Aviation Investigation Final Report

Location:	TUCUMCARI, New Mexico	**Accident Number:**	DEN99FA081
Date & Time:	May 19, 1999, 17:25 Local	**Registration:**	N54263
Aircraft:	Piper PA-23E-250	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation		

Analysis

Approximately 5 minutes after taking off, the pilot told air traffic control that his 'left engine was smoking badly,' that he had feathered the propeller, and was returning to land. As the airplane made its approach, the pilot was advised that his landing gear was still retracted. He said he would make a go-around. Witnesses could not recall if an engine had been shut down, but they did say that there was no smoke coming from either engine. They watched the airplane bank left on base leg and descend into the ground. Examination of the propeller governors disclosed the right (not the left) propeller had been feathered. Disassembly and examination of both engines disclosed no mechanical discrepancies or failures.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadvertent stall. A factor was the loss of power of one engine in the twin-engine airplane.

Findings

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

Findings
1. (F) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH - VFR PATTERN - BASE LEG/BASE TO FINAL

Findings
2. (C) STALL - INADVERTENT - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
3. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On May 19, 1999, at 1725 mountain daylight time*, a Piper PA-23E-250, N54263, registered to and operated by Staudte Engineering, Inc., was destroyed when it impacted terrain one mile northeast of the Tucumcari Municipal Airport, Tucumcari, New Mexico. The commercial pilot and passenger were fatally injured. Visual meteorological conditions prevailed, and an IFR plan had been filed for the business flight being operated under Title 14 CFR Part 91. The flight originated at Tucumcari at 1714.

According to Federal Aviation Administration (FAA) documents, the pilot telephoned the Fort Worth Automated Flight Service Station (AFSS) at 1254 central daylight time (cdt), and was given a weather briefing for a proposed IFR flight from Addison, Texas, to Albuquerque, New Mexico. N54263 departed Addison Airport approximately 1330 cdt, and landed at Tucumcari approximately 1600. The airport manager said that as the airplane taxied up to the ramp, he noticed the passenger was sitting in the right seat in the second row. The pilot came into his office and asked how much gasoline $100 would buy. When told that gasoline cost $1.85 per gallon, he "grumbled something about the high cost of gasoline." The airport manager explained that his gasoline was considerably cheaper than gasoline in Albuquerque. He eventually serviced the airplane with 54.0 gallons of fuel: 41.7 gallons were put in the inboard tanks, and 6.3 and 6.0 gallons were put in the right and left outboard tanks, respectively. It is not known how much fuel were in the tip tanks. Total cost was $99.90, and was paid for with a $100 bill. The fuel receipt was stamped 3:41 p.m. The clock on the fuel pump was set to mountain standard time. (In a later telephone conversation, the pilot's wife said that this transaction was extremely unusual because her husband never carried cash, preferring to use a credit card to make purchases).

The airport manager said that as the airplane taxied out for takeoff, he noticed the passenger was in the same seat he was sitting in when they arrived. (In that same telephone conversation noted earlier, the pilot's wife said the passenger often sat in the back where he had more room to work and relax).

At 1714:41, the pilot contacted Albuquerque Air Route Traffic Control Center (ARTCC) and advised that he had just departed Tucumcari, was on V (victor airway) 12 at 6,200 feet msl (above mean sea level). He was then issued his IFR clearance to Albuquerque.

At 1717:15, the pilot advised ARTCC that the "left engine was smoking very badly." He said he had feathered the propeller and was returning to Tucumcari. The controller noted this report on the flight progress strip (copy attached). The pilot said he was having "no problem maintaining altitude." At 1721:30, the pilot reported he had the airport in sight. At 1722:01, the

pilot said he was "doing all right," and at 1725:20 he advised he was on final approach.

The pilot was then heard on the Unicom frequency asking all traffic to vacate the area because he had an emergency. The airport manager and the airport's weather observer saw the airplane fly low over runway 21 with the landing gear retracted (see WITNESS STATEMENTS, attached). Neither could recall if an engine had been shut down, but they did say that there was no smoke coming from either engine. They radioed the pilot and told him that his landing gear was still retracted. The pilot replied that he would make a go-around. The airport manager wrote, "I continued watching him as he turned downwind to his base leg, then as he turned to his final. The aircraft seemed to be in a left wing down [position] and the aircraft disappeared behind some trees, at which point all I could see was black smoke coming up from the site."

The airport's weather observer wrote, "He was over the runway but was too high to land and didn't have his landing gear down. He said he would go around. [The airport manager] told me to watch him go around. He made a left turn to line up on [runway 21]. The plane banked left and just [spiraled] down nose first."

The accident occurred during the hours of daylight at a location of 35 degrees, 12.409 minutes north latitude, and 103 degrees, 34.016 minutes west longitude, or about 2.5 miles northeast of the Tucumcari Vortac on the 037 degree radial.

PERSONNEL (CREW) INFORMATION

The pilot, age 61, was born on December 9, 1937. He held a commercial pilot certificate, dated August 7, 1968, with airplane single/multiengine and instrument ratings. He also held an expired flight instructor certificate with an airplane single engine land rating. His second class airman medical certificate, dated September 25, 1997, contained the restriction, "Must have glasses available for near vision."

The second of two pilot logbooks were made available for examination. The logbook, containing entries from June 1, 1968, to May 13, 1999, indicated he had logged 1,224.7 total hours, of which 742.9 were in multiengine airplanes. Of the latter total, 728.9 hours had been accrued in the PA-23, specifically, N54263 (see SUMMARY OF FLIGHT TIME, attached). His last FAR 61.56 flight review was dated January 29, 1999, and his last FAR 61.57(d) instrument competency check was dated February 13, 1999.

AIRCRAFT INFORMATION

N54263 (s/n 27-7554049), a Piper PA-23E-250, was manufactured by the Piper Aircraft Corporation on January 3, 1975. It was equipped with two Lycoming TIO-540-C1A engines (s/n L-2085-61, left; L-3621-61A, right), each rated at 250 horsepower, and two Hartzell HC-E2YR-2RBSF propellers.

The maintenance records were made available for inspection. The last annual and 100-hour inspections were accomplished on December 17, 1998, at a Hobbs meter time of 798.0 hours, and at a total airframe time of 2,581.0 hours. At this time, both engines had accumulated a total of 2,590.3 hours, and 799.7 hours after having been overhauled on March 15, 1987. The left turbocharger was overhauled and installed on August 5, 1993, at a Hobbs meter time of 450.8 hours, and the right turbocharger was overhauled and installed on December 8, 1987, at a Hobbs meter time of 123.2 hours. Both propellers were overhauled and reinstalled on the airplane on November 5, 1997, at a Hobbs meter time of 731.0 hours. The pitot-static system, both altimeters, encoder, and transponder were checked and certified for IFR usage on November 24, 1998.

METEOROLOGICAL INFORMATION

The following observations were made at the Tucumcari Municipal Airport:

1653 - Wind 210 degrees at 18 knots, gusts to 27 knots; visibility 10 statute miles; few clouds at 11,000 feet; temperature 23 degrees C. (73.4 degrees F.), dew point -1 degree C. (30.2 degrees F.)

1750 - Wind 180 degrees at 19 knots, gusts to 26 knots; visibility 30 statute miles; scattered clouds at 15,000 feet; temperature 27 degrees C. (80.6 degrees F.), dew point 6 degrees C. (42.8 degrees F.); altimeter 29.85 inches of mercury, peak wind 150 degrees at 30 knots occurring at 2250.

AERODROME INFORMATION

Tucumcari Municipal Airport (TCC), elevation 4,064 feet msl, is located six miles east of Tucumcari, New Mexico. It is served by two runways: 08/26 and 03/21. N54263 was in the landing pattern for runway 21, which is 7,100 feet long and 100 feet wide. It is an asphalt runway with a porous friction coarse (pfc) overlay.

WRECKAGE AND IMPACT INFORMATION

The on-scene investigation commenced May 20, 1999. The airplane impacted flat, rock strewn, open range land on a magnetic heading of 340 degrees. The airplane came to rest 5 to 10 feet away from the initial impact point on a magnetic heading of 290 degrees. Witness marks gave evidence that the airplane was approximately 35 degrees nose down at impact.

A postimpact fire consumed most of the airplane, including the nose, instrument panel, main cabin, both wings, and portions of both engines and turbochargers. The aft fuselage and empennage were not fire damaged. The fire extended to grass and covered an area extending 115 feet in front of the airplane.

The turnbuckle and uplocks indicated the landing gear was retracted. The hydraulic flap

actuator cylinder case was completely melted, exposing the full length of the actuator rod, making flap position determination impossible. The rudder trim tab shaft was extended 0.8 inches, exposing 6 threads. The horizontal stabilizer trim tab shaft was fully withdrawn, exposing no threads. According to the New Piper Aircraft Corporation's technical representative, these measurements equate to a neutral rudder and full elevator up positions. The representative said that since the elevator trim tab uses a cable-drum arrangement, it is not unusual for impact forces to stretch or pull the cable off the drum, driving the shaft to a full elevator up position. Elevator, rudder, aileron, and trim tab control cable continuity was established.

Examination of the cockpit disclosed the left throttle was in the midrange position, and the right throttle was closed. The left mixture control was in the full rich position, and the right mixture control was in the idle cutoff position. The left propeller control was in the low pitch-high rpm position, and the right propeller control was in the feathered position. Both left and right fuel selectors were positioned on the outboard tanks. The crossfeed was off. The left and right needles on the tachometer indicated 1,300 rpm and 250 rpm, respectively.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed by the New Mexico State Medical Examiner's Office in Albuquerque, New Mexico.

Toxicology screens were performed by FAA's Civil Aeromedical Institute (CAMI) in Oklahoma City, Oklahoma, and by the New Mexico State Medical Examiner's Office. According to CAMI's report, there was no evidence of ethanol in the kidney and muscle tissue, and there was no evidence of drugs in the kidney fluid. Carbon monoxide and cyanide tests could not be performed. The New Mexico State Medical Examiner's toxicology report gave findings.

TESTS AND RESEARCH

The following day, May 21, 1999, the engines were disassembled and examined at the Tucumcari Municipal Airport. The left engine was fire damaged but remained attached to its mount. The propeller assembly remained attached to the crankshaft flange. One blade was burned off 17 inches from the hub; the other blade was bent aft 90 degrees and burned off 19 inches from the hub. A large portion of the oil sump was melted, creating a hole in the crankcase. The crankshaft could not be rotated, but could be seen through the hole at the nos. 5 and 6 connecting rod positions. No drive train discontinuity was observed. The valves and push rod tubes were intact. The spark plugs displayed varying degrees of coloration. The accessory case and accessories (including the magnetos) were melted. The accessory gears were intact. Although the fuel distribution manifold and injector lines were intact and attached, the fuel injector servo and fuel pump were destroyed.

The left turbocharger compressor section was destroyed by fire and impact. The turbine section was intact but could not be turned. There was no evidence of turbine blade rotation

deformation or foreign object ingestion. The wastegate and butterfly valves were intact and undamaged. The density and differential controllers were thermally destroyed.

The left propeller governor remained attached to the mounting pad, but was fire damaged. The control wheel was melted, but the control rod was in the low pitch/high rpm position.

The right engine was fire damaged but remained attached to its mount. The propeller assembly remained attached to the crankshaft flange, and the blades were in the feathered position. One blade was burned off 14 inches from the hub; the other blade was burned off 27 inches from the hub. A large portion of the oil sump was melted, creating a hole in the crankcase. The crankshaft could not be rotated, but could be seen through the hole at the nos. 3, 4, 5, and 6 connecting rod positions. No drive train discontinuity was observed. The valves and push rod tubes were intact. The spark plugs were gray in color, consistent with a lean mixture. The accessory case and accessories (including the magnetos) were melted. The accessory gears were intact. Although the fuel distribution manifold and injector lines were intact and attached, the fuel injector servo and fuel pump were destroyed.

The right turbocharger compressor section was destroyed by fire and impact. The turbine section was intact but could not be turned. There was no evidence of turbine blade rotation deformation or foreign object ingestion. The wastegate and butterfly valves were intact and undamaged. The density and differential controllers were thermally destroyed. The propeller governor remained attached to the mounting pad and the control rod was attached to the control wheel. The control wheel was in the feathered position.

ADDITIONAL INFORMATION

In addition to the Federal Aviation Administration, parties to the investigation included the New Piper Aircraft Corporation and Textron Lycoming.

The wreckage was released to a representative of the pilot's insurance company on May 21, 1999.

*All times stated herein are mountain daylight time (mdt) unless otherwise noted.

Pilot Information

Certificate:	Commercial	**Age:**	61,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	September 25, 1997
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1616 hours (Total, all aircraft), 729 hours (Total, this make and model), 1569 hours (Pilot In Command, all aircraft), 33 hours (Last 90 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N54263
Model/Series:	PA-23E-250 PA-23E-250	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	27-7554049
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	December 17, 1998 Annual	**Certified Max Gross Wt.:**	5200 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	TIO-540-C1A
Registered Owner:	STAUDTE ENGINEERING, INC.	**Rated Power:**	250 Horsepower
Operator:		**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:	TCC ,4064 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	17:50 Local	**Direction from Accident Site:**	210°
Lowest Cloud Condition:	Scattered / 15000 ft AGL	**Visibility**	30 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	19 knots / 26 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	27°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(TCC)	**Type of Flight Plan Filed:**	IFR
Destination:	ALBUQUERQUE , NM (ABQ)	**Type of Clearance:**	IFR
Departure Time:	17:14 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	TUCUMCARI MUNICIPAL TCC	**Runway Surface Type:**	Asphalt
Airport Elevation:	4064 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	21	**IFR Approach:**	None
Runway Length/Width:	7100 ft / 100 ft	**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	35.160625,-103.719314(est)

Administrative Information

Investigator In Charge (IIC):	Scott, Arnold
Additional Participating Persons:	JOHN C SANDERS; ALBUQUERQUE , NM
Original Publish Date:	June 22, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=46354