National Transportation Safety Board
Aviation Accident Final Report

Location:	SAN ANTONIO, TX	**Accident Number:**	FTW93FA267
Date & Time:	09/27/1993, 1723 CDT	**Registration:**	N891SP
Aircraft:	PIPER PA-31P	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

DURING TAKEOFF ROLL, THE LEFT ENGINE BEGAN TO EMIT BLACK SMOKE. THE TOWER INFORMED THE PILOT, WHO DID NOT RESPOND, AND CONTINUED HIS TAKEOFF. AFTER BECOMING AIRBORNE, THE AIRCRAFT WAS OBSERVED TO LEVEL OFF THEN ENTER A LEFT TURN AND IMPACT THE GROUND APPROXIMATELY 2 MILES WEST OF THE AIRPORT. EXAMINATION OF THE ENGINE PROVIDED NO EVIDENCE OF MALFUNCTION. REVIEW OF AVAILABLE PILOT RECORDS INDICATED THE PILOT HAD 12 HOURS IN TYPE.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE BY THE PILOT-IN-COMMAND TO MAINTAIN VMC FOLLOWING TAKEOFF. FACTORS WERE: PARTIAL LOSS OF POWER TO ONE ENGINE FOR UNDETERMINED REASON, AND LACK OF TOTAL EXPERIENCE IN AIRCRAFT TYPE.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: TAKEOFF - ROLL/RUN

Findings
1. (F) 1 ENGINE - LOSS,PARTIAL
2. ABORTED TAKEOFF - NOT PERFORMED - PILOT IN COMMAND

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
3. (C) AIRSPEED(VMC) - NOT MAINTAINED - PILOT IN COMMAND
4. STALL/MUSH - INADVERTENT - PILOT IN COMMAND
5. (F) LACK OF TOTAL EXPERIENCE IN TYPE OF AIRCRAFT - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On September 27, 1993, at 1723 central daylight time, a Piper PA- 31P, N891SP, impacted the ground following takeoff from Stinson Field, San Antonio, Texas, while maneuvering with an observed left engine abnormality. The pilot received fatal injuries and the aircraft was destroyed. Visual meteorological conditions prevailed and no flight plan was filed for this personal flight which had an intended destination of San Antonio International Airport.

According to witness information, the left engine began to emit black smoke during the takeoff roll. The pilot was informed by the tower but did not respond, and continued the takeoff. Following liftoff, the aircraft was observed to level off just above the runway and then pull up at the end of the runway and enter a left turn with a steep bank angle and disappear behind trees. This was followed by smoke from the area where the aircraft disappeared from view.

Witnesses, who observed the aircraft after takeoff, provided information that the aircraft proceeded at low level in a left bank which increased prior to the nose dropping and the aircraft impacting into a wooded area at the southeast end of elementary school property. Along its track, the aircraft passed over a fire station and observers at that site said the aircraft pulled up sharply to avoid trees followed by an increased bank angle just prior to impact. One witness said he thought the pilot pulled up to avoid the school yard where several children were playing.

PERSONNEL INFORMATION

According to the pilot's log, he received his private pilot certificate in 1961 and his commercial certificate in 1967. FAA records provide information that he received his multiengine rating on April 9, 1966 and his instrument rating on December 3, 1966. The pilot's log has no entries after November 1991, and the first entry showing time in the accident aircraft was in January 1991. According to persons at the airport where the accident aircraft was based, the pilot flew approximately 10 hours per year in the accident aircraft and approximately the same in a Beech Duke which he also owned.

AIRCRAFT INFORMATION

According to the aircraft operating manual, the maximum weight for takeoff was 6,500 pounds and the empty weight was 3,930 pounds. Calculated takeoff weight for this flight was 5,476 pounds based on the following: Empty weight 3,390 pounds, fuel 1,115 pounds, oil 84 pounds, pilot 210 pounds, and miscellaneous items 100 pounds.

According to performance calculations, using weather information provided in this document, the best single engine rate of climb at calculated gross weight, was 330 fpm @ 111 mph, and the takeoff ground roll should have been 1,750 feet (engine inoperative above 89 mph).

Performance charts provide information that the power off stall speed, gear and flaps retracted, was 87 mph at 30 degrees angle of bank, 93 mph at 40 degrees angle of bank, 103 mph at 50 degrees angle of bank, and 115 mph at 60 degrees angle of bank.

As stated in the aircraft manual, operating procedures for an inoperative engine during takeoff specify that initial climb should be at 106 mph until obstacles are cleared and then 115 mph with a 5 degree bank angle into the operative engine. This is based on gear and flaps retracted,

and cowl flaps closed on the inoperative engine. Listed velocity of minimum control (Vmc) was 85 mph.

WRECKAGE AND IMPACT INFORMATION

Witness marks and debris distribution are detailed in the attached wreckage diagram. Except for the empennage, the aircraft was consumed by fire and witness information indicates postimpact explosion. See the attached photographs for details.

The right main landing gear was found in the extended position but was not locked down. The nose gear and left main gear were found in the retracted position, as were the flaps. The position of the cowl flaps could not be determined.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was conducted on the pilot by the Bexar County, Texas, Forensic Science Center.

Toxicological test results were negative and the report is attached.

TESTS AND RESEARCH

Both engines were examined by the investigator in charge, with assistance provided by Lycoming and the FAA. Both engines had sustained fire damage and accessories could not be tested. Examination provided no evidence of preimpact failure or malfunction of the engine cores.

The turbochargers were examined at the facilities of Garrett Turbochargers with FAA personnel monitoring the examinations. No evidence of preimpact failure or malfunction was found.

ADDITIONAL DATA/INFORMATION

The wreckage was released to the owner's representative on 09/28/93. Both turbochargers were retained for further examination and returned to the owner's representative following the examination.

Pilot Information

Certificate:	Commercial	**Age:**	55, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	**Last FAA Medical Exam:**	01/10/1992
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	1668 hours (Total, all aircraft), 12 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	**Registration:**	N891SP
Model/Series:	PA-31P PA-31P	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	31P-7300145
Landing Gear Type:	Tricycle	**Seats:**	6
Date/Type of Last Inspection:	08/05/1992, Annual	**Certified Max Gross Wt.:**	6500 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	6374 Hours	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	TIGO-541-E1A
Registered Owner:	GILLINGHAM, KENT K.	**Rated Power:**	425 hp
Operator:	GILLINGHAM, KENT K.	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	SSF, 577 ft msl	**Distance from Accident Site:**	2 Nautical Miles
Observation Time:	1729 CDT	**Direction from Accident Site:**	100°
Lowest Cloud Condition:	Clear / 0 ft agl	**Visibility**	20 Miles
Lowest Ceiling:	None / 0 ft agl	**Visibility (RVR):**	0 ft
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	350°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	30°C / 2°C
Precipitation and Obscuration:			
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	1720 CDT	**Type of Airspace:**	Class D

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	NORMAN F WIEMEYER,	**Report Date:**	08/01/1994
Additional Participating Persons:	RALPH H RODRIGUEZ; SAN ANTONIO, TX		
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/.		