Aviation Investigation Final Report

Location:	SLATON, Texas	**Accident Number:**	FTW99LA273
Date & Time:	September 30, 1999, 11:30 Local	**Registration:**	N5399B
Aircraft:	Cessna 152	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The airplane's nose landing gear struck a dike and the airplane flipped to the inverted position during a forced landing following a total loss of engine power due to fuel exhaustion. The solo student pilot/owner did not refuel the airplane before departing on the second leg of the round trip cross country flight. No physical evidence of fuel or compromise of the integrity of the fuel system was observed at the accident site. Total fuel capacity for the airplane is 39 gallons (37.5 usable fuel) and about 2 gallons of fuel was drained from the tanks. The student pilot based his calculated fuel consumption on cruise performance at 4.7 gallons per hour for a pressure altitude of 8,000 feet; however, the Cessna 152 performance chart indicates a fuel burn of 4.9 gallons per hour. Further, the pilot did not calculate the climb performance to cruise altitude. When asked how the accident could have been prevented, the pilot stated, 'I could have topped off the tanks before the return trip.'

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to refuel the airplane resulting in fuel exhaustion. Factors were the pilot's inadequate preflight planning and the lack of suitable terrain for the forced landing.

Findings

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

Findings
1. (C) FLUID,FUEL - EXHAUSTION
2. (C) REFUELING - NOT OBTAINED - PILOT IN COMMAND
3. (F) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND

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

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: LANDING - ROLL

Findings
4. TERRAIN CONDITION - BERM
5. (F) TERRAIN CONDITION - NONE SUITABLE

Factual Information

On September 30, 1999, at 1130 central daylight time, a Cessna 152 single engine airplane, N5399B, sustained substantial damage upon impacting the terrain during a forced landing following a total loss of engine power near Slaton, Texas. The airplane was owned and operated by the student pilot under 14 Code of Federal Regulations Part 91. The student pilot, sole occupant, was not injured. Visual meteorological conditions prevailed for the solo cross country instructional flight, and a visual flight rules (VFR) flight plan was filed. The flight departed Decatur Municipal Airport, Decatur, Texas.

During interviews, conducted by the local authorities and the FAA inspector, the student pilot stated that he landed the airplane in the cotton field after the "engine failed due to fuel starvation" during the second leg of the round trip solo cross country flight from Lubbock, Texas, to Decatur, Texas. The student pilot departed Lubbock with full fuel tanks. Before departing Decatur, the pilot visually checked the fuel tanks and observed the fuel tank level was about an inch below the filler neck on each tank. The fuel gauges indicated over 24 gallons. At approximately 98 nautical miles from the destination airport, the student pilot "noticed that the fuel gauge on the right was beginning to drop quicker than the gauge on the left." The pilot diverted toward the Slaton Municipal Airport; however, the airplane was approximately 8 miles from the airport when the "engine began to lose power." A forced landing was performed in the cotton field; however, when the front landing gear touched down in the dirt, the airplane flipped to the inverted position. The local authorities found no physical evidence of fuel at the site or compromise of the integrity of the fuel system.

The FAA inspector, who examined the accident site, reported that the airplane struck a dike during the landing roll. The rear spar of the right wing was damaged, and leading edge dents were found in both wings. Total fuel capacity for the airplane is 39 gallons (37.5 usable). The inspector reported that "when both fuel tanks were drained, about 2 gallons of fuel remained between both fuel tanks." The inspector further reported that the student pilot based his calculated fuel consumption on cruise performance at 4.7 gallons per hour for a pressure altitude of 8,000 feet; however, the Cessna 152 performance chart indicates a fuel burn of 4.9 gallons per hour. The pilot "failed to calculate the climb performance to cruise altitude." No pre-impact discrepancies were found by the FAA inspector with the engine or the airframe.

The student pilot reported that he and his flight instructor performed the fuel calculations for the flight. According to a Flight Log, provided by the pilot, he was not tracking fuel consumption during the flight.

On the Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1/2), the owner/pilot was asked the following question: How could this accident have been prevented? The owner responded, "I could have topped off the tanks before the return trip."

Pilot Information

Certificate:	Student	**Age:**	42,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	December 2, 1998
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	52 hours (Total, all aircraft), 52 hours (Total, this make and model), 20 hours (Pilot In Command, all aircraft), 23 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N5399B
Model/Series:	152 152	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal; Utility	**Serial Number:**	15283861
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	July 9, 1999 Annual	**Certified Max Gross Wt.:**	1670 lbs
Time Since Last Inspection:	97 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	8499 Hrs	**Engine Manufacturer:**	Lycoming
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-235-L2C
Registered Owner:	STEWART W. HICKS	**Rated Power:**	110 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:	HICKS ENTERPRISES, INC.	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	LBB ,3281 ft msl	**Distance from Accident Site:**	18 Nautical Miles
Observation Time:	11:09 Local	**Direction from Accident Site:**	305°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	16 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	20°C / -8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	DECATUR (8F7)	**Type of Flight Plan Filed:**	VFR
Destination:	LUBBOCK (F82)	**Type of Clearance:**	
Departure Time:	00:00 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 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	33.430171,-101.640129(est)

Administrative Information

Investigator In Charge (IIC):	Roach, Joyce
Additional Participating Persons:	JUAN RIVERA; LUBBOCK , TX
Original Publish Date:	November 30, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=47478