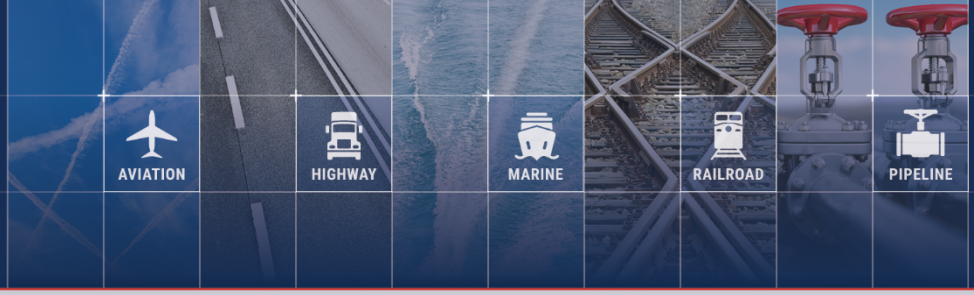

Aviation Investigation Final Report

Location:	EDEN PRAIRIE, Minnesota	**Accident Number:**	CHI94LA059
Date & Time:	December 23, 1993, 12:07 Local	**Registration:**	N9228S
Aircraft:	BEECH C23	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

NEITHER THE CFI OR STUDENT PILOT VISUALLY CHECKED THE FUEL QUANTITY IN THE FUEL TANKS DURING THE PREFLIGHT. THE STUDENT STATED THE FUEL CAPS WERE FROZEN AND AS HE WAS ATTEMPTING TO FREE THE CAPS THE CFI STATED 'IT WAS ALRIGHT' AND TO GET IN THE AIRPLANE. THE CFI LATER STATED HE HAD CHECKED THE LEFT TANK AND THOUGHT THE STUDENT HAD CHECKED THE RIGHT TANK. THE STUDENT STATED HE WAS UNDER THE IMPRESSION THAT THE CFI HAD CHECKED THE FUEL QUANTITY PRIOR TO HIS ARRIVAL SO HE GOT IN THE AIRPLANE. SEVERAL LOCAL PRACTICE APPROACHES WERE MADE AND FOLLOWING THE LAST APPROACH WHILE CIRCLING TO LAND, A LOSS OF ENGINE POWER RESULTED. THE CFI ATTEMPTED TO RESTART THE ENGINE, BUT POWER WAS NOT REGAINED. A FORCED LANDING WAS MADE ON TOP OF A RIDGE DURING WHICH THE LEFT WING CONTACTED THE TERRAIN. POST ACCIDENT INSPECTION REVEALED THE RIGHT FUEL TANK WAS EMPTY AND THE LEFT TANK CONTAINED 1 GALLON OF FUEL.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: an inadequate preflight by both the CFI and student pilot. Factors contributing to the accident was poor communications between the CFI and student pilot, and hilly terrain.

Findings

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

Findings
1. FLUID,FUEL - EXHAUSTION
2. (C) AIRCRAFT PREFLIGHT - INADEQUATE - DUAL STUDENT
3. (C) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND(CFI)
4. (F) COMMUNICATIONS - POOR - DUAL STUDENT
5. (F) COMMUNICATIONS - POOR - PILOT IN COMMAND(CFI)

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

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
6. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY

Factual Information

On December 23, 1993, at 1207 central standard time, a Beech C23, N9228S, operated by General Aviation Services, collided with the terrain during a forced landing following a loss of engine power.

The power loss occurred while the airplane was circling to land on runway 27L at the Flying Cloud Airport, Eden Prairie, Minnesota, while on an instrument training flight. Visual meteorological conditions prevailed and no flight plan was filed.

The airplane was substantially damaged. The Certified Flight Instructor (CFI) and instrument student pilot where not injured. The flight originated from Eden Prairie, Minnesota, on December 23, 1993, at 1030 cst.

The student stated they were running late on the scheduled flight period due to his late arrival at the airport. He stated that during his preflight he discovered the fuel caps were frozen shut. He stated he was attempting to get the caps off when his instructor, who was already in the airplane, stated, "it was alright" and to get in the airplane. The student stated he got in the airplane and initiated the flight without visually checking the fuel quantity in the tanks. He did stated the fuel gauges showed approximately 3/4 full of fuel in each tank.

The CFI stated he told the student to go out and preflight the airplane as usual. He stated that at few minutes later he went out to the airplane to "set up in the cockpit." He stated he checked the fuel level in the left tank which was noted to be at the tab but did not check the fuel quantity in the right tank assuming the student had done so.

Both pilots stated they took off and practiced several approaches. The last approach was the VOR 36 at Flying Cloud Airport with a circle to land on runway 27L. The pilots stated that while circling to land (approximately on a base leg) the engine lost power. The CFI attempted to restart the engine to no avail and an off airport landing was made in hilly terrain. The CFI stated that during the landing on top of a ridge, the left wing contacted the terrain first and the airplane slid down the side of the ridge coming to a stop with the gear collapsed.

Post accident inspection of the airplane by the Federal Aviation Administration revealed, "There was nothing that indicated any type of mechanical failure." The right wing tank was found empty of fuel. The left wing tank contained approximately 1 gallon of fuel. Refueling records and aircraft flight log records show the airplane had been flown 3.8 hours prior to last having been refueled.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	24,Male
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 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	August 20, 1993
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	586 hours (Total, all aircraft), 131 hours (Total, this make and model), 453 hours (Pilot In Command, all aircraft), 140 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BEECH	**Registration:**	N9228S
Model/Series:	C23 C23	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	M-1761
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	100 hour	**Certified Max Gross Wt.:**	2455 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	O-360
Registered Owner:	GENERAL AVIATION SERVICES	**Rated Power:**	180 Horsepower
Operator:	GENERAL AVIATION SERVICES	**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:	FCM ,906 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	12:09 Local	**Direction from Accident Site:**	90°
Lowest Cloud Condition:	Scattered / 15000 ft AGL	**Visibility**	12 miles
Lowest Ceiling:	Broken / 25000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	310°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	VFR
Departure Time:	10:30 Local	**Type of Airspace:**	Class D;Class E

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:	906 ft msl	**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	Circling
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	44.859451,-93.43048(est)

Administrative Information

Investigator In Charge (IIC):	Sullivan, Pamela
Additional Participating Persons:	JOHN C VERGENZ; MINNEAPOLIS , MN
Original Publish Date:	September 13, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=9448