Aviation Investigation Final Report

Location:	Aspen, Colorado	**Accident Number:**	DEN06LA038
Date & Time:	February 9, 2006, 12:45 Local	**Registration:**	N900LG
Aircraft:	Canadair CL-600	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

According to the pilot, he was landing on runway 15 when the airplane encountered wake vortices from an aircraft which had just departed runway 33. At 50 feet above ground level, the airplane rolled hard to the left and the stall warning horn activated. The pilot added power and the airplane rolled hard to the right. The pilot was able to stop the roll; however, the nose dropped and the right main landing gear impacted the runway, resulting in substantial damage. The pilot did not report any anomalies with the airframe, flight controls, engines, or weather.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the flight's encounter with wake turbulence from the departing airplane resulting in the pilot's inability to control the airplane and the subsequent impact with the runway.

Findings

Occurrence #1: VORTEX TURBULENCE ENCOUNTERED
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
1. (C) AIRCRAFT CONTROL - NOT POSSIBLE - PILOT IN COMMAND

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

Findings
2. TERRAIN CONDITION - RUNWAY

Factual Information

On February 9, 2006, approximately 1245 mountain standard time, a Canadair CL-600, N900LG, owned by Branblebush LLC, and piloted by an airline transport pilot, was substantially damaged while landing at Aspen-Pitkin County Airport (ASE), Aspen, Colorado. Visual meteorological conditions prevailed at the time of the accident. The business flight was being conducted under the provisions of Title 14 CFR Part 91 on an instrument flight rules flight plan. The pilot, co-pilot, and passenger were not injured. The cross-country flight departed Van Nuys, California, at 1045.

According to the pilot, he was landing on runway 15 (7,006 feet by 100 feet, asphalt) when the airplane encountered wake vortices from a BAe 146, which had just departed runway 33. At 50 feet above ground level, the airplane rolled hard to the left and the stall warning horn activated. The pilot added power and the airplane rolled hard to the right. The pilot was able to stop the roll; however, the nose dropped and the right main landing gear impacted the runway. The pilot reduced the power to "idle" and attempted to maintain runway centerline. The right main landing gear strut penetrated the right wing, the leading edge of the right wing was crushed aft, and the right aft wing spar was bent and buckled. The pilot did not report any anomalies with the airframe, flight controls, engines, or weather.

The airplane was equipped with a Fairchild Model A-100A cockpit voice recorder. This recorder was removed and sent to the National Transportation Safety Board's Vehicle Recorder Division for readout and a summary transcript was prepared. The recording was 31 minutes and 15 seconds in length and times are expressed in elapsed time only. According to the transcript, the accident airplane was cleared to land 26 minutes and 33 seconds into the recording. At this time, the controller reported that the winds were calm. At 28 minutes and 46 seconds, the BAe 146 was cleared for takeoff and the crew of the accident airplane commented to each other "airplane's on the roll." At 31 minutes at 09 seconds, the recorder captured a comment about "plus five sinking five", and at 31 minutes and 12 seconds, a stall warning horn was heard for 1.08 seconds. At 31 minutes and 15 seconds, the sound of an impact was captured.

Pilot Information

Certificate:	Airline transport; Commercial; Flight instructor	**Age:**	52,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	September 1, 2005
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	September 1, 2005
Flight Time:	11800 hours (Total, all aircraft), 350 hours (Total, this make and model), 10252 hours (Pilot In Command, all aircraft), 41 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Co-pilot Information

Certificate:	Airline transport; Commercial; Flight instructor	**Age:**	52,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:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	December 1, 2005
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	January 1, 2006
Flight Time:	3548 hours (Total, all aircraft), 147 hours (Total, this make and model), 1695 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Canadair	**Registration:**	N900LG
Model/Series:	CL-600	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Transport	**Serial Number:**	1036
Landing Gear Type:	Retractable - Tricycle	**Seats:**	14
Date/Type of Last Inspection:	April 1, 2005 AAIP	**Certified Max Gross Wt.:**	41250 lbs
Time Since Last Inspection:		**Engines:**	2 Turbo fan
Airframe Total Time:	6726 Hrs at time of accident	**Engine Manufacturer:**	Honeywell
ELT:	Installed, not activated	**Engine Model/Series:**	ALF-502-C
Registered Owner:	Bramblebush LLC	**Rated Power:**	7500 Lbs thrust
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	ASE,7820 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	19:53 Local	**Direction from Accident Site:**	180°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/ None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.12 inches Hg	**Temperature/Dew Point:**	6°C / -11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	VAN NUYS, CA (VNY)	**Type of Flight Plan Filed:**	IFR
Destination:	Aspen, CO (ASE)	**Type of Clearance:**	VFR;Traffic advisory
Departure Time:	10:45 Local	**Type of Airspace:**	

Airport Information

Airport:	ASPEN-PITKIN CO/SARDY FIELD ASE	**Runway Surface Type:**	Asphalt
Airport Elevation:	7820 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	15	**IFR Approach:**	Visual
Runway Length/Width:	7006 ft / 100 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	39.223331,-106.868331

Administrative Information

Investigator In Charge (IIC):	Kaiser, Jennifer
Additional Participating Persons:	Carl M Miller; FAA Flight Standards District Office; Denver, CO
Original Publish Date:	October 12, 2006
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=63213