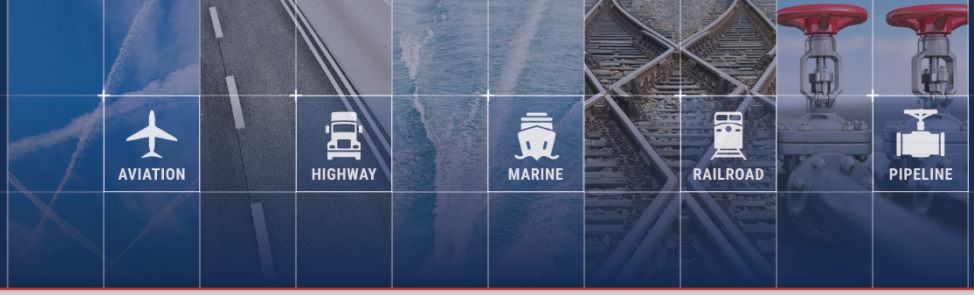

Aviation Investigation Final Report

Location:	Brentwood, California	**Accident Number:**	LAX04CA233
Date & Time:	June 5, 2004, 16:00 Local	**Registration:**	N9421K
Aircraft:	Schweizer 269C-1	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The helicopter collided with terrain and rolled over while hovering above flat terrain. The student pilot was practicing hover techniques by utilizing the controls individually. While the student was manipulating the cyclic, the certified flight instructor (CFI) noticed that the friction setting on the collective had been engaged. As the CFI was focusing on the friction setting for the collective, the student made a large forward cyclic input. The helicopter responded in an extreme nose down position and the CFI attempted to counteract the student's abrupt maneuver. The helicopter impacted terrain and rolled over the nose, coming to rest on the right side. The CFI reported no preimpact mechanical malfunctions or failures with the helicopter.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the student's improper use of the cyclic control, the flight instructor's inadequate supervision, and his delayed remedial action. A factor in the accident was the CFI's diverted attention.

Findings

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

Findings
1. LOW ALTITUDE FLIGHT/MANEUVER - ATTEMPTED - DUAL STUDENT
2. (C) CYCLIC - IMPROPER USE OF - DUAL STUDENT
3. (C) SUPERVISION - INADEQUATE - PILOT IN COMMAND(CFI)
4. (F) DIVERTED ATTENTION - PILOT IN COMMAND(CFI)
5. (C) REMEDIAL ACTION - DELAYED - PILOT IN COMMAND(CFI)

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: HOVER - IN GROUND EFFECT

Findings
6. TERRAIN CONDITION - GROUND

Occurrence #3: ROLL OVER
Phase of Operation: HOVER - IN GROUND EFFECT

Factual Information

On June 5, 2004, about 1600 Pacific daylight time, a Schweizer 269C-1, N9421K, collided with terrain and rolled over near Brentwood, California. Helicopter Adventures, Inc., was operating the helicopter under the provisions of 14 CFR Part 91. The certified flight instructor (CFI) and the student pilot were not injured; the helicopter sustained substantial damage. The local instructional flight departed Buchanan Field Airport, Concord, California, about 1500. Visual meteorological conditions prevailed, and a company visual flight rules flight plan had been filed. The wreckage was at 37 degrees 53 minutes north latitude and 121 degrees 45 minutes west longitude.

In a written statement, the operator of the helicopter stated that the CFI had planned to take the student pilot to the Silva Ranch practice area, about 15 miles east of Concord. During the en route portion of the flight, the student practiced maneuvering the helicopter in straight and level flight. Upon arriving at the practice area (a large flat valley), the CFI instructed the student on hover techniques by demonstrating the use of control inputs. The student practiced maneuvering the helicopter via the use of a sole control input, starting with pedals, then collective, followed by cyclic. While the student was manipulating the cyclic, the CFI noted that the friction setting on the collective had been engaged, and he attempted to disengage it.

As the CFI was focusing his attention on the friction setting for the collective, the student made a large forward cyclic input. The CFI input aft cyclic and increased the collective in an effort to counteract the student's abrupt maneuver and maintain ground separation. The helicopter impacted the ground and rolled over.

In a written statement, the CFI reported that, while maneuvering about 3 to 4 feet above ground level, he noticed that the collective was difficult to adjust. He glanced down at the collective and realized that the collective friction had been activated. (According to the Schweitzer Pilot's Operating Handbook, the friction control is activated by adjustment of a lever.) While the CFI attempted to adjust the friction setting, the student made a large forward cyclic input. The helicopter responded in an extreme nose down position and began to move forward. The helicopter impacted terrain and rolled over the nose, coming to rest on the right side. The CFI reported no preimpact mechanical malfunctions or failures with the helicopter.

Flight instructor Information

Certificate:	Commercial; Flight instructor	**Age:**	29,Male
Airplane Rating(s):	None	**Seat Occupied:**	
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	Yes
Instructor Rating(s):		**Toxicology Performed:**	No
Medical Certification:	Class 2	**Last FAA Medical Exam:**	April 9, 2004
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	237 hours (Total, all aircraft), 179 hours (Total, this make and model), 64 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft)		

Student pilot Information

Certificate:	None	**Age:**	22,Male
Airplane Rating(s):	None	**Seat Occupied:**	
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):		**Toxicology Performed:**	No
Medical Certification:	None	**Last FAA Medical Exam:**	
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	17 hours (Total, all aircraft), 4 hours (Total, this make and model), 17 hours (Last 90 days, all aircraft), 17 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Schweizer	**Registration:**	N9421K
Model/Series:	269C-1	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	0141
Landing Gear Type:	Skid	**Seats:**	
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	HO-360
Registered Owner:	North Bay Enterprises Inc.	**Rated Power:**	
Operator:	Helicopter Adventures Inc.	**Operating Certificate(s) Held:**	None

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:		**Visibility**	
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	
Precipitation and Obscuration:			
Departure Point:	Concord, CA (CCR)	**Type of Flight Plan Filed:**	Company VFR
Destination:	Concord, CA	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class G

Airport Information

Airport:	Buchanan Field Airport CCR	**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	
Total Injuries:	2 None	**Latitude, Longitude:**	37.891666,-121.757225

Administrative Information

Investigator In Charge (IIC):	Jones, Patrick
Additional Participating Persons:	Tim Jarrard; Federal Aviation Administration; Oakland, CA
Original Publish Date:	September 1, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=59404