



National Transportation Safety Board Aviation Accident Final Report

Location:	CHEYENNE, WY	Accident Number:	FTW95FA177
Date & Time:	04/21/1995, 1016 MDT	Registration:	N711PS
Aircraft:	BEECH 60	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal

Flight Conducted Under: Part 91: General Aviation - Personal

Analysis

SHORTLY AFTER TAKEOFF, THE PILOT REPORTED HE HAD 'A PROBLEM...AN OVERBOOST SITUATION,' AND WANTED TO RETURN FOR LANDING. INSTRUMENT METEOROLOGICAL CONDITIONS PREVAILED, SO THE PILOT WAS CLEARED FOR THE ILS RUNWAY 26 APPROACH. A WITNESS SAW THE AIRPLANE EMERGE FROM THE LOW OVERCAST IN A WINGS LEVEL DESCENT, THEN PITCH OVER TO A NEAR VERTICAL ATTITUDE AND IMPACT A SHOPPING CENTER SIGN. THE LEFT TURBOCHARGER WASTEGATE WAS FOUND IN THE OPEN (LOW BOOST) POSITION, AND THE RIGHT TURBOCHARGER WASTEGATE WAS FOUND IN THE CLOSED (HIGH BOOST) POSITION. THE RIGHT TURBOCHARGER BUTTERFLY VALVE WAS SEVERELY ERODED, THE PIN WAS MISSING, AND THE VALVE WAS FREE TO ROTATE ON THE SHAFT. A HOLE WAS BURNT THROUGH THE RIGHT ENGINE NUMBER 1 CYLINDER EXHAUST VALVE. BOTH PROPELLERS WERE IN THE LOW PITCH-HIGH RPM RANGE. BOTH ENGINES AND TURBOCHARGERS WERE ORIGINAL EQUIPMENT AND HAD NOT BEEN OVERHAULED IN 21 YEARS. A TOXICOLOGY TEST SHOWED 0.564 MCG/ML OF SERTRALINE (ANTIDEPRESSANT) IN THE PILOT'S BLOOD. SERTRALINE WAS NOT APPROVED FOR USE WHILE FLYING AN AIRCRAFT.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S FAILURE TO MAINTAIN AIRCRAFT CONTROL. FACTORS WERE THE INSTRUMENT WEATHER CONDITONS AND THE EXCESSIVE WORKLOAD IMPOSED ON THE SOLO PILOT ATTEMPTING TO DEAL WITH AN EMERGENCY SITUATION WHILE FLYING IN INSTRUMENT METEOROLOGICAL CONDITIONS.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: CLIMB - TO CRUISE

Findings

1. (F) EXHAUST SYSTEM,WASTEGATE - FAILURE,TOTAL

Occurrence #2: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: APPROACH - FAF/OUTER MARKER TO THRESHOLD (IFR)

Findings

2. (F) WEATHER CONDITION - LOW CEILING

3. (F) WEATHER CONDITION - OBSCURATION

4. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND

5. (F) EXCESSIVE WORKLOAD (TASK OVERLOAD) - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: DESCENT - UNCONTROLLED

Findings

6. OBJECT - SIGN

Factual Information

HISTORY OF FLIGHT

On April 21, 1995, at 1016 mountain daylight time, a Beech 60, N711PS, was destroyed when it collided with a ground structure in Cheyenne, Wyoming. The commercial pilot was fatally injured. The personal flight, conducted under Title 14 CFR Part 91, originated in Cheyenne at 1006. Instrument meteorological conditions prevailed at the time, and an instrument flight rules (IFR) flight plan had been filed.

According to the Denver Automated Flight Service Station (AFSS), the pilot obtained a weather briefing, filed an IFR flight plan, and took off from Cheyenne at 1006, en route to Colorado Springs, Colorado. A family member said the pilot was en route to a pilot safety clinic. An Air National Guard C-130 hydraulics mechanic witnessed the takeoff of a light twin engine airplane answering the description of N711PS. He said that just before and during rotation to liftoff, he heard a very loud, high pitch whine. The noise "sounded like a turbo" and then stopped abruptly as the airplane passed his position.

The Cheyenne control tower was closed for renovation. As a result, the pilot contacted the Denver Air Route Traffic Control Center shortly after takeoff. According to a taped recording of communications, the pilot reported he had "a problem" and wanted to return for landing. The controller asked the pilot if he was declaring an emergency and the pilot replied, "I have an overboost situation, here. I want to come back and check it out." He was subsequently cleared for the ILS (instrument landing system) runway 26 approach.

NTAP (National Track Analysis Program) radar plots were reviewed and showed N711PS south of the airport and on an easterly heading. The target subsequently joined the localizer and tracked inbound on the ILS 26 localizer course. Radar contact was lost just inside to Horse LOM (locator outer marker).

An Army helicopter mechanic, driving past the Frontier Shopping Mall on Dell Range Boulevard, observed the airplane emerge from the low overcast in a wings-level descent. He said he thought the pilot had executed the VOR-A approach because he was northeast of the airport and travelling in a southwest direction.

He heard the engines "spool up," then the airplane pitched over to a near-vertical attitude and dove into a shopping center parking lot on the airport perimeter. The witness said the airplane struck and destroyed a mall sign and exploded on impact. A secondary explosion followed shortly thereafter.

AIRCRAFT INFORMATION

A review of the airplane maintenance records disclosed the left and right turbochargers were original equipment and were installed after having been overhauled in December and March of 1974, respectively. On July 9, 1993, the left turbocharger wastegate was replaced but no reason was given as to why. The right turbocharger wastegate was not replaced at that time. There were no entries to indicate either turbocharger had been overhauled in the following 21 years of continuous service. The engines had been factory remanufactured and were re-installed on the airplane on June 11, 1974. Analysis of engine oil samples had been routinely performed. The report on the analysis done in April 1995 indicated the left engine oil sample was normal, but the right engine oil sample indicated "critical conditions! Bearing overlay wear. . .piston and

liner wear. . .check for proper start-up and operating oil pressures. . .check for excessive blow-by or low compression (emphasis added)." The airplane had received routine annual inspections.

WRECKAGE AND IMPACT INFORMATION

The airplane came to rest next to the shopping center mall sign. There were no skewed ground scars. The engines and propellers were inside craters next to the nose section. The tail section, according to photographs taken immediately after the accident, was leaning against the sign, but was laying inverted next to the fuselage when examined. Numerous small pieces of wreckage was strewn across a grass median and onto the adjacent boulevard. Other small pieces of wreckage were scattered in the parking lot.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was conducted by Dr. Patrick C. Allen of Forensic Pathology Consultants, Loveland, Colorado. Toxicological screens were conducted by FAA's Civil Aeromedical Institute (CAMI) and the Wyoming State Crime Laboratory. According to its toxicology report, the Wyoming State Crime Laboratory reported no evidence of drugs or alcohol in urine. Carbon monoxide, however, was measured at 9 percent.

TESTS AND RESEARCH

The engines, turbochargers, and propellers were disassembled and inspected at the facilities of Beegles Aircraft Company, Greeley, Colorado, on May 16, 17, and 18, 1995.

Rotational scoring was noted in the turbine section of the left turbocharger (s/n DAR0104). The wastegate, or exhaust bypass valve, was found in the open (spring-loaded) or low boost position. The turbine shaft had fractured in torsional overload.

Rotational scoring was also noted in the turbine section of the right turbocharger (s/n DAR0121). Both bearing journals had been rebored and were 0.010 oversized --- an unapproved repair, according to the manufacturer. The bottom portion of the wastegate butterfly valve that attaches the valve to the input shaft was severely eroded. The pin was missing and the valve was free to rotate on the shaft. The valve was in a closed or high boost position.

Disassembly of the left engine disclosed no anomalies. Disassembly of the right engine disclosed a hole burned through the exhaust valve of number 1 cylinder. The TIT (turbine inlet temperature) probe was burned away. There was no evidence that the right engine was incapable of producing power.

According to a technical representative of Hartzell Propellers, both the left and right propellers were found in positions consistent with, and indicative of, the low pitch/high RPM range.

It was estimated that at the time of the accident, the gross weight of N711PS was 6,100 pounds. Referring to the Cheyenne 1024 meteorological observation (altimeter setting, 29.92 inches of mercury; 33 degrees F. or 0.5 degrees C.), the pressure altitude was computed to be 6,156 feet MSL. According to the performance section of the FAA approved Beech 60/A60 Flight Manual, the airplane should be capable of climbing 370 feet per minute with one engine operating. Additionally, it was computed that the airplane's service and absolute ceilings were 16,100 and 18,200 feet, respectively.

ADDITION INFORMATION

The wreckage was released to the owner's representative on May 18, 1995.

Pilot Information

Certificate:	Commercial	Age:	39, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	04/27/1994
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	683 hours (Total, all aircraft), 143 hours (Total, this make and model), 559 hours (Pilot In Command, all aircraft), 44 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BEECH	Registration:	N711PS
Model/Series:	60 60	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	P-4
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	04/01/1994, Annual	Certified Max Gross Wt.:	6725 lbs
Time Since Last Inspection:	179 Hours	Engines:	2 Reciprocating
Airframe Total Time:	3462 Hours	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	TIO-541-E1A4
Registered Owner:	RML, INC.	Rated Power:	380 hp
Operator:	HOMMEL, DANIEL J.	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	CYS, 6156 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1024 MDT	Direction from Accident Site:	180°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	0.5 Miles
Lowest Ceiling:	Broken / 300 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	100°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	1°C / 1°C
Precipitation and Obscuration:			
Departure Point:	, WY (CYS)	Type of Flight Plan Filed:	IFR
Destination:	COLORADO SPGS, CO (COS)	Type of Clearance:	IFR
Departure Time:	1006 MDT	Type of Airspace:	Class D

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	On-Ground
Total Injuries:	1 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	ARNOLD W SCOTT	Report Date:	12/19/1995
Additional Participating Persons:	ALVIN H HANKINS; DENVER, CO		
Publish Date:			
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 pubinquiry@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. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).