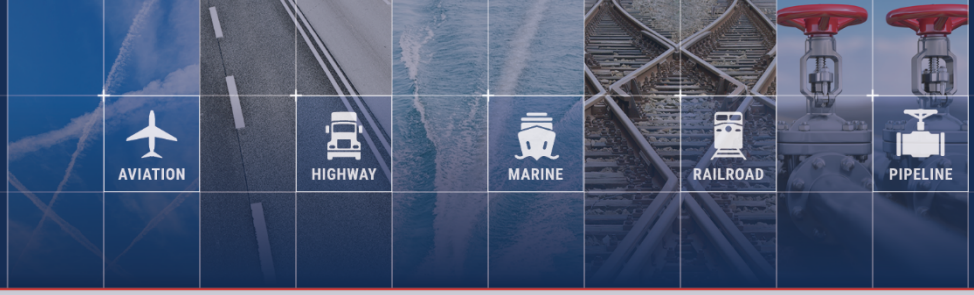

Aviation Investigation Factual Report

Location:	Sunol, California	**Accident Number:**	LAX08LA213
Date & Time:	July 4, 2008, 00:30 Local	**Registration:**	N2011A
Aircraft:	Schweizer 269 C-1	**Aircraft Damage:**	Destroyed
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Instructional		

Factual Information

HISTORY OF FLIGHT

On July 04, 2008, about 0030 Pacific daylight time, a Schweizer 269C-1, N2011A, collided with transmission wires while en route over the Sinclair Freeway Interstate 680 (I-680) in Sunol, California. Following the collision, the helicopter was consumed by fire and destroyed. Silicon Valley Helicopters was operating the helicopter under the provisions of 14 Code of Federal Regulations Part 91. The certificate flight instructor (CFI) and pilot undergoing instruction were killed. The night cross-country flight originated from Byron Airport, Byron, California, about 1130 on July 03, and was destined for the operator's base at Reid-Hillview Airport of Santa Clara County, San Jose, California. Visual meteorological conditions prevailed, and a flight plan had not been filed.

The night cross-country flight originated from San Jose en route on a 50-mile flight to Metropolitan Airport, Stockton, California. Thereafter, the pilots flew about 22 miles to Byron and refueled the helicopter. The CFI telephoned his spouse from the airport and indicated he would arrive back in San Jose in 45 minutes.

A National Transportation Safety Board investigator interviewed a witness immediately following the accident. The witness recalled observing a small helicopter ahead of him while driving his automobile southbound on the I-680. He noted the fog was low and the helicopter remained under the clouds. The helicopter's ground speed began to slow and in reaction he slowed his automobile to about 50 mph, thinking that the helicopter may be having an emergency and needing to land.

The witness further stated that he rolled down his windows and exited off the interstate, continuously watching the helicopter as it increased speed and altitude. Hearing nothing unusual, the witness entered back on the freeway still following the helicopter. The helicopter gradually drifted south and the grade of the interstate increased. He observed an explosion as the helicopter contacted transmission wires that crossed over the interstate. The helicopter came to rest on a street adjacent to the interstate and erupted into flames.

PERSONNEL INFORMATION

Certified Flight Instructor (CFI)

The CFI, age 27, held a commercial pilot certificate with ratings for rotorcraft-helicopters and instrument (rotorcraft), issued on January 2006. He additionally held a flight instructor certificate with ratings for rotorcraft-helicopters and instrument, issued in April 2006. He held a second-class airman medical certificate issued on June 2007, with no limitations.

According to the CFI's personal flight logbook, he had amassed 588.8 hours total time, all of which was in rotorcraft and a majority in the same make and model as the accident helicopter. The CFI had accumulated about 264 hours in the capacity of a flight instructor. He was hired with the operator in June 2007, the same time he moved to the area.

Based on the airport identifiers listed in the logbook for flight origin and destination points, the CFI accumulated a majority of his flying hours around San Jose since June 2007. There was one recorded entry dated April 28, 2008, where the CFI logged a 2.4-hour roundtrip flight from San Jose to Byron, while operating the accident helicopter. The flight is described in the remarks section as night cross-country for commercial regulations and a student's name is listed.

A former check pilot of the CFI stated that about 14 to 15 months prior to the accident, they flew together in an area familiarization flight. The check pilot recalled that during this flight they maneuvered the helicopter north on I-680 and continued to a lake by the accident site. At that time, the check pilot pointed out high power lines that were stretched across the interstate and relayed to the CFI that they were difficult to discern and had resulted in several accidents.

During an interview with a Safety Board investigator, the CFI's spouse stated that he initially began flying in Scotland and was very familiar with cloudy weather conditions. She noted that he was comfortable maneuvering close to clouds and fog, as a great deal of weather in Scotland had undesirable conditions for flying.

Pilot Undergoing Instruction (PUI)

A review of Federal Aviation Administration (FAA) airman records revealed that the PUI, age 39, held a private pilot certificate with a rating for rotorcraft-helicopters. He additionally held a CFI with ratings for airplane single and multiengine land and instrument flight. The rotorcraft helicopter rating was issued May 2007. The pilot held a third-class medical certificate that was issued April 2006, with no limitations.

According to the pilot's personal flight logbook, he had 1,496.1 hours total time, with 85.2 hours accrued in rotorcraft, and 670.3 hours accrued in the capacity of a CFI for fixed-wing airplane. According to the records, the CFI and PUI had flown together on two prior occasions, equating to 1.4 hours in the accident helicopter. The last date they had flown together was April 18, 2008, which coincided with the last time the PUI had flown the same make and model as the accident helicopter.

AIRCRAFT INFORMATION

The accident helicopter, a Schweizer 269C-1, serial number 0016, was manufactured in 1995. According to the maintenance records, the airframe had accumulated a total time in service of about 644 hours. The most recent annual inspection was signed by a mechanic, as completed

on July 20, 2007.

The maintenance records disclosed that the Lycoming HO-360-C1A engine, serial number L6420-36A, was the originally installed on the helicopter in October 2004. The engine logbook indicated that the last annual inspection was completed on March 04, 2008, at an engine total time of 1233.6.

METEOROLOGICAL

A routine aviation weather report (METAR) for Livermore Municipal Airport, Livermore, California, located 11 miles northeast of the accident, was issued at 0053. It stated: skies clear; visibility 10 statute miles; winds from 280 degrees at 10 knots; temperature 59 degrees Fahrenheit; dew point 55 degrees Fahrenheit; and altimeter 29.96 inHg.

An FAA inspector arrived at the accident site about 3 hours after it occurred. He stated that upon arrival, he noted that the fog bank was low enough that the he could not discern the transmission towers or wires. He approximated the cloud layer was about 200 feet above ground level (agl). He added that he had to utilize his windshield wipers while driving to the accident due to excessive moisture.

WRECKAGE AND IMPACT

The accident site was located in a small canyon, which is about 3.5 miles in length and oriented east-west. Interstate 680, an eight-lane interstate, ran through the canyon connecting the inland area to the bay area. The elevation at the accident site was about 655 feet mean seal level (msl), with the surrounding hills about 800 feet msl. The main wreckage, consisting of the fuselage and engine, came to rest on Sheridan Road, which adjoins perpendicular to the interstate. Power lines were located adjacent to the wreckage with four major support structures (unlit) on either side of the interstate; the tallest of which was 120 feet agl and the furthest east on the south side of the interstate. The wires were oriented northwest-southeast and crossed the interstate at a near 45-degree angle, with colored balls strewn on the highest wires. These were the only wires that cross over the interstate in the stretch of the canyon.

The postimpact fire spread into the hilly area east of I-680, consuming about 6.1 acres adjacent to the interstate's asphalt. Following the accident, about 750 Pacific Gas and Electric Company customers in the Sunol area without power until about 03:40

The helicopter sustained thermal damage in the postcrash fire with the exception of the intact main rotor head, tail boom, and tail rotor. According to the FAA inspector, there were markings to indicate that the helicopter contacted a high tension wire, severing it. There are two high tension towers on the hill to the east of the accident site; one routed three high tension wires and the other had six high tension wires.

A detailed wreckage and impact report with accompanying pictures is contained in the public

docket for this accident.

MEDICAL AND PATHOLOGICAL

The Alameda County Sheriff's Office county coroner performed autopsies on both the pilots. The FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing on the CFI. The specimens tested negative for ethanol.

TESTS AND RESEARCH

Wreckage Examination

A Safety Board investigator examined the wreckage on July 23, 2008, at the facilities of Plain Parts, Pleasant Grove, California. The entire wreckage had sustained significant thermal damage. Examination of the airframe and engine revealed no evidence of mechanical malfunctions of failures that would have precluded normal operation. A detailed examination report is contained in the public docket for this accident.

Global Positioning System (GPS) Data

Investigators found a Garmin GPSMAP 496, battery-powered portable GPS receiver within the wreckage. The unit includes a built-in Jeppesen database and is capable of receiving XM satellite radio for flight information. The unit stores date, route-of-flight, and flight-time information for up to 50 flights; all recorded data is stored in non-volatile1 memory.

Recorded data plots were recovered for the time frame that matched the anticipated flight track of the helicopter en route toward San Jose. The track began at 1050:12 at Stockton and continued to Byron Airport, where the time lapses from 1116:57 to 1203:32. After leaving the airport, the flight path continues to the southwest until adjoining the I-680 at a recorded altitude of 816 feet msl. The path continues along the interstate for 3 miles oscillating between altitudes of 300 to 700 feet msl toward the accident site between 30 to 50 miles per hour (mph).

The last four hits of the flight track occurred over 23 seconds from 1228:36 to 1228:59. During this time the speed slowed from 31 mph to 24 mph to unknown and the altitude was recorded as follows: 704, 712, 756, 685 feet msl. The direction of travel changed from 227 degrees true (first hit) to 133 degrees true (last hit).

ADDITIONAL INFORMATION

The San Francisco VFR Terminal Area Chart, dated March 18, 2008 (72nd edition), pictorially depicted a tower and the power lines, showing them crossing the interstate in the area of the accident site.

Flight instructor Information

Certificate:	Commercial; Flight instructor	**Age:**	27,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; Instrument helicopter	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	June 1, 2008
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	589 hours (Total, all aircraft)		

Pilot Information

Certificate:	Commercial; Flight instructor; Private	**Age:**	39,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	April 1, 2006
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1496 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Schweizer	**Registration:**	N2011A
Model/Series:	269 C-1	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	0016
Landing Gear Type:	Skid	**Seats:**	2
Date/Type of Last Inspection:	July 20, 2007 Annual	**Certified Max Gross Wt.:**	2050 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	644 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	HIO-360-D1A
Registered Owner:	Quadrus Inc.	**Rated Power:**	190 Horsepower
Operator:	Silicon Valley Helicopters	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	LVK,400 ft msl	**Distance from Accident Site:**	11 Nautical Miles
Observation Time:	00:53 Local	**Direction from Accident Site:**	45°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	280°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.95 inches Hg	**Temperature/Dew Point:**	15°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Byron, CA (C83)	**Type of Flight Plan Filed:**	None
Destination:	San Jose, CA (RHV)	**Type of Clearance:**	None
Departure Time:	11:30 Local	**Type of Airspace:**	

Airport Information

Airport:	Reid-Hillview Airport RHV	**Runway Surface Type:**	
Airport Elevation:	135 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	37.561668,-121.904998

Administrative Information

Investigator In Charge (IIC):	Keliher, Zoe
Additional Participating Persons:	Dennis Pollard; Federal Aviation Administration; Oakland, CA
Report Date:	February 24, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=68398