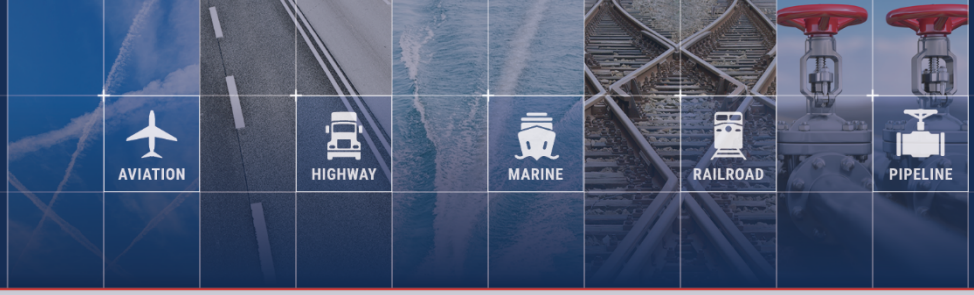

Aviation Investigation Final Report

Location:	WHARTON, Texas	**Accident Number:**	FTW99LA072
Date & Time:	January 27, 1999, 21:02 Local	**Registration:**	N8729E
Aircraft:	Piper PA-34-200T	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 Serious, 4 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The commercial pilot reported a partial power loss to the right engine that 'could be...fuel starvation' during an IFR cross-country flight. During the visual approach to an alternate airport, the aircraft impacted trees short of the runway. The right auxiliary fuel pump switch was found on HI, the right fuel selector OFF, & the left fuel selector on X-FEED. Flaps & landing gear were extended. The right propeller was not feathered. The pilot reported the right engine experienced a 'mechanical fuel pump and/or aneroid' failure. The right auxiliary fuel pump was tested and found to pump fluid. Damage to the engine driven (mechanical) pump precluded testing. The engine driven fuel pump failure checklist states that the lack of fuel flow indication while on the HI auxiliary fuel pump position could indicate fuel exhaustion. The single-engine landing checklist calls for landing gear & flap extension when certain of making the airport. The checklist also calls for feathering the propeller of the inoperative engine.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to comply with the manufacturer's single engine landing checklist which resulted in the aircraft landing short of the runway.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - NONMECHANICAL
Phase of Operation: CRUISE

Findings
1. (F) 1 ENGINE - LOSS,PARTIAL
2. (F) FLUID,FUEL - STARVATION

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

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
3. OBJECT - TREE(S)
4. (C) PROCEDURES/DIRECTIVES - NOT FOLLOWED - PILOT IN COMMAND
5. LANDING GEAR - IMPROPER USE OF - PILOT IN COMMAND
6. FLAPS - IMPROPER USE OF - PILOT IN COMMAND
7. PROPELLER FEATHERING - NOT PERFORMED - PILOT IN COMMAND

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

On January 27, 1999, at 2102 central standard time, a Piper PA-34-200T multiengine airplane, N8729E, impacted trees and terrain during a forced landing following a partial loss of right engine power near Wharton, Texas. The airplane was owned by Premier Aviation Group, Inc., Ft. Meyers, Florida, and flown by a private individual under 14 Code of Federal Regulations Part 91. En route instrument meteorological conditions prevailed and an instrument flight rules (IFR) flight plan was filed for the planned personal cross country flight from Brownsville, Texas, to Houston, Texas. The instrument rated commercial pilot and two passengers received serious injuries, 4 passengers received minor injuries, and the airplane sustained substantial damage.

FAA personnel conducted a pilot interview. The pilot submitted the Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1/2). The NTSB investigator-in-charge (IIC) reviewed the ATC data. From these sources, the following information was obtained. The pilot made a roundtrip flight earlier that day from Brownsville, Texas, to Laredo, Texas. He obtained a weather briefing and filed an IFR flight plan from Brownsville to William P. Hobby Airport, Houston, Texas. He reported 60 gallons of fuel (30 gallons in each tank) available for this flight.

At 1942, the aircraft departed runway 13R at the Brownsville/South Padre Island International Airport, Brownsville, Texas. The aircraft was cleared to a heading of 360 degrees to intercept Victor 163, and climb to 9,000 feet msl.

At 2029:52, the airplane was cleared direct to Lisse Intersection. At 2049:40, the controller issued a clearance to cross Lisse at 7,000 feet msl. During the descent, the aircraft encountered IMC conditions about 8,500 feet msl. After the descent to 7,000 feet msl, the airplane "started to lose partial power" and the pilot noticed a "dropping fuel flow indication." The pilot turned on the emergency auxiliary fuel boost pump to the "HIGH" position and power was momentarily restored to the right engine. The pilot's Global Positioning System (GPS) unit indicated that the nearest airport was Wharton. The pilot requested an ATC clearance to descend to VFR conditions. The controller cleared the flight to descend to 2,000 feet msl, and subsequently, to report the Wharton airport in sight.

At 2101:02, the controller asked the pilot to confirm that the "right engine is not out it's just running rough." At 2101:06, the pilot replied "affirmative uh we have activated the auxiliary fuel pump we could be uh maybe uh uh the fuel starvation just on that engine uh but we're in control." The controller asked the pilot to keep him advised, and the pilot responded "affirmative." There were no additional transmissions from the pilot, and radar contact was lost at 700 feet msl. The controller made numerous attempts to establish communication with the pilot. At 2151:57, an en route aircraft picked up the emergency locator transmitter (ELT) in

the vicinity of the Wharton airport.

During a telephone interview, conducted by the NTSB IIC, the manager for the Brownsville Tower stated that the pilot had called him from the accident site. The manager recalled that "the pilot was alert and said they had crashed in a wooded area about 1 1/2 miles short of runway 14. The airplane hit trees and the left wing had a small fire. The pilot stated that he thought the "right engine lost power due to fuel pump."

On page 4 of the Pilot/Operator Aircraft Accident Report, the block entitled "Mechanical Malfunction Failure" was marked "yes" with the words "mechanical fuel pump and/or aneroid." The pilot stated "the right engine would lose and partially restore power. The fuel selector was also switched to x-feed." The pilot further stated that he "executed a control crash landing with no flaps and landing gear up."

During interviews, conducted by FAA personnel, the passengers reported that the airplane was flying in the clouds when the pilot reported right engine trouble and requested the nearest airport. During the descent, the airplane encountered fog. The airplane turned and impacted trees. After the accident, everyone exited the airplane, and the pilot reported their location via his cellular telephone. Local authorities responded to the site.

FAA inspectors responded to the site. Engine and airframe manufacturer representatives, at the request of the NTSB IIC, examined the aircraft at the accident site [29 degrees 16.412 minutes North latitude; 096 degrees 9.665 minutes West longitude]. They reported the wreckage distribution path was on a measured magnetic heading of approximately 140 degrees with the debris path extending 309 feet. During the final approach to the Wharton Municipal Airport, the airplane impacted trees and terrain short of runway 14. The left wing was found along the debris path approximately 20 feet before the main wreckage. A postaccident fire destroyed the inboard area of the left wing and the left engine accessory section. The left propeller was attached to the engine propeller flange. The left engine was found separated from the airframe. The right propeller was separated from its respective engine, and the tips of the propeller blades were bent aft.

The right wing fuel gascolator contained "several ounces of clear, blue colored aviation fuel." The fuel drain valve located on the right side of the forward spar cover was missing its cover assembly. The right valve handle was found in the down [drain] position; however, no physical evidence of an in-flight fuel leak was found. According to the manufacturer's representative, "examination of the valve assembly from the back side of the spar revealed that the fuel valve was being held open by fuel lines that had been repositioned from impact."

The flap torque tube position corresponded to a fully extended flap position. The manual flap handle in the cockpit was in the extended position for full flaps (40 degrees). The main landing gear was in the down and locked position, and the cockpit gear switch was down.

On March 8, 1999, the aircraft, engine, and propeller manufacturer's representatives examined

the airplane under the surveillance of the NTSB IIC at Air Salvage of Dallas, Lancaster, Texas. The integrity of the fuel tanks was comprised, and no fuel was found in the tanks, except for residual fuel in the left fuel tank and lines. No physical evidence of an inflight fuel leak was found. The right wing fuel selector valve was found in the "OFF" position, and the left wing fuel selector in the "X-FEED" position. The right auxilliary fuel pump was in the "HI" position. The right auxiliary fuel pump was removed, tested, and found to pump fluid. Impact damage precluded a functional check of the right engine driven fuel pump and aneroid. The aneroid was destroyed. On November 4, 1999, the right engine fuel pump was disassembled by an NTSB investigator at Air Salvage of Dallas, Lancaster, Texas. No anomalies were found that would have prevented operation of the fuel pump prior to the impact.

Engine continuity was confirmed to the engine cylinders and to the accessory gear drive of both engines. Thumb compression was noted on all the cylinders. The turbocharger shafts rotated and no evidence of oil leakage was found. Both of the magnetos from the right engine sparked at all terminals when rotated.

The manufacturer's representative reported that the propeller blades for the right engine were "similarly bent aft roughly 20 degrees at 1/2 blade radius with some twisting toward low pitch." He reported that "both blades had very little damage to the paint or the edges of the blades." The propellers were not found in the feathered position.

The commercial pilot held the airplane multiengine land and instrument rating. The pilot was issued a second class medical certificate on March 6, 1998. The pilot reported his aircraft total flight time as 2,484.5 hours, with 422.6 hours in the PA-34 aircraft. His last biennial flight review was accomplished on March 16, 1998, in a Cessna 172 single engine land airplane.

The 1976 model aircraft (S/N 34-7670170) has a maximum gross weight of 4,570 lbs with center of gravity (CG) range of 90.6 inches to 94.6 inches. The aircraft manufacturer's representative calculated a gross weight of 4,613.1 lbs and an aft CG of 96.95 inches at the time of departure. Utilizing an en route fuel burn of 23.6 gph, the estimated gross weight at the time of the accident was 4,429.0 lbs with an aft CG at 97.09 inches. The Seneca II (PA-34-200T) aircraft is certified to carry seven people when the optional seat and seatbelt is installed between the center seats. According to the original aircraft delivery documents, the 7th seat was not installed in the aircraft. At the time of the accident, six seats were found installed in the aircraft. The last annual inspection was completed on March 27, 1998, at a tachometer time of 4986.91 hours.

The National Weather Service (NWS) surface observations in the vicinity of the accident site were reporting the winds from 110 to 140 degrees at 6 to 14 knots, visibility 6 to 10 statute miles, sky condition 600 to 4,000 feet broken clouds, with temperatures and dewpoints in the sixties.

The NWS facility at Palacios, Texas (located 30 nautical miles south of Wharton) reported the local weather at 2052 as 1,600 feet broken cloud, 7 statute miles visibility, winds 110 degrees

at 14 knots, temperature and dewpoint 68 degrees Fahrenheit.

The emergency procedures checklist for the PA-34-200T states in part:

ENGINE DRIVEN FUEL PUMP FAILURE CAUTIONS "The lack of fuel flow indication while on the HI [high] auxiliary fuel pump position could indicate a leak in the fuel system or fuel exhaustion.

The emergency procedures checklist states in part:

SINGLE ENGINE LANDING

Inoperative engine propeller. . . . . feather When certain of making field: Landing gear. . . . . extend Wing flaps . . . . . lower

Pilot Information

Certificate:	Commercial	**Age:**	32,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):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	March 6, 1998
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	2485 hours (Total, all aircraft), 423 hours (Total, this make and model), 2417 hours (Pilot In Command, all aircraft), 74 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8729E
Model/Series:	PA-34-200T PA-34-200T	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	7670170
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	March 27, 1998 Annual	**Certified Max Gross Wt.:**	4570 lbs
Time Since Last Inspection:	169 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	4987 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, activated	**Engine Model/Series:**	TSIO-360-E
Registered Owner:	PREMIER AVIATION GROUP, INC.	**Rated Power:**	200 Horsepower
Operator:	JAVIER H. HINOJOSA, JR.	**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:**	Night/dark
Observation Facility, Elevation:	HOU ,47 ft msl	**Distance from Accident Site:**	52 Nautical Miles
Observation Time:	20:22 Local	**Direction from Accident Site:**	53°
Lowest Cloud Condition:	Unknown	**Visibility**	10 miles
Lowest Ceiling:	Broken / 1400 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	130°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	21°C / 19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	BROWNSVILLE , TX (BRO)	**Type of Flight Plan Filed:**	IFR
Destination:	(5R5)	**Type of Clearance:**	IFR
Departure Time:	19:42 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	WHARTON MUNICIPAL 5R5	**Runway Surface Type:**	Asphalt
Airport Elevation:	100 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	14	**IFR Approach:**	Visual
Runway Length/Width:	5002 ft / 75 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 Serious, 4 Minor	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Serious, 4 Minor	**Latitude, Longitude:**	29.310003,-96.090316(est)

Administrative Information

Investigator In Charge (IIC):	Roach, Joyce
Additional Participating Persons:	PAUL F ALLEN; HOUSTON , TX CHARLES R LITTLE; VERO BEACH , FL JOHN T KENT; MOBILE , AL
Original Publish Date:	June 23, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=45678