



National Transportation Safety Board Aviation Accident Data Summary

Location:	Cliffdell, WA	Accident Number:	LAX08LA253
Date & Time:	08/01/2008, 1433 PDT	Registration:	N45EL
Aircraft:	LONG Lancair ES	Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

During the instrument-flight-rules flight at 11,000 feet mean sea level, the pilot's last transmission to air traffic control confirmed his altimeter setting. Shortly thereafter, radar data indicated that the airplane started a descending right-hand turn. The final radar return was at 9,700 feet msl. The airplane wreckage was located about 1 mile west of the final radar return, at a terrain elevation of 3,830 feet. The debris field was consistent with an in-flight breakup, with airplane wreckage distributed over a distance of 0.5 miles. A study of the meteorology in the vicinity at the time of the accident indicated that a broken to overcast ceiling existed between 5,000 to 6,000 feet msl and extended up to 14,000 feet msl. Satellite imagery depicted cloud top temperatures of -1 to -3 degrees C between 11,000 and 12,000 feet msl. The location of the last radar return was immediately downwind of Mt. Rainier and the sounding wind profile indicated favorable conditions for mountain wave formation. Digital photos of Mt. Rainier taken a few minutes before the accident were recovered from a camera onboard the airplane. The images depict a clear view of clouds surrounding Mt. Rainier and that the airplane was operating immediately above a broken-to-overcast cloud layer, in visual meteorological conditions. The radar track combined with weather radar imagery and satellite imagery indicated that the airplane was in instrument meteorological conditions (IMC) at the time it entered the descending right turn and dropped below the radar floor. Flight performance data recovered from cockpit instrumentation indicate that 5 minutes prior to the accident the airplane experienced continuous turbulence ranging from 0.77 to 1.5 vertical g's, consistent with a mountain wave encounter. Upon entering IMC conditions, the airplane began a right turn that developed into a spiral descent. During the last few seconds of flight the airplane was oriented 88.6 degrees nose down, 113 degrees angle of bank, and 290 knots. Upon exiting the bottom of the cloud layer, at 6,135 msl, the airplane experienced a rapid onset of g's that exceeded the strength of the airplane. The sudden onset of g-load is constant with the pilot's attempt to recover from the rapid descent and unusual attitude.

Flight Events

Enroute-cruise - Loss of control in flight
Uncontrolled descent - Aircraft structural failure

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain aircraft control while in cruise flight due to spatial disorientation. Contributing to the accident was turbulence and clouds.

Findings

Aircraft-Aircraft structures-Wing structure-(general)-Capability exceeded
Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
Personnel issues-Psychological-Perception/orientation/illusio-Spatial disorientation-Pilot - C

Environmental issues-Conditions/weather/phenomena-Turbulence-Terrain induced turbulence-
Effect on operation - F

Environmental issues-Conditions/weather/phenomena-Ceiling/visibility/precip-Below VFR minima-
Effect on operation - F

Pilot Information

Certificate:	Private	Age:	68
Airplane Rating(s):	Single-engine Land	Instrument Rating(s):	Airplane
Other Aircraft Rating(s):	None	Instructor Rating(s):	None
Flight Time:	592 hours (Total, all aircraft), 266 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	LONG	Registration:	N45EL
Model/Series:	Lancair ES	Engines:	1 Reciprocating
Operator:	Eugene C. Long	Engine Manufacturer:	Teledyne Continental Motors
Air Carrier Operating Certificate:	None	Engine Model/Series:	IO-550
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	KSMP, 3967 ft msl	Weather Information Source:	Weather Observation Facility
Conditions at Accident Site:	Visual Conditions	Lowest Ceiling:	Overcast / 7000 ft agl
Condition of Light:	Day	Wind Speed/Gusts, Direction:	9 knots, 290°
Temperature:	11°C / 8°C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Ketchikan, AK (PAKT)	Destination:	Mountain Home, ID (KU76)

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

Administrative Information

Investigator In Charge (IIC):	Van McKenny	Adopted Date:	07/28/2009
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the

accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report.