



# Aviation Investigation Final Report

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<b>Location:</b>	Hooksett, New Hampshire	<b>Accident Number:</b>	ERA13FA039
<b>Date &amp; Time:</b>	October 25, 2012, 13:06 Local	<b>Registration:</b>	N4325W
<b>Aircraft:</b>	Beech A36	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Miscellaneous/other	<b>Injuries:</b>	2 Fatal
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The airplane was on the second leg of a visual flight rules cross-country flight and was receiving flight following services from air traffic control (ATC). About 10 minutes after establishing radio and radar contact with ATC, the airplane's discrete transponder code was lost, and an air traffic controller made several unsuccessful attempts to contact the airplane. Postaccident review of radar data showed a primary target, correlated to be the accident airplane, as it tracked north toward the pilot's destination. About 7 minutes later, the target initiated a left turn south, paralleling its northerly course. The last several radar returns showed the target tracking southbound directly over an interstate highway. The last radar return was located about 2,500 feet north of where the airplane was found resting upright against an interstate guardrail. Postaccident examination of the airframe and engine revealed no evidence of any mechanical malfunctions or anomalies that would have precluded normal operation.

Review of the pilot's medical history revealed multiple medical conditions and a coronary artery bypass graft procedure for three-vessel coronary artery disease and insertion of a pacemaker for symptomatic bradycardia. The pilot provided the Federal Aviation Administration (FAA) extensive documentation regarding his conditions and the medications used to treat the conditions and was granted special-issuance medical certificates. His most recent medical certificate was issued 3 months before the accident. The pilot's autopsy report indicated that he died from an acute heart attack at some point during the accident flight.

The pilot-rated passenger held a pilot certificate, and, according to the pilot's logbook, had acted as a safety pilot on flights in the accident airplane during the previous year. However, she did not hold a

current medical certificate, and no other evidence of recent flight experience could be found to suggest that she was capable of flying the accident airplane unassisted.

## Probable Cause and Findings

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

The pilot's total incapacitation in flight due to an acute heart attack.

### Findings

Personnel issues	
	Cardiovascular - Pilot

## Factual Information

### History of Flight

<b>Enroute</b>	Miscellaneous/other (Defining event)
<b>Maneuvering</b>	Collision with terr/obj (non-CFIT)

On October 25, 2012, at approximately 1306 eastern daylight time, a Beechcraft A36, N4325W, was substantially damaged during impact with a light stanchion and terrain near Hooksett, New Hampshire. The private pilot/owner and pilot-rated passenger were fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the flight, which departed Boire Field (ASH), Nashua, New Hampshire, with a planned destination of Laconia Municipal Airport (LCI), Laconia, New Hampshire. The personal flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

According to line workers at ASH, the pilot and his wife departed the airplane's base at Block Island State Airport (BID), Block Island, Rhode Island, the morning of the accident, and landed at ASH to clean the airplane's windscreen before departing for LCI. They stated that the airplane did not take on fuel at ASH, and that the pilot appeared to be in good spirits. A fixed-base operator at LCI reported that the pilot had reserved a rental car, and was scheduled to arrive at 1330.

The pilot contacted the FAA Boston terminal radar approach control facility at 1239, shortly after takeoff from ASH, and requested visual flight rules (VFR) flight following services. The airplane was issued a discrete transponder code and continued direct to LCI at a cruise altitude of 5,500 feet. At 1247, the airplane's transponder code was lost. Air traffic control attempted to contact the pilot several times to verify the airplane's altitude, but after no response was received, flight following services were terminated.

Review of radar data from Manchester Airport (MHT), Manchester, New Hampshire, revealed a series of primary radar returns correlated to the accident airplane, which provided position, but not altitude, information. The target tracked north towards LCI until about 1254, when it began a left turn towards the south, nearly parallel to its northerly track. About 1303, the target began an approximate 30-degree left turn, followed by an approximate 50-degree right turn. The last several returns showed the target tracking southbound directly overhead Interstate 93, with the last return located about 2,200 feet north of the airplane's initial impact point.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	83
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Unknown
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	March 22, 2011
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	March 2, 2011
<b>Flight Time:</b>	(Estimated) 9600 hours (Total, all aircraft), 500 hours (Total, this make and model), 20 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft)		

## Pilot-rated passenger Information

<b>Certificate:</b>	Private	<b>Age:</b>	83
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	None None	<b>Last FAA Medical Exam:</b>	August 1, 1972
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 62 hours (Total, all aircraft), 0 hours (Total, this make and model)		

The pilot, age 83, held a private pilot certificate with ratings for airplane single- and multi-engine land, and instrument airplane. His most recent Federal Aviation Administration (FAA) third class medical certificate was issued in August 2012. His most recent flight review was conducted in March 2011. Review of the pilot's logbook revealed a total flight experience of 9,675 hours.

According to FAA airman records, the passenger was issued a third-class medical/student pilot certificate in August 1972. She was issued a private pilot certificate in November 1972, at which time she reported 62 total hours of flight experience. There were no further airman or medical records on file with the FAA, and no records were found during the investigation to suggest that the passenger was a current pilot; however, according to the pilot's logbook, the passenger acted as a safety pilot during several flights in the accident airplane the year prior to the accident, while the pilot conducted flight under simulated instrument meteorological conditions.

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Beech	<b>Registration:</b>	N4325W
<b>Model/Series:</b>	A36	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1974	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	E-528
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	April 17, 2012 Annual	<b>Certified Max Gross Wt.:</b>	3612 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	4130 Hrs as of last inspection	<b>Engine Manufacturer:</b>	CONT MOTOR
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	IO-520 SERIES
<b>Registered Owner:</b>	HERMAN HASSINGER ARCHITECTS	<b>Rated Power:</b>	285 Horsepower
<b>Operator:</b>	HERMAN HASSINGER ARCHITECTS	<b>Operating Certificate(s) Held:</b>	None

The airplane was manufactured in 1974 and registered to the pilot in 2004. It was equipped with one Continental Motors Inc. IO-520-BB, 285 horsepower, reciprocating engine. Review of the airplane's maintenance logs revealed that the most recent annual inspection was completed on April 17, 2012, at a total aircraft time of 4,130 hours.

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	MHT,266 ft msl	<b>Distance from Accident Site:</b>	7 Nautical Miles
<b>Observation Time:</b>	12:53 Local	<b>Direction from Accident Site:</b>	160°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility:</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	5 knots /	<b>Turbulence Type Forecast/Actual:</b>	/ None
<b>Wind Direction:</b>	120°	<b>Turbulence Severity Forecast/Actual:</b>	/ N/A
<b>Altimeter Setting:</b>	30.27 inches Hg	<b>Temperature/Dew Point:</b>	16°C / 3°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Nashua, NH (ASH)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Laconia, NH (LCI)	<b>Type of Clearance:</b>	VFR;VFR flight following
<b>Departure Time:</b>	12:35 Local	<b>Type of Airspace:</b>	

The 1253 weather observation at Manchester Airport, located approximately 7 nm southeast of the accident site, reported winds from 120 degrees at 5 knots, clear skies, 10 miles visibility, and an

altimeter setting of 30.27 inches of mercury.

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 Fatal	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 Fatal	<b>Latitude, Longitude:</b>	43.041389,-71.468887(est)

The initial impact point was identified as a light stanchion, located on the east side of Interstate 93 at 43 degrees, 3 minutes, 1.5 seconds north latitude; 71 degrees, 28 minutes, 13.41 seconds west longitude, at an elevation of approximately 300 feet. The outboard portion of the right wing was located about 55 feet north of the stanchion. The main wreckage came to rest upright against the guardrail on the west side of the northbound lanes, on an approximate 280 degree heading, about 300 feet from the initial impact point. The propeller was separated from the engine, and came to rest about 50 feet past the main wreckage.

The wreckage was removed from the interstate and recovered to a hangar for further examination. The cabin area exhibited significant impact damage, and the fuselage structure displayed buckling at the rear spar carry-through. The empennage was intact, and exhibited wrinkling of the skin. The landing gear was observed in the retracted position. The airplane was equipped with dual flight control yokes mounted on a T-arm. The T-arm was separated at the single control column. Continuity was established from all flight control surfaces to the cockpit area.

The engine remained attached to the airframe by various lines, cables, and hoses. The top spark plugs were removed; each was light gray in color and exhibited normal wear. The engine was rotated by hand through the accessory drive, and valve train continuity was confirmed. Compression was obtained on all cylinders using the thumb method. Both left and right magnetos produced spark on all terminal leads.

The metal, three-bladed, constant-speed propeller was separated just aft of the propeller flange. All three blades remained attached at the hub. Two of the blades exhibited s-bending, twisting, and leading edge gouging. The third blade was relatively undamaged.

## Medical and Pathological Information

Review of the pilot's FAA airman medical file revealed that the pilot was first granted a third class medical certificate in 1967. From 1967 through 1997, the pilot received second or third class medical certificates and did not report the use of any medications or any medical problems, with the exception of hay fever.

In 1999, the pilot reported high blood pressure being treated with a beta blocker. He was issued a third class medical certificate, but was required to provide further documentation regarding his condition to the FAA, and was cautioned against flying if he developed new symptoms or side effects from the medication. In 2003, the pilot reported having undergone coronary artery bypass grafting and pacemaker insertion the year prior. His medical certificate was deferred, and the FAA again requested additional information. The submitted documentation revealed a previously unreported history of hypertension, paroxysmal atrial fibrillation, high cholesterol, sleep apnea, aortic insufficiency, stroke, shortness of breath with exertion, renal insufficiency, and type 2 diabetes. Stress testing and cardiac catheterization revealed ischemia and three-vessel coronary artery disease. The pilot underwent three-vessel bypass grafting in July 2002, and in December 2002, he had developed symptomatic bradycardia, which required insertion of the pacemaker.

The pilot was subsequently granted a third class, special issuance medical certificate valid for 6 months only. The pilot continued to supply extensive documentation of his health conditions as requested by the FAA, and continued to receive special issuance, time-limited medical certificates over the next several years. During this time, the pilot reported additional medical issues, including bilateral cataract removal, prostate surgery, and sleep apnea requiring the use of a continuous positive airway pressure (CPAP) machine. In 2012, the pilot's medical certificate application was deferred due to the reported use of two diabetes medications, the concomitant use of which was prohibited by the FAA. The pilot worked with his physicians to discontinue one of these medications, and was subsequently granted a third class, special issuance medical certificate in August 2012.

Toxicological testing was performed on the pilot by the FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. Testing revealed metoprolol (trade name Lopressor), a beta blocker used to treat hypertension, atrial fibrillation, and coronary artery disease; ranitidine (trade name Zantac), used to treat ulcers and heartburn, and warfarin (trade name Coumadin), an anticoagulant or blood thinner, used to prevent blood clots; in urine and blood. All of these medications had been reported to the FAA on the pilot's most recent medical certificate application. Blood samples were negative for carbon monoxide.

Toxicological testing of the passenger revealed diphenhydramine in urine. Blood samples were negative for carbon monoxide.

An autopsy was performed by the Office of the Chief Medical Examiner, Concord, New Hampshire. The cause of death was determined to be coronary artery bypass graft thrombosis due to atherosclerosis, and the manner of death was natural. The autopsy further noted a lack of significant hemorrhage associated with the traumatic injuries, consistent with the injuries having been sustained postmortem. Post mortem interrogation of the pacemaker did not reveal any anomalies.

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Diaz, Allison
<b>Additional Participating Persons:</b>	Joe Ingalls; FAA/FSDO; Portland, ME Ernest C Hall; Hawker Beechcraft; Wichita, KS Chris Lang; Continental Motors Inc; Mobile, AL
<b>Original Publish Date:</b>	July 9, 2014
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=85430">https://data.ntsb.gov/Docket?ProjectID=85430</a>

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