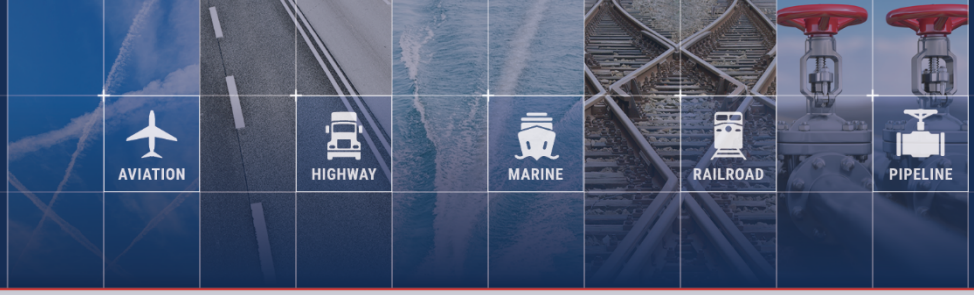

Aviation Investigation Final Report

Location:	CASPER, Wyoming	**Accident Number:**	SEA93LA089
Date & Time:	April 6, 1993, 07:40 Local	**Registration:**	N5541P
Aircraft:	PIPER PA-24	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE PILOT IN COMMAND OF THE FLIGHT, WHO HAD NOT PERSONALLY PERFORMED A VISUAL CHECK OF THE FUEL QUANTITY PRIOR TO DEPARTURE, AND WHO HAD EXPERIENCED UNEXPECTED STRONG HEADWINDS ALONG THE ENTIRE ROUTE, REFILED FOR A MORE DISTANT AIRPORT WHILE ABOUT 15 MINUTES SHORT OF THE ORIGINAL DESTINATION. THE FLIGHT CONTINUED TO EXPERIENCE STRONG HEADWINDS WHILE CONTINUING EN ROUTE TO THE REFILED DESTINATION WHERE THE WEATHER WAS REPORTED TO BE CONSIDERABLY LOWER THAN THAT AT THE ORIGINAL DESTINATION. FUEL EXHAUSTION OCCURRED WHILE THE AIRCRAFT WAS ON ILS FINAL TO THE REFILED DESTINATION.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FUEL EXHAUSTION, AND THE PILOT IN COMMAND'S POOR INFLIGHT DECISION. FACTORS INCLUDE AN INADEQUATE PREFLIGHT BY THE PILOT IN COMMAND.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: APPROACH - FAF/OUTER MARKER TO THRESHOLD (IFR)

Findings
1. (C) FLUID,FUEL - EXHAUSTION

2. (C) IN-FLIGHT PLANNING/DECISION - POOR - PILOT IN COMMAND(CFI)
3. (F) AIRCRAFT PREFLIGHT - INADEQUATE - PILOT IN COMMAND(CFI)

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

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

Findings
4. TERRAIN CONDITION - SNOW COVERED

Factual Information

On April 6, 1993, at approximately 0740 mountain daylight time (MDT), a Piper PA 24, N5541P, impacted the terrain after a loss of power while on ILS final at Natrona County International Airport, Casper, Wyoming. The FAA certificated flight instructor, the FAA certificated private pilot, and their passenger were not injured, but the aircraft sustained substantial damage. The pilot, who was on a personal pleasure flight, departed Cumberland Municipal Airport, Cumberland, Wisconsin just over five hours earlier. He had originally filed an IFR flight plan for Rapid City, South Dakota, but while en route, the destination was changed to Casper Wyoming. The ELT was activated upon impact, and was turned off at the scene.

According to the instructor pilot, he had been asked by the owner of the aircraft to accompany him on the flight because of the potential for bad weather. The night before the flight, the instructor asked the owner, who was not instrument rated, to check the weather, and to plan and file an IFR flight plan. According to the instructor pilot, prior to departure the owner told him that the latest forecast winds would be about 90 degrees to the intended course at about five knots. The morning of the flight, about 15 minutes prior to takeoff, the owner fueled the aircraft and received an IFR clearance for departure from the uncontrolled airport. The instructor pilot said the he did not personally make a visual inspection of the fuel level after the owner had fueled the aircraft.

According to the instructor pilot, the flight initially leveled at 10,000 feet, but then climbed to 12,000 feet in order to stay above the clouds, in which light icing had been reported. He also said that, "We encountered headwinds of 20 to 30 knots along the entire route." When the flight was about 15 minutes from Rapid City, the instructor pilot received current weather for that destination, and also for Casper, Wyoming. According to the instructor pilot, the weather at that time for Rapid City was a 400 foot ceiling with a visibility of one mile. Although the instructor pilot stated that the ILS was inoperative at the time he received the weather report, the current ceiling at Rapid City was higher than the published Minimum Descent Altitude (MDA) of 282 feet Height Above Touchdown (HAT), and the visibility was greater than the published one half mile required for the available localizer only approach at Rapid City.

Although the instructor pilot's written statement says that the Casper weather he received at this same time was "...reported at 400FT and 1 mile visibility," the FAA inspector who responded to the scene said that he had listened to the audio tapes of the pilot's conversation with both Center and Flight Service, and that the weather they gave him was 200 feet obscured, visibility variable from one eighth to one half mile, heavy snow and fog. The published minimums for the ILS at Casper were a Decision Height (DH) of 200 feet above the touchdown zone, and a one half mile visibility. After receiving these reports, the instructor pilot elected not to land at the original Rapid City destination, but instead refiled for a final destination of Casper. At the time of his refiling, no alternate was designated.

While en route to Casper, the flight continued to encounter the 20 to 30 knot headwinds, and once again had to climb higher, to 14,000 feet, to avoid icing in the clouds. While on the approach to Casper, the aircraft's engine began to run rough and eventually quit. After a gear up landing in a snow covered valley, the occupants eventually made their way to a nearby road.

According to the FAA inspector who responded to the scene of the accident, there was no fuel remaining in the aircraft's tanks, and there was no evidence of fuel spills or leaks on the fresh snow. According to the instructor pilot, after the accident the owner informed him that "... he thought he could have gotten three or four more gallons in the fuel tanks..." prior to departure.

This same inspector stated that after interviewing both the owner and the instructor pilot, he had determined that the original desired destination had been Casper, Wyoming. But, according to the inspector, the instructor pilot's original decision had been to fly to the filed Rapid City destination, refuel, check the weather, and then continue on to Casper if conditions permitted. Instead, according to the FAA inspector, the instructor pilot, who had experienced continuous headwinds while en route, and was facing reported weather that fluctuated below minimums at his desired destination, continued on toward Casper until reaching a point where no fuel remained in the aircraft's fuel system.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	33,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; 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 multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	September 8, 1992
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	1500 hours (Total, all aircraft), 33 hours (Total, this make and model), 1450 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER	**Registration:**	N5541P
Model/Series:	PA-24 PA-24	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	24-605
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	January 2, 2000 Annual	**Certified Max Gross Wt.:**	2900 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	LYCOMING
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	O-540-A1A5
Registered Owner:	KRINGLE, WENDELL K.	**Rated Power:**	250 Horsepower
Operator:	KRINGLE, WENDELL K.	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Dawn
Observation Facility, Elevation:	CPR ,5348 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	07:50 Local	**Direction from Accident Site:**	80°
Lowest Cloud Condition:	Unknown / 200 ft AGL	**Visibility**	0.5 miles
Lowest Ceiling:	200 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	20 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	10°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	1°C
Precipitation and Obscuration:	N/A - Blowing - Snow		
Departure Point:	CUMBERLAND , WI (UBE)	**Type of Flight Plan Filed:**	IFR
Destination:		**Type of Clearance:**	IFR
Departure Time:	03:45 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	NATRONA COUNTY INT CPR	**Runway Surface Type:**	Snow
Airport Elevation:	5348 ft msl	**Runway Surface Condition:**	Snow
Runway Used:	8	**IFR Approach:**	ILS
Runway Length/Width:	8679 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	43.000896,-106.81958(est)

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	BUD HARDESTY; CASPER , WY DAVE SOUCIE; DENVER , CO
Original Publish Date:	May 17, 1994
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=41709