



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	N. MYRTLE BEACH, SC	<b>Accident Number:</b>	MIA98FA250
<b>Date &amp; Time:</b>	09/20/1998, 1431 EDT	<b>Registration:</b>	N17MT
<b>Aircraft:</b>	Piper AEROSTAR 600	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	5 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

After takeoff while over the departure end of the runway, deep gray colored smoke was observed by the tower controller trailing the right engine. The pilot was alerted of this and advised the controller the flight was returning. Witnesses reported seeing smoke trailing the right engine and that the airplane rolled to the left, pitched nose down, impacted trees, and then the ground. A fatigue crack was detected in the exhaust aft of the No. 6 cylinder of the right engine; and incomplete fusion of a weld repair was also noted. Heat damaged components from the right engine were replaced and the engine was started and found to operate normally. A foreign object of undetermined origin was found in the intake area of the No. 3 cylinder. Analysis of the voice tape revealed both engines/propellers were operating near full rated rpm when the pilot acknowledged the transmission that smoke was trailing the right engine, one engine/propeller rpm then decreased to about 2,160 rpm. Examination of the flight controls revealed no evidence of preimpact failure or malfunction. Flap positions at impact could not be determined. Calculations indicate that the airplane was approximately 55 pounds over the maximum certificated takeoff weight at takeoff.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain airspeed (Vs) during a single engine approach resulting in an inadvertent stall. Factors contributing to the accident were a fatigue crack in the exhaust pipe in the right engine, the aircraft weight and balance was exceeded, degraded aircraft performance and the pilot's diverted attention.

## Findings

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Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF  
Phase of Operation: TAKEOFF - INITIAL CLIMB

### Findings

1. 1 ENGINE
  2. (F) EXHAUST SYSTEM,MANIFOLD/PIPE - FATIGUE
  3. (F) EXHAUST SYSTEM - LEAK
- 

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

### Findings

4. (F) AIRCRAFT WEIGHT AND BALANCE - EXCEEDED - PILOT IN COMMAND
  5. (F) AIRCRAFT PERFORMANCE - DETERIORATED
  6. (C) AIRSPEED(VS) - NOT MAINTAINED - PILOT IN COMMAND
  7. (F) DIVERTED ATTENTION - PILOT IN COMMAND
  8. (C) STALL - INADVERTENT - PILOT IN COMMAND
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Occurrence #3: IN FLIGHT COLLISION WITH OBJECT  
Phase of Operation: DESCENT - UNCONTROLLED

### Findings

9. OBJECT - TREE(S)
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Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT - UNCONTROLLED

### Findings

10. TERRAIN CONDITION - GROUND

## Factual Information

### HISTORY OF FLIGHT

On September 20, 1998, about 1431 eastern daylight time, a Piper Aerostar 600, N17MT, registered to a private individual, crashed shortly after takeoff from the Grand Strand Airport, North Myrtle Beach, South Carolina. Visual meteorological conditions prevailed at the time and an Instrument Flight Rules (IFR) flight plan was filed for the 14 CFR Part 91 personal flight. The airplane was destroyed by impact forces and a postcrash fire. The commercial-rated pilot and three passengers were fatally injured. An individual on the ground who was injured by fire, subsequently died 6 days after the accident. The flight originated about 3 minutes earlier.

According to a line service person employed by Ramp 66, North Myrtle Beach, the airplane had been hangared since arrival 3 days earlier and before the flight departed, he noted that the pilot was seated in the left front seat and a younger looking person of the three passengers was seated in the right front seat. Both engines started "ok", and the pilot waited on the ground for about 20-25 minutes with the engines idling. During that time he observed the pilot wiping sweat from his face using a cloth; he was doing something on the panel, and he put on his headset and kneeboard. He reported that he drove a golf cart to a corner of the field for the purpose of watching the takeoff, and while there, the airplane arrived at the run-up area. He did not hear an engine run-up, and noted that the engines remained at idle while the airplane was stopped there for about 5-6 minutes. He then positioned his cart to a point about midfield of the runway to observe the takeoff; the airplane departed with no flaps extended. During the climbout, he observed the landing gear retracting and a slight amount of black smoke trailing the airplane.

Review of a transcription of communications with the Grand Strand Airport Air Traffic Control Tower revealed that at 1420:24, the pilot contacted ground control, requested and received his IFR clearance then at 1421:07, the controller cleared the flight to taxi to runway 23. The pilot was provided the wind and barometric setting information. At 1427:34, the pilot radioed the local controller and advised that the flight was ready for departure on runway 23. The controller cleared the flight to takeoff at 1427:39, which was acknowledged by the pilot 6 seconds later. At 1428:32, the local controller advised the controller from the arrival position of Myrtle Beach Approach Control that "aerostar seven mike tango's rolling...." At 1429:19, the local controller radioed the pilot and advised him "seven mike tango appears to have smoke trailing from your right side." The pilot acknowledged the transmission and at 1429:37, the pilot radioed the local controller and stated "seven mike tango we're going to come around and land." The local controller acknowledged the pilot's transmission and asked the pilot if he was declaring an emergency or did he need any assistance. The pilot replied negative. At 1429:58, the local controller cleared the flight to land on runway 23, which was acknowledged by the pilot. Further transmissions from the pilot recorded on the voice tape were unintelligible. At 1430:53, the local controller advised the approach controller that the airplane had crashed and smoke was observed.

The controller who observed the smoke reported in a personnel statement that "...as the aircraft was passing in front of the tower it appeared to be trailing smoke. I picked up the binoculars and confirmed my observation and identified the smoke as coming from the right engine and smoke was beginning to increase in intensity. I advised the pilot (He was crossing

the departure end of runway 23) that the right engine appeared to be trailing smoke...." He later stated that the smoke appeared to be deep gray in color with two dark edges that appeared to be 1 to 1.5 feet apart with distinct separation. He did not see any fire or flames.

Numerous witnesses near the accident site reported observing a low flying airplane with smoke trailing from the right engine. They reported seeing the airplane bank to the left and a pilot-rated witness reported, "...the right engine was trailing smoke the aircraft made a turn to the left as if trying to return to the airport possibly due to the south tower he continued to tighten his turn to the left I told my wife 'he's in trouble' He appeared to stall and went below the tree line...." A copy of his statement is attached. Several witnesses reported seeing the airplane pitch nose down, impact trees then the ground followed by an explosion. One witness reported "...planes engines were at high speed, no smoke, no fire", while another witness reported seeing the plane fly over the ocean and "...it sounded like the engine was cutting out...." Copies of the witness statements are attachments to this report.

#### PERSONNEL INFORMATION

According to the pilot's second pilot logbook, his total logged flight time was 1,321 hours which included 474 hours in make and model. His first flight in the accident airplane was logged as taking place on March 31, 1998, and he had accumulated a total of 30 hours in the accident airplane. He logged a total of 1,184 hours as pilot-in-command, and 956 hours in multi-engine airplanes. His first pilot logbook was not located. Further information pertaining to the pilot is contained on page 3 of the Factual Report-Aviation.

#### AIRCRAFT INFORMATION

Current logbook records for the aircraft and engines were not located after the accident. According to a work order and invoice from Flying Tigers, Inc., a maintenance facility that had maintained the airplane, an annual inspection had been performed on January 29, 1998. The airplane total time, and time since major overhaul of the left and right engines at that time were 3,360 hours, 1,307 and 2,030 hours, respectively. The airplane had accumulated approximately 53 hours since the annual inspection at the time of the accident. According to the engine manufacturer, the recommended time between overhaul for the Lycoming IO-540-K1J5 engine is 2,000 hours; compliance is not mandatory.

Logbooks for the right engine which begin with an entry dated May 22, 1979, and end with an entry dated December 3, 1993, were recovered; no further logbooks for the right engine were located. Review of the logbooks revealed several entries which indicate that the exhaust was repaired. The first entry dated April 2, 1980, indicates that the cracked exhaust stacks were repaired, but it does not indicate which side of the exhaust stack was repaired. The second entry dated August 22, 1980, indicates that the left exhaust assembly was repaired. The third entry dated February 5, 1981, indicates that the aft section of the inboard exhaust stack was repaired. The final entry pertaining to repairs of the exhaust system was dated February 21, 1984. The entry indicates that the cracked exhausts were repaired.

Airworthiness directive (AD) 87-07-09, which was issued on May 15, 1987, and applicable to this make and model airplane, required a one time inspection of the exhaust system. An entry in the engine logbook dated October 31, 1987, indicates compliance with the AD. Additionally, Aerostar Service Bulletin No. 920A, dated September 12, 1991, for this make and model airplane by serial number, indicates that the exhaust system is required to be inspected at the next regularly scheduled inspection not to exceed 10 hours, and thereafter each 25 hours

time in service. Review of the right engine logbook from that date to the last entry in the engine logbook revealed no entry which specifically states that the inspection was accomplished. Compliance with the Service Bulletin is not mandatory.

According to the president of Flying Tigers, Inc., where the airplane was maintained, he was aware of Service Bulletin 920A, and reported that it was typically accomplished during each engine oil change. He also stated that he had flown the accident airplane for about 22.5 hours from January 1998, to August 1998.

The aircraft maintenance records indicate that the airplane was equipped with a low thrust detector system that was installed on November 25, 1987, in accordance with a Supplemental Type Certificate.

According to the line service employee who witnessed the takeoff, he helped load bags into the airplane and he sat briefly inside the airplane. With respect to the baggage, he noted eight bags of luggage and four sets of golf clubs. One of the bags that he loaded into the aft baggage compartment weighed an estimated 100 pounds. The pilot loaded the golf clubs into the airplane. He thought that each person had two pieces of luggage consisting of a garment bag, and one additional bag that could carry 2-3 days of clothes.

On the day of the accident, at the request of the pilot, the fuselage fuel tank was filled which took 19.6 gallons and 25.0 gallons of fuel were added to each wing fuel tank. A total of 69.6 gallons of fuel were added. According to the fueler, the wing tanks were not full; he could not see fuel in the wing fuel tanks.

According to personnel from Aerostar Aircraft Corporation, with approximately 24 gallons of fuel in the fuselage tank, each wing tank would contain approximately 7 gallons of fuel. The fuel consumption while idling is approximately 3.5 gallons per hour per engine, and the fuel used for engine start and taxi is approximately 5 gallons.

Weight calculations were performed using the last known empty weight of the airplane (4,041.58 pounds per an entry in the aircraft logbook dated May 30, 1986), the usable fuel quantity of the fuselage tank (41.5 gallons), and the usable fuel quantity in the wing fuel tanks (58 gallons total). The calculations also included the weight of the pilot per his last medical application dated October 30, 1997 (203 pounds), the estimated weight of the right front seat occupant (160 pounds), and the weights of Leonard Boyer (186 pounds) and David Boyer (218 pounds), per visits to the same doctor's office 12 and 11 days before the accident, respectively. The calculations also include the weight of the golf clubs and baggage that was damp (197 pounds), the fuel used with the engines idling for 25 minutes (3 gallons), and 5 gallons total used for engine start and taxi. The airplane was calculated to weigh 5,555 pounds at the time of departure. The airplane type certificate data sheet lists the maximum takeoff weight as 5,500 pounds.

According to the Director of Maintenance for Ramp 66, where the airplane was parked, the airplane arrived there on September 18, 1998. There was no record of maintenance being performed while the airplane was at their facility.

#### METEOROLOGICAL INFORMATION

The Grand Strand Airport surface weather observation taken at 1435, indicates that the wind was from 140 degrees at 6 knots, the surface visibility was 6 statute miles, a ceiling of broken clouds existed at 3,000 feet, the temperature and dewpoint were 82 and 72 degrees F,

respectively, and the altimeter setting was 29.94 inHg. Additional weather information may be found on pages 3 and 4 of the Factual Report-Aviation.

## COMMUNICATIONS

The pilot was in contact with the Grand Strand Air Traffic Control Tower and transcriptions of communications are attachments to this report.

## WRECKAGE AND IMPACT INFORMATION

The airplane crashed in Ocean Creek Resort which was located approximately 2 statute miles and 209 degrees magnetic from the Grand Strand Airport. Examination of the crash site revealed that while on a magnetic heading of about 009 degrees, the airplane collided with several trees then the ground. The airplane came to rest upright on a magnetic heading of approximately 017 degrees, approximately 100 feet from the initial tree impact location. The angle of descent from the first tree impact to the first ground impact approximately 72 feet later was calculated to be approximately 35-40 degrees. The first tree contact occurred with the right wing about 50-55 feet above ground level (agl). Additional tree impacts were noted 40-45 agl, and 30 feet agl. Fire damage to several trees near where the airplane came to rest were noted. A postcrash fire consumed the cockpit, cabin, sections of both wings, and the nose section of the airplane. The right wing outboard of the engine nacelle was separated and found about 17 feet to the right of the centerline of the impact path. Tree leaves near the initial tree impact exhibited fire damage.

All components necessary to sustain flight were in the immediate vicinity of the crash site. The rod ends for the elevator and rudder at the rear bellcranks were connected; the push tubes for all flight controls were destroyed by fire in the cockpit, cabin, and in sections of the wings. The landing gear was determined to be retracted. The left flap actuator was found to be extended 8 1/8 inches which equates to extension between 30 degrees and 45 degrees (full down). The right flap actuator was found to be extended 3 7/8 inches which equates to being between fully retracted and extended 10 degrees. The flap extension at the time of impact was not determined. The rudder trim actuator was found to be extended 3 inches which equates to a tab deflection of between 1.15 degrees to the left and neutral. The right horizontal stabilizer with attached elevator was separated from the airplane with evidence of two tree impacts on the leading edge of the horizontal stabilizer, soot was noted on the stabilizer and elevator. Examination of the fuel selector valve revealed that the left and right fuel shutoff valves were in the "open" position and both fuel crossfeed valves were in the "closed" position. The left propeller was found in line with the engine; two of the propeller blades were bent beneath the engine. The propeller hub was fractured forward of the propeller hub engine mounting flange. The right propeller was attached to the engine. The interior surface of the right lower engine cowling was observed to be sooted with deep, non-sooted scratches. The interior surface of the right upper engine cowling exhibited heavy sooting. The engines were removed from the airframe for further examination.

Examination of the left engine revealed crankshaft, camshaft, and valve train continuity. Thumb compression for each cylinder was confirmed. The magnetos, engine driven fuel pump, oil filter adaptor housing, and the aft oil cooler were destroyed by fire. The propeller governor which was found positioned at the high rpm stop, was removed for further examination. Visual examination of the spark plugs revealed a light tan color. All fuel injector nozzles were clear of obstructions.

Examination of the left propeller revealed that the No. 1 propeller blade was bent aft about 60 degrees beginning at the midspan with evidence of leading edge twisting towards low pitch. A gouge on the leading edge of the blade was noted about 11 inches from the blade tip. The No. 2 propeller blade was bent aft with the leading edge near the blade tip twisted towards low pitch and the No. 3 propeller blade was bent slightly aft with the leading edge twisted towards low pitch. Examination of the preload plates of each propeller blade for impact signatures to determine propeller blade angle at the time of impact was accomplished. The propeller blade angles for the Nos. 1 and 3 propeller blades were between the low and high pitch settings and near the low pitch stop setting, respectively. The propeller blade angle for the No. two propeller blade could not be determined.

Bench testing of the heat damaged left propeller governor revealed that the high rpm stop was recorded to be 1,960 rpm (specification range 2420 + or - 10 rpm). The pressure relief was recorded to be 195 psi (specification range 275-300 psi). Oil leakage was noted from the base during bench testing and the flyweight was noted to be heat damaged. Disassembly of the governor revealed that the rack and spool was bent and was restricted in movement. The discrepancies noted were attributed to impact and fire damage.

Examination of the right engine revealed crankshaft, camshaft, and valve train continuity. Heat damage was noted externally to the left magneto greater than heat damage externally to the right magneto. The servo fuel injector, and engine driven fuel pump were in place and the throttle and mixture controls at the servo were in the closed and full rich positions; respectively. The exhaust stack from cylinder Nos. 2, 4, and 6, which was crushed upward on the bottom, was found to be cracked aft of the No. 6 cylinder. The cracked segment of the exhaust was retained for further examination (see Tests and Research section of this report). An oil line which was adjacent to that area of the exhaust, exhibited evidence of heat damage aft of the crack location. The fire sleeve on the line immediately forward of the crack location was noted to be unburned. Several flexible hoses in the engine compartment were noted to have manufacture dates of 1977, 1978, and 1979. Examination of the spark plugs revealed all were black in color and visual examination of the interior portion of the exhaust outlet revealed it was light tan in color.

The servo fuel injector was removed from the engine, the ports were capped, and the injector was placed in a cardboard box, and shipped along with the engine to the manufacturers facility for an attempted engine run. Heat and/or impact damaged components were replaced and the engine was placed in a test cell utilizing the fuel injection system components that were installed at the time of the accident. Also, the inlet fitting at the servo fuel injector which was noted to be damaged, was replaced. The engine was started and operated for approximately 45 minutes at varying engine rpm's up to approximately 2,700 rpm for a period of 4 minutes with no discrepancies noted; the engine was then removed from the test cell. During removal of the "slave" oil sump, and intake pipes, a foreign object of undetermined origin was observed in the intake area of the No. 3 cylinder. The cylinder was removed and examination of the valve head seat and cylinder valve seat revealed no evidence of damage. Circumferential scoring on a radius line approximately 1/2 inch from the valve stem was noted on the seat side of the No. 3 cylinder intake valve. The foreign object which measured about 2 3/4 inches in length and about 3/4 inches wide, was nearly fully sooted; soot was absent in a corner of the object. The propeller and propeller governor were removed for further examination.

Damage to the 90-degree AN fitting which was installed at the inlet of the right servo fuel injector resulted in the inlet portion of it resembling the letter "D", with the flat side located at the inboard side of the engine with the servo positioned as if installed on the engine. Testing of the damaged fitting as found revealed evidence of extensive leakage. No determination could be made as to when the fitting was damaged. Examination of the associated flexible fuel hose revealed no evidence of similar damage.

Examination of the right propeller revealed that propeller hub was broken adjacent to the No. 2 propeller blade; the hub thru bolt adjacent to that area was broken. The No. 1 propeller blade was bent aft about 60 degrees beginning at the midspan with evidence of leading edge twisting towards low pitch. A gouge on the leading edge of the blade was noted about 11 inches from the blade tip. The No. 2 propeller blade was bent aft with the leading edge near the blade tip twisted towards low pitch and the No. 3 propeller blade was bent slightly aft with the leading edge twisted towards low pitch. Examination of the preload plates of each propeller blade for impact signatures to determine propeller blade angle at the time of impact was accomplished. The propeller blade angles for the Nos. 1 and 3 propeller blades were near the low pitch stop setting and the propeller blade angle of the No. 2 propeller blade was near and between the low pitch stop for the two impact signatures.

Bench testing of the right propeller governor revealed no evidence of preimpact failure or malfunction. The rpm at the high rpm stop setting and oil flows were within limits.

#### MEDICAL AND PATHOLOGICAL

A postmortem examination of the pilot was performed by Edward L. Proctor, Jr., M.D. The cause of death was listed as multiple trauma sustained in airplane crash. Postmortem examinations were not performed on the airplane passengers. Toxicological analysis of specimens of the pilot was performed by the FAA Toxicology and Accident Research Laboratory (CAMI). The results were negative for carbon monoxide, cyanide, ethanol, and tested drugs. Toxicological testing of specimens of the passengers was also performed by CAMI for cyanide and carbon monoxide. The results were negative for both substances for all passengers. With respect to the person who was fatally injured on the ground, the certificate of death lists the cause of death as multiple organ failure due to burns.

#### TESTS AND RESEARCH

Metallurgical examination by the NTSB Metallurgical Laboratory, Washington, D.C., of the cracked exhaust stack segment for the Nos. 2, 4, and 6 cylinders revealed extensive repair welds between the larger and smaller diameter pipes. The outside face of the exhaust was found to have a crack at the weld joint between the larger and smaller diameter pipes which extended approximately 180 degrees around the weld joint. Additionally, incomplete fusion due to repair of the weld joint was noted. Cracks through the original weld of the larger and smaller diameter pipes were also observed. A fatigue crack was observed that emanated from multiple origins at the outside diameter surface. Lead and bromine were detected on the surface of the fracture surfaces of the welds. A copy of the metallurgy report is an attachment to this report.

A copy of the voice tape from the Grand Strand Air Traffic Control tower was retained for acoustic analysis which was performed by the NTSB Recorders Laboratory, Washington, D.C. According to the report which is an attachment to this report, nine separate times of communication from the accident pilot to the ATCT were examined. The first two



communications occurred when the flight was on the ground, and analysis revealed that only one primary frequency of 1,720 rpm could be detected. The third communication point that was analyzed occurred when the pilot radioed the controller acknowledging the comment from the controller that smoke was trailing the right engine. The analysis of that communication point revealed that the engine rpm was 2,540 and 2,552. The fourth communication point which consisted of a keying of the microphone for .8 second which was not listed in the transcription of communications, revealed that the engine rpm was 2,420 and 2,540. The fifth communication point which occurred when the pilot radioed the controller and advised that the flight was returning to land, revealed that the engine rpm was 2,220 and 2,520. The sixth communication point which occurred when the pilot responded to the question from the controller if he needed assistance, revealed that the engine rpm was 2,280 and 2,500. The seventh communication point occurred when the pilot acknowledged that the flight was cleared to land, revealed that the engine rpm was 2,260 and 2,520. The eighth communication point which occurred at the beginning of the unintelligible transmission from the pilot revealed that the engine rpm was 2,120 and 2,520. The ninth and final communication point which was the end of the unintelligible transmission from the pilot revealed that the rpm was 2,160 and 2,530. No determination could be made as to what engine was producing the rpm frequency.

Review of the aircraft type certificate data sheet, revealed the "engine limits" sections lists the maximum rpm as 2,575.

#### ADDITIONAL INFORMATION

The airplane minus the retained right engine, both propellers and propeller governors, retained exhaust stack segment, servo fuel injector with inlet fitting, flexible fuel line from engine-driven fuel pump to servo fuel injector, flexible fuel line from right engine tagged as "fuel pressure", foreign object, and maintenance records were released to Mr. James T. Brewer, of Inflight Aviation, on January 5, 2000. The retained components were also released to Mr. James Brewer, on January 6, 2000.

#### Pilot Information

<b>Certificate:</b>	Commercial; Private	<b>Age:</b>	56, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 2 Valid Medical--w/ waivers/lim.	<b>Last FAA Medical Exam:</b>	10/30/1997
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	1321 hours (Total, all aircraft), 474 hours (Total, this make and model), 1184 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N17MT
Model/Series:	AEROSTAR 600 AEROSTAR 6	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	600641796120
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	01/29/1998, Annual	Certified Max Gross Wt.:	5500 lbs
Time Since Last Inspection:	53 Hours	Engines:	2 Reciprocating
Airframe Total Time:	3413 Hours	Engine Manufacturer:	Lycoming
ELT:	Installed	Engine Model/Series:	IO-540-K1J5
Registered Owner:	HENRY K. SAGEL	Rated Power:	290 hp
Operator:	HENRY K. SAGEL	Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	CRE, 32 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	1435 EDT	Direction from Accident Site:	29°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	7 Miles
Lowest Ceiling:	Broken / 3000 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	28° C / 22° C
Precipitation and Obscuration:			
Departure Point:	(CRE)	Type of Flight Plan Filed:	IFR
Destination:	MARIETTA, PA (N71)	Type of Clearance:	IFR
Departure Time:	1428 EDT	Type of Airspace:	Class D

## Airport Information

Airport:	GRAND STRAND (CRE)	Runway Surface Type:	
Airport Elevation:	32 ft	Runway Surface Condition:	
Runway Used:	0	IFR Approach:	
Runway Length/Width:		VFR Approach/Landing:	

## Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	3 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	1 Fatal	Aircraft Explosion:	On-Ground
Total Injuries:	5 Fatal	Latitude, Longitude:	

## Administrative Information

Investigator In Charge (IIC):	TIMOTHY W MONVILLE	Report Date:	02/22/2000
Additional Participating Persons:	ROBERT W SWITTER; W. COLUMBIA, SC EDWARD ROGALSKI; BELLEVIEW, FL THOMAS M MCCREARY; 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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).