



# Aviation Investigation Final Report

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<b>Location:</b>	SACRAMENTO, California	<b>Accident Number:</b>	LAX01FA059
<b>Date &amp; Time:</b>	December 14, 2000, 17:20 Local	<b>Registration:</b>	N252SA
<b>Aircraft:</b>	Dehavilland DHC-6	<b>Aircraft Damage:</b>	None
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal, 6 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Executive/Corporate		

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## Analysis

A passenger aboard an airplane sustained fatal injuries when she exited the airplane through an emergency exit during flight. The emergency exit door, hinged along the edge toward the nose of the airplane, was on the right side of the cabin between the right rear single seat and the rear pair of seats. Opening the door in flight would require significant force to overcome the wind pressure. The deceased passenger sat by herself next the emergency exit. The passengers in the seats immediately ahead of the emergency exit said they heard a loud sound, like rushing air, behind them and knew this wasn't normal. They thought they felt the wind, and one passenger turned to look over his right shoulder. He saw the deceased passenger with her shoulders out of the door. Her left arm was passing over his head, so he grabbed her coat at her left wrist. He tried to reach further right for a better hold, but now could only see the dark coat and her arm. He felt a tug; the female slipped from his grasp and fell clear of the airplane. Officers from the San Jose Police Department, agents from the Federal Bureau of Investigation (FBI), and the investigator-in-charge (IIC) from the Safety Board examined the airplane after FBI personnel completed a forensic analysis of the cabin. A red cover, inscribed with the word "LIFT" in white letters, lay over the emergency exit door's operating handle. With this cover lifted up, the handle required a noticeable force to rotate it about 45 degrees in a clockwise direction. Rotation of the handle moved a 1/2-inch diameter metal rod approximately 1-inch from the latched to the unlatched position. The latch receptacle in the airframe did not exhibit any deformities. The IIC locked and unlocked the door several times and detected no malfunctions. The victim's husband informed the FBI that, the day before the incident, his wife scheduled an appointment for counseling later that week. Toxicological tests on the deceased passenger found no ethanol or other drug substances. The coroner's office classified the death as a suicide.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:  
The passenger committed suicide.

### Findings

Occurrence #1: MISCELLANEOUS/OTHER  
Phase of Operation: CRUISE

#### Findings

1. (C) SUICIDE - INTENTIONAL - PASSENGER

## Factual Information

On December 14, 2000, about 1720 Pacific standard time, a passenger aboard a Dehavilland DHC 6, N252SA, sustained fatal injuries when she exited the airplane near Sacramento, California. The Hewlett-Packard Company was operating the airplane on a corporate transportation flight under the provisions of 14 CFR Part 91. The airline transport pilot, copilot, and four passengers were not injured, and the airplane was not damaged. The flight departed Sacramento Executive Airport about 5 minutes prior to the occurrence. Visual meteorological conditions prevailed, and an instrument flight rules (IFR) flight plan had been filed.

The company flew four scheduled roundtrip flights a day between San Jose and Lincoln, California. The flight crew's day started with the third trip. The flight to Lincoln was uneventful and no discrepancies were noted with the airplane. The airplane was on the ground about 10 minutes before departing on the return flight to San Jose, about 1620, with five passengers, four male and one female. The airplane was configured with five pairs of seats along the right side of a center aisle, three single seats left of the center aisle, and single seats on each side at the rear of the cabin area. The entry door on the left side of the cabin was forward of the left rear seat and abeam the rearmost pair of seats. An emergency exit door, hinged along the edge toward the nose of the airplane, was on the right side of the cabin between the right rear single seat and the rear pair of seats.

The female occupied the single seat near the emergency exit. The male passengers were seated in separate rows along the right side of the cabin with one occupant in each of the two rear-most pairs. The flight was in instrument meteorological conditions climbing through 4,200 feet to a cruise altitude of 6,000 feet when an amber "door open" caution light illuminated on the instrument panel. An emergency checklist directed the crew to land at the nearest suitable field, so the crew diverted into Sacramento Executive Airport.

The airplane landed and taxied to an open area on the parking ramp. While the captain left the engines running, the copilot verified the entry, emergency exit, and rear baggage doors were secure. After he reentered the cabin he could see the light was still illuminated. The crew checked with maintenance control via cell phone, and was instructed to verify a positive lock on all doors. The copilot exited the airplane and cycled each door handle including the front baggage compartment door. He felt a positive lock on each door and the light extinguished.

The airplane departed runway 12, then made a right turn to a heading of 150 degrees and leveled off at 2,000 feet. The "door open" light illuminated, the crew noticed a sound change, and felt a rush of air. The crew notified air traffic control at 1723, and requested a return to Sacramento Executive. The copilot went to the rear of the airplane, and saw the rear emergency exit door open. The copilot did not remember hearing anyone talk to him as he went toward the rear of the cabin to check the door. He secured the door and returned to the cabin. The light went out, so the crew notified air traffic control of their intention to continue to San Jose.

The male in the seat ahead of the emergency exit said he flew this trip often. Shortly after departure, he heard a loud sound, like rushing air, behind him and knew this wasn't normal. He thought he felt the wind, and turned to look over his right shoulder. He saw the female passenger with her shoulders out of the door. Her left arm was passing over his head, so he grabbed her coat at her left wrist. He tried to reach further right for a better hold, but now could only see the dark coat and her arm. He and the passenger in front of him yelled, but no one else seemed to respond. He felt a tug; the female slipped from his grasp and fell clear of the airplane.

As the passenger sat in shock, the copilot came by as he went to check the doors. The passenger recalled saying she fell out, but did not notice a reaction from the crewman. The copilot returned to the cockpit, and the airplane began a turning maneuver. The passenger assumed this meant the airplane was returning to Sacramento, but could not tell since the airplane was in instrument meteorological conditions. He was surprised when the airplane landed at San Jose, and he observed no emergency response. Everyone except the two passengers who knew of the event exited the airplane. The rearmost passenger said he experienced cramps and was physically unable to exit the airplane for several minutes. He and the other passenger who observed the female victim exit the airplane went into the flight dispatch area and notified the copilot that a passenger exited the airplane.

Officers from the San Jose Police Department, agents from the Federal Bureau of Investigation (FBI), and the investigator-in-charge (IIC) from the Safety Board examined the airplane after FBI personnel completed a forensic analysis of the airplane. A red cover, inscribed with the word LIFT in white letters, lay over the emergency exit door's operating handle. With this cover lifted up, the handle required a noticeable force to rotate it about 45 degrees in a clockwise direction. Rotation of the handle moved a metal rod about 1/2-inch in diameter approximately 1-inch from the latched to the unlatched position. The latch receptacle in the airframe did not exhibit any deformities. The IIC locked and unlocked the door several times and detected no malfunctions.

Literature from one of the company's employee assistance providers, found in the victim's luggage, contained highlighted passages dealing with recognizing the warning signs of stress. The victim's husband informed the FBI that, the day before the incident, his wife scheduled an appointment for counseling later that week.

Toxicological tests of specimens from the deceased passenger were negative for ethanol and all screened drug substances.

The Sacramento County Coroner's Office autopsy report classified the death of the passenger as a suicide.

## Pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight engineer; Flight instructor	<b>Age:</b>	42, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea; Multi-engine land; Multi-engine sea	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	December 21, 2000
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	August 18, 2000
<b>Flight Time:</b>	3100 hours (Total, all aircraft), 700 hours (Total, this make and model), 2250 hours (Pilot In Command, all aircraft), 195 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft)		

## Co-pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight instructor	<b>Age:</b>	42, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea; Multi-engine land; Multi-engine sea	<b>Seat Occupied:</b>	Rear
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane; Helicopter	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Helicopter; Instrument airplane; Instrument helicopter	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	December 21, 2000
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	August 11, 2000
<b>Flight Time:</b>	5500 hours (Total, all aircraft), 450 hours (Total, this make and model), 150 hours (Last 90 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Dehavilland	<b>Registration:</b>	N252SA
<b>Model/Series:</b>	DHC-6 DHC 6	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	614
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	17
<b>Date/Type of Last Inspection:</b>	November 28, 2000 100 hour	<b>Certified Max Gross Wt.:</b>	12500 lbs
<b>Time Since Last Inspection:</b>	72 Hrs	<b>Engines:</b>	2 Turbo prop
<b>Airframe Total Time:</b>	30743 Hrs at time of accident	<b>Engine Manufacturer:</b>	Pratt & Whitney
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	PT6-27
<b>Registered Owner:</b>		<b>Rated Power:</b>	680 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	SAC, 24 ft msl	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	16:53 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Scattered / 2100 ft AGL	<b>Visibility</b>	3 miles
<b>Lowest Ceiling:</b>	Overcast / 5500 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	6 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	150°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30 inches Hg	<b>Temperature/Dew Point:</b>	11°C / 10°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Sacramento, CA (SAC)	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	SAN JOSE, CA (SJC)	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	17:15 Local	<b>Type of Airspace:</b>	Class E

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	None
<b>Passenger Injuries:</b>	1 Fatal, 4 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal, 6 None	<b>Latitude, Longitude:</b>	38.695556,-121.590835

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Plagens, Howard
<b>Additional Participating Persons:</b>	SHAWN A SKAGGS; Federal Aviation Administration; San Jose, CA
<b>Original Publish Date:</b>	November 25, 2003
<b>Note:</b>	The NTSB traveled to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=50782">https://data.nts.gov/Docket?ProjectID=50782</a>

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. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).