Aviation Investigation Final Report

Location:	BRENTWOOD, California	**Accident Number:**	LAX00LA216
Date & Time:	June 5, 2000, 16:00 Local	**Registration:**	N2029H
Aircraft:	Schweizer 269C-1	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The solo student pilot was practicing quick stop maneuvers. He reported that, during one maneuver, the helicopter was nearly stopped in a high hover at 30 feet agl, and he was descending to low hover when the helicopter started vibrating and yawed to the left. The controls became ineffective and the helicopter started spinning around until it impacted the ground and then rolled on its side. When examined after the accident, the main rotor blades exhibited modest leading edge damage, modest chordwise striations, and approximately 20 degrees of uniform root-to-tip upward bending deformation. One tail rotor blade was undamaged and the other was bent about 10 degrees tip-inboard at the midspan. The engine was started and ran smoothly. No preaccident mechanical anomalies were noted.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The student's improper execution of a quick-stop maneuver in that he misjudged his altitude and failed to terminate at a stationary hover prior to descending to a low hover. This resulted in an excessive engine power requirement and the student improperly coordinated the use of the collective and anti-torque controls.

Findings

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

Findings
1. (C) MANEUVER - IMPROPER - PILOT IN COMMAND
2. (C) ALTITUDE - MISJUDGED - PILOT IN COMMAND
3. (C) ROTORCRAFT FLIGHT CONTROLS - IMPROPER USE OF - PILOT IN COMMAND
4. DESCENT - NOT CORRECTED - PILOT IN COMMAND

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

Factual Information

On June 5, 2000, at 1600 hours Pacific daylight time, a Schweizer 269C-1, N2029H, was substantially damaged when the pilot lost control of the helicopter during a practice quick-stop maneuver and impacted the ground near Brentwood, California. The student pilot, the sole occupant, was not injured. The instructional flight was operated by Helicopter Adventures, Inc., of Concord, California, under 14 CFR Part 91. Visual meteorological conditions prevailed and no flight plan was filed. The flight departed from Concord about 1430.

The pilot reported that, during one quick-stop maneuver, the helicopter was nearly stopped in a high hover and he was descending to low hover when the helicopter started vibrating and yawed to the left. The controls became ineffective and the helicopter started spinning around until it impacted the ground and then rolled on its side. The pilot's flight instructor said the student told him he performed the quick stop at 30 feet agl.

The helicopter was examined in the impound facility on June 19, 2000. The flight control linkage was intact except for one fractured blade pitch control link rod end fitting and the anti-torque push-pull tube at the fuselage/tail boom juncture. The fracture surfaces of both components exhibited a uniform, shiny, metallic appearance. The main rotor blades exhibited modest leading edge damage, modest chordwise striations, and approximately 20 degrees of uniform root-to-tip upward bending deformation. One tail rotor blade was undamaged and the other was bent about 10 degrees tip-inboard at the midspan. The main and tail rotor transmissions turned freely and smoothly when rotated by hand and the magnetic plugs were free of debris. The engine was started (with the transmission disconnected) and ran smoothly at 2,600 rpm for about 5 minutes. The magneto check was normal and engine instrument indications were within normal limits.

Pilot Information

Certificate:	Student	**Age:**	26,Male
Airplane Rating(s):	None	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	January 13, 2000
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	87 hours (Total, all aircraft), 21 hours (Pilot In Command, all aircraft), 60 hours (Last 90 days, all aircraft), 33 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Schweizer	**Registration:**	N2029H
Model/Series:	269C-1 269C-1	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	0100
Landing Gear Type:	Skid	**Seats:**	2
Date/Type of Last Inspection:	April 26, 2000 100 hour	**Certified Max Gross Wt.:**	1750 lbs
Time Since Last Inspection:	96 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	395 Hrs	**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	HO-360-D1A
Registered Owner:	HELICOPTER ADVENTURES INC.	**Rated Power:**	180 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:	CCR ,23 ft msl	**Distance from Accident Site:**	17 Nautical Miles
Observation Time:	17:53 Local	**Direction from Accident Site:**	270°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	72°C / 52°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	CONCORD , CA (CCR)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	14:30 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
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):	Parker, Richard
Additional Participating Persons:	DENNIS D POLLARD; OAKLAND , CA
Original Publish Date:	July 30, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49357