



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Grand Junction, Colorado	<b>Accident Number:</b>	DEN02TA052
<b>Date &amp; Time:</b>	June 9, 2002, 20:30 Local	<b>Registration:</b>	N123Z
<b>Aircraft:</b>	Beech 58P	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Public aircraft		

## Analysis

The pilot departed Grand Junction, Colorado (GJT) on fire assignment as a Forest Service lead airplane, to the Coal Seam Fire in Garfield County, Colorado, in the vicinity of Glenwood Springs. The pilot reported experiencing low-level wind shear and light, moderate, and severe turbulence from just after takeoff through arriving at the area of operation. Following a reconnaissance of the fire, the pilot reported climbing to approximately 5,000 feet agl (above ground level) to avoid the turbulence and wait for wind conditions to improve so that tanker operations (aircraft dropping fire suppressant chemicals on the wildfire) could begin. The pilot reported that wind conditions improved and tanker operations commenced. On conclusion of the tanker operations, the pilot returned to GJT. The pilot reported he was in the vicinity of the Book Cliffs, approximately 10 miles northeast of GJT, approximately 2,000 feet agl in a low power descent, and an airspeed of approximately 150-160 knots, when he encountered one significant event of severe turbulence. The pilot reported the winds were out of the southwest at 20 knots with gusts to 29 knots. The airplane continued to GJT and landed uneventfully. The aircraft damage was noted the following morning during a routine preflight inspection. An examination of the airplane showed the top skin of the airplane's left wing, between the fuselage and the left engine nacelle, was buckled. No other anomalies were found. The reported winds at GJT, 34 minutes prior to the event, were 180 degrees at 20 knots with gusts to 28 knots.

## 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 adverse weather conditions. A factor contributing to the accident was the terrain-induced turbulence.

## Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER

Phase of Operation: CRUISE

### Findings

1. (C) FLIGHT INTO ADVERSE WEATHER - INADVERTENT - PILOT IN COMMAND
2. (F) WEATHER CONDITION - TURBULENCE, TERRAIN INDUCED
3. WING, SPAR - BENT
4. WING, SKIN - BUCKLED

## Factual Information

On June 9, 2002, approximately 2030 mountain daylight time, a Beech 58P, N123Z, operated by the U. S. Department of Agriculture (USDA) Forest Service and piloted by an airline transport pilot, was substantially damaged when it encountered severe turbulence, approximately 10 miles east of Grand Junction, Colorado. Visual meteorological conditions prevailed at the time of the accident. The aerial observation flight was conducted in support of wildfire fighting efforts near Glenwood Springs, Colorado, as public use under the provisions of Title 14 CFR Part 91. No flight plan was on file. The pilot reported no injuries. The local flight originated at Grand Junction-Walker Field (GJT), Grand Junction, Colorado, about 1715, and was returning to GJT when the accident occurred.

According to the USDA Safety Manager, the pilot departed GJT on fire assignment as a Forest Service lead airplane, to the Coal Seam Fire in Garfield County, Colorado, in the vicinity of Glenwood Springs. The airplane was operating by request of, and under the control of the Garfield County Sheriffs Department. The pilot reported experiencing low-level wind shear and light, moderate, and severe turbulence from just after takeoff through arriving at the area of operation. Following a reconnaissance of the fire, the pilot reported climbing to approximately 5,000 feet agl (above ground level) to avoid the turbulence and wait for wind conditions to improve so that tanker operations (aircraft dropping fire suppressant chemicals on the wildfire) could begin. The pilot reported that wind conditions improved and tanker operations commenced. On conclusion of the tanker operations, the pilot returned to GJT.

The pilot reported he was in the vicinity of the Book Cliffs, approximately 10 miles northeast of GJT, approximately 2,000 feet agl in a low power descent, and an airspeed of approximately 150-160 knots, when he encountered one significant event of severe turbulence. The pilot reported the winds were out of the southwest at 20 knots with gusts to 29 knots. The airplane continued to GJT and landed uneventfully. The aircraft damage was noted the following morning during a routine preflight inspection.

An examination of the airplane showed the top skin of the airplane's left wing, between the fuselage and the left engine nacelle, was buckled. Flight control continuity was confirmed. An examination of the engines, engines controls, and other airplane systems revealed no anomalies.

At 1956, the Aviation Routine Weather Report for GJT was clear skies, visibility 9 statute miles, temperature 91 degrees Fahrenheit (F), dew point 14 degrees F, winds 180 degrees at 20 knots with gusts to 28 knots, and an altimeter setting of 29.55 inches of Mercury. At 2056, the winds at GJT were reported as 170 degrees at 16 knots with gusts to 24 knots.

## Pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight instructor; Military	<b>Age:</b>	44,Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Glider	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	June 1, 2001
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	October 1, 2001
<b>Flight Time:</b>	5484 hours (Total, all aircraft), 1880 hours (Total, this make and model), 4250 hours (Pilot In Command, all aircraft), 79 hours (Last 90 days, all aircraft), 41 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Beech	<b>Registration:</b>	N123Z
<b>Model/Series:</b>	58P	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	TJ-211
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	5
<b>Date/Type of Last Inspection:</b>	AAIP	<b>Certified Max Gross Wt.:</b>	5400 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	TSIO-520-WB
<b>Registered Owner:</b>	USDA Forest Service	<b>Rated Power:</b>	325 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>	U. S. Forest Service	<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	GJT, 4858 ft msl	<b>Distance from Accident Site:</b>	10 Nautical Miles
<b>Observation Time:</b>	19:56 Local	<b>Direction from Accident Site:</b>	225°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	9 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	20 knots / 28 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	180°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.54 inches Hg	<b>Temperature/Dew Point:</b>	33°C / -10°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Grand Junction, CO (GJT )	<b>Type of Flight Plan Filed:</b>	Company VFR
<b>Destination:</b>		<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>	17:15 Local	<b>Type of Airspace:</b>	Class E

## Airport Information

<b>Airport:</b>	WALKER FIELD GJT	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	4858 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	29	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	10501 ft / 150 ft	<b>VFR Approach/Landing:</b>	Full stop; Straight-in

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	39.122501, -108.526664

## Administrative Information

Investigator In Charge (IIC):	Bowling, David
Additional Participating Persons:	Robert D Lesitsky; Federal Aviation Administration; Salt Lake City, UT
Original Publish Date:	December 6, 2002
Last Revision Date:	
Investigation Class:	<a href="#">Class</a>
Note:	
Investigation Docket:	<a href="https://data.nts.gov/Docket?ProjectID=54926">https://data.nts.gov/Docket?ProjectID=54926</a>

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