National Transportation Safety Board
Aviation Accident Final Report

Location:	MALONE, NY	**Accident Number:**	NYC98LA125
Date & Time:	06/05/1998, 1531 EDT	**Registration:**	N215AB
Aircraft:	Beech BE 65-80	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Serious, 4 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

After a 4.7 hour flight, while turning onto final, the airplane landed short. The pilot did not mention engine problems during a police interview. He subsequently told an FAA Inspector that the left engine failed, then later, that the right engine failed. He told the Safety Board that both engines failed. Adequate fuel was confirmed. The previous day, the right engine failed approaching another airport. The pilot performed a single-engine go-around, with landing gear and flaps down. He refused assistance and performed his own maintenance. He cleaned the fuel filters of both engines. During a ground runup, the right engine was hard to start, and required a high fuel flow to remain running. After the pilot re-cleaned the right fuel filter the engine ran fine. The flight was uneventful until the accident. Post-flight examination revealed all propeller blades bent back 90 degrees, with significant chordwise scoring on one blade per engine. The left engine fuel filter was relatively clean, with some brown residue which contained ferrous material. The right engine fuel filter was heavily coated with a white residue which contained aluminum, and brown material which contained ferrous material. The pilot received his multi-engine rating on April 22, 1998.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to follow emergency procedures, and his failure to maintain control of the airplane after a loss of power from one engine. Factors include fuel filter blockage, inadequate maintenance, and the pilot's lack of experience in multi-engine airplanes.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: APPROACH

Findings
1. 1 ENGINE
2. (F) FUEL SYSTEM,FILTER - BLOCKED(PARTIAL)
3. (F) MAINTENANCE - INADEQUATE - COMPANY/OPERATOR MANAGEMENT

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

Findings
4. (C) EMERGENCY PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND
5. (F) LACK OF EXPERIENCE - PILOT IN COMMAND
6. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Factual Information

On June 5, 1998, at 1531 Eastern Daylight Time, a Beech 65-80 Queen Air, N215AB, was destroyed during an approach to Malone-Dufort Airport (MAL), Malone, New York. The certificated private pilot and four passengers received minor injuries while one passenger was seriously injured. Visual meteorological conditions prevailed at the time of the accident. A visual flight rules flight plan was filed for the flight between North Myrtle Beach Airport (CRE), North Myrtle Beach, South Carolina and Malone-Dufort Airport. The personal flight was conducted under 14 CFR Part 91.

In a written statement to the New York State Police, the pilot wrote that he "received a weather report from Flight Watch...the winds were from the west at 18 knots, gusting [to] 26 knots...clouds were scattered at 6,000 feet." He further wrote: "At about 3:10 p.m. and...2,500 feet, I checked the wind socks to determine which runway to land on. At this time, I noticed the plane was not responding [as] it should have responded. All my pre-landing procedures were done, including the landing gear being down. I made a right turn and was trying to maintain directional control in order to have as controlled a crash as possible, because I knew a crash was inevitable."

At that time, the pilot made no mention of an engine malfunction, nor did the two passengers who were also interviewed. In an initial telephone conversation with a Federal Aviation Administration (FAA) Inspector, the pilot said the left engine quit. During a subsequent interview, the pilot said the right engine was "cutting out, so he adjusted the mixture for that engine to keep it going." When reminded of the earlier telephone conversation, the pilot said he was not sure which engine had lost power because it happened so fast.

In a later telephone interview with the Safety Board Investigator, the pilot said both engines lost power. He stated that after he flew over the airport, he made a descending right turn to a downwind for Runway 32. At the abeam position, the airplane was about 2,000 feet, propellers 2,750 to 2,800 rpm, throttle reduced to 18 to 19 inches, mixture full rich, airspeed about 110 knots, flaps up, and an angle of bank of about 45 degrees. Just before turning to the base leg, the pilot said he lost power to the right engine, followed almost immediately by a loss of power to the left engine. He said he recognized the loss of thrust from the right engine by the sound and the yaw, and added left rudder. The pilot "gave more throttle" and both engines were "kinda coughing." He moved the mixture knob fore and aft, and checked the magnetos, pumps and battery switches. He said he knew he would land in the field. He landed "pretty much flat" but hit the right wing first. All three landing gear hit the ground and "came apart." The airplane slid on its belly, hit a small tree, and came to rest 142 feet from the initial impact point.

When asked to describe the loss of engine power, the pilot said it was "coughing like it was starting, backfiring, sputtering." The pilot stated that he did not try to put either engine into feather because he wanted the airplane to hit the ground at a lower speed.

The pilot also stated that the previous day, during the arrival to North Myrtle Beach from Key West, Florida, the right engine lost power during a missed approach. After the pilot leaned the mixture, it regained power. However, it lost power again when the throttle was reduced on final approach.

Witnesses in North Myrtle Beach stated that when the engine failed, the pilot executed a go-

around, and continued through to the landing, with the landing gear and flaps down. After landing, a local fixed based operator offered maintenance help, but the pilot opted to troubleshoot the problem on his own.

The pilot said he spent several hours cleaning fuel screens that evening. During a ground test, the left engine started without any problem. The right engine was hard to start, but finally did. In order to keep the engine going, the pilot had to open the throttle until the fuel computer read a flow of 22 to 25 gallons per hour. The pilot said normal consumption at idle was 3.5 to 5 gallons per hour. He shut the engine down, re-cleaned the fuel screens, and started the engine again without problem.

According to the pilot, the preflight on the day of the accident flight revealed a small amount of solid contamination from an auxiliary fuel tank, and no contamination from the other tanks. The fuel from all tanks was blue in color, and no water was found. The fuel computer indicated at least 30 gallons usable fuel upon arrival at Malone after a 4.7 hour flight.

Inspection of the airplane logbook revealed that new main fuel tank bladders were installed a year and a half earlier.

On-site wreckage examination revealed that all six propeller blades were bent backwards approximately 90 degrees, with one blade on each propeller exhibiting evidence of chordwise scoring. Wheel well fuel strainer housings were covered with oil and dirt. Inside the strainer housings, there was silt and other contamination, mostly on the bottom and in the screens. The strainers themselves were checked for any obstruction using gravity fuel flow, and none was found.

Fuel filters, undisturbed in their housings, were removed from the airplane by the pilot and forwarded to the Safety Board Investigator. During initial visual inspection, the filter from the left engine appeared relatively clean, with small spots of brown residue. The filter from the right engine also contained small spots of brown residue, but also large amounts of a caked white residue. The housing for that filter exhibited stripped threads.

The fuel filters were forwarded to the Safety Board Materials Laboratory. According to the Laboratory's factual report, residue from each filter was removed, and subjected to energy dispersive x-ray spectroscopy (EDS) to determine which elements were present. The brown residue spectrum on the filter from the left engine contained a major peak of iron, and minor peaks of carbon, oxygen, aluminum, silicon sulfur, chlorine, potassium, calcium, manganese and zinc. The white residue spectrum on the filter from the right engine contained a major peak of aluminum, and minor peaks oxygen, potassium, sodium, and carbon. The brown residue spectrum on the filter from the right engine contained a major peak of iron, and minor peaks of oxygen, aluminum, manganese, and carbon. The housing with the stripped threads produced a major peak of aluminum.

After laboratory analysis, the filters in their housings were taken to Textron-Lycoming for further inspection. Both sets of housings and filters were visually examined, with the right filter showing no change from the initial visual examination. The residue from the left filter, however, had changed dramatically in appearance. Instead of the residue being caked on the filter, it lay in the housing loosely, as a sandy powder. Both housings and filters were reassembled and hooked up to a fuel flow meter. Gravity-fed fuel passed through both housings freely.

The Beechcraft Queen Air Model 80 Owner's Manual stated: "Engine failure is usually

preceded by symptoms which will enable you to take preventive action, if you are alert to operating conditions at all times. Concern, therefore, must be given to operating and maintenance procedures." It went on to say: "Once an engine has actually failed, your first consideration is to continue flying the aircraft. Apply maximum power to both engines immediately. Then determine for certain which engine has failed. Advancing power to the operating limitations will give you maximum flying power on the good engine and will give you time to react to engine indications rather than forcing you into a rapid, arbitrary decision...."

The pilot received his multi-engine certification on April 22, 1998.

Pilot Information

Certificate:	Private	**Age:**	35, Male
Airplane Rating(s):	Multi-engine Land; 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--no waivers/lim.	**Last FAA Medical Exam:**	08/26/1998
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	535 hours (Total, all aircraft), 48 hours (Total, this make and model), 488 hours (Pilot In Command, all aircraft), 71 hours (Last 90 days, all aircraft), 47 hours (Last 30 days, all aircraft), 9 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N215AB
Model/Series:	BE 65-80 BE 65-80	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	LD-58
Landing Gear Type:	Retractable - Tricycle	**Seats:**	9
Date/Type of Last Inspection:	02/10/1998, Annual	**Certified Max Gross Wt.:**	8000 lbs
Time Since Last Inspection:	47 Hours	**Engines:**	2 Reciprocating
Airframe Total Time:	6758 Hours	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IGSO-540-B1A
Registered Owner:	2 ENGINES AND A PRAYER, INC.	**Rated Power:**	380 hp
Operator:	2 ENGINES AND A PRAYER, INC.	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	MSS, 202 ft msl	**Distance from Accident Site:**	23 Nautical Miles
Observation Time:	1450 EDT	**Direction from Accident Site:**	300°
Lowest Cloud Condition:	Scattered / 15000 ft agl	**Visibility**	10 Miles
Lowest Ceiling:	None / 0 ft agl	**Visibility (RVR):**	0 ft
Wind Speed/Gusts:	16 knots / 21 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	270°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	19°C / 3°C
Precipitation and Obscuration:			
Departure Point:	NRTH MYRTLE BCH, SC (CRE)	**Type of Flight Plan Filed:**	VFR
Destination:	(MAL)	**Type of Clearance:**	None
Departure Time:	1030 EDT	**Type of Airspace:**	Class G

Airport Information

Airport:	MALONE-DUFORT AIRPORT (MAL)	**Runway Surface Type:**	Asphalt
Airport Elevation:	786 ft	**Runway Surface Condition:**	Dry
Runway Used:	32	**IFR Approach:**	None
Runway Length/Width:	3245 ft / 75 ft	**VFR Approach/Landing:**	Full Stop; Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Serious, 3 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 4 Minor	**Latitude, Longitude:**	

Administrative Information

Investigator In Charge (IIC):	PAUL R COX	**Report Date:**	01/28/2000
Additional Participating Persons:	JOHN LUDWIG; ALBANY, NY		
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/.		