Aviation Investigation Final Report

Location:	LONGMONT, Colorado	**Accident Number:**	DEN99LA173
Date & Time:	September 29, 1999, 18:40 Local	**Registration:**	N84DH
Aircraft:	Enstrom 280C	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

While practicing autorotations, the pilot, who was a commercial pilot in single and multiengine aircraft but a student pilot in helicopters, experienced a loss of engine power for unknown reasons. During the full autorotation, which was necessitated by the power loss, the landing was hard and resulted in main rotor flex, which cut off the tail boom. Density altitude at the time was 9,000 feet.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: An inaccurate touchdown during a full autorotation, which resulted in main rotor flex which cut off the tail boom. Factors were the pilot's lack of total experience in helicopters and high density altitude.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: APPROACH

Findings
1. REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Findings
2. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE
3. AUTOROTATION - PERFORMED - PILOT IN COMMAND
4. (C) TOUCHDOWN - INACCURATE - PILOT IN COMMAND
5. (F) LACK OF TOTAL EXPERIENCE IN KIND OF AIRCRAFT - PILOT IN COMMAND

Factual Information

On September 29, 1999, at 1840 mountain daylight time, an Enstrom 280C helicopter, N84DH, sustained substantial damage during a hard landing, after a practice autorotation, at Vance Brand Airport, Longmont, Colorado. The non-helicopter rated commercial pilot and sole occupant was not injured. The flight was a local solo instructional flight operating under Title 14 CFR Part 91 and no flight plan was filed. Visual meteorological conditions prevailed.

According to the pilot, he was practicing autorotations and the engine lost power while in an autorotation. During the ensuing hard landing, the main rotor flexed and cut of the tail boom. Density altitude at the time was 9,000 feet.

The pilot reported that he had 40 hours flight experience in helicopters and that all his helicopter experience was in the Enstrom 280C. He said he had 11 hours of helicopter experience in the 30 days prior to the accident, and 40 hours in the preceding 90 days.

No evidence was developed during the investigation as to the reason for the power loss.

Pilot Information

Certificate:	Commercial	**Age:**	46,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	December 29, 1999
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	2127 hours (Total, all aircraft), 40 hours (Total, this make and model), 2004 hours (Pilot In Command, all aircraft), 91 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Enstrom	**Registration:**	N84DH
Model/Series:	280C 280C	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1055
Landing Gear Type:	Skid	**Seats:**	3
Date/Type of Last Inspection:	April 5, 1999 Annual	**Certified Max Gross Wt.:**	2200 lbs
Time Since Last Inspection:	12 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	688 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	HIO-360-E1AD
Registered Owner:	MILE HIGH SKYDIVERS, INC.	**Rated Power:**	205 Horsepower
Operator:	JEFFERY J. SANDS	**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:	BJC ,5671 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	18:45 Local	**Direction from Accident Site:**	170°
Lowest Cloud Condition:	Clear	**Visibility**	40 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	250°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	36°C / 30°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(2V2)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	17:30 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	VANCE BRAND 2V2	**Runway Surface Type:**	Concrete
Airport Elevation:	5050 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	29	**IFR Approach:**	None
Runway Length/Width:	4800 ft / 75 ft	**VFR Approach/Landing:**	Forced landing

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:**	40.169178,-105.109924(est)

Administrative Information

Investigator In Charge (IIC):	Wiemeyer, Norman
Additional Participating Persons:	RANDY HOLDER; DENVER , CO
Original Publish Date:	June 22, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=47476