATE SUPERVISION BY THE FLIGHT INSTRUCTOR.

Findings

Occurrence #1: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

1. (C) FLARE - IMPROPER - DUAL STUDENT
2. (C) SUPERVISION - INADEQUATE - PILOT IN COMMAND(CFI)

Factual Information

On January 11, 1996, about 0930 eastern standard time, a Bell 206B, N33HF, registered to Heliflight Inc., operating as a 14 CFR Part 141 instructional flight, experienced a hard landing during an autorotation at Pompano Air Park, Pompano Beach, Florida. Visual meteorological conditions prevailed and no flight plan was filed. The airline transport pilot-in-command /certified flight instructor and airline transport pilot receiving instruction reported no injuries. The flight originated from Fort Lauderdale Executive Airport about 15 minutes before the accident.

The flight instructor stated the student pilot was making a straight in autorotation to a taxiway. During the autorotation the student pilot informed him the rotor rpm was low. a visual check of the rotor rpm revealed it was in the low to mid green area. The student pilot started the deceleration at 50 feet, made an initial collective pitch pull at about 15 to 20 feet, and then lowered the collective to the full down position. The helicopter was at about 5 to 10 feet in a nose-high attitude when the student pilot pulled in nearly full up collective. The flight instructor attempted to level the helicopter, but it would not level due to low rotor rpm, caused by the premature collective pitch pull by the student pilot. The helicopter collided with the ground in a nose-high attitude on the heels of the skids. The nose of the helicopter pitched down and the main rotor blades collided with the tailboom assembly.

The student pilot stated he entered the autorotation as instructed by the flight instructor. A few seconds later he informed the flight instructor that the rotor rpm was in the low green. The instructor responded, "everything is ok." The student pilot verified that he had the collective pitch in the full down position. He could feel the flight instructor on the flight controls with him during the deceleration, initial pitch, and cushioning pitch. He thought he managed to land the helicopter smoothly with a very gentle touchdown.

Examination of the helicopter by an airframe and powerplant mechanic with inspection authority was conducted. The inspection, revealed the helicopter touched down on the aft portion of the skids, and the tailboom assembly pitched upward. One main rotor blade struck the tailboom and severed the tail rotor driveshaft. The rotating disk of the main rotor swashplate assembly struck the transmission cowling on the aft left side of the main rotor pylon damaging the air inlet cowling.

Pilot Information

Certificate:	Airline transport	**Age:**	33,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	Yes
Instructor Rating(s):	Helicopter	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	September 26, 1995
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	3900 hours (Total, all aircraft), 400 hours (Total, this make and model), 3800 hours (Pilot In Command, all aircraft), 140 hours (Last 90 days, all aircraft), 37 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BELL	**Registration:**	N33HF
Model/Series:	206B 206B	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	192
Landing Gear Type:	Skid	**Seats:**	5
Date/Type of Last Inspection:	November 17, 1995 Annual	**Certified Max Gross Wt.:**	3200 lbs
Time Since Last Inspection:	76 Hrs	**Engines:**	1 Turbo shaft
Airframe Total Time:	11343 Hrs	**Engine Manufacturer:**	ALLISON
ELT:	Installed, not activated	**Engine Model/Series:**	250-C20-B
Registered Owner:	HELIFLIGHT INC	**Rated Power:**	420 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:	PMP ,21 ft msl	**Distance from Accident Site:**	
Observation Time:	09:47 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 25000 ft AGL	**Visibility**	7 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	260°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(PMP)	**Type of Flight Plan Filed:**	None
Destination:	(PMP)	**Type of Clearance:**	None
Departure Time:	09:25 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	POMPANO BEACH AIR PARK PMP	**Runway Surface Type:**	
Airport Elevation:	21 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	26.230575,-80.129249(est)

Administrative Information

Investigator In Charge (IIC):	Smith, Carrol
Additional Participating Persons:	JAMES R PICCOLI; FORT LAUDERDALE, FL
Original Publish Date:	May 9, 1996
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=37969