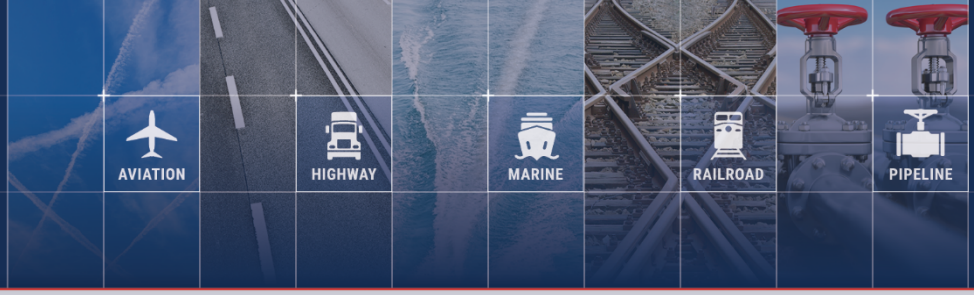

Aviation Investigation Factual Report

Location:	Kneeland, California	**Accident Number:**	LAX02FA234
Date & Time:	July 23, 2002, 15:00 Local	**Registration:**	N8801N
Aircraft:	Piper PA-28-140	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Factual Information

HISTORY OF FLIGHT

On July 23, 2002, approximately 1500 pacific daylight time, a Piper PA-28-140 single-engine airplane, N8801N, was destroyed when it impacted trees and terrain while maneuvering near Kneeland, California. The airline transport rated pilot, sole occupant of the airplane, sustained fatal injuries. The airplane was registered to the pilot and another private individual. Instrument meteorological conditions prevailed, and an instrument flight rules (IFR) flight plan was filed in-flight for the 14 Code of Federal Regulations Part 91 personal flight. The flight departed the Kneeland Airport (O19), approximately 1420, and was destined for the Arcata Airport (ACV), Arcata, California.

According to California Department of Forestry (CDF) personnel, who were interviewed by the NTSB investigator-in-charge and party members, the pilot landed at O19 approximately 1245, parked the airplane on the side of the runway, and then ate lunch at the CDF facility. CDF personnel reported that this was the first time they had seen or met the pilot. The pilot stated he was an employee of an air freight charter company, and reported he departed earlier that day from an airport near Sacramento, California, and was traveling to Arcata to pick-up an airplane for a charter flight that evening.

CDF personnel reported the pilot placed a call to an individual, who was a fellow company pilot and located at ACV, for weather information. CDF stated it was a common practice for pilots to land at O19 if poor weather was reported in the Arcata area. The pilot mentioned the airplane did not have all the instruments he was used to flying with. In addition, CDF personnel reported that the pilot appeared to be in good spirits and did not seem to be in a hurry to depart for ACV.

At 1415, CDF personnel departed O19 to respond to a fire, and at that time, the pilot had not yet departed for ACV. At the time of their departure, the weather near the Arcata area was "patchy fog and breaking up."

The fellow company pilot, who was located at ACV, reported the pilot called him approximately 1330, for weather information. The fellow company pilot informed the pilot that the sky was overcast with the cloud bases approximately 1,100 feet.

According to the communication data from Seattle Air Route Traffic Control Center (ARTCC), at 1430:50, the pilot reported to a controller his position was three miles southeast of the KNEES fix (located 15.8 nautical miles southeast of ACV), at 5,500 feet mean sea level (msl) in visual flight rules (VFR) conditions, and he requested an instrument landing system (ILS) approach to ACV. At 1431:02, the pilot was asked to squawk a transponder code of 3505;

however, the controller did not receive a transponder signal. At 1435:42, the pilot was cleared for the ILS approach to ACV runway 32. At 1437:50, the pilot cancelled the approach for an unknown reason and requested to enter a holding pattern to set up for another approach.

At 1445:29, due to arrival aircraft and for sequencing purposes, the controller informed the pilot to expect an 8 minute delay. At 1450:23, the controller asked, "are you in that holding pattern southeast of KNEES now with the left turns?" The pilot responded, "affirmative, I just turned outbound from the east..." At 1451:29, the controller again asked the pilot if he was holding southeast with left turns. The pilot reported that he was in VFR conditions and was circling at KNEES with right turns. The controller responded that he noticed a primary radar return indicating an aircraft executing right turns and stated that the standard holding pattern procedure was left turns.

At 1453:43, the controller cleared N8801N for the ILS approach to ACV runway 32, and reported to the pilot that the last aircraft on the ILS approach broke out of the clouds approximately 1,100 feet. At 1456:33, the controller instructed the pilot to cancel his IFR flight plan on that approach frequency. The pilot acknowledged the instruction, and that was the last radio communication transmission from the accident airplane to the controller. During the entire flight from O19, the controller did not receive a positive transponder identification from the accident airplane.

Approximately 1545, an Alert Notice (ALNOT) was issued for an overdue aircraft by the Federal Aviation Administration's (FAA) Seattle Regional Operations Center. The Civil Air Patrol, the United States Coast Guard and local authorities were notified of an overdue aircraft. A search was initiated, and on July 24, 2002, approximately 2030, the airplane wreckage was located at 40 degrees 48 minutes north latitude, and 123 degrees 59 minutes west longitude, and at an elevation of approximately 1,850 feet msl. The accident site was located approximately 11 nautical miles southeast of ACV.

PERSONNEL INFORMATION

The 69-year old pilot held an airline transport pilot (ATP) certificate and a certified flight instructor rating for single-engine land and instrument airplanes. The pilot obtained his ATP certificate on September 9, 1988, and his instrument flight instructor rating on August 19, 1992. In addition to the pilot's civilian ratings, the pilot also held ratings for the Lockheed L-300 and L-382 (C-141 and C-130) military aircraft. The pilot was issued a second class medical certificate on January 3, 2002, with the limitation, "Must wear corrective lenses."

The pilot's logbooks were not located; however, according to the pilot's January 3, 2002, medical certificate application, the pilot reported a total time of 14,300 hours and 30 total hours in the past 6 months. The pilot's instrument currency could not be determined.

The pilot was a part-time employee of Union Flight, an air freight charter company, near Dayton, Nevada. According to Union Flight personnel, the pilot was hired as a back-up pilot in

June 1990. The personnel reported that the pilot completed his most recent biennial flight review approximately two weeks prior to the accident. Additionally, the personnel stated the pilot was "highly trained, safety conscience, excellent physical [condition] and flew to keep his experience level up."

AIRCRAFT INFORMATION

The 1969 model Piper PA-28-140 airplane, serial number 28-25646, was a single-engine, low wing, fixed landing gear, and semi-monocoque design airplane. The airplane was powered by a four cylinder, air-cooled, horizontally opposed, normally aspirated Lycoming O-320-E2A (serial number L-16692-27A) engine, rated at 150 horsepower. The airplane was configured to carry a maximum of four occupants.

The airplane was issued a standard airworthiness certificate on March 6, 1969, and was certificated for normal category operations. The airplane was registered to the pilot and co-owner on December 4, 1990. The airframe, engine, and propeller logbooks were not located. According to a mechanic, who completed the airplane's most recent annual inspection, the airframe had accumulated approximately 5,000 total hours, and the engine accumulated approximately 450 total hours since its last major overhaul. The most recent annual inspection was completed on July 12, 2002.

According to personnel at Mauser Aviation, Rio Linda Airport, near Rio Linda (suburb of Sacramento), California, on the morning of the accident, the pilot had the airplane fueled with 23.7 gallons of 100LL aviation grade fuel. Fuel services were not available at O19.

The co-owner of the airplane reported that the pilot "always had a hand-held global positioning system (GPS) unit" while flying the airplane. The co-owner stated that the airplane was equipped for IFR flight.

METEOROLOGICAL INFORMATION

At 1453, the ACV Automated Surface Observation System (ASOS) station reported the wind from 280 degrees at 5 knots, 10 statute miles visibility, ceiling overcast at 1,300 feet agl, temperature 61 degrees Fahrenheit, dew point 52 degrees Fahrenheit, and an altimeter setting of 30.05 inches of Mercury.

At 1518, ACV ASOS station reported the wind from 280 degrees at 5 knots, 10 statute miles visibility, ceiling overcast at 1,500 feet agl, temperature 61 degrees Fahrenheit, dew point 52 degrees Fahrenheit, and an altimeter setting of 30.05 inches of Mercury.

Two pilot reports (PIREPs) were recorded that preceded the accident time. The PIREPs correspond to the surrounding area near the accident site. At 1125, an unknown type of aircraft, at an unknown altitude, near CEC, reported that the sky cover was overcast at 800 feet msl and the layer tops were at 2,000 feet msl. At 1402, a Beech Sierra airplane, at altitude

5,500 feet msl near ACV, reported that the sky cover was overcast at 1,600 feet msl and the layer tops were at 2,600 feet msl.

The area forecast for Northern California issued by the National Weather Service (NWS) for July 23, 2002, at 1245, was valid until 0100, on July 24, 2002. The forecast reported for the coastal, mountains, and valleys of northwestern California was "generally skies clear...over immediate coastline sky cover broken to scattered between 1,000 and 1,200 feet msl with tops at 1,500 feet msl. Around [2000] coastline/coastal valleys becoming broken to overcast between 1,000 and 1,200 feet, msl tops at 1,500 feet msl, occasional visibility from 3 to 5 statute miles with mist. Outlook...Instrument Flight Rules ceilings and mist along the coastline and coastal valleys...Visual Flight Rules for the remainder of the area."

The NWS issued AIRMET SIERRA at 1245, on July 23, 2002, for Washington, Oregon, California, and the coastal waters. The AIRMET stated the following: "Update 3 for IFR valid until [1900] on July 24."

The following Terminal Aerodrome Forecast (TAF) for ACV was issued on July 23, 2002, at 1308.

ACV TAF issued July 23, 2002, at 1308; valid July 23, 2002, at 1300 to 1100 on July 24, 2002; wind from 270 degrees at 5 knots; visibility greater than 6 statute miles; sky cover overcast at 900 feet agl; temporary condition from 1700 to 1800; sky cover scattered at 1,500 feet agl; from 2000, wind variable at 3 knots, visibility 6 statute miles with mist, overcast at 800 feet agl; becoming from 0200 to 0400; visibility 3 statute miles with mist, overcast at 300 feet agl.

AERODROME INFORMATION

Arcata Airport is a publicly owned airport, located approximately 7 miles north of Eureka, at 40 degrees 58.41 minutes north latitude and 124 degrees 06.31 minutes west longitude, and at a surveyed elevation of 218 feet msl. The non-towered airport features two asphalt runways: runway 2/20 and runway 14/32. Runway 14/32 is a 5,998 foot in length and 150 feet in width runway, with precision instrument markings. The runway is equipped with a Category 1 ILS, which includes outer and middle markers, but no inner marker. The glideslope is set to a standard 3 degree angle, and the course width of the localizer is set to 5 degrees. There were no Federal Aviation Administration (FAA) Notices to Airmen (NOTAMs) on file indicating that any landing aid components were inoperative. The ILS localizer frequency is 109.5 megahertz and the common traffic advisory frequency (CTAF) is 123.0 megahertz.

The KNEES fix is located at 40 degrees 45.08 minutes north latitude and 123 degrees 57.19 minutes west longitude. KNEES fix is located 15.8 nautical miles on the 316 degree radial from ACV, and 4.14 nautical miles on the 320 degree radial from the accident site. The KNEES fix is the initial approach fix for the ILS Runway 32 approach, and the minimum altitude at KNEES is 5,200 feet.

WRECKAGE AND IMPACT INFORMATION

The airplane impacted trees and came to rest inverted on the side of a heavily wooded, 45-degree sloped ridge, at an elevation of 1,850 msl. The wreckage energy path measured approximately 300 feet in length on a measured magnetic heading of 190 degrees. The aft inboard section of the left wing, with the flap partially attached, was the first component located in the wreckage distribution path, and was found wrapped around a 125-foot tall tree approximately 110 feet above ground. The forward inboard section of the left wing, with the left main landing gear attached, was found 100-feet up in another 125-foot tall tree, and was located approximately 45 feet beyond the aft inboard left wing section. The outboard section of the left wing was located on the ground near the two trees that contained the inboard left wing sections. The main wreckage came to rest approximately 210 feet from the impacted trees. The main wreckage consisted of the engine, cockpit, cabin, right wing and empennage. The propeller and spinner, which were separated from the engine, came to rest approximately 250 feet from the initial impact with a tree, and then down the sloped ridge forward of the main wreckage. The spinner displayed a semi-circular depression which was consistent with the tree-top diameter. There were no ground scars noted except for the scars beneath the main wreckage.

The two separated left wing sections were located upright in the trees and displayed crushing from the leading edge to the aft of the wing. The left aileron cable remained attached to the bellcrank; however, the inboard cable end exhibited broomstrawing signatures which are consistent with overload failure. The right wing came to rest with the main wreckage and was partially consumed by a post-impact fire. The flap and aileron remained attached to their respective attach points. The right aileron cable remain attached to its bellcrank.

The empennage section was separated from the fuselage and came to rest upright adjacent to the cockpit and cabin. The elevator and rudder control surfaces remained attached to their respective attach points, and control continuity of the flight control cables was established. The elevator trim drum was measured and determined to be in a slightly nose down position.

The entire cockpit and cabin area were destroyed by a post impact fire. The flap torque tube assembly was found detached from the fuselage structure, and the attach points were destroyed by thermal damage. The flap selector was found in the 20 degree detent position. The three-point altimeter was found melted and damaged; however, the face and pointers displayed an altitude of 6,000 feet and the Kollsman Window was set at 30.08 inches of Mercury.

The engine remained attached to the airframe by the engine mounts. The engine crankcase was fractured forward of the #2 and #4 cylinders, and the crankshaft would not rotate. The engine cylinders were boroscoped with no anomalies noted. The spark plugs were removed and according to the Champion Spark Check-A-Plug chart AV-27, the spark plug electrodes displayed coloration consistent with normal operation. The exhaust system components displayed significant ductile bending. The engine accessories displayed fire damage, and were

unable to be functionally tested. The vacuum pump was secured to its mounts; however, the drive coupler was melted and destroyed by thermal damage. The vacuum pump cover was removed, and the pump rotor and vanes were found intact.

The two-bladed fixed pitch propeller remained intact; one blade was bent forward, and one blade was bent aft. No evidence of leading edge damage was noted on the blades.

The airplane was equipped with an Emergency Locator Transmitter (ELT); however, it was destroyed by fire.

PATHOLOGICAL INFORMATION

An autopsy was performed by County of Humbolt, Coroner's Office, Eureka, California, on July 25, 2002, and specimens were retained for toxicological analysis by the FAA's Civil Aeromedical Institute's (CAMI) Forensic and Accident Research Center. According to the Forensic Pathologist, the cause of death for the pilot was blunt force and thermal injuries, without contributing preexisting conditions.

The results of the toxicological test was negative for alcohol and all screened drug substances.

FIRE

A post-impact fire consumed a portion of the right wing, the fuselage, and a portion of the empennage of the airplane. No evidence of pre-impact fire was noted during the on-scene portion of the investigation.

ADDITIONAL INFORMATION

The wreckage was released to the owner's representative on August 1, 2002.

Pilot Information

Certificate:	Airline transport; Flight instructor	**Age:**	69,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):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	January 3, 2002
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	14300 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8801N
Model/Series:	PA-28-140	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28-25646
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	July 12, 2002 Annual	**Certified Max Gross Wt.:**	2150 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	5000 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-320-E2A
Registered Owner:	James C. Wahleithner	**Rated Power:**	150 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	ACV,218 ft msl	**Distance from Accident Site:**	11 Nautical Miles
Observation Time:	14:53 Local	**Direction from Accident Site:**	314°
Lowest Cloud Condition:	Unknown	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 1300 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots / 0 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	280°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	16°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Kneeland, CA (O19)	**Type of Flight Plan Filed:**	IFR
Destination:	ARCATA/EUREKA, CA (ACV)	**Type of Clearance:**	IFR
Departure Time:	14:20 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Arcata ACV	**Runway Surface Type:**	Asphalt
Airport Elevation:	218 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:	32	**IFR Approach:**	ILS
Runway Length/Width:	5998 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	40.815834,-123.990837

Administrative Information

Investigator In Charge (IIC):	Sauer, Aaron
Additional Participating Persons:	W. J Gilley; Federal Aviation Administration; Oakland, CA Charles R Little; The New Piper Aircraft; Chino Hills, CA Mark W Platt; Lycoming; Van Nuys, CA
Report Date:	June 12, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=55290