National Transportation Safety Board
Aviation Accident Final Report

Location:	ROCK HILL, SC	**Accident Number:**	MIA95FA208
Date & Time:	08/20/1995, 0028 EDT	**Registration:**	N41GA
Aircraft:	PIPER 601P	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

AS THE FLIGHT APPROACHED THE AIRPORT, RADAR DATA SHOWED THAT IT WENT INTO A SHALLOW DESCENDING LEFT TURN AWAY FROM THE AIRPORT. RADAR DATA WAS LOST AT ABOUT 650 FEET AGL WITH THE GROUND SPEED ABOUT 100 KNOTS. WITNESSES OBSERVED THE AIRCRAFT FLYING ON A SOUTHERLY HEADING AND ENTER A SPIN OR SPIRAL FROM WHICH IT CRASHED NOSE FIRST INTO THE GROUND. POST-CRASH EXAMINATION OF THE AIRCRAFT STRUCTURE, FLIGHT CONTROLS, AND ENGINES SHOWED NO PRECRASH FAILURE OR MALFUNCTION. POST-MORTEM EXAMINATION OF THE PILOT SHOWED HE HAD SUFFERED A HEART ATTACK. THE PILOT HAD A HISTORY OF HEART DISEASE, A PREVIOUS HEART ATTACK, AND HEART BYPASS SURGERY. HE HELD A SPECIAL ISSUANCE FAA MEDICAL CERTIFICATE, DUE TO HIS HISTORY OF HEART DISEASE.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE PILOT'S IN-FLIGHT LOSS OF AIRCRAFT CONTROL, DUE TO INCAPACITATION BY A HEART ATTACK.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH

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

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
3. TERRAIN CONDITION - ROADWAY/HIGHWAY

Factual Information

HISTORY OF THE FLIGHT

On August 20, 1995, about 0028 eastern daylight time, a Piper 601P, N41GA, registered to the pilot, crashed while approaching Rock Hill Airport, Rock Hill, South Carolina, while on a 14 CFR Part 91 personal flight. Visual meteorological conditions prevailed at the time and no flight plan was filed. The aircraft was destroyed and the private-rated pilot and one passenger were fatally injured. The flight originated from North Myrtle Beach, South Carolina, on August 19, 1995, about 2300.

The flight received flight following radar service from the FAA Charlotte Approach Control. When the flight was 10 miles southeast of the Rock Hill Airport, the pilot reported he had the airport in sight. Radar service was terminated and the pilot was cleared to change radio frequencies. No further voice contact with the flight was made.

Recorded radar data from the Charlotte Approach Control and the FAA Atlanta Center showed the flight approached the Rock Hill Airport from the southeast. At 0025:04, the flight was 5 miles southeast of the airport heading northwest while descending through 3,200 feet msl. A left turn was initiated and at 0026:31 the flight was at 2,400 feet heading west. At 0027:04, the flight was heading south at 2,300 feet. At 0027:41, the flight was heading south, 5 miles south of the airport, in the area of the crash site, at 1,300 feet msl or about 650 feet agl. The ground speed at this point is 100 knots. No further radar contact with the flight is made. See attached radar data.

Witnesses heard the engines of the aircraft and observed the aircraft descending with the red and green navigation lights rotating around. The aircraft impacted the ground in a near vertical, nose-down attitude. A postcrash fire erupted about 30 seconds after impact.

PERSONNEL INFORMATION

Information on the pilot is contained in this report under First Pilot Information.

AIRCRAFT INFORMATION

Information on the aircraft is contained in this report under Aircraft Information.

METEOROLOGICAL INFORMATION

Visual meteorological conditions prevailed at the time of the accident. Meteorological information is contained in this report under Weather Information.

WRECKAGE AND IMPACT INFORMATION

The aircraft crashed at the intersection of Albright Road (Highway 72) and Saluda Road (Highway 901), Rock Hill, South Carolina. The crash site is about 5 miles south of the Rock Hill Airport. Examination of the crash site showed the aircraft was on a southerly heading when it impacted nose first in a near vertical descent, at a slow speed. The aircraft crashed between a highway sign, power pole, and guy wires. None of these objects were struck by the aircraft.

Examination of the aircraft showed all components of the aircraft which are necessary for flight were located on or around the main wreckage. Continuity of the flight control systems was established. All disconnected points in the control rod systems were caused by impact forces or fire damage. The landing gear was in the extended position. The right flap actuator

was in the 20-degree flap extended position. The left flap actuator was separated from the wing and flap.

Examination of the left engine showed the engine sustained severe impact and postcrash fire damage. The front portion of the crankshaft along with the propeller flange separated from the remainder of the engine and was located with the engine. The fracture area of the crankshaft was typical of overstress separation. The No. 1 cylinder, piston, and connecting rod remained with the separated portion of crankshaft. The remainder of the crankshaft, camshaft, and valve drive train had continuity. Continuity to all accessory drive gears was established. The engine had normal lubrication. The wheels and blades of each turbocharger were in place. Each magneto and the fuel servo were destroyed by fire. The engine fuel pump had fire damage but did rotate. The fuel manifold, lines, and injector nozzles were clear of obstructions. The spark plugs had color consistent with normal engine operation.

Examination of the right engine showed the propeller was still attached to the propeller flange. The engine rotated and compression was developed by all six cylinders. Continuity of the crankshaft, camshaft, valve train, and accessory drives was established. Each magneto rotated when turned by hand, but would not spark due to fire damage. Fuel was found in the fuel servo. The fuel manifold, lines, and injectors nozzles were free of obstructions. Each turbocharger rotated normally. The spark plugs had color consistent with normal engine operation.

Examination of the left propeller showed the propeller hub was destroyed by impact forces. The aft portion of the hub remained bolted to the engine propeller flange. All three propeller blades separated from the destroyed hub. Each blade face had chordwise scratches and blade bending consistent with rotation by engine power during ground impact. The left propeller governor separated from the engine during impact and sustained impact damage. The governor did rotate when turned by hand.

Examination of the right propeller showed the propeller was attached to the engine propeller flange. One blade separated from the hub and was found in the hole created by the right engine during impact. Each blade had chordwise scratches on the face and bending damage consistent with rotation by engine power during ground impact. The propeller governor sustained impact damage and would not turn due to a bent drive shaft.

MEDICAL AND PATHOLOGICAL INFORMATION

Post-mortem examination of the pilot was performed on August 21, 1995, by Dr. Clay A. Nichols, Assistant Professor of Pathology and Laboratory Medicine, Medical University of South Carolina, Charleston, South Carolina. The cause of death was attributed to multiple trauma due to airplane crash due to acute myocardial infarction. Dr. Nichols reported that an apparent extension of a previous myocardial infarction was identified in the posterior wall of the left ventricle. The age of the infarct was approximately 24 to 48 hours.

Post-mortem toxicology studies on specimens obtained from the pilot was performed by Dr. Barry Levine, Armed Forces Institute of Pathology, Washington, D.C. The studies were positive for .047% ethanol alcohol in liver and .022% ethanol alcohol in kidney. The studies were negative for basic, acidic, and neutral drugs. The samples were identified as having moderate putrefaction upon arrival at the laboratory and the ethanol alcohol was attributed to post-mortem production.

Federal Aviation Administration records showed the pilot held a special issuance third class

medical certificate issued on March 22, 1995. The certificate is not valid after April 30, 1996. The records showed the pilot had a history of arteriosclerotic cardiovascular disease requiring coronary artery bypass surgery in 1979 and 1986 and a myocardial infarction. The FAA required the pilot to submit a cardiovascular evaluation each year before the issuance of the special medical certificate. The last evaluation submitted by the pilot's doctor on March 27, 1995, showed the pilot was "completely asymptomatic with respect to symptoms of angina pectoris or congestive failure."

For additional medical and pathological information see Supplement K and the toxicology report.

ADDITIONAL INFORMATION

The aircraft wreckage was released on August 22, 1995, to the estate of the registered owner, in care of Roy Hunter, Frank Bobos Towing, Rock Hill, South Carolina. The propellers were released on December 14, 1995, to Rob Wilder, Attorney for the estate of the registered owner.

Pilot Information

Certificate:	Private	**Age:**	52, 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 3 Valid Medical--w/ waivers/lim.	**Last FAA Medical Exam:**	03/22/1995
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	638 hours (Total, all aircraft), 458 hours (Total, this make and model), 280 hours (Pilot In Command, all aircraft), 36 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	**Registration:**	N41GA
Model/Series:	601P 601P	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	61P-0465-183
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	09/01/1994, Annual	**Certified Max Gross Wt.:**	6000 lbs
Time Since Last Inspection:	94 Hours	**Engines:**	2 Reciprocating
Airframe Total Time:	2561 Hours	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	IO-540-S1A5
Registered Owner:	BLAIR M. BYCURA	**Rated Power:**	290 hp
Operator:	BLAIR M. BYCURA	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Night/Dark
Observation Facility, Elevation:	CLT, 749 ft msl	**Distance from Accident Site:**	20 Nautical Miles
Observation Time:	0051 EDT	**Direction from Accident Site:**	10°
Lowest Cloud Condition:	Unknown / 0 ft agl	**Visibility**	10 Miles
Lowest Ceiling:	Broken / 8000 ft agl	**Visibility (RVR):**	0 ft
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	80°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	24°C / 21°C
Precipitation and Obscuration:			
Departure Point:	MYRTLE BEACH, SC (CRE)	**Type of Flight Plan Filed:**	None
Destination:	(29J)	**Type of Clearance:**	None
Departure Time:	2300 EDT	**Type of Airspace:**	Class B

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-Ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-Ground
Total Injuries:	2 Fatal	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	JEFFREY L KENNEDY	**Report Date:**	02/08/1996
Additional Participating Persons:	LEWIS BLACKWELL; COLUMBIA, SC JAMES F BROWN; WILLIAMSPORT, PA ROGER W STALLKAMP; PIQUA, OH		
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.ntsb.gov/pubdms/.		