National Transportation Safety Board
Aviation Accident Final Report

Location:	Morgantown, WV	**Accident Number:**	NYC04LA151
Date & Time:	07/01/2004, 1502 EDT	**Registration:**	N5345E
Aircraft:	Beech 35	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot departed with the right fuel tank full (approximately 17 gallons) and the left tank about half full. He flew for approximately 30 minutes with the right fuel tank selected, and landed at his destination airport. The pilot departed again with the right tank selected for the return flight. As the airplane reached the end of the runway, the engine began to sputter and then lost power. The pilot performed a forced landing to a field, during which the airplane impacted trees. The pilot reported that the airplane burned more fuel when the right tank was selected, since unused fuel from the engine is returned to the left fuel tank. The pilot stated that the cause of the accident was, "fuel starvation and simple pilot error." Examination of the airplane revealed the right fuel tank was ruptured, and the left fuel tank was approximately half full. The fuel lines from the fuel pump to the fuel injector, and the line from the fuel distributor to the cylinders contained no fuel. The fuel line from the fuel selector to the fuel pump contained residual fuel only. According to the Beechcraft BE-35 Pilot's Operating Handbook, "The pressure type carburetor returns about 3 gallons per hour of excess fuel to the left main cell regardless of the cell selected." The fuel burn rate depicted in the Performance section of the Handbook was approximately 9.5 gallons per hour.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper fuel management, which resulted in fuel starvation and a subsequent loss of engine power.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. FLUID,FUEL - STARVATION
2. (C) FUEL MANAGEMENT - IMPROPER - PILOT IN COMMAND

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

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Findings
3. OBJECT - TREE(S)

Factual Information

On July 1, 2004, at 1502 eastern daylight time, a Beech 35, N5345E, was substantially damaged when it impacted trees after takeoff from Morgantown Airport (MGW), Morgantown, West Virginia. The certificated private pilot received minor injuries. Visual meteorological conditions prevailed and no flight plan was filed for the personal flight which was destined for the Somerset County Airport (2G9), Somerset, Pennsylvania.

According to the pilot, he departed Somerset with the left fuel tank about half full, and the right fuel tank and two auxiliary tanks full (approximately 55 gallons total). He flew approximately 30 minutes to Morgantown, with the fuel selector set to the right tank.

The pilot had lunch in Morgantown, and then departed runway 18, with the fuel selector set to the right tank, for the return flight to Somerset. During the takeoff climb, as the airplane reached the end of the runway, at an altitude of about 100 feet, the engine began to sputter and then lost power. The pilot performed a forced landing to a field, during which the airplane impacted trees and was substantially damaged.

The pilot additionally stated that the airplane burned more fuel when the right tank was selected, since unused fuel from the engine is returned to the left fuel tank. Thus, the range, when selected to the right tank, was less than the depicted 25 gallons. The pilot stated that the cause of the accident was, "fuel starvation and simple pilot error."

Examination of the airplane by a Federal Aviation Administration (FAA) inspector revealed the right fuel tank was ruptured, and the left fuel tank was approximately half full. The fuel lines from the fuel pump to the fuel injector, and the line from the fuel distributor to the cylinders contained no fuel. The fuel line from the fuel selector to the fuel pump contained residual fuel only.

According to the Beechcraft BE-35 Pilot's Operating Handbook, the capacity for each of the main tanks was 17 gallons, and each of the two auxiliary tanks held 10 gallons of fuel (54 gallons total). The Systems Description Section of the Handbook stated, "The pressure type carburetor returns about 3 gallons per hour of excess fuel to the left main cell regardless of the cell selected." The fuel burn rate depicted in the Performance section of the Handbook was approximately 9.5 gallons per hour.

Pilot Information

Certificate:	Private	**Age:**	80, Male
Airplane Rating(s):	Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim.	**Last FAA Medical Exam:**	07/23/2002
Occupational Pilot:		**Last Flight Review or Equivalent:**	05/15/2004
Flight Time:	1490 hours (Total, all aircraft), 985 hours (Total, this make and model), 1490 hours (Pilot In Command, all aircraft), 8 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N5345E
Model/Series:	35	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	05811
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	11/12/2003, Annual	**Certified Max Gross Wt.:**	2950 lbs
Time Since Last Inspection:	12 Hours	**Engines:**	1 Reciprocating
Airframe Total Time:	2730 Hours	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470
Registered Owner:	Paul Tarnutzer	**Rated Power:**	250 hp
Operator:	Paul Tarnutzer	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	MGW, 1248 ft msl	**Distance from Accident Site:**	
Observation Time:	1504 EDT	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 Miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	Variable	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.14 inches Hg	**Temperature/Dew Point:**	28°C / 15°C
Precipitation and Obscuration:			
Departure Point:	Morgantown, WV (MGW)	**Type of Flight Plan Filed:**	None
Destination:	Somerset, PA (2G9)	**Type of Clearance:**	None
Departure Time:	1500 EDT	**Type of Airspace:**	Class D

Airport Information

Airport:	Morgantown Municipal Airport (MGW)	**Runway Surface Type:**	Asphalt
Airport Elevation:	1248 ft	**Runway Surface Condition:**	Dry
Runway Used:	18	**IFR Approach:**	None
Runway Length/Width:	5199 ft / 150 ft	**VFR Approach/Landing:**	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	39.642778, -79.916111

Administrative Information

Investigator In Charge (IIC):	Jill M Andrews	**Report Date:**	07/07/2005
Additional Participating Persons:	Tom Fye; FAA/FSDO; Charleston, WV		
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/.		

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