Aviation Investigation Final Report

Location:	IMMOKALEE, Florida	**Accident Number:**	MIA00LA218
Date & Time:	July 16, 2000, 10:47 Local	**Registration:**	N980AC
Aircraft:	Piper PA-24-250	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

At departure, the airplane had been operated for 1.8 hours since fueling. The pilot rated student (student) had not received systems ground instruction but preflighted the airplane. Fuel was noted in the right main fuel tank; he intended on inquiring about the quantity with the CFI, but didn't. The flight departed with the fuel selector positioned to the right main fuel tank and remained on that position until the engine experienced a loss of power. The CFI took the controls and stated she moved the fuel selector; the student stated he could not recall if she moved the fuel selector after the loss of power but during the flight, 'he did not touch the fuel selector at all.' The CFI stated the airplane impacted the ground at about 100 knots; the student stated that the airplane, 'came straight down for the last few feet.' Postaccident examination of the airplane revealed the fuel selector was positioned to the right main fuel tank; no fuel was noted in that tank. The remaining fuel tanks were nearly full. No fuel was in the fuel line at the inlet of the engine driven fuel pump; the fuel selector and auxiliary fuel pump checked satisfactory.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The inadequate supervision of the pilot rated student by the CFI for her failure to note that the fuel selector was positioned to an empty fuel tank. Also, failure of the CFI to attain the proper rate of descent at touchdown resulting in a hard landing. Contributing to the accident was the total loss of engine power due to fuel starvation, and inadequate preflight planning preparation by the CFI for her failure to review the airplane systems with the pilot rated student. Also, inattention by the pilot rated student for his failure to reposition the fuel selector during the flight.

Findings

Occurrence #1: MISCELLANEOUS/OTHER
Phase of Operation: STANDING - ENGINE(S) NOT OPERATING

Findings
1. (F) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND(CFI)

Occurrence #2: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: CRUISE - NORMAL

Findings
2. (F) FLUID,FUEL - STARVATION
3. (F) FUEL TANK SELECTOR POSITION - INATTENTIVE - DUAL STUDENT
4. (C) SUPERVISION - INADEQUATE - PILOT IN COMMAND(CFI)

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

Findings
5. (C) PROPER DESCENT RATE - NOT ATTAINED - PILOT IN COMMAND(CFI)

Factual Information

On July 16, 2000, about 1047 eastern daylight time, a Piper PA-24-250, N980AC, registered to and operated by Naples Air Center, Inc., experienced a loss of engine power and was substantially damaged during a forced landing approximately 5 miles southwest of Immokalee Airport, Immokalee, Florida. Visual meteorological conditions prevailed at the time and no flight plan was filed for the 14 CFR Part 91 instructional flight. The certified flight instructor (CFI) sustained serious injuries and the private-rated student sustained minor injuries. The flight originated about 1011 from the Naples Municipal Airport, Naples, Florida.

The CFI stated that the flight departed with the fuel selector positioned to the right main fuel tank. Airwork was performed, then the student requested to practice patterns. The Immokalee Airport was chosen due to the close proximity. While flying at 1,200 feet, about 5 miles southwest of Immokalee airport, "there was a sudden sharp drop in rpm, checks were carried out, [she] decided to switch fuel tanks from right main to left main but the problem did not clear and [she] prepared for a forced landing." She made a call to indicate their position to a nearby flying airplane and reported her location and intentions. She reported that the propeller stopped "windmilling" and she did not attempt to start the engine using the ignition switch. The landing gear was extended to slow the airplane down, "but the impact speed was around 100 knots."

The pilot-rated student stated that the purpose of the flight was for him to get training in complex airplanes. He also stated that he had not been given any formal ground school on the systems of the airplane by the CFI. He performed the preflight to the airplane and noted there was fuel in the right main fuel tank but did not know the quantity. He intended on asking the CFI about the quantity but did not. The CFI arrived at the airplane at they were unable to start the engine; another instructor assisted. Either before or after the engine was started, the CFI placed the fuel selector in the "right main" position. The fuel selector remained on that position for the duration of the flight, "he did not touch the fuel selector at all." When the engine problem was evident, the CFI took the controls; he couldn't recall if she changed the position of the fuel selector valve. He recalled coming in to land in a field that he thought they would make and the last thing he remembers was, "remember specifically, the plane came straight down for last few feet." He could not recall activation of the stall warning system but remembers, "we went straight down." The CFI was on the controls at the time of impact. He recalls that his yoke broke on impact and his seat came off the rails on impact.

Examination of the airplane by a mechanic working for the owner and a Collier County Sheriff Department deputy revealed no visible fuel in the right main fuel tank; the fuel selector was found positioned to the right main fuel tank. The remaining fuel tanks were nearly full. Additionally, without NTSB or FAA authorization or supervision, the company mechanic disconnected the fuel line at the inlet of the engine driven fuel pump; no fuel was noted.

Following recovery of the airplane, operational check of the fuel selector and auxiliary fuel pump was performed; no discrepancies were noted. A copy of a statement from the mechanic and a copy of the sheriff's department report are attachments to this report.

The airplane was equipped with four fuel tanks, two in each wing. The two fuel tanks in each wing are not interconnected. By design to supply fuel to the engine, the fuel selector is required to be positioned to one of the four tank positions. The airplane was fueled last 2 days earlier; it had been operated for 2.4 hours since then at the time of the accident. The accident flight duration was .6 hour.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	25,Female
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	September 3, 1999
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	669 hours (Total, all aircraft), 6 hours (Total, this make and model), 605 hours (Pilot In Command, all aircraft), 221 hours (Last 90 days, all aircraft), 45 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N980AC
Model/Series:	PA-24-250 PA-24-250	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-3359
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	May 1, 2000 Annual	**Certified Max Gross Wt.:**	2900 lbs
Time Since Last Inspection:	87 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3638 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-540-C1B5
Registered Owner:	NAPLES AIR CENTER, 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:	RSW ,30 ft msl	**Distance from Accident Site:**	
Observation Time:	10:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 2800 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 3500 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots / 17 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	260°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	30°C / 25°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	NAPLES , FL (APF)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	10:11 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Serious, 1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 1 Minor	**Latitude, Longitude:**	26.409305,-81.419128(est)

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	DICK HELLER; MIAMI , FL
Original Publish Date:	July 16, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=49723