



# Aviation Investigation Final Report

<b>Location:</b>	FREEDOM, Pennsylvania	<b>Accident Number:</b>	NYC97FA099
<b>Date &amp; Time:</b>	May 26, 1997, 15:42 Local	<b>Registration:</b>	N1802C
<b>Aircraft:</b>	Cessna 180	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	1 Serious, 4 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation		

## Analysis

The airplane was configured with a single seat, one set of controls, and with seat belts on the floor to haul parachutists. Also, it was loaded to an estimated gross weight of 2,834 lbs; the maximum certificated gross weight was 2,550 lbs. The pilot took off from a soft sod runway (rwy 9) with a crosswind component. About 12 miles south, the wind was reported to be from 020 deg at 9 gusting 18 kts. The pilot reported that during takeoff, the airplane was 'pushed to the right by a gust of wind.' He said that to avoid a telephone pole, he 'made a hard turn to the right, the airplane hit the ground and cartwheeled.' A parachutist seated on the floor next to the pilot, who held a commercial pilot certificate, stated the stall warning horn sounded from takeoff to ground contact. The carburetor heat was found in the 'CARB HEAT ON' position.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's premature lift off, and his failure to maintain proper runway alignment, which resulted in an inadvertent stall, while attempting to avoid an obstruction (telephone pole). Factors relating to the accident were: the pilot allowed the airplane's gross weight to be exceeded, his inadvertent use of carburetor heat, and a gusty crosswind condition.

## Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT  
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (F) AIRCRAFT WEIGHT AND BALANCE - EXCEEDED - PILOT IN COMMAND
2. (F) CARBURETOR HEAT - INADVERTENT USE - PILOT IN COMMAND
3. (F) WEATHER CONDITION - CROSSWIND
4. (F) WEATHER CONDITION - GUSTS
5. (C) LIFT-OFF - PREMATURE - PILOT IN COMMAND
6. (C) PROPER ALIGNMENT - NOT MAINTAINED - PILOT IN COMMAND
7. (F) TERRAIN CONDITION - HIGH OBSTRUCTION(S)
8. MANEUVER TO AVOID OBSTRUCTIONS - PERFORMED - PILOT IN COMMAND
9. (C) STALL - INADVERTENT - PILOT IN COMMAND

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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: TAKEOFF

## Factual Information

### HISTORY OF FLIGHT

On May 26, 1997, at 1542 eastern daylight time, N1802C, a Cessna 180 airplane operated by Beaver Valley Skydivers was destroyed when it collided with terrain after takeoff from Kindelberger Landing Strip Airport, Freedom, Pennsylvania. Visual meteorological conditions prevailed and no flight plan was filed. The pilot and three parachutist received minor injuries; one parachutist was seriously injured. The local parachuting flight was conducted under 14 CFR Part 91.

In an interview with the NTSB, the pilot reported he stayed in the grass on the right side of the strip for the takeoff roll and avoided the muddy areas in the center. During the takeoff climb to the east from the grass strip, the airplane encountered a crosswind from the left and veered to the right over a fence and toward a telephone pole. He said:

"I felt a good crosswind give me a push to the right. I started to move over the fence. I tried to work it back, then I saw the telephone pole. I thought I could go over it. I was pulling up a little bit. The pole went out of my vision so I made a hard turn to the right to avoid the pole. That took it into a steep bank right. I felt the gear hit then the wing tip. ... drifting a little right and that breeze a little right, got me into trouble."

The pilot reported that he had flown five lifts of parachutists that day and that there "...was nothing wrong with the airplane."

In an interview with the NTSB, the airplane owner stated that he serviced the airplane with fuel just prior to the accident flight. He said the airplane departed with approximately 25 gallons of fuel in the right wing tank and 5 gallons in the left wing tank. The owner stated that he watched the airplane during taxi, takeoff roll and lift off. He said his attention was diverted momentarily and that he refocused on the airplane when people near him started yelling. He stated:

"...he was just over the pole. He was already turning and he just kept going on over. When he went out of sight the wings were straight up and down. Well...not quite a 90 degree bank."

When questioned about the sound of the engine, the owner responded:

"The engine sounded perfect, [sounded] even, all the way 'till it hit."

The airplane was configured with a single seat and a single set of flight controls at the pilot's station. Two parachutists sat on the floor of the airplane facing aft. One was seated next to

the pilot and the other was seated behind the pilot. Two parachutists crouched or kneeled on the floor of the airplane facing forward. One was positioned aft of the copilot's station and the other was positioned in the rearmost area of the cabin. The three parachutists aft of the pilot's station were secured with a seat belt looped through a single point on their parachute harnesses. A seat belt was available for use by the parachutist at the copilot's station.

In a telephone interview, the parachutist seated on the floor at the copilot's station stated that he could not remember if he was restrained. He reported that the pilot had difficulty maintaining directional control during the takeoff roll. He stated:

"...he was over controlling...he was all over the place. Rotation was early and excessive ...[the airplane] pitched up violently. A less than adequate first segment put the aircraft in close proximity to obstacles. Panic and error resulted in right turn towards more obstacles. He had the elevator buried in his stomach and right aileron in. I started yelling, 'Let it fly, let it fly ...'. From the runway to impact the stall warning horn was going off. The horn was going off and he's pulling back on the yoke. It was a takeoff/departure stall."

The parachutist at the copilot's station held a Commercial Pilot certificate with Single Engine Land and Instrument ratings.

The accident occurred during the hours of daylight approximately 40 degrees, 30 minutes north latitude, and 80 degrees, 10 minutes west longitude.

#### PERSONNEL INFORMATION

The pilot held a commercial Pilot Certificate with ratings for airplane single engine land and sea, and instrument airplane. His most recent Federal Aviation Administration (FAA) Second Class Medical Certificate was issued on November 21, 1996.

In the NTSB Form 6120.1/2, the pilot reported 1,835 hours of flight experience; 870 hours in this make and model.

A review of the pilot's flight records by the FAA revealed his most recent Flight Review was completed June 22, 1993.

#### AIRCRAFT INFORMATION

The maximum allowable gross weight of the Cessna 180 is 2,550 pounds. According to Weight and Balance computations performed by an FAA Operations Inspector, the takeoff weight of the airplane was 2,834 pounds. According to the Inspector, "Based on the over gross weight configuration, the aircraft cg (center of gravity) is located outside the center of gravity envelope. This aircraft must be operated within the normal category and the flight manual."

#### METEOROLOGICAL INFORMATION

Weather observed at the Pittsburgh International Airport, 12 miles to the south of Kindelberger Airport was: ceiling 25,000 feet broken with 10 miles visibility. The temperature was 65 degrees and the dewpoint was 39 degrees. The winds were from 020 degrees at 9 knots with gusts to 18 knots.

#### AERODROME INFORMATION

The Kindelberger Landing Strip Airport was a private use airport with a field elevation of 1,140 feet. The 1,515 foot runway was oriented east/west and designated 09 and 27. The runway surface was turf. It was hilly and uneven with several rocky and bare patches. Runway 09 was bordered by buildings and rising terrain on the left, and a fence on the right. Telephone wires and poles were on either side of the runway at the departure end. The wind sock was mounted on a pole on the right side of the runway at the departure end.

#### WRECKAGE AND IMPACT INFORMATION

The airplane wreckage was examined at the accident site on March 26, 1997. All major components were accounted for at the scene. The site was located approximately 300 yards from the departure end of Runway 09 at Kindelberger Airstrip. The wreckage debris path was approximately 125 feet long and was oriented approximately 150 degrees magnetic. The airplane came to rest upright, facing 330 degrees, opposite the direction of travel. The wreckage path is identified in one foot increments called stations.

Several ground scars were noted between the initial ground scar at station zero, and the propeller which was found at station 86. The propeller was separated from the engine and displayed twisting and chordwise scratching. The propeller spinner displayed torsional damage. The left and right main gear were at stations 105 and 114, respectively. The engine muffler was found at station 108.

The airplane was at station 124. The engine was separated at its mounts, but remained attached by cables. The cockpit and cabin area was intact. The right wing was partially separated at the wing root. Examination of the cockpit revealed the carburetor heat control in the 'on' position.

#### ADDITIONAL INFORMATION

In a written statement, the FAA Operations Inspector said:

"This aircraft departed from a very SOFT sod runway 09, at a gross weight of 2,834.2 pounds, with an over gross weight of 284.2 pounds. This over gross constitutes approximately 11% of the aircraft certificated gross weight of 2,550 pounds. The aircraft departed with a ninety degree crosswind component, the CARB HEAT ON, and with an unqualified pilot as pilot in command. The aircraft was unable to safely clear an obstruction at the end of runway 09,

stalled and crashed. Performance specifications at this weight are unknown."

The airplane wreckage was released to the owner on March 27, 1997.

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	69, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>		<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical-w/ waivers/lim	<b>Last FAA Medical Exam:</b>	November 21, 1996
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	1835 hours (Total, all aircraft), 870 hours (Total, this make and model), 15 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N1802C
<b>Model/Series:</b>	180 180	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	32153
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	Unknown	<b>Certified Max Gross Wt.:</b>	2550 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>		<b>Engine Model/Series:</b>	O-470-K
<b>Registered Owner:</b>		<b>Rated Power:</b>	230 Horsepower
<b>Operator:</b>	EMIL H. KINDLEBERGER	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>	BEAVER VALLEY SKYDIVERS	<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	PIT	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	15:51 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Unknown	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 25000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots / 18 knots	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	20°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	18°C / 4°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	(6G2 )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	00:00 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	KINDELBERGER 6G2	<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>	1140 ft msl	<b>Runway Surface Condition:</b>	Rough;Soft;Wet
<b>Runway Used:</b>	9	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	1515 ft / 110 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	1 Serious, 3 Minor	<b>Aircraft Fire:</b>	Unknown
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	Unknown
<b>Total Injuries:</b>	1 Serious, 4 Minor	<b>Latitude, Longitude:</b>	40.680324,-80.249824(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Rayner, Brian
<b>Additional Participating Persons:</b>	WARREN E HALL; WEST MIFFLIN , PA RON A HORACK; WEST MIFFLIN , PA WILLIAM B WELCH; WICHITA , KS GEORGE HOLLINGSWORTH; RESTON , VA
<b>Original Publish Date:</b>	June 26, 1998
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=39276">https://data.nts.gov/Docket?ProjectID=39276</a>

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