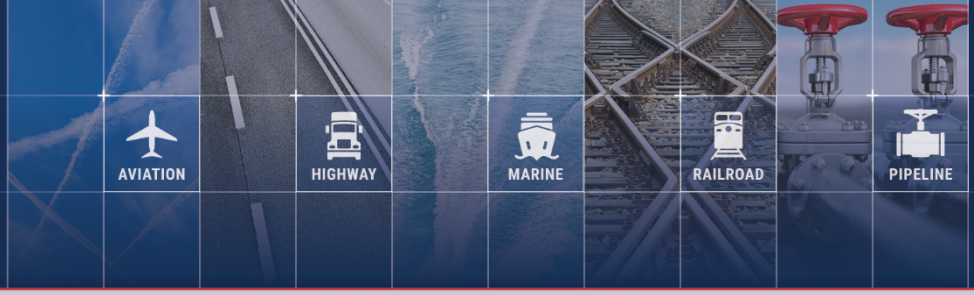

Aviation Investigation Final Report

Location:	OXFORD, Mississippi	**Accident Number:**	MIA93FA129
Date & Time:	May 23, 1993, 18:00 Local	**Registration:**	N3144H
Aircraft:	BEECH F33A	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE PILOT STATED THE ENGINE QUIT SUDDENLY WHILE CLIMBING THROUGH 500 FEET AGL SHORTLY AFTER TAKEOFF AS HE WAS REDUCING POWER TO THE CLIMB SETTING. POSTCRASH TESTING OF THE ENGINE ASSEMBLY AND COMPONENTS REVEALED NO EVIDENCE TO INDICATE PRECRASH FAILURE OR MALFUNCTION. BOTH WING FUEL TANKS CONTAINED UNCOMTAMINATED FUEL AND ALL FUEL PICKUP POINTS AND FUEL LINES WERE FREE FROM OBSTRUCTIONS.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: LOSS OF ENGINE POWER FOR UNDETERMINED REASONS. THE LACK OF SUITABLE TERRAIN FOR A FORCED LANDING WAS A FACTOR.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
2. (F) TERRAIN CONDITION - NONE SUITABLE

Factual Information

HISTORY OF FLIGHT

On May 23, 1993, about 1800 central daylight time, a Beech F33A, N3144H, registered to Hunter Cycle Company, Inc., crashed following loss of engine power during takeoff at University- Oxford Airport, Oxford, Mississippi, while on a 14 CFR Part 91, personal flight. Visual meteorological conditions prevailed at the time and no flight plan was filed. The aircraft received substantial damage and the private-rated pilot and one passenger received serious injuries. The flight was originating at the time of the accident.

The pilot stated that while climbing through 500 feet agl after takeoff he began to reduce engine power to the climb settings. The engine suddenly lost all power. He flew the airplane straight ahead and elected to land with the landing gear retracted. During touchdown on uneven terrain the aircraft landed hard. The aircraft then slid to a stop within 200 feet.

PERSONNEL INFORMATION

The pilot held an expired third class medical certificate issued on March 25, 1991. Additional information on the pilot is contained in the first pilot information section of this report.

AIRCRAFT INFORMATION

Information on the aircraft is contained in the aircraft information section of this report.

METEOROLOGICAL INFORMATION

Visual meteorological conditions prevailed at the time of the accident. Additional meteorological information is contained in the weather information section of this report.

WRECKAGE AND IMPACT INFORMATION

Postcrash examination of the aircraft at the crash site by an FAA inspector indicated that each of the aircraft's fuel tanks contained usable fuel. No contamination was found in the aircraft and engine fuel systems. Removal of the engine-driven fuel pump indicated the pump drive shaft was intact. Examination of the cockpit area indicated the mixture, propeller, and throttle controls were in the takeoff power position. The electric boost pump was in the off position.

Postcrash examination of the aircraft by NTSB, after recovery from the crash site, indicated

that each of the wing fuel tanks and all airframe and engine fuel lines were free of obstructions and contamination.

The engine was removed from the aircraft and installed on an engine test stand. A factory overhauled engine driven fuel pump and a overhauled throttle assembly was installed and the engine was started and operated to full power.

Examination of the engine-driven fuel pump at Teledyne Continental Motors, Mobile, Alabama, indicated the pump had been reassembled incorrectly after postcrash examination. The fuel pump was reassembled correctly and placed on a test bench. The pump operated normally,however; it was found to be set for 7.0 psi output. The specifications for the accident engine called for the pump to be set at 10.5 psi minimum. The metering unit return line fitting on the throttle assembly was found broken after the accident. Metallurgical examination of the failed fitting indicated it failed due to overload forces.

The throttle assembly was bench tested and found to operate normally. The throttle assembly was found to deliver 10 to 20 pounds of fuel flow over the required fuel flow for the accident engine. Teledyne Continental Motors engineers stated this would compensate for the low fuel pump output. The fuel manifold and fuel injector nozzles from the accident engine flowed within normal specifications during bench testing.

The engine-driven fuel pump, throttle assembly, fuel manifold, and fuel injector nozzles were installed on a test engine. No settings had been changed on the units. The test engine was started and operated to full power with no evidence of failure or malfunction of the engine fuel units from the accident engine. See attached TCM report.

MEDICAL AND PATHOLOGICAL INFORMATION

Medical and pathological information on the pilot and passenger is contained in supplement K.

TESTS AND RESEARCH

Postaccident testing of a fuel sample taken from the fuel truck from which N3144H was fueled was performed by Exxon Company USA, Houston, Texas. The sample was found to be free of contamination and met all specifications for aviation gasoline. See attached Exxon report.

ADDITIONAL INFORMATION

The aircraft wreckage was released by NTSB to Charles B. Hunter on June 11, 1993.

Pilot Information

Certificate:	Private	**Age:**	49,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Expired	**Last FAA Medical Exam:**	March 25, 1991
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1200 hours (Total, all aircraft), 750 hours (Total, this make and model), 1200 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BEECH	**Registration:**	N3144H
Model/Series:	F33A F33A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	CE-1191
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	March 20, 1993 Annual	**Certified Max Gross Wt.:**	3400 lbs
Time Since Last Inspection:	32 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	763 Hrs	**Engine Manufacturer:**	CONTINENTAL
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-520-BB
Registered Owner:	HUNTER CYCLE COMPANY, INC.	**Rated Power:**	285 Horsepower
Operator:	HUNTER, CHARLES B.	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	UOX ,451 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	18:00 Local	**Direction from Accident Site:**	270°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	120°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	27°C / 13°C
Precipitation and Obscuration:			
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:	MONTGOMERY , AL (MGM)	**Type of Clearance:**	None
Departure Time:	18:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	UNIVERSITY-OXFORD UOX	**Runway Surface Type:**	Asphalt
Airport Elevation:	451 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	9	**IFR Approach:**	
Runway Length/Width:	4700 ft / 100 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	34.349773,-89.519729(est)

Administrative Information

Investigator In Charge (IIC):	Kennedy, Jeffrey
Additional Participating Persons:	AL DAVIS; JACKSON , MS JOE B SMITH; MOBILE , AL JOHN WARD; WICHITA , KS
Original Publish Date:	October 20, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=37341