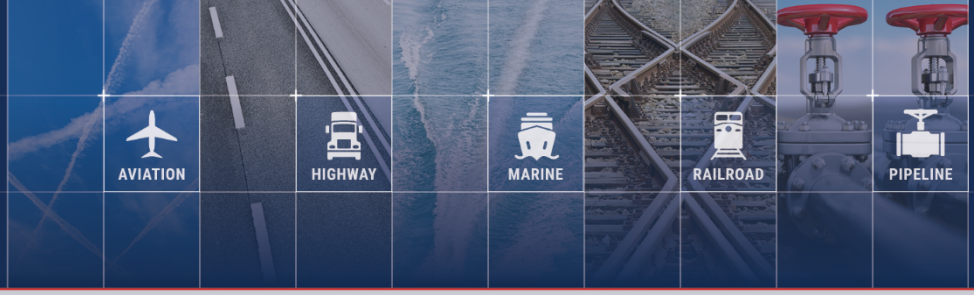

Aviation Investigation Final Report

Location:	ESSEX, California	**Accident Number:**	LAX95FA003
Date & Time:	October 5, 1994, 12:09 Local	**Registration:**	N251VW
Aircraft:	AERO COMMANDER 560	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE PRIVATE PILOT WITH ABOUT 3,000 HOURS OF REPORTED FLIGHT TIME AND NO INSTRUMENT RATING DEPARTED HIS HOME BASE, THERMAL, CALIFORNIA, FOR A SHORT CROSS-COUNTRY FLIGHT TO LAS VEGAS, NEVADA. THERE WAS NO RECORD OF A PREFLIGHT WEATHER BRIEFING, AND NO FLIGHT PLAN WAS FILED. WHEN THE PILOT FAILED TO ARRIVE AT HIS DESTINATION, A SEARCH WAS INITIATED. THE WRECKAGE WAS LOCATED 6 DAYS AFTER IT DEPARTED THERMAL WITH THE HELP OF RADAR DATA. ACCORDING TO THE RADAR DATA, THE AIRPLANE WAS AT 16,100 FEET WHEN IT STARTED A SERIES OF MANEUVERS WHILE DESCENDING. POSTCRASH EXAMINATION OF THE WRECKAGE REVEALED THAT THE LEFT WING OUTER PANEL, AILERON, AND LEFT ENGINE WERE LOCATED SOME DISTANCE FROM THE MAIN WRECKAGE. THE WEATHER AT THE TIME OF THE ACCIDENT WAS REPORTED AS MARGINAL VFR WITH THUNDERSTORM CELL ACTIVITY IN THE AREA. THE AIRPLANE DID NOT HAVE A WORKING OXYGEN SYSTEM NOR WAS IT EQUIPPED FOR INSTRUMENT FLIGHT NOR ICING CONDITIONS.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadvertent flight into IMC conditions. Contributing to the accident was a loss of control of the aircraft and exceeding the structural limits of the aircraft. The weather conditions were factors.

Findings

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

Findings
1. (F) WEATHER CONDITION - CLOUDS
2. (F) WEATHER CONDITION - TURBULENCE
3. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
4. (C) VFR FLIGHT INTO IMC - INADVERTENT - PILOT IN COMMAND
5. (C) IN-FLIGHT PLANNING/DECISION - IMPROPER - PILOT IN COMMAND

Occurrence #2: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: DESCENT - UNCONTROLLED

Findings
6. (C) DESIGN STRESS LIMITS OF AIRCRAFT - EXCEEDED - PILOT IN COMMAND

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

Factual Information

HISTORY OF FLIGHT

On October 5, 1994, about 1209 hours Pacific daylight time, an Aero Commander 560, N251VW, was destroyed near Essex, California, following an in-flight breakup. The airplane was owned and operated by Caudle Hay Sales, Inc., of Peoria, Arizona, and was on a personal cross-country flight. No flight plan was filed. Visual meteorological conditions were reported for the route of flight; however, thunderstorm and rain showers were forecast and observed in the area of the accident. The pilot received fatal injuries. The flight originated at Thermal, California, about 1115 hours on the day of the accident and was destined for Las Vegas, Nevada.

When the airplane failed to arrive at the destination airport, a family member notified the Federal Aviation Administration (FAA). The Civil Air Patrol initiated a search mission. Subsequently, with the help of recorded radar data and the National Track Analysis Program (NTAP), the airplane was located on October 11, 1994.

According to the Mode C altitude reports in the recorded radar data, the airplane was at 16,100 feet mean sea level at 1206:35 hours when it started a series of maneuvers. At 1207:59, the airplane was at 12,700 feet msl. The last radar contact was at 1208:36. The last three radar hits were without altitude information. The crash site elevation was about 2,100 feet msl, in the East Mojave National Scenic Area.

PERSONNEL INFORMATION

At the pilot's last third-class flight physical conducted on May 5, 1994, he reported a total flight time of 3,000 hours with an additional 50 hours flown in the last 6 months. A current personal logbook for the pilot was not found.

Two pilot logbooks were reviewed. The first logbook appeared to be an original with a starting date of August 28, 1962. The last entry in that log was found midway through the book dated December 8, 1990. The entries were incomplete and not totaled. The second logbook reviewed was initiated on January 3, 1990. The last entry was located four pages later and dated December 15, 1990. The entries were incomplete and not totaled. Located in the first logbook were three biennial flight reviews dated in 1985, 1987, and 1989.

AIRCRAFT INFORMATION

According to aircraft logbook records recovered at the accident site, the last documented maintenance was an annual inspection conducted on May 19, 1994. At that inspection, the

total flight time of the airframe was listed as 3,917 hours.

According to the last annual inspection technician, the airplane did not have a working oxygen system. The oxygen bottle was removed from the wreckage and examined. According to a date stamp on the bottle, the last hydrostatic test was conducted on November of 1988.

Examination of the records did not find compliance with Federal Air Regulations 14 CFR Part 91.413, for ATC transponder tests and inspections, nor 91.411, for altimeter system and altitude reporting equipment tests and inspections.

WRECKAGE AND IMPACT INFORMATION

The wreckage site was located in near-level, soft, brush-covered undulating desert terrain. The left engine, propeller, and some left wing components were found 1,000 to 6,000 feet north and northeast of the main wreckage.

Examination of the wreckage revealed that the left wing leading edge skin assembly had separated from the wing at wing station 91 outboard to station 257. The left outboard wing panel assembly less the top surface skin from station 145 to station 257 was found separated. Both assemblies and the top wing skin were located about 6,000 feet northeast of the point of impact (POI). The left aileron was located in two sections, separated at the middle hinge area. Both sections were found about 3,500 feet north of the POI. Overtravel signatures were noted on the aileron attach points.

The left engine top and lower cowl assemblies were found about 4,500 feet northeast of the POI. The left engine, propeller, and the left engine mount truss were located 1,000 feet north of the POI. The left engine oil cooler was found 2,000 feet north of the POI. All three propeller blades revealed tip damage with about 3 inches missing from one blade tip. Two blades exhibited similar nicks on the leading edge at about 19 inches from the shaft center. One blade revealed minor trailing edge damage at about 15 inches from the shaft center.

A section of the left horizontal stabilizer had separated near station 58. The section was found about 4,000 feet northeast of the POI. The tip cap of the stabilizer was noted to be bent down with a blue paint transfer similar to the color of the vertical stabilizer.

Examination of the main wreckage POI revealed a near-vertical impact with heavy accordioning of the fuselage structure on the longitudinal axis. The right wing was present with the aileron and flaps in their respective positions. The right wing chord was reduced by heavy accordioning of the structure. The aileron exhibited overtravel signatures at the hinge points.

At the apex of the main wreckage was located the empennage. Examination of the left horizontal stabilizer revealed a failure and separation at station 58, with the elevator bent upwards against the vertical stabilizer from station 45. The elevator control horn and hinges exhibited overtravel signatures.

The right horizontal stabilizer and the elevator were both noted to be bent down about 15 degrees at station 43 and 45. The elevator control horn and hinge points exhibited overtravel signatures.

METEOROLOGICAL INFORMATION

The closest weather reporting facility to the accident site was located at Needles, California, about 47 miles to the east. The 1154 hours scheduled weather observation was reporting; sky condition 6,000 feet scattered clouds, estimated ceiling 12,000 feet broken clouds, 20,000 feet broken clouds, visibility 30 miles, temperature 77 degrees Fahrenheit, dewpoint 38 degrees Fahrenheit, wind 230 degrees at 15 knots gusting to 20 knots, altimeter 29.79 inches of mercury. Remarks, rain showers unknown intensity north.

Weather radar composites for 1130 and 1225 hours were obtained from the Palmdale, California, weather service office. The 1130 composite indicated an area of light rain showers extending from around 30 miles east of Daggett to about 60 miles east of Daggett. Daggett is located about 77 miles west of the accident site. The 1225 composite showed an area of light rain showers from around 60 miles east of Daggett extending into extreme southern Nevada.

Airmet information "Zulu" was current and included the accident area. Occasional moderate rime/mixed icing in cloud in precipitation between 9,000 and 23,000 feet was forecast.

Airmet information "Tango" was also current and forecasted occasional moderate/isolated severe turbulence below 12,000 feet.

The Twentynine Palms air operations officer reported light to moderate turbulence from the surface to 12,000 feet.

MEDICAL AND PATHOLOGICAL INFORMATION

According to a single-page autopsy report obtained from the San Bernardino County Coroner's Office, a contract pathologist viewed the pilot's body remains on October 12, 1994. The report makes no mention of normal autopsy procedures. The cause of death was attributed to multiple traumatic injuries.

During the on-scene recovery of the pilot's body, the requirement for FAA toxicological samples for analysis was discussed with the deputy coroner. The samples for the toxicological analysis at the FAA Civil Aeromedical Institute in Oklahoma City, Oklahoma, were not gathered.

ADDITIONAL INFORMATION

The wreckage was released to the pilot's widow on October 24, 1994.

Pilot Information

Certificate:	Private	**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):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	May 5, 1994
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	3000 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AERO COMMANDER	**Registration:**	N251VW
Model/Series:	560 560	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	212
Landing Gear Type:	Retractable - Tricycle	**Seats:**	7
Date/Type of Last Inspection:	May 19, 1994 Annual	**Certified Max Gross Wt.:**	6000 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	GO-480-B
Registered Owner:	FIFER CAUDLE	**Rated Power:**	270 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:	CAUDLE HAY SALES,INC.	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Unknown	**Condition of Light:**	Day
Observation Facility, Elevation:	EED ,990 ft msl	**Distance from Accident Site:**	45 Nautical Miles
Observation Time:	18:54 Local	**Direction from Accident Site:**	85°
Lowest Cloud Condition:	Scattered / 6000 ft AGL	**Visibility**	30 miles
Lowest Ceiling:	Broken / 12000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	15 knots / 20 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	25°C / 3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	THERMAL , CA (TRM)	**Type of Flight Plan Filed:**	None
Destination:	LAS VEGAS , NV (LAS)	**Type of Clearance:**	None
Departure Time:	11:15 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**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:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	34.96091,-115.310943(est)

Administrative Information

Investigator In Charge (IIC):	Petterson, George
Additional Participating Persons:	KENNETH L HALE; ARLINGTON , WA BILL ROBERTS; LONG BEACH , CA JOE COSTA; LONG BEACH , CA JESUS D LUCERO; RIVERSIDE , CA
Original Publish Date:	September 24, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=28891