Aviation Investigation Final Report

Location:	HOUSTON, Texas	**Accident Number:**	FTW99LA178
Date & Time:	July 1, 1999, 20:40 Local	**Registration:**	N5788
Aircraft:	Piper PA-24-260	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	4 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot failed to maintain the proper descent rate during a VFR approach, in dusk light conditions, following a complete loss of engine power, and the airplane undershot the runway. The airplane was on the downwind leg at 1,100 feet agl and was abeam the runway numbers when the pilot extended the landing gear. Simultaneously, she heard a loud bang and noticed a loss of engine power. The pilot advanced the throttle and realized that the engine had lost total power. The pilot stated that she trimmed the airplane to attain the best glide speed, but did not verify the airspeed during the ensuing forced landing. She added that the airplane was descending 'too fast,' and she needed 'more trim to relieve back pressure, but decided to muscle it as best [she] could and try not to stall the airplane.' Subsequently, the airplane's nose wheel contacted a cement drainage ditch at the approach end of the runway. Following the accident, the engine was test run in the airframe and found to operate within the manufacturer's specifications.

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 the proper descent rate during a forced landing, which resulted in a runway undershoot. Factors were the total loss of engine power for an undetermined reason and the dusk light conditions.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: APPROACH - VFR PATTERN - DOWNWIND

Findings
1. (F) REASON FOR OCCURRENCE UNDETERMINED

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

Findings
2. (C) PROPER DESCENT RATE - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #3: UNDERSHOOT
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings
3. (F) LIGHT CONDITION - DUSK
4. TERRAIN CONDITION - DITCH

Factual Information

On July 1, 1999, at 2040 central daylight time, a Piper PA-24-260 airplane, N5788, was substantially damaged when it impacted terrain following a complete loss of engine power while executing a VFR approach to the West Houston Airport near Houston, Texas. The commercial pilot, who was one of four partners who owned the airplane, and her three passengers were not injured. Dusk visual meteorological conditions prevailed for the Title 14 Code of Federal Regulations Part 91 personal flight and a flight plan was not filed. The flight originated from the New Braunfels Municipal Airport, New Braunfels, Texas, at 1950.

According to the pilot and a fuel receipt, the airplane was "topped off" with 18 gallons of 100LL aviation fuel at New Braunfels. Subsequently, the airplane departed New Braunfels for Houston.

The 357-hour pilot reported that the airplane was on a VFR approach to runway 15 at the West Houston Airport. The airplane was on a left downwind leg, level at 1,100 feet agl, and abeam the runway numbers when she extended the landing gear. Simultaneously she heard a "loud bang" and noticed a loss of engine power. The instrument panel lights "flickered," and the illumination in the cockpit failed. The pilot then advanced the throttle and realized that the engine had lost total power. The pilot stated that she trimmed the airplane to attain the best glide speed, but did not verify the airspeed during the ensuing forced landing. She added that the airplane was descending "too fast," and she needed "more trim to relieve back pressure, but decided to muscle it as best [she] could and try not to stall the airplane." Subsequently, the airplane's nose wheel contacted a cement drainage area at the approach end of the runway and collapsed. The left main landing gear penetrated the wing structure, and the airplane slid approximately 250 feet down the runway, coming to a stop upright.

The pilot reported that the following light and weather conditions existed at the time of the accident: dusk light, visibility greater than 10 miles, clear skies, and wind from 150 degrees at 15 knots.

The airplane was equipped with a 260-horsepower Lycoming IO-540-D engine, which was examined and test run at Caulkins Aero, Houston, Texas, under the supervision of an FAA inspector. The spark plugs, magnetos, oil filter, and air filter were examined before the test run and no anomalies were noted. The fuel selector valve "worked free and correct through all of its ranges," and fuel was present in each of the four fuel tanks. The engine was run in the airframe for a total of 28 minutes at various rpm and manifold pressure settings, including the maximum power setting. The engine operated within manufacturer's specifications. For further details reference the enclosed FAA inspector's statement.

Pilot Information

Certificate:	Commercial	**Age:**	Female
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 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	August 27, 1997
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	357 hours (Total, all aircraft), 27 hours (Total, this make and model), 241 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N5788
Model/Series:	PA-24-260 PA-24-260	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-4580
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	November 1, 1998 Annual	**Certified Max Gross Wt.:**	3100 lbs
Time Since Last Inspection:	112 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4775 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	IO-540D
Registered Owner:	DAVID A. PYLE	**Rated Power:**	260 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:**	Dusk
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	15 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	150°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	NEW BRAUNFELS , TX (BAZ)	**Type of Flight Plan Filed:**	None
Destination:	(IWS)	**Type of Clearance:**	None
Departure Time:	19:50 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	WEST HOSUTON IWS	**Runway Surface Type:**	Asphalt
Airport Elevation:	112 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	15	**IFR Approach:**	None
Runway Length/Width:	3955 ft / 75 ft	**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	3 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 None	**Latitude, Longitude:**	29.610641,-95.119094(est)

Administrative Information

Investigator In Charge (IIC):	Snyder, Georgia
Additional Participating Persons:	JACOB D JOHNSON; HOUSTON , TX
Original Publish Date:	June 22, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=46681