



National Transportation Safety Board Aviation Accident Final Report

Location:	Cheyenne, WY	Accident Number:	DEN03FA125
Date & Time:	07/10/2003, 1310 MDT	Registration:	N72615
Aircraft:	CASA 2.111	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal

Flight Conducted Under: Part 91: General Aviation - Business

Analysis

The airplane was en route to an air show and was making a refueling stop. The tower controller cleared the pilot to land. The airplane was observed on a 3-mile straight-in final approach when it began a left turn. The controller asked the pilot what his intentions were. The pilot replied, "We just lost our left engine." The pilot then reported that he wasn't going to make it to the airport. Witnesses observed the airplane flying "low to the ground and under-speed for [a] good 4 minutes." The right propeller was turning, but the left propeller was not turning. There was no fire or smoke coming from the left engine. The pilot was "obviously trying to pull up." The airplane "dipped hard left," then struck the ground left wing first. It slid through a chain link fence, struck a parked automobile, and collided with a school bus wash barn. The ensuing fire destroyed the airplane, parked car, and wash barn. Disassembly and examination of both engines disclosed no anomalies that would have been causal or contributory to the accident. According to the Airplane Flight Manual, "Maximum power will probably be required to maintain flight with one engine inoperative. Maximum power at slow air speed may cause loss of directional control."

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power for reasons undetermined, and the pilot's failure to maintain aircraft control. Contributing factors were the unsuitable terrain on which to make a forced landing, low airspeed, the fence, automobile, and the school bus wash barn.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings

1. 1 ENGINE
2. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings

3. (F) AIRSPEED - LOW
4. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. (F) TERRAIN CONDITION - NONE SUITABLE
6. (F) OBJECT - FENCE
7. (F) OBJECT - VEHICLE
8. (F) OBJECT - BUILDING(NONRESIDENTIAL)

Factual Information

HISTORY OF FLIGHT

On July 10, 2003, approximately 1310 mountain daylight time, N72615, a CASA 2.111, registered to and operated by the American Airpower Heritage Fly Museum, was destroyed when it collided with a building 2 miles southeast of the Cheyenne Municipal Airport, Cheyenne, Wyoming. The airline transport certificated pilot and copilot were fatally injured. Visual meteorological conditions prevailed, and no flight plan had been filed for the cross-country flight being conducted under Title 14 CFR Part 91. The flight originated at Midland, Texas, approximately 1030, and was en route to Missoula, Montana, for an air show.

According to control tower personnel, the tower controller cleared the pilot to land on runway 26. The airplane was on a 3-mile straight-in final approach when controllers saw it turning left. When they asked the pilot what his intentions were, he replied: "We just lost our left engine." The pilot then reported that he wasn't going to make it to the airport. Several witnesses observed the airplane flying "low to the ground and under-speed for [a] good 4 minutes." The right propeller was turning, but the left propeller was not turning. They saw no smoke or fire coming from the left engine. One witness said the pilot was "obviously trying to pull up. The plane dipped hard left," then struck the ground with its left wing. It traveled through a chain link fence, struck a parked automobile, and slid into a school bus wash barn. The ensuing fire destroyed the airplane, parked car, and wash barn. One witness observed the "tail cartwheel above the roof [of the wash barn] and then shower[ed] debris into another building in [the] rear of [the] bus barn."

CREW INFORMATION

The pilot, 56, held an airline transport pilot certificate with an airplane multiengine land rating, type ratings in the Boeing 757 and 767, and commercial privileges for airplane single-engine land, rotorcraft-helicopter, and instrument-helicopter ratings. He held a flight instructor certificate with airplane single/multiengine ratings. He also held a ground instructor certificate with a basic rating. His first class airman medical certificate, dated February 21, 2003, contained the limitation, "Must have available glasses for near and intermediate vision." On February 20, 2003, he successfully completed an American Airpower Heritage Fly Museum proficiency check, and was designated pilot-in-command in the HE-111 on March 5, 2003. He was a captain with America West Airlines.

The copilot, 54, held an airline transport pilot certificate with an airplane multiengine land rating, type ratings in the Airbus A320, Boeing 737, and Sikorsky S70, and commercial privileges for airplane single-engine land, glider, rotorcraft-helicopter, and instrument-helicopter ratings. He held a flight instructor certificate with airplane single/multiengine, instrument-airplane, and rotorcraft-helicopter ratings. The pilot also held a mechanic certificate with airframe and powerplant ratings. His first class airman medical certificate, dated May 19, 2003, contained the limitation, "Must wear corrective lenses for near and distant vision." On October 4, 2001, he successfully completed an American Airpower Heritage Fly Museum proficiency check, and was designated copilot in the HE-111 on November 1, 2001. He was a captain with U.S. Air.

AIRCRAFT INFORMATION

The Spanish manufacturer, CASA, manufactured the airplane, a model 2.111 (s/n T8-B-124), in

1952. The airplane was a replica of the Heinkel HE-111, a World War II German Air Force bomber. The airplane was powered by two Rolls-Royce Merlin 500 V-12, liquid-cooled engines (s/n 45-306915, left; 307205, right), each rated at 1,200 horsepower, driving two 3-bladed, hydraulically-controlled, constant speed, full-feathering propellers.

The airplane was maintained under an FAA-approved continuous inspection program. The last airframe and engine inspections were conducted on April 18, 2003, and August 20, 2001, respectively, when the airframe had accrued 1,895.1 and 1,834.6 hours, respectively. The last pitot-static system and transponder checks were done on March 14, 2003.

METEOROLOGICAL INFORMATION

At the time of the accident, the current METAR (routine meteorological report) for Cheyenne Municipal Airport was as follows: Wind, 010 degrees at 12 knots, gusting to 15 knots; visibility, 10 statute miles (or greater); sky condition, clear; temperature, 29 degrees Celsius; dew point, 1 degree Celsius; altimeter setting, 30.31 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

A ground scar in the dirt contained pieces of the left wing. The scar led up to a portion of a chain link fence that had been torn down. The airplane then struck a parked automobile and a school bus wash barn. The ensuing post-impact fire destroyed the automobile and heavily damaged the school bus wash barn. With the exception of the outboard portion of the right wing and both engines, fire consumed the airplane.

MEDICAL & PATHOLOGICAL INFORMATION

On July 11, 2003, the Laramie County Coroner's Office conducted an autopsies on the pilot-in-command and copilot. FAA's Civil Aeromedical Institute (CAMI) performed toxicological tests on specimens taken from the pilot and copilot. According to CAMI's reports (#200300208001 and #200300208002), all tests were negative.

TESTS AND RESEARCH

The left engine was disassembled and examined on August 12, 2003. Before disassembly, however, engine rotation was accomplished. When viewed from the rear, the "A" magneto is on the left side and the "B" magneto is on the right side of the engine. The exhaust manifold, camshafts, and rockers; the "A" and "B" bank flame traps, pistons, and cylinder walls, and the crankshaft were unremarkable. The "A" bank spark plugs were oil-fouled, and the "B" bank spark plugs were clean. The oil filter contained normal amounts of metal deposits. Although the magnetos and fuel pump were burned, no discrepancies were noted.

The right engine was disassembled and examined on September 9, 2003. No discrepancies were noted.

ADDITIONAL INFORMATION

The following are excerpts from the Airplane Flight Manual. The airplane has a fuel capacity of 930 gallons. Each engine consumes approximately 60 gallons per hour, giving the airplane a 7 hour, 45 minute endurance. The engines are equipped with float-type carburetors that are sensitive to deck angle (or pitch attitude) and high fuel pressures. The engines may lose power if the deck angle exceeds 15 degrees or if the fuel pressure exceeds 9 psi.

There is an engine-driven fuel pump on each engine, and there is an electric boost pump between each engine and the fuel tank valves. The boost pumps should be on "any time the aircraft is flown within 1,000 feet of the surface." The boost pumps provide adequate backup fuel pressure to prevent an engine power loss if an engine-driven fuel pump should fail.

Maximum power will probably be required to maintain flight if an engine should lose power. Maximum power at slow airspeed may cause a loss of directional control.

Other than the Federal Aviation Administration, there were no designated parties to this investigation.

The wreckage was released to the insurance company on August 13, 2003.

Pilot Information

Certificate:	Airline Transport; Flight Instructor	Age:	56, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Helicopter	Toxicology Performed:	Yes
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	02/21/2003
Occupational Pilot:		Last Flight Review or Equivalent:	04/07/2003
Flight Time:	21000 hours (Total, all aircraft)		

Co-Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial	Age:	54, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	Glider; Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Helicopter; Instrument Airplane	Toxicology Performed:	Yes
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	05/19/2003
Occupational Pilot:		Last Flight Review or Equivalent:	12/01/2002
Flight Time:	15000 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CASA	Registration:	N72615
Model/Series:	2.111	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Experimental	Serial Number:	T8-B-124
Landing Gear Type:	Retractable - Tailwheel	Seats:	4
Date/Type of Last Inspection:	04/18/2003, AAIP	Certified Max Gross Wt.:	30800 lbs
Time Since Last Inspection:	3 Hours	Engines:	2 Reciprocating
Airframe Total Time:	1895 Hours as of last inspection	Engine Manufacturer:	Rolls-Royce
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	Merlin 500
Registered Owner:	American Airpower Heritage Flying Museum	Rated Power:	1200 hp
Operator:	American Airpower Heritage Flying Museum	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	CYS, 6156 ft msl	Distance from Accident Site:	3 Nautical Miles
Observation Time:	1314 MDT	Direction from Accident Site:	305°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	12 knots / 15 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	10°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.31 inches Hg	Temperature/Dew Point:	29° C / 1° C
Precipitation and Obscuration:			
Departure Point:	Midland, TX (MAF)	Type of Flight Plan Filed:	None
Destination:	MISSOULA, MT (MSO)	Type of Clearance:	VFR
Departure Time:	1030 CDT	Type of Airspace:	Class D

Airport Information

Airport:	CHEYENNE (CYS)	Runway Surface Type:	Concrete
Airport Elevation:	6156 ft	Runway Surface Condition:	Dry
Runway Used:	26	IFR Approach:	None
Runway Length/Width:	9176 ft / 150 ft	VFR Approach/Landing:	Forced Landing; Straight-in

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	41.150833, -104.801944

Administrative Information

Investigator In Charge (IIC):	Arnold W Scott	Report Date:	03/30/2004
Additional Participating Persons:	James M Smith; FAA Flight Standards Field Office; Casper, WY		
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 pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.ntsbt.gov/pubdms/ .		

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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](#).