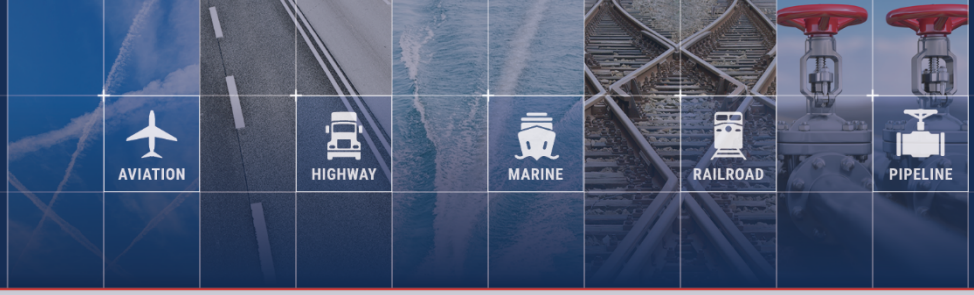

Aviation Investigation Final Report

Location:	ROUND MOUNTAIN, California	**Accident Number:**	LAX95FA161
Date & Time:	April 12, 1995, 12:20 Local	**Registration:**	N5461E
Aircraft:	HELIO H-250	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

A GROUND WITNESS LOCATED 15 MILES FROM THE ACCIDENT REPORTED HEARING AN AIRPLANE AT ABOUT THE TIME OF THE ACCIDENT. HE REPORTED THAT CLOUDS OBSCURED THE MOUNTAIN PEAKS AND THAT HE WAS UNABLE TO SEE THE AIRPLANE. THE GROUND WITNESS ALSO SAID THAT RAIN, SLEET, SNOW FLURRIES, AND HIGH WINDS EXISTED, AND THE GROUND VISIBILITY WAS LESS THAN 200 FEET. THE WRECKAGE EXAMINATION DISCLOSED THE AIRPLANE'S LEFT WING STRUCK A TREE IN A NEAR LEVEL FLIGHT ATTITUDE. A WEATHER BRIEFING WAS NOT OBTAINED BEFORE THE ACCIDENT FLIGHT.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's poor preflight planning/preparation and in-flight decision by continuing VFR flight into instrument meteorological conditions. The pilot's delay in returning to the departure airport, the low clouds, and low visibility were factors in this accident.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: MANEUVERING

Findings
1. (C) PREFLIGHT PLANNING/PREPARATION - POOR - PILOT IN COMMAND
2. (C) IN-FLIGHT PLANNING/DECISION - POOR - PILOT IN COMMAND

3. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND
4. (C) REMEDIAL ACTION - DELAYED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: MANEUVERING

Findings
5. OBJECT - TREE(S)

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

History of Flight

On April 12, 1995, about 1220 hours Pacific daylight time, a Helio H-250, N5461E collided with a tree and crashed about 5 miles northwest of Round Mountain, California. The pilot was conducting a visual flight rules personal flight to Palmer, Alaska, with an intended landing at Couer d'Alene, Idaho. The airplane, registered to and operated by a private individual, was destroyed. The certificated private pilot and the certificated private pilot/passenger sustained fatal injuries. Instrument meteorological conditions prevailed. The flight originated at Benton Airpark, Redding, California, about 1200 hours.

The registered owner told National Transportation Safety Board investigators in a telephone interview conducted on April 13, 1995, that the pilot was using his airplane to fly to Alaska. He said that they intended to land at Couer d'Alene, Idaho, to pick up another airplane. The passenger was also going to fly the other airplane to Alaska.

According to a refueller at Hillside Aviation, Benton Airpark, the passenger helped him fuel the airplane about 1130 hours. He said in a personal interview conducted on April 14, 1995, at Hillside Aviation, that all of the fuel tanks were full after it was refueled. Shortly after the pilot paid for the fuel, he departed on the accident flight. The refueller could not state whether the pilot or the pilot/passenger occupied the left front seat.

A ground ear-witness told Safety Board investigators in a personal interview conducted at Round Mountain that an airplane flew over his house at Hatchet Mountain (about 15 miles east of the accident site) in the late morning/early afternoon. The airplane then made a left turn and flew to the west. The engine sounded normal until it dissipated in the distance.

He said that he did not see the airplane because of the prevailing meteorological conditions. The clouds obscured the mountain peaks. He also said that rain, sleet, snow flurries, and high winds existed and the ground visibility was less than 200 feet.

There were no eyewitnesses.

The accident's coordinates are 40 degrees, 54.25 minutes north latitude and 122 degrees, 01.79 minutes west longitude.

Pilot Information

The pilot held a private pilot certificate with an airplane, single engine land rating. He also held an unrestricted third class medical certificate issued on May 3, 1994. According to federal air

regulations, a third class medical certificate is valid for 24 calendar months.

The flight hours reflected on page 3 of this report were obtained from the pilot's flight logbook. According to the last entry in the logbook as of April 2, 1995, the pilot accrued 327.6 flight hours, of which 46.5 hours were in the accident airplane make and model. The pilot also received 6.3 hours of instrument flight instruction. The last instrument instruction he received was on November 15, 1992.

On August 13, 1994, the pilot received 1.3 hours of dual instruction from a certified flight instructor. The instructor noted in the remarks section that the pilot executed several maneuvers. The instructor noted on the last page of the pilot's logbook that the pilot successfully passed a biennial flight review. The instructor did not show the date that the biennial flight review was conducted. According to the airplane owner's insurer, the pilot showed on the insurance application form that he received a biennial flight review on August 13, 1994.

The passenger held a private pilot certificate with an airplane single engine land rating. He also held a third-class medical certificate dated September 1, 1994; the certificate contained a limitation endorsement that states:

Holder shall wear lenses that correct for distant and possess glasses that correct for ear vision while exercising the privileges of the airman certificate.

Safety Board investigators did not recover the pilot/passenger's flight hours logbook. The flight hours reflected in Supplement E of this report were the hours he noted in his last medical application form.

Aircraft Information

The registered owner said that he and the pilot were partners in other properties, but not in the airplane; however, Safety Board investigators found a book in the wreckage that suggests the pilot was also a partner in the airplane.

The number two airframe and engine logbooks were found in the airplane wreckage. Examination of the logbooks showed that the last annual inspection was accomplished by an aircraft mechanic with inspection authorization on September 3, 1994. The airframe accrued 2,439 hours and the engine accrued 1,406 hours since major overhaul (SMOH) at the time of the inspection. At the time of the accident, the airframe accrued 2,664.86 hours and the engine accrued 1,474.86 hours SMOH.

The logbooks did not show compliance with any airworthiness directives that were applicable to this aircraft. Several Federal Aviation Administration (FAA) aircraft alteration forms (FAA Form 337) and compliance with the carry-thru airworthiness inspection records were found with the logbooks.

Meteorological Information

There are no surface weather observation facilities at the accident site. The closest weather observation facility is at Redding Airport. The weather data reflected on page 4 of this report were obtained from ground personnel residing near the accident site.

The following are the Redding Airport 1150 and 1250 hours, respectively, surface weather observations:

Measured ceiling 2,700 feet broken clouds, 4,300 feet broken clouds, 8,500 feet overcast clouds; visibility - 40 miles; temperature - 63 degrees' F; dew point - 54 degrees' F; surface winds - 220 degrees at 10 knots; altimeter setting - 29.92 inHg.

Measured ceiling 2,500 feet broken clouds, 3,500 feet overcast clouds; visibility - 30 miles; temperature - 63 degrees' F; dew point - 54 degrees' F; surface winds - 220 degrees at 10 knots; altimeter setting - 29.89 inHg.

Weather Study

The Safety Board's Office of Research and Engineering conducted a meteorological study of the accident area at the time of the accident.

The National Weather Service (NWS) 1100 hours surface analysis chart showed a low pressure center near the southern Oregon Coast line. A cold front stretched from the low southwestward offshore along the northern California coast. A stationary front extended from the low eastward through southern Oregon and southern Idaho. The chart indicated generally overcast clouds over northern California, southern Oregon, western Nevada, and southern Idaho.

The available weather radar data did not indicate any radar returns near the accident site.

Visual and infrared imagery was lacking in the area, but available radar and satellite data showed patchy light rain or rain showers were present.

Other satellite data showed that overcast clouds were present. The tops of the clouds were between 26,000 - 28,000 feet msl.

Radiosonde data and upper air analysis charts indicated that the freezing level in the accident area was between 8,500 and 9,000 feet msl.

Communications

At the request of the Safety Board, the FAA, Western-Pacific Air Traffic Division searched their

records for any communications between the accident airplane and any FAA air traffic facility. The FAA reported that the pilot did not file a flight plan or obtain a weather briefing from any FAA Flight Service Station before departing on the accident flight.

Investigators found the number two radio selected to 122.0 MHZ, a flight watch station.

Wreckage and Impact Information.

The main wreckage was found about 1,000 feet southwest of a 3,500-foot ridge about 29 miles north of the Redding VOR (very high frequency omni range - a navigational facility). Wreckage debris was scattered between the top of the ridge and the main wreckage.

The on-scene fuselage examination revealed the main fuselage struck the ground in a near vertical nose-down attitude while rotating to the left about its longitudinal axis. The main fuselage went down the 30-degree down-sloping terrain about 120 feet and came to rest on its left side against a tree. The nose of the fuselage was facing 246 degrees (all headings and bearings noted in this section are oriented toward magnetic north). Scattered airplane debris was found throughout the ground path.

The right wing remained attached at its upper and lower attach carry-thru assembly. The wing, however, was found wrapped around the fuselage. The upper cabin section was torn away.

The wreckage was retrieved from the mountainous area on April 18, 1995, and subsequently transported to Plain Parts, Pleasant Grove, California, where Safety Board investigators examined the wreckage on May 5, 1995.

All of the airplane's major components and flight control surfaces, except a 16-inch section of the left slat, were recovered by retrieval personnel. Safety Board investigators were unable to establish continuity of the flight control surfaces to the cabin/cockpit area. The rudder, stabilators, and stabilator trim cables separated at fuselage station 147; about 147 inches aft of the airplanes reference datum line located at the firewall. The left aileron cables and flap control tube separated at the wing root.

Wing Assembly Description:

Each wing is 16.79 feet long (span) by 6 feet wide (chord). The span is measured outboard from the fuselage. The main spars are "H" shaped and the upper and lower fittings are connected to the fuselage carry-thru assembly. The wing station (ws) measurements noted in this report are measured from the airplane's longitudinal axis.

The fabric covered ailerons are controlled by cables which extend from the control surface to the cockpit control wheel.

The span wise leading edge slats on each wing consists of two, 8.39 feet panels, that are

aerodynamically operated. According to a Helio Enterprises' representative, the slats extend at 60 knots indicated airspeed (IAS) and retract at 65 knots IAS. Helio Enterprises, Seattle, Washington, purchased the manufacturing rights and hold the type certificate for the airplane.

The Fowler-type flaps are mounted on tracks at the trailing edge of the wing and extend downward 40 degrees. The flaps are 12.41 feet long by 1.59 feet wide and are connected to a combination, manually operated, flap and stabilator trim mechanism. The mechanism is mounted on the lower carry-thru assembly member on the cabin ceiling.

Left Wing Examination:

The flap assembly was found on a Douglas fir tree at the ridge line (about 1,000 feet northeast of the main wreckage). The flap was torn from its wing attach tracks and bent upward at midspan. Several pieces of the left wing were found at the base of the tree. The flap actuator jackscrew was found in the flap retracted position.

All of the leading edge slat panels, except for a 16-inch section between ws 100 and 116 were recovered. The outer slat panel control arms were found seized in the extended position. The inboard panel, inboard control arm was found seized in the extended position; the outboard control arm was broken.

The major sections of the left wing were found about 250 feet southwest of the ridge line. The left wing's upper skin was torn and ripped upward between ws 21.56 and 41.56. The outboard panel between ws 170.47 and 223.0 separated from the wing. A section of the wing between ws 144.02 and 170.47 was also torn from the wing.

The leading edge between ws 21.56 and 87.09 broke into two pieces at ws 54. A 15-degree, upward crushing, 16-inch concave impact signature between ws 100 and 116 was observed. The concave area exhibited several upward slanting scrub marks and two spanwise red paint transference marks. The red paint was similar to the color of the horizontal stabilators and wing tips. The remaining section of the leading edge remained attached to the wing.

The wing spar fractured in two places; at the carry-thru attach fitting and at ws 142.14. The upper spar fracture was oriented in a downward direction; the lower fractured area was bent forward and twisted counter-clockwise (viewing from the fracture toward the wing tip). The upper fracture at ws 142.14 exhibited 30-degrees upward bending; the lower fracture surface exhibited tensile separation characteristics. The fractured surfaces did not display any beach or chevron marks.

The left side of the carry-thru assembly upper tube was fractured about 18.625 inches inboard of the wing spar/carry-thru attach fitting. The left upper attach fitting was not recovered. All of the carry-thru assembly connecting crossmembers fractured and were not

recovered.

One filament of the red navigation light was broken; the remaining filament was not stretched. The light bulb and its lens were found intact.

Right Wing Examination:

The right wing remained connected to the upper and lower carry-thru fittings. The slats were found seized to the leading edge. The flap and aileron assemblies separated from their respective attach fittings. The upper surface of the wing displayed extensive 45-degree cross chord buckling. The leading edge of the wing was found ripped at midspan.

One filament of the green navigation light was broken; the remaining filament was not stretched. The light bulb and lense were found intact.

Tail Assembly:

The tail assembly separated at fuselage station 147. The separated area displayed extensive counter-clockwise (viewing toward the empennage) twisting and tearing signatures. The stabilator trim tab jackscrew was found extended 1.875 inches. According to the Helio Enterprises representative, this setting is equivalent to about a neutral trim tab position.

The left stabilator separated from its upper spar box. The upper skin tore in an upper direction; the lower skin was found partially torn. The stabilator folded upward beyond 90-degrees. The stabilator trim tab was found seized against the stabilator in a neutral position. The leading edge of the fibreglass stabilator tip was missing. The remaining section displayed extensive tearing.

The right stabilator remained attached to its spar box and exhibited minimal ground or flight impact damage. The antibalance tab was also found in the neutral position.

The left side of the vertical fin displayed a 2-inch tear about 31 inches below the top of the fin; the tear extended 15 inches to the fin's trailing edge. The left side also displayed extensive downward orange paint transference marks. The undercoat of the red horizontal fibreglass tip is orange colored.

Cabin/Cockpit Area:

The cabin/cockpit area was compromised. The cabin roof, right rear door, and left front door tore away from their respective attach points.

The bench-type front seat remained attached to its floor mounted attach points. Both front seat back rests were found canted toward the center of the fuselage.

Both front seat occupants combination shoulder harness/lapbelt tore at their respective buckle tang attach fitting. The torn sections displayed extensive fraying signatures.

Engine Examination:

Continuity of the engine gear and valve train assembly was established. Thumb compression was noted during the crankshaft rotation.

The engine oil screens were free of contaminates.

The upper spark plugs were dark and sooty and their center electrodes were slightly ovaled.

Both magnetos produced spark upon rotation of their respective drive shafts.

The carburetor screen was free of contaminates. The carburetor contained a single piece venturi and a composite float assembly.

The wet vacuum pump and the fuel pump produced suction when their respective drive shafts were rotated.

The propeller assembly remained connected to the engine crankshaft. Both propeller blades were found near the full low pitch, high RPM position. Both blades displayed extensive "S" twisting, leading edge gouging, and chordwise scuffing marks.

Tests and Research

The attitude indicator was not functionally tested because of impact damage. Disassembly examination of the indicator did not show any rotational score marks on the rotating gimbal's housing.

Medical and Pathological Information

The Shasta County Sheriff-Coroner's Office conducted the post mortem examinations on both occupants. The pathologist did not note any findings that would have inhibited their ability to fly an airplane.

The FAA Civil Aeromedical Institute, Oklahoma City, Oklahoma, conducted toxicological examinations on both occupants. The examinations were negative for alcohol or drugs.

Additional Information

The wreckage was released to the owner's insurance representative on May 4, 1995. The

wreckage was at Plain Parts, Sacramento, California, when it was released.

Pilot Information

Certificate:	Private	**Age:**	40,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	May 3, 1994
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	328 hours (Total, all aircraft), 47 hours (Total, this make and model), 12 hours (Last 90 days, all aircraft), 8 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	HELIO	**Registration:**	N5461E
Model/Series:	H-250 H-250	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	2518
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	September 3, 1994 Annual	**Certified Max Gross Wt.:**	3400 lbs
Time Since Last Inspection:	69 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2665 Hrs	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	O-540-A1A5
Registered Owner:	JOSEPH I. KOLIADKOI	**Rated Power:**	250 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Unknown	**Visibility**	
Lowest Ceiling:	Overcast	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	REDDING , CA (O85)	**Type of Flight Plan Filed:**	None
Destination:	COEUR D'ALENE , ID (COE)	**Type of Clearance:**	None
Departure Time:	12:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	BENTON AIRPARK O85	**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	40.920486,-122.020095(est)

Administrative Information

Investigator In Charge (IIC):	Llorente, A.
Additional Participating Persons:	GERALD C GRISWOLD; SACRAMENTO , CA EARL BENEDICT; SACRAMENTO , CA CHARLES LITTLE; CHINO , CA JAMES METZLER; KENT , WA
Original Publish Date:	November 30, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=28923