

# National Transportation Safety Board - Aircraft Accident/Incident Database

|                                    |                     |                 |                       |                                       |
|------------------------------------|---------------------|-----------------|-----------------------|---------------------------------------|
| Accident Rpt# ERA18FA012           | 10/31/2017 1005 EDT | Regis# N293GC   | Whiteville, NC        | Apt: Columbus County Muni CPC         |
| Acft Mk/Mdl BEECH 35C33-UNDESIGNAT |                     | Acft SN CD-1035 | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR IO-470-K     |                     | Acft TT 5813    | Fatal 1 Ser Inj 0     | Flt Conducted Under: FAR 091          |
| Opr Name: CHARTRESS GEORGE H       |                     | Opr dba:        |                       | Aircraft Fire: NONE                   |
|                                    |                     |                 |                       | AW Cert: STU                          |

## Events

3. Approach - Fuel starvation

## Narrative

On October 31, 2017, at 1005 eastern daylight time, a Beech 35-C33, N293GC, was substantially damaged when it impacted trees and terrain after a loss of engine power during approach to Columbus County Municipal Airport (CPC), Whiteville, North Carolina. The private pilot was fatally injured, and the pilot-rated passenger sustained minor injuries. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight, conducted under the provisions of 14 Code of Federal Regulations Part 91, which departed from Cannon Creek Airport (15FL), Lake City, Florida about 0735.

According to the pilot-rated passenger, the private pilot told him that the engine on the accident airplane would consume about 11.5 gallons per hour in cruise flight. On the morning of the accident, during the preflight inspection of the airplane they noticed that the fuel level was about « inch above the tabs in both fuel tanks. They initially intended to fly from 15FL to Lake City Gateway Airport (LCQ), Lake City, Florida for fuel, but the fixed-base-operator was closed, so they decided to refuel at CPC, on their way to their final destination of Westerly State Airport (WST), Westerly, Rhode Island.

After departing 15FL, they flew with the fuel selector in the right tank position for 1 hour and 25 minutes. When they were about 40 minutes from CPC, the private pilot switched the fuel selector to the left tank position.

During the final approach to runway 6 at CPC, when the airplane was about 700 ft above mean sea level, the private pilot switched the fuel selector to the right tank, as the landing checklist required the selector to be selected to the fullest tank for approach and landing. The pilot-rated passenger noticed that the left fuel tank gauge was showing ½ full, and the right fuel tank gauge was showing « full. He then advised the private pilot that that could not be correct, as they had been operating on the right tank for most of the flight. The nose of the airplane then dropped, and the pilot-rated passenger advised the private pilot that the airplane had lost engine power. The pilot-rated passenger then noticed the private pilot twisting the vernier type throttle, and he told him again that the engine was not producing any power.

The private pilot then reached down, and switched the fuel selector to the left tank. The pilot-rated passenger noticed that as the private pilot leaned forward against the throw-over control wheel assembly, the airplane pitched sharply downward. The pilot-rated passenger then saw that the airplane was approaching trees, and he yelled at the private pilot who then looked up just as the airplane's left wing struck a tree. The pilot-rated passenger then put his arms in front of him to brace himself. He subsequently egressed from the airplane and called 911.

Examination of the accident site revealed that the airplane came to rest in a heavily wooded area about 2,000 ft from the approach end of runway 6. The airplane came to rest upright, in a 38° nose down attitude, facing the opposite direction of travel.

Examination of the airplane revealed that it had been substantially damaged during the impact sequence with the outboard left wing sustaining significant impact damage near the flap/aileron junction.

The throttle was in the full throttle position, the propeller control was in the high rpm (fine pitch) position, the mixture control was in the full rich position, and the fuel boost pump switch was on. The wing flaps were in the 30° extended position and the landing gear was down. The fuel selector valve was in the "LH TANK" position.

The left fuel tank contained about 16 gallons of fuel, and the right fuel tank contained about 0.5 gallons of fuel. Both left fuel tank and right fuel tank quantity transmitters were checked with an Ohmmeter; the resistance levels were variable and moved in concert with the floats. When electrical power was applied to the electrical system, the left fuel tank quantity gauge indicted about « full and the right fuel tank quantity gauge indicated about \_ full.

When the left fuel tank quantity transmitters were actuated to full (up), the left fuel tank quantity gauge responded accordingly. When the left fuel tank quantity transmitters were actuated to empty (down), the left fuel tank quantity gauge responded accordingly.

When the right fuel tank quantity transmitters were actuated to full (up), the right fuel tank quantity gauge responded accordingly. When the right fuel tank quantity transmitters were actuated to empty (down), the right fuel tank quantity gauge still indicated approximately \_ full.

The engine did not exhibit physical impact damage. Oil was present in the oil sump, galleries, and rocker boxes. The engine oil dipstick indicated that the oil sump contained about 5.5 quarts of oil. All six upper spark plugs exhibited normal wear patterns, were dry, and exhibited a light color consistent with a lean combustion mixture. Examination of the piston domes, cylinder walls, exhaust valves, and intake valves with a lighted borescope, did not reveal any anomalies. Continuity was established with the cockpit engine controls and the associated engine components. The throttle and mixture control arms remained attached and secured. The mufflers and tailpipes were impact damaged.

Drivetrain continuity was established, thumb compression and suction were achieved on all six cylinders, and rocker arm motion was observed on all valves. Spark was produced by the magnetos to each ignition lead, and the impulse couplers were heard to release. The fuel control inlet screen was clean, and the engine driven fuel pump gear and drive coupling were intact. The fuel pump rotated smoothly, and fuel was expelled when manually rotated. The oil pump appeared normal, and the vacuum pump drive coupling was intact.

Examination of the two-bladed propeller revealed that one propeller blade exhibited S-bending, twisting, and leading-edge paint erosion, with smearing of the red paint that was on the blade tip. The other blade was bent aft around the left side of the engine; the blade was twisted, and the tip was curled aft. Freshly cut sections of tree limbs, about 5 inches in diameter and approximately 15 inches long were observed at the accident site.. One section exhibited a red paint transfer mark.

According to Federal Aviation Administration (FAA) airman and pilot records, the pilot held a private pilot certificate with ratings for airplane single-engine land, and rotorcraft-helicopter. His most recent FAA third-class medical certificate was issued on February 22, 2016. He had accrued about 3,797 total hours of flight experience, about 2,403 hours of which, were in single engine airplanes.

According to FAA airman records, the pilot-rated passenger, held a private pilot certificate with ratings for airplane single-engine land, and instrument-airplane. His most recent FAA third-class medical certificate was issued on September 19, 2016. He reported on that date, that he had accrued about 1,330 total hours of flight experience.

According to FAA airworthiness and maintenance records, the airplane was manufactured in 1966. Its most recent annual inspection was completed on March 4, 2017. At the time of the Accident, the airplane had accrued about 5,812 total hours of operation.

The wreckage was retained for further examination.

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|---|---------------------|-----------------------|------------------------------|--------------------|
| Accident Rpt# GAA17CA524                | 09/03/2017 1610 CDT | Regis# N52813         | Oshkosh, WI                  | Apt: Pioneer WS17  |
| Acft Mk/Mdl BOEING A75N1(PT17)-UNDESIGN | Acft SN 75-394      | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual          | Prob Caus: Pending |
| Eng Mk/Mdl CONTINENTAL W-670-6N         | Acft TT 7121        | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091 |                    |
| Opr Name: WILLIAM D. TISCHER            | Opr dba:            | Aircraft Fire: NONE   |                              | AW Cert: STA       |

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## Summary

The pilot of the tailwheel-equipped biplane reported that, during the landing roll, about halfway down the grass runway, the biplane "very quickly" inverted. After exiting the biplane, he examined the runway and saw where the propeller had dug in and viewed skid marks in the grass "where it was obvious that the brakes had been applied and locked up." The airplane sustained substantial damage to the vertical and horizontal stabilizer.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the biplane that would have precluded normal operation.

The automated weather observation system about 1 nautical mile from the accident site reported, about the time of the accident, wind from 230ø at 7 knots, gusting to 14 knots. The pilot landed on runway 31.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's overapplication of the brakes, which resulted in the biplane coming to rest inverted.

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## Events

1. Landing - Nose over/nose down

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## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Surface speed/braking-Capability exceeded - C
2. Aircraft-Aircraft systems-Landing gear system-Brake-Incorrect use/operation - C
3. Personnel issues-Task performance-Use of equip/info-Use of equip/system-Pilot - C

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## Narrative

The pilot of the tailwheel-equipped biplane reported that, during the landing roll, about half way down the grass runway, the biplane "very quickly" became upside down. After exiting the biplane, he examined the runway and saw where the propeller had dug in and viewed skid marks in the grass "where it was obvious that the brakes had been applied and locked up." Subsequently, the airplane sustained substantial damage to the vertical and horizontal stabilizer.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the biplane that would have precluded normal operation.

The automated weather observation system about 1 nautical mile from the accident site reported, about the time of the accident, the wind was 230ø at 7 knots, gusting to 14 knots. The pilot landed on runway 31.

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|-----------------------------------|---------------------|-----------------|-----------------------|--|
| Accident Rpt# GAA17CA504          | 08/18/2017 1540 EDT | Regis# N4859N   | Centerville, TN       | Apt: Centerville Muni GHM              |
| Acft Mk/Mdl BOEING E75-UNDESIGNAT |                     | Acft SN 75-5650 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONTINENTAL W670-6N    |                     |                 | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: ERIC L. COLLINS         |                     | Opr dba:        |                       | Aircraft Fire: NONE                    |
|                                   |                     |                 |                       | AW Cert: SPR                           |

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## Summary

The pilot receiving instruction reported that, during the landing roll before stopping, the tailwheel-equipped biplane "made a sudden move to [the] left." He added that the flight instructor's quick reactions kept the biplane on the runway and going straight.

The pilot then regained control of the biplane, and the left wing dropped and "despite corrective inputs on the controls would not respond to further control inputs," and the airplane then ground looped to the right. Subsequently, the left main landing gear collapsed, and the biplane came to rest nose down on the runway.

The biplane sustained substantial damage to all four wings and fuselage.

The pilot reported that "it was [his] personal contention and belief that the upper left gear failed[,] resulting in substantial damage to the [biplane] and the resultant ground loop." He added that "[he] did not believe that this particular incident could have been prevented."

A review of a video of the accident showed, in part, a loss of control early in the landing roll, followed by a subsequent loss of control and ground loop to the right.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot receiving instruction's failure to maintain directional control during the landing roll and the flight instructor's delayed remedial action.

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## Events

1. Landing - Loss of control on ground
2. Landing - Landing gear collapse
3. Landing - Nose over/nose down

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## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Directional control-Not attained/maintained - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - C
3. Personnel issues-Action/decision-Action-Delayed action-Instructor/check pilot - C

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## Narrative

The pilot, who was receiving instruction, reported that during the landing roll prior to stopping, the tailwheel-equipped biplane "made a sudden move to [the] left." He added that, quick reactions by the flight instructor kept the biplane on the runway and going straight.

The biplane once again under the control of the pilot, then "dropped the left wing and despite corrective inputs on the controls would not respond to further control inputs" and ground looped to the right. Subsequently, the left main landing gear collapsed and the biplane came to rest nose down on the runway.

The biplane sustained substantial damage to all four wings and fuselage.

The pilot reported that, "it was [his] personal contention and belief that the upper left gear failed[,] resulting in substantial damage to the [biplane] and the resultant ground loop." He added that, "[he] did not believe that this particular incident could have been prevented."

A review of a video of the accident that was submitted, showed in part a loss of control early in the landing roll, followed by a subsequent loss of control and ground loop to the right.

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|---|-----------------|---------------|---------------------|--|
| Accident Rpt# WPR16FA012                | 10/14/2015 1510 | Regis# N1940J | Missoula, MT        | Apt: Missoula Intl MSO                 |
| Acft Mk/Mdl BUCKER JUNGMEISTER BU 133-C |                 | Acft SN 22    | Acft Dmg: DESTROYED | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl WARNER AIRCRAFT ENGINES 1650 |                 | Acft TT 2039  | Fatal 1 Ser Inj 0   | Flt Conducted Under: FAR 091           |
| Opr Name: PATRICK CARTER                |                 | Opr dba:      |                     | Aircraft Fire: GRD                     |
|   |                 |               |                     | AW Cert: SPE                           |

## Summary

The airline transport pilot purchased the airplane the day before the accident and was flying it across the country to his home airport. After landing at the accident airport, the pilot spoke on the telephone to a mechanic familiar with the airplane. The pilot reported to the mechanic that, after both of his earlier refueling stops, during the take climb, fuel had entered the cockpit, but after flying for a while, it stopped. The pilot stated that someone was helping him inspect the fuel system, but they were not able to find anything wrong. The mechanic stated that it sounded like a fuel venting problem and recommended that the pilot not fly the airplane until the issue was resolved. The pilot told the mechanic that he needed to get the airplane home and said that he was going to depart with all electrical power off.

On the initial takeoff climb, witnesses saw the airplane enter a steep right turn; this was consistent with the pilot attempting to return to the runway. After turning about 180°, the airplane stalled, entered a spin, and descended to ground impact. Upon impact, a fire erupted, which consumed most of the airplane. Although the pilot had told the mechanic that he had someone help him inspect the fuel system, no one was identified at the accident airport who reported helping the pilot inspect the fuel system or seeing the pilot or anyone else perform such an inspection. Therefore, it is likely that the pilot experienced the same fuel leakage problem on the accident takeoff that he had experienced after his previous refueling stops. Extensive postcrash fire damage to the fuel system prevented determination of the source of the fuel leak. The fuel selector was found in the "off" position. Because the pilot chooses to take off with no electrical power, he was unable to communicate the reason for his turn to tower controllers. It is likely that the pilot was distracted by fuel entering the cockpit and failed to maintain adequate airspeed as he was returning to the airport to rectify the problem, which resulted in the airplane exceeding its critical angle of attack and an aerodynamic stall/spin.

Toxicology testing identified 10% carbon monoxide in the pilot's specimens. This was likely due to the postcrash fire.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to maintain adequate airspeed and his exceedance of the airplane's critical angle of attack while executing a return to the runway after takeoff, which resulted in an aerodynamic stall/spin. Contributing to the accident was the pilot's decision to take off with a known mechanical problem.

## Events

1. Initial climb - Loss of control in flight
2. Initial climb - Collision with terr/obj (non-CFIT)
3. Initial climb - Aerodynamic stall/spin

## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Airspeed-Not attained/maintained - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Angle of attack-Capability exceeded - C
3. Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Pilot - F
4. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C

## Narrative

### HISTORY OF FLIGHT

On October 14, 2015, at 1510 mountain daylight time, a Bucker Jungmeister BU 133/C, airplane N1940J, crashed in a parking lot during the initial takeoff climb at the Missoula International Airport (MSO), Missoula, Montana. The pilot was fatally injured. The airplane was destroyed. The airplane was owned by the pilot, who operated the airplane under 14 Code of Federal Regulations Part 91 as a personal cross-country flight. Visual meteorological conditions prevailed for the flight that was destined for Alabama. No flight plan had been filed.

The pilot purchased the World War II-era single-seat biplane the day before the accident. According to the former mechanic for the airplane, on the day of the accident, the previous owner contacted him to let him know that the airplane had been sold and that the new owner/pilot was having a problem with fuel running into the cockpit. The former owner asked the mechanic if he could call the pilot. The mechanic called the pilot and left a message. When the pilot called him back, the pilot stated that he had refueled at the Dalles, Oregon, airport. After takeoff, when the pilot lowered the nose, he was getting fuel on the floor and down the tubing on the side of the cockpit. He shut off all the electrical power and continued the flight; after a while, the problem went away. The pilot also experienced the same scenario when he refueled in Coeur d'Alene, Idaho. The mechanic told the pilot that it sounded like the fuel tank was not venting properly.

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and that it was forcing out fuel until air could get into the tank. The pilot said that someone at the airport in Missoula was helping him inspect the fuel system, but they were not able to find anything wrong. The mechanic suggested that the pilot ask them to check the vent system. The pilot told the mechanic that he was going to call the tower and leave Missoula with all electrical power off. The mechanic suggested to the pilot that he not fly the airplane until the problem was fixed. The pilot reported that he had to get to Alabama, or as far east as he could by October 16. The mechanic stated that they spoke for about 10 minutes, and he found out later that the pilot had crashed about 20 minutes after they had spoken.

Witnesses located at Northstar Jet, the fixed base operator (FBO) at MSO where the pilot obtained fuel, reported that they had very little interaction with the pilot. The line crew employee reported that the pilot pumped his own fuel and spilled some fuel during the fueling process. The airplane was fueled with 14 gallons of fuel. None of the Northstar Jet personnel reported helping the pilot inspect the fuel system or seeing the pilot or anyone else perform such inspection.

Several witnesses saw the airplane takeoff. A mechanic at another FBO stated that during takeoff from runway 25, the airplane appeared to have plenty of power and sounded good. Once airborne, the airplane made a hard-right turn with the bank angle increasing. A second witness at the same FBO stated that the airplane made a steep right bank and began to descend.

A third witness reported that the airplane climbed quickly after rotation, and made an immediate right turn; the rate of climb decreased, and the airplane began to sink as it continued to turn right. After turning about 180°, the airplane "suddenly rolled about 90° to the right as the wing stalled." The airplane entered a spin and descended "almost straight down," to impact in the rental car lot at the airline terminal. Upon impact, a fire erupted.

Another witness stated that he was on the west end of the airport when he saw the airplane about 80 ft above ground level (agl) enter a hard-right turn, then the airplane descended and impacted the ground. According to this witness, the engine sounded like it was "powering up." A witness at the eastern end of the rental car parking lot stated that the engine was running at the time the airplane impacted the ground.

## PERSONNEL INFORMATION

No personal logbooks were made available to the National Transportation Safety Board (NTSB). A review of the pilot's Federal Aviation Administration (FAA) airman medical records on file at the Airman and Medical Records Center in Oklahoma City, Oklahoma, revealed that the pilot was issued a second-class medical certificate on June 4, 2015. He reported 11,200 total flight hours with 150 hours accrued in the past 6 months.

## AIRCRAFT INFORMATION

The last maintenance performed on the airplane was an annual inspection completed on June 12, 2015, at an airplane total time of 2,038.9 hours. The airplane was powered by a radial piston Warner Aircraft Engines Scarab 165, serial number 2031A; at the time of the annual inspection, the engine total time was recorded as 909.4 hours, with 32.7 hours since major overhaul.

## METEOROLOGICAL INFORMATION

## AIRPORT INFORMATION

## WRECKAGE AND IMPACT INFORMATION

Investigators from the NTSB and an inspector from the FAA responded to the accident site. The entire airplane came to rest in the long-term parking lot on airport property, and most of the airplane was consumed by the postcrash fire.

## MEDICAL AND PATHOLOGICAL INFORMATION

The Montana Department of Justice Forensic Science Division, Missoula, Montana, conducted a post mortem examination on the pilot. The cause of death was listed as blunt force trauma with thermal injuries and smoke inhalation.

The FAA Bioaeronautical Sciences Research Laboratory in Oklahoma City, Oklahoma, performed forensic toxicology on specimens from the pilot. The results were negative for cyanide, ethanol, and drugs of abuse. The results were positive for carbon monoxide, which was detected at 10% in heart blood.

## TEST AND RESEARCH

According to Northstar Jet personnel, two of their company airplanes had refueled before the accident airplane via the same truck that had fueled the accident. The two airplanes and the fuel truck were taken out of service, and the fuel was tested with no discrepancies noted.

A visual engine examination revealed no obvious mechanical problems. The engine could not be manually rotated because of engine displacement due to impact forces. The number three cylinder had separated from the crankcase and exposed the inside of the engine. The engine accessory components had sustained fire damage. Both the left and right magneto remained attached at their respective mounting pads. The left magneto was manually rotated and spark was observed at the ignition leads. The right magneto had sustained fire and impact damage, and the magneto was disassembled with no mechanical malfunctions noted.

The fuel system was subjected to and compromised by the postcrash fire. The fuel selector was removed from the airframe, and upon visual examination, no obvious mechanical deficiencies were noted. Compressed air was blown into each of its selector positions, 1,2, and both; no air escaped from the openings. The fuel selector was then manually moved through each of its positions, compressed air was blown into each position, and air was noted to come out of each fuel selector position.

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| Accident Rpt# GAA18CA008           | 10/08/2017 1645 EDT | Regis# N7313G    | Medina, OH            | Apt: Medina Muni 1G5                   |
| Acft Mk/Mdl CESSNA 150-L           |                     | Acft SN 15074645 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR O-200 SERIES |                     |                  | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: SPENCER FURIN            |                     | Opr dba:         |                       | Aircraft Fire: NONE                    |
|                                    |                     |                  |                       | AW Cert: STU                           |

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## Events

1. Landing - Hard landing

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## Narrative

The solo student pilot reported that, during landing, the airplane landed hard and bounced. He added that the airplane porpoised before coming to rest on the runway.

The airplane sustained substantial damage to the engine mounts.

The student pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.



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|                               |                    |                  |                       |                                       |
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| Accident Rpt# CEN18LA040      | 11/26/2017 915 CST | Regis# N8637S    | Midland, TX           | Apt: N/a                              |
| Acft Mk/Mdl CESSNA 150F-F     |                    | Acft SN 15061937 | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR O-200-A |                    | Acft TT 4205     | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091          |
| Opr Name:                     |                    | Opr dba:         |                       | Aircraft Fire: NONE                   |
|                               |                    |                  |                       | AW Cert: STU                          |

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## Events

1. Enroute - Loss of engine power (total)

## Narrative

On November 26, 2017, at 0915 central standard time, a Cessna 150F airplane, N8637S, impacted terrain during a forced landing following a total loss of engine power near Midland, Texas. The student pilot, who was the sole occupant, was not injured, and the airplane sustained substantial damage. The airplane was registered to Skycops, LLC, Midland, Texas, and operated by a private individual. The instructional flight was conducted under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed, and a visual flight rules flight plan had been filed for the solo cross-country flight. The flight departed the Midland Airpark (MDD), Midland, Texas, about 0900, and was destined for San Angelo, Texas.

The student pilot stated the airplane preflight, engine run-up, and takeoff were normal with no anomalies noted. About 15 minutes into the cross-country flight, the engine lost total power, and the pilot performed a forced landing to a mesquite tree covered area. During the forced landing, the airplane impacted a power line and mesquite trees.

The airplane and engine were examined by Federal Aviation Administration (FAA) inspectors at the accident site, and after the airplane was recovered. Examination of the airplane revealed oil residue on the back of the engine, lower engine cowling, and the right main landing gear strut. The top nut on the generator was missing, and the two lower nuts were loose. A hole in the engine crankcase was noted above the No. 1 cylinder.

On the day of the accident, the FAA inspector examined the engine run-up and taxiway area at MDD, consistent with where the student pilot completed his engine run prior to the flight. The engine run-up area contained a large oil stain and residual oil.

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|----------------------------------|---------------------|------------------|---------------------|---------------------------------------|
| Accident Rpt# WPR18FA035         | 11/19/2017 1756 PST | Regis# N24987    | Tehachapi, CA       | Apt: Tehachapi Municipal TSP          |
| Acft Mk/Mdl CESSNA 152-NO SERIES |                     | Acft SN 15280496 | Acft Dmg: DESTROYED | Rpt Status: Prelim Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-235 SERIES |                     | Acft TT 11168    | Fatal 1 Ser Inj 0   | Flt Conducted Under: FAR 091          |
| Opr Name: BARNES AVIATION        |                     | Opr dba:         |                     | Aircraft Fire: NONE                   |
|                                  |                     |                  |                     | AW Cert: STU                          |

## Events

1. Initial climb - Unknown or undetermined

## Narrative

On November 19, 2017, about 1756 Pacific standard time, a Cessna 152, N24987, was destroyed when it impacted terrain shortly after takeoff from Tehachapi Municipal Airport (TSP), Tehachapi, California. The private pilot received fatal injuries. The personal flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91. Night visual meteorological conditions prevailed.

The pilot had rented the airplane from Barnes Aviation, which was located at General William J. Fox Airfield (WJF), Lancaster, California. According to a certified flight instructor (CFI) who was employed by Barnes, the pilot had reserved the airplane for a few hours in the afternoon of November 19. About 1522, the CFI was asked by another Barnes employee to pull the airplane out of a hangar for the pilot, which he completed about 1530. That was the first time that the CFI had met the pilot. The two introduced themselves, and, in response to the CFI's query, the pilot told the CFI that he planned to fly "to Rosamond then maybe up north for a little while." About 1535, the pilot started his preflight inspection. About 1545, the pilot started the engine of N24987, and the CFI saw him take off from WJF runway 6 about 1555.

Airport surveillance imagery from three collocated cameras at TSP captured the airplane taxi into and stop in the transient parking area about 1628. The pilot secured the airplane and walked to a nearby restaurant to obtain some food. He returned to the airplane about 1738. By that time it was dark; local sunset occurred at 1646. The pilot started the engine about 1749, and taxied from the parking spot about a minute later. A set of lights presumed to be the airplane was observed to depart from TSP runway 29 about 1755. The airplane executed two sequential right turns consistent with right crosswind and downwind leg turns for runway 29. Two of the cameras then captured a descent, but the night image quality, in combination with the airplane distance from the cameras, precluded any determination of airplane attitude.

Multiple witnesses saw or heard the descent and/or impact, and telephoned 911 to report the accident. A ground search, aided by law enforcement helicopter searchlight illumination, located the wreckage in a ranch pasture just north of TSP. The initial impact point was located about 350 feet west-northwest of, and offset about 2050 feet north-northwest of, the runway 11 threshold. The main wreckage came to rest about 250 feet, on a bearing of 138° true, from the initial impact point. The main wreckage consisted of the engine, wings, empennage, and most of the fuselage. Several items, including the propeller, some engine accessories, and some fuselage fragments, formed a debris field between the initial impact point and the main wreckage. Several high-density items such as the battery and the alternator core came to rest several hundred feet beyond the main wreckage. There was no fire. The wreckage was recovered to a secure storage facility for subsequent detailed examination.

According to a representative of Barnes Aviation, the airplane had been topped off with fuel, and then flown for about 1.4 hours prior to its pickup by the accident pilot. The accident pilot did not fuel the airplane before his departure from WJF, or after his arrival at TSP. The investigation has not yet determined where the pilot flew, or whether he landed at any other airports prior to his arrival at TSP. A handheld GPS was recovered on scene, and was sent to the NTSB Recorders Laboratory for possible data download.

The pilot held a private pilot certificate with an airplane single-engine land rating. At the time of the accident, the pilot had logged a total flight experience of about 152 hours, including about 12 hours of night time. He had previously flown solo from WJF to TSP and back at night, in the accident airplane, on October 8, 2017. His most recent flight review was completed in August 2017, and his most recent third-class Federal Aviation Administration (FAA) medical certificate was issued in April 2016.

FAA information indicates that the airplane was manufactured in 1977, and that it was registered to the current owner in November 2011. The airplane was equipped with a Lycoming O-235 series engine. Maintenance records indicated that the airplane had accumulated a total time (TT) in service of about 11,168 hours, and that the engine had accumulated a time since major overhaul (SMOH) of about 2,795 hours. The most recent annual inspection was completed in April 2017, and the most recent 100 hour inspection was completed in September 2017.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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TSP is located just north of the city of Tehachapi; both are situated in an elevated wide valley surrounded by highlands. The area surrounding TSP and the city is primarily ranchland, with very sparse illumination. TSP is equipped with a single paved runway, designated 11/29. The runway is 4,040 feet long, and airport elevation is 4,001 feet. TSP is not equipped with an air traffic control tower. Runway 29 is designated as having a left-hand traffic pattern.

The 1755 TSP automated weather observation included winds from 320 degrees at 3 knots, visibility 10 miles, clear skies, temperature 7 degrees C, dew point 0 degrees C, and an altimeter setting of 30.13 inches of mercury. The moon was a waxing crescent, with 2% of its disc illuminated. Local moonset occurred at 1802.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                    |                     |   |                       |  |
|------------------------------------|---------------------|---|-----------------------|--|
| Accident Rpt# ERA17CA221           | 06/29/2017 1820 EDT | Regis# N53396                             | Miami, FL             | Apt: Miami Executive Airport TMB       |
| Acft Mk/Mdl CESSNA 152-NO SERIES   |                     | Acft SN 15283543                          | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-235-L2C      |                     | Acft TT 16760                             | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: DEAN INTERNATIONAL, INC. |                     | Opr dba: DEAN INTERNATIONAL FLIGHT SCHOOL | Aircraft Fire: NONE   | AW Cert: STU                           |

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## Events

1. Landing-flare/touchdown - Abnormal runway contact
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## Narrative

The student pilot performed three landings earlier that day with his flight instructor, then was signed off for his first solo flight. The student departed and remained in the traffic pattern, and the airplane bounced during the first landing. After bouncing three times, the nose landing gear fork and wheel assembly separated, and the propeller impacted the runway. The airplane sustained substantial damage to the engine mount and firewall. The operator reported that there were no preimpact mechanical failures or malfunctions of the airplane that would have precluded normal operation.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                  |                 |                  |                       |  |
|----------------------------------|-----------------|------------------|-----------------------|--|
| Accident Rpt# GAA17CA528         | 09/09/2017 1400 | Regis# N89732    | Broomfield, CO        | Apt: Rocky Mountain Metropolitan BJC   |
| Acft Mk/Mdl CESSNA 152-NO SERIES |                 | Acft SN 15282846 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-235-L2C    |                 | Acft TT 7241     | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: HAROLD WAYNE WATERS    |                 | Opr dba:         |                       | Aircraft Fire: NONE                    |
|                                  |                 |                  |                       | AW Cert: STN                           |

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## Summary

The student pilot reported that, while landing in a "strong" crosswind, the airplane touched down on the runway centerline but then veered hard to the left. He attempted to correct by using rudder and aileron inputs, but he overcorrected, and the airplane veered sharply to the right and exited the runway. He applied full throttle to abort the landing; however, the airplane veered left across the runway, then continued off its left side. The airplane continued down an embankment, the nose impacted an "upslope" on the far side of a ditch, and the airplane came to rest inverted.

The airplane sustained substantial damage to the empennage and both wings.

The student pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

The automated weather observation system located about 1 mile from the accident site reported, about 15 minutes before the accident, the wind was from 190° at 13 knots and that, about 15 minutes after the accident, the wind was from 210° at 17 knots, gusting to 21 knots. The student pilot landed on runway 12R.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The student pilot's failure to maintain directional control while landing in gusting crosswind conditions.

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## Events

1. Landing - Loss of control in flight
2. Landing - Runway excursion
3. Landing - Attempted remediation/recovery
4. Landing - Nose over/nose down

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## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Directional control-Not attained/maintained - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - C
3. Environmental issues-Conditions/weather/phenomena-Wind-Crosswind-Effect on operation
4. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation
5. Environmental issues-Physical environment-Terrain-(general)-Contributed to outcome

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## Narrative

The student pilot reported that, while landing in a "strong" crosswind, the airplane touched down on the center line of the runway, but then veered hard to the left. He attempted to correct by using rudder and aileron inputs, but over corrected and the airplane veered sharply to the right and exited the runway. He applied full throttle to abort the landing; however, the airplane veered left across the runway, then continued off the left side of the runway. The airplane continued down an embankment, the nose impacted an "upslope" on the far side of a ditch and the airplane came to rest inverted.

The airplane sustained substantial damage to the empennage and both wings.

The student pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

The automated weather observation system located about 1 mile from the accident site reported, about 15 minutes before the time of the accident, the wind was from 190° at 13 knots; and that about 15 minutes after the time of the accident, the wind was from 210° at 17 knots, gusting to 21 knots. The student pilot landed on runway 12R.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                   |                     |               |                       |  |
|-----------------------------------|---------------------|---------------|-----------------------|--|
| Accident Rpt# GAA17CA489          | 08/11/2017 1302 CDT | Regis# N4189V | Axtell, KS            | Apt: N/a                               |
| Acft Mk/Mdl CESSNA 170-UNDESIGNAT |                     | Acft SN 18522 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR C145 SERIES |                     |               | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: NICHOLAS BUESSING       |                     | Opr dba:      |                       | Aircraft Fire: NONE                    |
|                                   |                     |               |                       | AW Cert: STN                           |

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## Summary

The pilot reported that, during a go-around after a low approach, the left cabin door opened. He added that he reached back to close the door and that the airplane then aerodynamically stalled. The pilot was unable to recover, and the airplane impacted the ground and struck multiple fences.

The airplane sustained substantial damage to the fuselage.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

The pilot did not submit the National Transportation Safety Board Form 6120.1 Pilot/Operator Aircraft Accident/Incident Report after multiple requests.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's exceedance of the airplane's critical angle of attack during a go-around. Contributing to the accident was the pilot's decision to attempt to close a passenger door during a critical phase of flight.

## Events

1. Approach-VFR go-around - Aerodynamic stall/spin
2. Approach-VFR go-around - Collision with terr/obj (non-CFIT)

## Findings - Cause/Factor

1. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Angle of attack-Capability exceeded - C
3. Aircraft-Aircraft structures-Doors-Passenger/crew doors-Related operating info - F
4. Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Pilot - F
5. Environmental issues-Physical environment-Object/animal/substance-Fence/fence post-Contributed to outcome

## Narrative

The pilot reported that, during a go around after a low approach, the left cabin door opened. He added that he reached back to close the door and the airplane aerodynamically stalled. The pilot was unable to recover and the airplane impacted the ground and struck multiple fences.

The airplane sustained substantial damage to the fuselage.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

The pilot failed to submit the National Transportation Safety Board NTSB Form 6120.1 Pilot/ Operator Aircraft Accident/ Incident Report after multiple requests.

# National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA513 08/30/2017 1100 Regis# N2982U Belle Fourche, SD Apt: Belle Fourche Muni EFC  
Acft Mk/Mdl CESSNA 172-G Acft SN 17254808 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending  
Eng Mk/Mdl CONT MOTOR O-300 SER Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091  
Opr Name: ROBERT L. MCNEW Opr dba: Aircraft Fire: NONE  
AW Cert: STN

## Summary

The flight instructor reported that he was demonstrating a "full [aerodynamic] stall" landing for the student pilot in "stiff" gusting crosswind conditions. He added that the airplane crossed the runway threshold at 2 ft, the stall warning sounded, and then a "strong [wind] gust lifted the aircraft to [approximately] 6 feet with the stall warning still sounding." He further added that he immediately applied power to go around, but the "gust died out." Subsequently, the left wing dropped and impacted terrain, and the airplane nosed over.

The fuselage, right wing, and vertical stabilizer sustained substantial damage.

The flight instructor reported that there were no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation. An automated weather observation station 17 nautical miles southwest from the accident site reported, about the time of the accident, wind from 110ø at 12 knots. The landing was on runway 36.

The flight instructor failed to submit the National Transportation Safety Board Form 6120.1 Pilot/ Operator Aircraft Accident/ Incident Report.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The flight instructor's failure to maintain adequate airspeed and his exceedance of the airplane's critical angle of attack during a go-around in gusting crosswind conditions, which resulted in an aerodynamic stall.

## Events

1. Landing-flare/touchdown - Other weather encounter
2. Approach-VFR go-around - Aerodynamic stall/spin
3. Approach-VFR go-around - Loss of control in flight
4. Approach-VFR go-around - Collision with terr/obj (non-CFIT)
5. Landing-flare/touchdown - Nose over/nose down

## Findings - Cause/Factor

1. Personnel issues-Task performance-Use of equip/info-Aircraft control-Instructor/check pilot - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Angle of attack-Capability exceeded - C
3. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Airspeed-Not attained/maintained - C
4. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation
5. Environmental issues-Conditions/weather/phenomena-Wind-Crosswind-Effect on operation

## Narrative

The flight instructor reported that, he was demonstrating a "full [aerodynamic] stall" landing for the student pilot in "stiff" gusting crosswind conditions. He added that, the airplane crossed the runway threshold at two feet, the stall warning sounded, and then a "strong [wind] gust lifted the aircraft to appx [approximately] 6 feet with the stall warning still sounding." He further added that, he immediately applied power to go-around, but the "gust died out." Subsequently, the left wing dropped, impacted terrain, and the airplane nosed over.

The fuselage, right wing, and vertical stabilizer sustained substantial damage.

The flight instructor did not report that there were any preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

An automated weather observation station, about the time of the accident, 17 nautical miles southwest from the accident site, reported wind from 110ø at 12 knots. The landing was on runway 36.

The flight instructor failed to submit the NTSB Form 6120.1 Pilot/ Operator Aircraft Accident/ Incident Report.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                               |                     |                  |                       |  |
|-------------------------------|---------------------|------------------|-----------------------|--|
| Accident Rpt# GAA18CA005      | 10/08/2017 1415 CDT | Regis# N9664Q    | Black River Fal, WI   | Apt: Black River Falls Area BCK        |
| Acft Mk/Mdl CESSNA 172-M      |                     | Acft SN 17265748 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-320-E2D |                     | Acft TT 5979     | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: JEFFREY CASPER      |                     | Opr dba:         |                       | Aircraft Fire: NONE                    |
|                               |                     |                  |                       | AW Cert: STN                           |

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## Events

2. Landing - Loss of control on ground

## Narrative

The pilot reported that, during landing in a gusting crosswind, the airplane landed on the left wheel first. He added that "all of a sudden it was like a huge gust of wind took the plane and just threw it to the right". The propeller struck the runway; the airplane exited the runway to the right and came to rest inverted.

The airplane sustained substantial damage to the left wing.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

A review of recorded data from the automated weather observation station located on the airport reported that, about the time of the accident, the wind was from 190ø at 9 knots, gusting 17 knots. The airplane landed on runway 26.

The pilot's operating handbook contains a section titled "Crosswind Landing". It stated in part:

"The maximum allowable crosswind velocity is dependent upon pilot capability rather than aircraft limitations. With average pilot technique, direct crosswinds of 15 knots can be handled with safety."



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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# GAA18CA064    11/16/2017 1515 EST    Regis# N75919    Pampano, FL    Apt: Pompano Beach Airpark PMP  
Acft Mk/Mdl CESSNA 172-N    Acft SN 17268042    Acft Dmg: SUBSTANTIAL    Rpt Status: Prelim    Prob Caus: Pending  
Fatal 0    Ser Inj 0    Flt Conducted Under: FAR 091  
Opr Name:    Opr dba:    Aircraft Fire: NONE

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                |                     |                  |                       |  |
|--------------------------------|---------------------|------------------|-----------------------|--|
| Accident Rpt# GAA17CA573       | 09/22/2017 1000 PDT | Regis# N520KS    | Chino, CA             | Apt: Chino CNO                         |
| Acft Mk/Mdl CESSNA 172-S       |                     | Acft SN 172S9734 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING IO-360-L2A |                     | Acft TT 8073     | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: HANSEO USA LLC       |                     | Opr dba:         |                       | Aircraft Fire: NONE                    |
|                                |                     |                  |                       | AW Cert: STN                           |

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## Events

1. Approach-VFR pattern downwind - Birdstrike

## Narrative

The flight instructor reported that, while the student pilot was flying on downwind, he noticed a bird approaching the airplane. He added that he took the flight controls from the student, banked left, but the airplane struck the bird. The airplane landed without further incident.

The airplane sustained substantial damage to the left wing.

The flight instructor reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

The Federal Aviation Administration Airport Facility Diagram page for the airport in part stated: "Birds and wildlife on and invof [in vicinity of] arpt."

# National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA526 09/10/2017 1444 PDT Regis# N5703A Coolin, ID Apt: Cavanaugh Bay 66S  
Acft Mk/Mdl CESSNA 172-UNDESIGNAT Acft SN 28303 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending  
Eng Mk/Mdl CONT MOTOR O-300 Acft TT 2810 Fatal 0 Ser Inj 1 Flt Conducted Under: FAR 091  
Opr Name: HOHNER, JACK B. Opr dba: Aircraft Fire: NONE  
AW Cert: STN

## Summary

The pilot reported that he completed a normal landing to the south at a grass airstrip near a lake that was surrounded by 75-ft-tall pine trees. He added that he and his passengers ate lunch at the airstrip, and during that time, he noticed "mostly calm" wind with an "occasional gust from the south." The pilot further reported that, due to the runway gradient, he decided to take off downhill to the north because the wind sock was indicating a calm wind.

He reported that, during the soft field takeoff, the takeoff roll was normal, but that, about 100 ft above ground level, he noticed that the "climb had slowed" and the "airspeed was dropping." The pilot lowered the nose, the airplane "descended quickly," and then touched down on the runway with about 30 ft remaining.

Subsequently, the airplane overran the runway, crossed a road, and impacted a dumpster and trees.

The fuselage and both wings sustained substantial damage.

The pilot reported that the airplane was 25 lbs under maximum gross weight.

The pilot reported that there were no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

An automated weather observation station (AWOS) 13 nautical miles from the accident site, reported, about the time of the accident, wind from 240° at 6 knots. A review of four hourly AWOS recordings, south and east of the accident site, around the time of the accident, revealed that the wind was variable from the southwest to west at 5 to 10 knots, gusting 15 to 18 knots. The pilot reported that the takeoff was on runway 33. The calculated density altitude was 3,700 ft. According to the Federal Aviation Administration (FAA) density altitude Koch Chart, the airplane would have likely experienced a 32% decrease in the normal climb rate and a 50% increase in the normal takeoff distance.

The FAA's Pilot's Handbook of Aeronautical Knowledge, FAA-H-8083-25B, contained a section titled, "Effect of Obstructions on Wind," which stated in part:

"Another atmospheric hazard exists that can create problems for pilots. Obstructions on the ground affect the flow of wind and can be an unseen danger.

Ground topography and large buildings can break up the flow of the wind and create wind gusts that change rapidly in direction and speed. These obstructions range from man-made structures, like hangars, to large natural obstructions, such as mountains, bluffs, or canyons. It is especially important to be vigilant when flying in or out of airports that have large buildings or natural obstructions located near the runway.

The intensity of the turbulence associated with ground obstructions depends on the size of the obstacle and the primary velocity of the wind. This can affect the takeoff and landing performance of any aircraft and can present a very serious hazard."

It is likely that, during the initial climb in high-density altitude conditions, the airplane encountered a quartering tailwind gust as the airplane climbed above the trees, which resulted in a loss of lift and an inability to gain altitude during the initial climb.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's decision to take off in high-density altitude and gusting quartering tailwind conditions, which resulted in a loss of lift and an inability to gain altitude during the initial climb.

## Events

1. Initial climb - Other weather encounter
2. Initial climb - Loss of lift
3. Initial climb - Abnormal runway contact
4. Landing-landing roll - Runway excursion

## Findings - Cause/Factor

1. Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Pilot - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Altitude-Attain/maintain not possible - C
3. Environmental issues-Conditions/weather/phenomena-Wind-Tailwind-Decision related to condition
4. Environmental issues-Conditions/weather/phenomena-Wind-Crosswind-Decision related to condition
5. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Decision related to condition
6. Environmental issues-Conditions/weather/phenomena-Temp/humidity/pressure-High density altitude-Decision related to condition
7. Environmental issues-Physical environment-Object/animal/substance-Tree(s)-Contributed to outcome

## Narrative

The pilot reported that he completed a normal landing to the south at a grass airstrip, near a lake and surrounded by 75 ft. tall pine trees. He added that he and his passengers ate lunch at the airstrip, and during that time, he noticed "mostly calm" wind with an "occasional gust from the south." The pilot further reported that, due to the runway gradient, he decided to takeoff downhill to the north, as the wind sock was indicating a calm wind.

During the soft field takeoff, he reported that the take-off roll was normal, but about 100 ft. above ground he noticed that the "climb had slowed" and the "airspeed was dropping." The pilot lowered the nose, the airplane "descended quickly," and touched down on the runway with about 30 ft. remaining. Subsequently, the airplane overran the runway, crossed a road, and impacted a dumpster and trees.

The fuselage and both wings sustained substantial damage.

The pilot reported that the airplane was 25 lbs. under maximum gross weight.

The pilot did not report that there were any preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

An automated weather observation station (AWOS), about the time of the accident, 13 nautical miles from the accident site, reported wind from 240ø at 6 knots. A review of four, hourly AWOSs, south and east of the accident site, around the time of the accident, recorded wind variable from the southwest to westerly direction, at 5 to 10 knots, gusting 15 to 18 knots. The pilot reported that the takeoff was on runway 33. The calculated density altitude was 3,700 ft. According to the Federal Aviation Administration density altitude Koch Chart, the airplane would have likely experienced a 32% decrease to the normal climb rate, and a 50% increase to the normal takeoff distance.

The Federal Aviation Administration's Pilot's Handbook of Aeronautical Knowledge, FAA-H-8083-25B, contains a section titled "Effect of Obstructions on Wind" which stated in part:

"Another atmospheric hazard exists that can create problems for pilots. Obstructions on the ground affect the flow of wind and can be an unseen danger. Ground topography and large buildings can break up the flow of the wind and create wind gusts that change rapidly in direction and speed. These obstructions range from man-made structures, like hangars, to large natural obstructions, such as mountains, bluffs, or canyons. It is especially important to be vigilant when flying in or out of airports that have large buildings or natural obstructions located near the runway.

The intensity of the turbulence associated with ground obstructions depends on the size of the obstacle and the primary velocity of the wind. This can affect the takeoff and landing performance of any aircraft and can present a very serious hazard."

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|-------------------------------|---------------------|------------------|---------------------|---------------------------------------|
| Accident Rpt# CEN18FA037      | 11/22/2017 1700 EST | Regis# N4676L    | Pittsford, VT       | Apt: N/a                              |
| Acft Mk/Mdl CESSNA 172G-G     |                     | Acft SN 17254671 | Acft Dmg: DESTROYED | Rpt Status: Prelim Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-360-A4M |                     |                  | Fatal 1 Ser Inj 0   | Flt Conducted Under: FAR 091          |
| Opr Name: NORMAN L. BAKER     |                     | Opr dba:         |                     | Aircraft Fire: NONE                   |
|                               |                     |                  |                     | AW Cert: STN                          |

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## Events

1. Enroute-cruise - VFR encounter with IMC

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## Narrative

On November 22, 2017, about 1700 eastern standard time, a Cessna 172G, N4676L, was destroyed when it impacted trees and terrain near Pittsford, Vermont. The pilot was fatally injured. The aircraft was registered to Anne Kristine II, Inc., and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Weather conditions at the site are to be determined. The flight was not on a flight plan. The flight originated from the Pittsfield Municipal Airport (PSF), Pittsfield, Massachusetts at an unconfirmed time and the Middlebury State Airport (6B0), Middlebury, Vermont, was the intended destination.

# National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# WPR15LA146 04/14/2015 1345 HST Regis# N12842 Hilo, HI Apt: Hilo Intl ITO  
Acft Mk/Mdl CESSNA 172M Acft SN 17262306 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending  
Eng Mk/Mdl LYCOMING O-320-D2J Acft TT 8251 Fatal 0 Ser Inj 3 Flt Conducted Under: FAR 091  
Opr Name: HAWAII FLIGHT ACADEMY Opr dba: Aircraft Fire: NONE  
AW Cert: STN

## Summary

The flight instructor and pilot receiving instruction reported that, during the preflight inspection before the local instructional flight, they drained water from the fuel tanks. After departure, they flew for about 1 hour and then returned to the airport to practice touch-and-go landings. During the approach for landing, the pilot receiving instruction accomplished a no-flap "slip to landing." After touchdown, he applied power for the takeoff, and the airplane then reached between about 75 and 100 ft above ground level, at which point the engine began to run irregularly, and subsequently, it lost power. The flight instructor took control of the airplane and executed a left turn away from buildings located at the end of the runway. Subsequently, the airplane impacted a grassy area northeast of the departure end of the runway. During the postaccident examination of the airplane, water was found in the fuel sump strainer and the carburetor, which likely led to the loss of engine power. It is likely the flight instructor and pilot receiving instruction failed to ensure that all the water was drained from the tank during the preflight inspection.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: Water contamination in the fuel system due to the flight instructor's and pilot receiving instruction's failure to drain all the water from the system during the preflight inspection, which resulted in a loss of engine power.

## Events

1. Takeoff - Loss of engine power (total)
2. Landing - Off-field or emergency landing

## Findings - Cause/Factor

1. Aircraft-Fluids/misc hardware-Fluids-Fuel-Fluid condition - C
2. Personnel issues-Task performance-Inspection-Preflight inspection-Student/instructed pilot - C
3. Personnel issues-Task performance-Inspection-Preflight inspection-Instructor/check pilot - C

## Narrative

On April 14, 2015, about 1345 Hawaiian standard time, a Cessna 172M, N12842, experienced a loss of engine power during initial climb from Hilo International Airport (ITO), Hilo, Hawaii. The certified flight instructor, the student pilot undergoing instruction (PUI), and one passenger sustained serious injuries. The airplane was substantially damaged during the forced landing on the grassy area near the departure end of the runway. Hawaii Flight Academy was operating the airplane under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The local instructional flight departed Hilo about 1245. Visual meteorological conditions prevailed, and no flight plan had been filed.

The operator reported that the FI was instructing the student pilot in preparation for his private pilot practical examination. The passenger was another student pilot who was observing the training flight.

The flight crew reported that they had drained water out of the fuel tanks prior to the flight. The flight departed and flew for about 1 hour before returning to ITO to practice touch-and-go landings. The flight instructor instructed the student to perform a no flap "slip to landing" and go-around. After the aggressive slip and landing, power was applied for the takeoff. The airplane became airborne and when about 75-100 feet above ground, the engine began to run irregular and subsequently lost power.

The FI took control of the airplane and executed a left turn away from buildings, which were located at the end of the runway. The airplane impacted onto the grass area northeast of the departure end of runway 03.

During an examination of the airplane, about 8 ounces of fluid was drained from the fuel sump strainer, and 5 ounces of the fluid appeared to be water. The carburetor was removed from the engine and an unmeasured amount of fluid was drained from the carburetor; about 90% of it appeared to be water. A water paste test was utilized, and the indication was positive for water.

The operator commented that examination of the inside of the fuel tanks revealed that the sump drain valves protruded up about 1/2 inch above the bottom of

the tanks. The operator suggested that pilots drain the engine sump completely, rock both wings vigorously during preflight, and drain fuel from the engine and wing sumps again.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# GAA18CA048    11/18/2017 1840 PST    Regis# N9678Q    Chico, CA  
Acft Mk/Mdl CESSNA 172M-M    Acft SN 17265762    Acft Dmg: SUBSTANTIAL    Rpt Status: Prelim    Prob Caus: Pending  
Fatal 0    Ser Inj 0    Flt Conducted Under: FAR 091  
Opr Name: NORTHGATE AVIATION INC    Opr dba:    Aircraft Fire: NONE

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|----------------------------------|---------------------|------------------|-----------------------|--|
| Accident Rpt# ERA17CA114         | 02/18/2017 1315 EST | Regis# N738DS    | Statesville, NC       | Apt: Statesville Rgnl SVH              |
| Acft Mk/Mdl CESSNA 172N-N        |                     | Acft SN 17269901 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-320 SERIES |                     | Acft TT 10509    | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: RALPH VALERIO          |                     | Opr dba:         |                       | Aircraft Fire: NONE                    |
|                                  |                     |                  |                       | AW Cert: STN                           |

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## Events

1. Takeoff - Loss of control in flight
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## Narrative

The student pilot was on the second leg of a solo cross county training flight. During the flare at the destination airport, he landed the airplane "hard" and it bounced twice before he was able to regained control. He taxied back to the beginning of the runway and conducted a run-up. Noting no anomalies, he taxied onto the runway and started the takeoff roll. During the takeoff, he pulled back on the yoke "too far" and the airplane climbed between 30 and 40 feet before entering an aerodynamic stall and colliding with the ground. The nose gear collapsed and the propeller struck the ground, resulting in substantial damage to the fuselage. The pilot reported that there were no mechanical anomalies with the airplane before the landing. It could not be determined whether the airplane incurred damage during the hard landing that would have impacted the pilot's ability to maintain pitch control during takeoff.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                              |                     |               |                       |  |
|------------------------------|---------------------|---------------|-----------------------|--|
| Accident Rpt# GAA17CA550     | 09/22/2017 1039 EDT | Regis# N9624B | Danbury, CT           | Apt: Danbury Muni DXR                  |
| Acft Mk/Mdl CESSNA 180-A     |                     | Acft SN 32921 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR O-470  |                     |               | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: BUTLER, JEFFREY T. |                     | Opr dba:      |                       | Aircraft Fire: NONE                    |
|                              |                     |               |                       | AW Cert: STN                           |

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## Summary

The pilot of the tailwheel-equipped airplane reported that, during the second touch-and-go landing in gusting wind conditions, the "wind got under [the] left wing," and the airplane ground looped to the left. He added that, during the ground loop, he applied brakes, and the airplane nosed over on the runway.

The right wing and fuselage sustained substantial damage.

The pilot reported that there were no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

An automated weather observation station at the airport reported, about the time of the accident, wind from 360° at 10 knots, gusting 20 knots. The pilot reported that the landing was on runway 35.

The pilot did not submit the National Transportation Safety Board Form 6120.1 Pilot/ Operator Aircraft Accident/ Incident Report.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to maintain directional control during the landing roll in gusting wind conditions.

## Events

1. Landing-landing roll - Other weather encounter
2. Landing-landing roll - Loss of control on ground
3. Landing-landing roll - Nose over/nose down

## Findings - Cause/Factor

1. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Directional control-Not attained/maintained - C
3. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation

## Narrative

The pilot of the tailwheel-equipped airplane reported that, during the second touch-and-go landing, in gusting wind conditions, the "wind got under [the] left wing" and the airplane ground looped to the left. He added that, during the ground loop, he applied brakes and the airplane nosed over on the runway.

The right wing and fuselage sustained substantial damage.

The pilot did not report that there were any preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

An automated weather observation station at the airport, about the time of the accident, reported wind from 360° at 10 knots, gusting 20 knots. The pilot reported that the landing was on runway 35.

The pilot failed to submit the NTSB Form 6120.1 Pilot/ Operator Aircraft Accident/ Incident Report.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                    |            |          |                  |                       |  |
|------------------------------------|------------|----------|------------------|-----------------------|--|
| Accident Rpt# GAA17CA521           | 09/04/2017 | 1600 AKD | Regis# N8249V    | Ambler, AK            | Apt: N/a                               |
| Acft Mk/Mdl CESSNA 180-H           |            |          | Acft SN 18051751 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR O-470 SERIES |            |          | Acft TT 4216     | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: DILLEY, TERRELL P.       |            |          | Opr dba:         |                       | Aircraft Fire: NONE                    |
|                                    |            |          |                  |                       | AW Cert: STN                           |

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## Summary

The pilot of the tailwheel-equipped airplane reported that, during landing on an off-airport gravel bar, the airplane touched down about 30 ft short of the intended landing area. Subsequently, the right wheel struck a large rock, the gear collapsed, and the left wing impacted the ground.

The airplane sustained substantial damage to the fuselage and left wing.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to maintain an appropriate glidepath to an off-airport landing site.

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## Events

1. Landing - Landing area undershoot
2. Landing - Collision with terr/obj (non-CFIT)

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## Findings - Cause/Factor

1. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Descent/approach/glide path-Not attained/maintained - C
3. Environmental issues-Physical environment-Runway/land/takeoff/taxi surface-(general)-Effect on operation

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## Narrative

The pilot of the tailwheel-equipped airplane reported that, during landing on an off-airport gravel bar, the airplane touched down about 30 ft. short of the intended landing area. Subsequently, the right wheel struck a large rock, the gear collapsed, and the left wing impacted the ground.

The airplane sustained substantial damage to the fuselage and left wing.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

# National Transportation Safety Board - Aircraft Accident/Incident Database

|                                    |                    |                  |                     |  |
|------------------------------------|--------------------|------------------|---------------------|--|
| Accident Rpt# WPR16FA116           | 05/23/2016 922 HST | Regis# N2007X    | Hanapepe, HI        | Apt: Port Allen PAK                    |
| Acft Mk/Mdl CESSNA 182-H           |                    | Acft SN 18256107 | Acft Dmg: DESTROYED | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR O-470 SERIES |                    | Acft TT 8279     | Fatal 5 Ser Inj 0   | Flt Conducted Under: FAR 091           |
| Opr Name: D & J AIR ADVENTURES INC |                    | Opr dba:         |                     | Aircraft Fire: GRD                     |
|                                    |                    |                  |                     | AW Cert: STN                           |

## Summary

The commercial pilot and four passenger-skydivers were departing in the airplane on a local area skydiving flight in visual meteorological conditions. Witnesses observed the airplane make a normal takeoff from the runway. Two witnesses reported that, shortly after takeoff, the engine seemed to stop producing power. Subsequently, the airplane rolled to the right while rapidly losing altitude. The airplane completed about a 360° rotation and impacted terrain in a nose-down attitude.

One of the four cameras recovered from the wreckage contained a 33-second video that captured the flight from the takeoff roll through the impact. The video showed the airplane after takeoff in a positive climb and a slight left roll. About 24 seconds into the recording, the video's audio track revealed a reduction in the volume of the engine sound. Two seconds later, the airplane started to roll to the right. The movement of the camera became increasingly erratic, consistent with the airplane entering an unusual flight attitude. The engine sound continued to decrease until the airplane impacted the ground. A sound spectrum study showed that the engine rpm decreased from 2,650 to 1,215 over the final 9 seconds of the flight, consistent with a partial loss of engine power.

Postaccident examination of the airplane revealed no evidence of any preimpact mechanical failures or anomalies that would have precluded normal operation. The airplane was estimated to be about 10 lbs above its maximum gross weight and within the center-of-gravity limits published for the maximum gross weight; therefore, weight and balance was likely not a factor in the accident.

The weather conditions at the time of takeoff were conducive to the formation of carburetor ice at glide power. Given that the airplane was operating at a high power setting at the time of takeoff, carburetor icing was unlikely.

Based on the witness observations and the onboard video recording, it is likely that the pilot failed to maintain airspeed following a partial loss of engine power, which resulted in the airplane exceeding its critical angle of attack and experiencing an aerodynamic stall. The reason for the partial loss of engine power could not be determined.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to maintain airspeed following a partial loss of engine power for reasons that could not be determined during postaccident examination, which resulted in the airplane exceeding its critical angle of attack and experiencing an aerodynamic stall.

## Events

1. Takeoff - Loss of engine power (partial)
2. Takeoff - Loss of control in flight
3. Uncontrolled descent - Collision with terr/obj (non-CFIT)

## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Airspeed-Not attained/maintained - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
3. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Angle of attack-Not attained/maintained - C
4. Not determined-Not determined-(general)-(general)-Unknown/Not determined - C

## Narrative

### HISTORY OF FLIGHT

On May 23, 2016, about 0922 Hawaiian standard time, a Cessna 182H, N2007X, impacted terrain following a partial loss of engine power shortly after departure from Port Allen Airport (PAK), Hanapepe, Hawaii. The pilot and four passenger-skydivers were fatally injured. The airplane was registered to and operated by D & J Air Adventures, Inc., under the provisions of 14 Code of Federal Regulations Part 91 as a skydiving flight. Visual meteorological conditions prevailed, and no flight plan was filed.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Numerous witnesses reported that the airplane departed runway 9, it began to roll to the right while rapidly losing altitude. Two witnesses stated that it seemed the engine had stopped producing power. The airplane completed about a 360° rotation and impacted terrain in a nose-low attitude.

A video taken from a security camera located about 0.8 mile northeast of PAK showed the airplane in a climb, followed by a sudden right roll, and a rapid descent toward the terrain in a nose-down attitude. The airplane came to rest at the edge of a dirt road in a grassy area just outside the airport perimeter fence, and a postimpact fire ensued.

## PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with airplane single-engine land and multi-engine land ratings and an Australian private pilot certificate with an airplane single-engine land rating. A first-class airman medical certificate was issued to the pilot on February 24, 2016, with no limitations. During his last medical exam, the pilot reported flight experience that included 321 total flight hours and 53.2 hours in last 6 months. A representative of the pilot's family provided a copy of the pilot's logbook, and the most recent entry in the logbook was for a flight of 1.1 hours on March 5, 2016.

## AIRCRAFT INFORMATION

The four-seat, single-engine, high-wing, fixed landing gear airplane, serial number 18256107, was manufactured in 1965. In September 1972, the airplane was configured for parachute operations, which included removal of the front right seat and the rear seat. The modifications also included the removal of original cabin seats and installation of floor level seat belt brackets to accommodate four occupants in addition to the pilot. The airplane was powered by a Continental Motors O-470-R engine, serial number 203374-70R, rated at 230 horsepower. The airplane was also equipped with a McCauley two-bladed, constant-speed propeller. A review of maintenance records showed that the engine was installed on November 12, 2013, at a total airframe time of 10,043.7 hours. The most recent annual inspection was completed on October 13, 2015, at a total engine time of 8,121.3 hours and a total airframe time of 10,783.6 hours. The most recent maintenance activity recorded in the logbooks was a nose landing gear inspection completed on May 19, 2016, at a tachometer time of 8,353.5 hours (925 hours since engine overhaul).

Weight and balance values were calculated for the accident takeoff using the airplane's weight and balance documentation dated February 23, 2015. The input values included a presumed fuel quantity of 20 gallons (120 pounds) and an owner-provided total weight of pilot, passengers, and parachutes of 981 pounds. The takeoff gross weight was calculated to be 2,810.5 pounds with a center of gravity (CG) of 41.2 inches. Maximum allowable gross weight was 2,800 pounds, and the allowable CG range for that weight was 38.4 to 47.4 inches.

According to the owner, the airplane was refueled on May 23, 2016, with fuel from a nearby gas station. A supplemental type certificate (STC) issued for the airplane allowed for the use of automotive gasoline; the STC did not approve the use of fuel containing ethanol. Both ethanol and ethanol-free gasolines are sold in the state of Hawaii. Hawaii does not require a placard on pumps for gasolines that contain less than 1% ethanol. According to a European Aviation Safety Agency (EASA) report titled "Safety Implication of Biofuels in Aviation," a fuel system that uses ethanol-mixed gasolines has a higher probability to develop vapor lock, carburetor icing, or experience a water-induced phase separation; these conditions can potentially disrupt engine operation.

## METEOROLOGICAL INFORMATION

At 0853, the automated weather observation for Lihue Airport, Lihue, Hawaii, located about 17 miles northeast from PAK, reported wind from 060° at 10 knots, visibility 10 statute miles, scattered clouds at 2,400 ft, scattered clouds at 3,000 ft, temperature 27°C, dew point 20°C, and altimeter 30.16 inches of mercury.

According to Federal Aviation Administration Special Airworthiness Information Bulletin CE-09-35, entitled "Carburetor Icing Prevention," the LIH temperature and dew point were conducive to the formation of serious icing at glide power.

## WRECKAGE AND IMPACT INFORMATION

The wreckage was located next to a dirt service road, about 250 ft from the departure end of runway 9, and at an elevation of about 90 ft mean sea level (msl).

The wreckage debris path was oriented on an approximate heading of 060° magnetic and was about 24 ft in length. The first identified point of impact was a

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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crater in the dirt road that contained the propeller hub with both blades attached; small pieces of airframe and other debris surrounded the disrupted dirt. The rest of the airplane came to rest about 7.5 ft from the propeller. The engine was displaced aft into the firewall, and both the engine and firewall were crushed aft into the cabin area by impact forces.

The cockpit, fuselage, left wing, and forward portion of the empennage were consumed by the postcrash fire. The engine and the right wing exhibited impact and postimpact fire damage. The right wing separated from the fuselage and was displaced forward next to the cockpit area. The right horizontal stabilizer and the elevator remained attached to the empennage, and they exhibited impact and postcrash fire damage. The composite left- and right-wing tips were respectively located left and right of the main wreckage about 71 ft apart.

During the postaccident examination, about 12 gallons of fuel were drained from the right wing. The recovered fuel was clear and colorless, and a water paste test did not indicate any water contamination. No test was performed to determine whether there was ethanol in the fuel.

The wreckage was recovered to a secure location for further examination.

## Airframe and Engine Examination

Postimpact fire consumed the cabin and rear fuselage, the instrument panel, and the left wing. The empennage was thermally damaged. Flight control cable continuity was confirmed from each cockpit control to the associated flight control. The rudder cables, aileron cables, pitch trim cables, and the "UP" elevator cable were cut in the cabin area to facilitate wreckage recovery. The position of the carburetor heat lever could not be determined.

Examination of the recovered engine revealed that it remained attached to the engine mount. All six cylinders remained attached to the engine and sustained damage consistent with impact damage and the postimpact fire.

Both magnetos were displaced from their mounts and exhibited damage to their mounting flanges. The ignition harness remained attached to both magnetos and a few of the leads were separated due to pinching damage. All the leads remained attached to their respective spark plugs, and their terminal ends were secured. The drive shafts on both magnetos were capable of normal rotation, and the impulse couplings operated normally. The drive shafts were rotated, and both magnetos produced a spark at each spark plug or at the end of the damaged leads.

All the spark plugs remained installed in their respective cylinders and were undamaged. The top spark plugs were removed, and it was noted that all top spark plug electrodes displayed normal operating and wear signatures. The internal portions of the cylinders were inspected using a lighted borescope. The cylinder barrels, piston faces, valves, and valve seats displayed normal operating and combustion signatures. The crankshaft was rotated manually using a hand tool that was inserted into the vacuum pump drive; thumb compression and suction were obtained on all six cylinders. In addition, engine and valve train continuity was established throughout.

The carburetor remained attached to the engine's induction system, but it was displaced from its normal mounting area. The carburetor sustained damage consistent with impact and the postimpact fire. The mixture and throttle control levers remained secured to their respective shafts, and the control cables remained secured to the throttle and mixture control levers. Both controls could move freely. The carburetor was disassembled, and both floats were melted on the bottom of the carburetor bowl. Movement of the float attachment bracket resulted in free movement of the fuel inlet valve. Movement of the throttle arm resulted in a coinciding movement of the throttle valve and accelerator pump. The fuel inlet screen was removed and no contaminants were observed.

The oil sump displayed deformation damage consistent with the impact forces and the postcrash fire. There were no signs of preimpact oil leaks around the oil sump. The oil pump remained attached to the rear of the engine. The oil pump housing was removed, and the gears were intact with no preaccident anomalies noted. The oil filter remained attached to the oil filter adapter and was secured with safety-wire.

The propeller spinner was crushed inward around the propeller hub; one side of the spinner was conformed to the hub. One propeller blade exhibited leading edge damage, chordwise scratching on the camber side of the blade, and blade twist toward a lower pitch. The other blade exhibited leading edge damage but no chordwise scratching. Examination of the recovered airframe and engine did not reveal evidence of any preexisting mechanical malfunction that would have precluded normal operation. The complete examination reports are contained in the public docket for this accident.

## MEDICAL AND PATHOLOGICAL INFORMATION

Pan Pacific Pathologists, LLC, Lihue, Hawaii, completed an autopsy on the pilot and concluded that the cause of death was multiple blunt force injuries. The FAA's Bioaeronautical Sciences Research Laboratory in Oklahoma City, Oklahoma, performed toxicology testing on specimens from the pilot. The results of the testing were negative for ethanol and listed drugs.

## TESTS AND RESEARCH

### Video Examination

Two GoPro HERO 3 and two GoPro HERO 3+ cameras were located at the accident site and subsequently sent to the National Transportation Safety Board Vehicle Recorders Laboratory for review. The cameras were enclosed in fabric-type wrist mount camera straps. Each strap contained one GoPro HERO 3 and one GoPro HERO 3+ camera. Examination of the cameras revealed two pertinent memory cards; one contained a video that captured the takeoff roll and the initial climb before the beginning of the accident sequence and the other contained a video that captured takeoff roll through the impact.

The GoPro videos revealed that the pilot sat in the left front seat and used a lap belt anchored to the floor. Instructor 1 sat on the floor to the right of the pilot with his back to the instrument panel; the right yoke had been removed. Student 1 sat on the floor between the legs of Instructor 1 facing aft. Student 2 sat on the floor between the legs of Student 1. Instructor 2 sat on the floor with his back to the pilot's seat facing aft. An external video taken by a family member of the passengers showed the floor of the airplane covered with a blue pad material. None of the videos showed the presence of restraint systems on the instructors or the students.

In a separate email correspondence, three individuals, who previously completed jumps as passenger-skydivers from the accident airplane, stated that they did not see or use seatbelts during their flights.

Throughout the first 13 seconds of the GoPro video recording that captured the impact, the airplane was observed rolling down the runway. Both flaps were retracted, and the left aileron trailing edge appeared above the left flap trailing edge. In addition, the video captured a fully extended windsock which was consistent with wind from the northeast. About 13 seconds after the airplane started to roll, it became airborne. The airplane was observed in a positive climb and a slight roll to the left. Around 24 seconds into the recording, an audio portion revealed a reduction in the volume of the engine sound, which continued to decrease until the airplane impacted the ground. (A sound spectrum study was conducted and is discussed separately in this report.) About 26 seconds into the recording, the trailing edge of the left aileron was observed below the position of the left flap trailing edge, which is consistent with a right roll command. As time progressed, the right roll increased. The camera was then panned inside the airplane toward the rear cabin area. In the next few seconds, the camera movement became increasingly erratic. The airplane impacted the ground about 33 second after the recording started.

### Sound Spectrum Study

The audio track of the video that captured the impact was evaluated to determine the engine operating speed from the takeoff roll to the impact. During the first 25 seconds of the video, the engine speed was about 2,650 rpm, and then it began to decrease. At 26 seconds, the engine rpm was about 2,250. At 27 seconds, the engine rpm dropped to about 1,700. At 30 seconds, the engine rpm dropped to about 1,400. By the time of impact, the engine rpm had decreased to about 1,215. A stall warning horn was not heard on the recording.

## ADDITIONAL INFORMATION

According to the FAA's Airplane Flying Handbook (FAA-H-8083-3B), Chapter 17 "Emergency Procedures", if an engine failure occurs on takeoff, a pilot should establish a proper glide attitude and select a landing area straight ahead with only small changes in direction.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# GAA18CA058    11/27/2017 1200 CST    Regis# N8128M    Black River Fal, WI    Apt: Black River Falls Area BCK  
Acft Mk/Mdl CESSNA 182-P    Acft SN 18264544    Acft Dmg: SUBSTANTIAL    Rpt Status: Prelim    Prob Caus: Pending  
Fatal 0    Ser Inj 0    Flt Conducted Under: FAR 091  
Opr Name: BRAD DOBBS    Opr dba:    Aircraft Fire: NONE

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|--------------------------------|-----------------|------------------|---------------------|--|
| Accident Rpt# GAA17CA529       | 09/06/2017 1845 | Regis# N735KQ    | Fairfield, MT       | Apt: Fairfield 5U5                     |
| Acft Mk/Mdl CESSNA 182-Q       |                 | Acft SN 18265488 | Acft Dmg: DESTROYED | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONTINENTAL O-470-U |                 | Acft TT 2474     | Fatal 0 Ser Inj 0   | Flt Conducted Under: FAR 091           |
| Opr Name: MARTIN TEAGUE        |                 | Opr dba:         |                     | Aircraft Fire: NONE                    |
|                                |                 |                  |                     | AW Cert: STN                           |

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## Summary

The pilot reported that, during an instrument flight rules cross-country flight, he realized the airplane was "very low on fuel." He added that, with air traffic control's assistance, he diverted to an airport along his route, which was about 30 nautical miles from the intended destination. He further added that he had difficulty locating the airport visually, and when he did locate the runway, the airplane was "too high" to land. Subsequently, as the pilot continued descending and maneuvering toward the runway, the engine lost power, and he landed in a field. He added that, the airplane "hit the field hard," bounced, and struck a utility pole before stopping.

The pilot further reported in the NTSB Pilot/ Operator Aircraft Accident/ Incident Report that he was informed that no fuel was found in the airplane and that the right fuel cap was not installed. He reported that he added fuel to both fuel tanks at the departure airport and that there was a "possibility/ likelihood" that he did not secure the right fuel cap during preflight. He added that, during the diversion, he did not complete the "forced landing checklist."

The airplane was destroyed.

The pilot reported that there were no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to secure the right fuel cap during the preflight inspection, which resulted in fuel exhaustion, a total loss of engine power, and an off-airport hard landing.

## Events

1. Prior to flight - Aircraft inspection event
2. Enroute - Fuel exhaustion
3. Landing-flare/touchdown - Hard landing
4. Landing-landing roll - Collision with terr/obj (non-CFIT)

## Findings - Cause/Factor

1. Personnel issues-Task performance-Inspection-Preflight inspection-Pilot - C
2. Aircraft-Aircraft systems-Fuel system-Fuel storage-Inadequate inspection - C
3. Aircraft-Fluids/misc hardware-Fluids-Fuel-Fluid level - C
4. Environmental issues-Physical environment-Object/animal/substance-Pole-Contributed to outcome

## Narrative

The pilot reported that, during an instrument flight rules cross-country flight, he realized the airplane was "very low on fuel." He added that, with air traffic control's assistance, he diverted to an airport along his route, which was about 30 nautical miles from the intended destination. He further added that he had difficulty locating the airport visually, and when he did locate the runway, the airplane was "too high" to land. Subsequently, as the pilot continued descending and maneuvering toward the runway, the engine lost power, and he landed in a field. He added that, the airplane "hit the field hard," bounced, and struck a utility pole prior to stopping.

The pilot further reported in the NTSB Pilot/ Operator Aircraft Accident/ Incident Report, that he was informed that no fuel was found in the airplane and that the right fuel cap was not installed. He reported that he added fuel to both fuel tanks at the departure airport and there was a "possibility/ likelihood" that he did not secure the right fuel cap during preflight. He added that during the diversion, he did not complete the "forced landing checklist."

The airplane was destroyed.

The pilot did not report that there were any preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# GAA18CA051    11/12/2017 1250 MST    Regis# N8515S    Tucson, AZ    Apt: Tucson Intl TUS  
Acft Mk/Mdl CESSNA 182H-H    Acft SN 18256615    Acft Dmg: SUBSTANTIAL    Rpt Status: Prelim    Prob Caus: Pending  
Fatal 0    Ser Inj 0    Flt Conducted Under: FAR 091  
Opr Name: BON VOL LLC    Opr dba:    Aircraft Fire: NONE

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|----------------------------------|--------------------|------------------|-----------------------|--|
| Accident Rpt# CEN16LA270         | 07/19/2016 903 CDT | Regis# N2644F    | Weatherford, TX       | Apt: Parker County WEA                 |
| Acft Mk/Mdl CESSNA 182J--        |                    | Acft SN 18256744 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR O-470-R25A |                    | Acft TT 6337     | Fatal 0 Ser Inj 1     | Flt Conducted Under: FAR 091           |
| Opr Name: DAVID BYROM            |                    | Opr dba:         |                       | Aircraft Fire: NONE                    |
|                                  |                    |                  |                       | AW Cert: STN                           |

## Events

1. Enroute - Loss of engine power (total)
3. Initial climb - Loss of engine power (partial)

## Narrative

### HISTORY OF FLIGHT

On July 19, 2016, at 0903 central daylight time, a Cessna 182J airplane, N2644F, experienced a loss of engine power after departure and the pilot conducted a forced landing to a field near Weatherford, Texas. The private pilot and one passenger sustained minor injuries and the second passenger sustained serious injuries. The airplane sustained substantial damage. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight which was operated without a flight plan. The flight was departing from Parker County Airport (WEA), Weatherford, TX, and was en route to Pecos Municipal Airport (PEQ), Pecos, Texas.

The pilot reported that he had departed from Denton Enterprise Airport (DTO), Denton, Texas, which was about 36 miles northeast of WEA. He landed at WEA and two passengers boarded the airplane while the engine continued to operate. He then taxied to the runway and noted that all the instruments showed normal operations, including the JPI engine data monitor (EDM) 700. He extended the flaps 10° for takeoff, increased the engine power to 29 inches of engine manifold pressure and 2,600 rpm, and lifted off at 60 to 65 mph. After takeoff, he retracted the flaps and noticed that the avionics turned off. He cycled the avionics master switch, but the avionics did not turn on again. About 40 seconds after takeoff while 300 to 500 ft above ground level, the engine experienced a loss of power. He attempted to troubleshoot the loss of power and to restart the engine; the engine restarted for about two seconds and then lost power again. The pilot did not remember if the engine ever experienced a total loss of power since he was concentrating on flying the airplane. He also did not remember if he ever pulled the boost cutoff control. He did not continue to troubleshoot the issue since his altitude was low and made a shallow bank towards a field for an emergency landing. During the landing, the airplane collided with a barbed wire fence, continued into a field, impacted several trees and came to rest on a road (figure 3). When the airplane came to rest, the pilot noted that fuel was pouring out of the fuel tanks all over the occupants. The pilot and two passengers exited the airplane.

A witness, who was working in a field north of the accident site, stated that he heard an airplane engine overhead. He observed the accident airplane in a descent, apparently attempting to land in a pasture when it hit a fence in the middle of the pasture (figure 1). He called 911 and drove to the accident site. He observed three occupants who were already out of the airplane and noticed that fuel was pouring out of the wings onto the ground.

The pilot stated to a Federal Aviation Administration (FAA) inspector, that one of the passengers recalled hearing the engine regain power just before touching down in the field.

## PERSONNEL INFORMATION

## AIRCRAFT INFORMATION

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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A Forced Aeromotive Technologies (FAT) supercharger was installed on the airplane in May 2004 under supplemental type certificate (STC) SE10233SC and STC SA10232SC.

On June 20, 2016, an annual inspection was completed at a tachometer time of 2,245.3 hours. During the inspection the maintenance personnel "checked and adjusted supercharger belt as per Force Air Tech service instructions."

The pilot stated he was not trained of the operation of the supercharger by the manufacturer or the previous airplane owner after he purchased the airplane, nor was he required to do so.

## METEOROLOGICAL INFORMATION

## WRECKAGE AND IMPACT INFORMATION

The responding FAA inspector reported that the left wing was folded over the top of the fuselage and the right wing was bent aft. The top of the cabin area had been opened and displaced aft. The fuselage was bent upward near the front seats (figure 2).

A postaccident examination of the airframe and engine was conducted by the NTSB Investigator-in-Charge (IIC), with technical representatives from Textron Aviation and Continental Motors, after recovery from the accident site. The engine was intact with no noticeable external damage. It was equipped with a FAT belt driven supercharger system that included two fuel boost pumps between the airframe fuel line and the engine carburetor. The top spark plugs and cylinder rocker covers were removed and the crankshaft was manually rotated with continuity confirmed to all cylinders and to the rear of the engine. The chromed cylinders were examined using a lighted borescope; all cylinder domes and pistons exhibited normal combustion deposits. All intake and exhaust valves were in place and free to move; suction and compression was confirmed in each cylinder. The magneto timing was checked and both magnetos were found to be timed at 22° before top dead center, which was normal timing. The top spark plugs exhibited normal wear signatures and dark deposits in the electrode areas. The air intake filter was clean and clear. The oil filter was in place and not damaged. The filter was opened and contained no debris or metal deposits in the filter element. The propeller remained attached to the crankshaft. Both propeller blades were bent and twisted aft and exhibited chordwise scratches and polishing. The cowl flap lever was positioned to OPEN. The carburetor heat control knob was full forward. The boost cutoff control knob was full forward and was not labeled on the instrument panel. The rudder and elevator flight control cables were continuous and undamaged. The left and right wings had been removed during the recovery process. The aileron flight control cables exhibited multiple overload separations. One portion of the left aileron control cable had been cut during the recovery process.

The flap motor was energized with an external battery and operated the flaps normally. The flaps were found extended 10°. Due to impact damage and the displacement of the airplane during recovery the entire electrical system could not be functionally tested.

An engine test run was conducted by the NTSB IIC and technical representatives from Textron Aviation, Continental Motors, and FAT. Prior to the test run procedures, the engine was examined. The gascolator screen was removed and was clean and clear of contaminants. The fuel inlet screen was removed from the carburetor and contained a small amount of multicolor organic material similar to tree leaves. The airplane had been stored outdoors at the storage facility.

An external fuel source was connected to the airframe fuel line and the engine was started and test run several times. The engine operated at full power performance according to the STC operating specifications. The alternator inoperative and low fuel pressure lights were pressed and illuminated as expected. The lights did not illuminate during the engine test runs. The ammeter remained near zero and did not show a discharge.

After the test runs were completed the carburetor was removed and examined. The carburetor was in place and not damaged. The throttle and mixture controls remained connected appropriately and were free to move. The unit was disassembled and the bowl was clean and clear. The floats and needle valve were attached and were free to move. The needle valve seat was clean and clear.

Also following the test runs, the engine cowling was opened to facilitate further examination of the engine compartment. The supercharger drive belt was installed on the idler gear inside out.

## ADDITIONAL INFORMATION

## FAT Supercharger Information

The Airplane Flight Manual Supplement (AFMS) states that the supercharger supplies boosted engine induction air (figure 3) so it is necessary to boost fuel pressure to ensure an unimpeded flow of fuel through the carburetor. The two fuel pumps supply fuel to the carburetor at the required pressure. Either pump will independently supply sufficient fuel pressure for engine operation, but two are installed to provide backup in case of a pump failure. According to the STC manufacturer, as the fuel level in the carburetor changes, air flows in and out of the fuel bowl through a passage inside the mouth of the carburetor. When the supercharger is installed, this air passage becomes pressurized and at power levels above 1,700 rpm, the pressurized air in the fuel bowl pushes the fuel out and back to the fuel tank. The electric fuel boost pumps counter the air pressure so that the fuel enters the float chamber correctly.

The AFMS further states that in the event of a complete electrical failure (alternator or battery), the engine can be operated using gravity-fed fuel at un-boosted manifold pressure using the boost cutoff control. When the boost cutoff control is pulled, pressurized air from the supercharger is dumped into the engine compartment before reaching the carburetor. This lowers the carburetor's requirement for pressurized fuel and allows operation as a normally-aspirated engine. The STC owner added that, during a complete electrical system failure, the effect would be the same as turning off the fuel boost pumps. With the fuel boost pumps off and engine power above 1,700 rpm, the carburetor fuel bowl would empty in 5 to 10 seconds. With the fuel bowl empty, the engine would begin to lose power; as the engine rpm decreases the supercharger boost also decreases and fuel begins to enter the fuel bowl again. The engine power would surge back and the cycle would repeat. The whole cycle would take less than 10 seconds and would continue as long as fuel was available in the fuel system. The cycle could be stopped by pulling the boost cutoff control. If the engine cannot be restarted during an engine failure the boost cutoff control should be pulled.

According to the AFMS, the maximum manifold pressure is 28 inches of mercury. The boost cutoff control is used only in emergency situations whenever both fuel boost pumps become inoperative.

## Engine Failure Procedures

If the engine failure in-flight procedures are unsuccessful in restarting the engine, and the low fuel pressure light is illuminated, the AFMS states the following:

1. Boost Cutoff - Pull Fully
2. Mixture - Full Rich
3. Propeller - Full
4. Throttle - Full
5. Power - See Warning Below
6. Follow in-flight low fuel pressure procedures to land as soon as practical

**WARNING:** To increase power, use the throttle first. When full throttle is reached and more power is needed, slowly push in the boost cutoff control, but do not exceed boost cutoff manifold pressure limitations. To decrease power, pull the boost cutoff control first. When boost cutoff control is out fully and a further

reduction in power is needed, use the throttle control to reduce power. If this is not followed, engine power fluctuations may occur. If power fluctuations do occur, pull boost cutoff control out fully and apply full throttle, then continue making power changes as described above.

Excerpts from the AFMS can be found in the public docket associated with this accident report.

## JPI Engine Data Monitor (EDM) 700

The EDM was downloaded by the NTSB Recorders Laboratory. The recorded data revealed that the engine parameters were all normal. There were several noticeable voids in the data indicative of electrical power interruptions to the device. The final electrical power interruption occurred from 09:01:47 to 09:04:37, which was during the time of the accident.

The EDM was downloaded again after the engine test runs. The data did not reveal any anomalies and the battery voltage was 13 to 15 volts, which is a normal voltage.

## Garmin Aera 796 GPS

The GPS was downloaded by the NTSB Recorders Laboratory. The recorded data revealed 12 sessions, which included the two flights on the accident day. The accident flight data was plotted for geographical representation (figure 1).

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                    |                     |                  |                       |                                       |
|------------------------------------|---------------------|------------------|-----------------------|---------------------------------------|
| Accident Rpt# CEN18LA041           | 11/22/2017 1100 CST | Regis# N7111S    | Bolingbrook, IL       | Apt: Bolingbrook's Clow Int'l 1C5     |
| Acft Mk/Mdl CESSNA 182P-P          |                     | Acft SN 18265063 | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR O-470 SERIES |                     |                  | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091          |
| Opr Name: LARSON MARK D            |                     | Opr dba:         |                       | Aircraft Fire: NONE                   |
|                                    |                     |                  |                       | AW Cert: STN                          |

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## Events

2. Takeoff - Flight control sys malff/fail

## Narrative

On November 22, 2017, about 1100 central standard time, a Cessna 182P airplane, N7111S departed the runway and impacted terrain while taking off from the Bolingbrook's Clow International Airport (1C5), Bolingbrook, Illinois. The pilot, sole occupant, was not injured and the airplane was substantially damaged during the accident. The airplane was registered to and operated by a private individual, under the provisions of 14 Code of Federal Regulations Part 91 as personal flight. Visual meteorological conditions prevailed at the time.

The pilot reported to the Federal Aviation Administration (FAA) inspector that during the takeoff run the airplane turned right. He was unable to correct the turn or stop the airplane before the airplane exited the side of the runway. The airplane became airborne momentarily, then descended into a ditch and came to rest inverted. The wings, and fuselage sustained substantial damage during the accident. The pilot added that the nose wheel steering had recently undergone maintenance.

The airplane was retained for further examination.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                |                     |               |                       |  |
|--------------------------------|---------------------|---------------|-----------------------|--|
| Accident Rpt# GAA17CA415       | 07/17/2017 1120 CDT | Regis# N4432C | Leavenworth, KS       | Apt: Sherman Aaf FLV                   |
| Acft Mk/Mdl CESSNA 195-B       |                     | Acft SN 16017 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl JACOBS R755B SERIES |                     | Acft TT 3554  | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: HUGH L. MILLS JR     |                     | Opr dba:      |                       | Aircraft Fire: NONE                    |
|                                |                     |               |                       | AW Cert: STN                           |

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## Events

1. Landing-landing roll - Loss of control on ground

## Narrative

The pilot of the tailwheel airplane reported that he made a normal approach to an asphalt runway.

During the landing roll, the tail started to move to the left and he corrected with left rudder application, but he recalled that, "I may have unintentionally put pressure on the left toe brake." The airplane veered to the left and exited the left side of the runway. The airplane entered a drainage culvert and ground looped to the left. The right main landing gear collapsed, and the right wing tip struck the ground.

The airplane sustained substantial damage to the right main landing gear attachment point.

The pilot reported that there were no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.



# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                            |                     |                  |                       |   |
|----------------------------|---------------------|------------------|-----------------------|---|
| Accident Rpt# CEN18LA032   | 11/15/2017 1515 MST | Regis# N9825M    | Rock Springs, WY      | Apt: Rock Springs-sweetwater County RKS |
| Acft Mk/Mdl CESSNA T207A   |                     | Acft SN 20700739 | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending   |
|                            |                     |                  | Fatal 0 Ser Inj 2     | Flt Conducted Under: FAR PUBU           |
| Opr Name: REDTAIL AIR, INC |                     | Opr dba:         |                       | Aircraft Fire: NONE                     |
|                            |                     |                  |                       | AW Cert: STN                            |

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## Events

6. Landing - Landing area overshoot

## Narrative

On November 15, 2017, at 1515 mountain standard time, a Cessna T207A, experienced a total loss of engine power and impacted terrain during a forced landing about two miles from Rock Springs-Sweetwater County Airport (RKS), Rock Springs, Wyoming. The airplane sustained substantial damage. The pilot and one passenger received minor injuries, and two passengers received serious injuries. The airplane was registered to Slickrock Air Guides Inc and operated by Redtail Air, Inc under 14 Code of Federal Regulations Part 91 as a public-use aerial survey flight. Visual meteorological conditions prevailed at the time of the accident. The flight originated from and was returning to RKS after having completed the aerial survey.

The airplane experienced the loss of engine power while on an approximate 3.5-mile base-to-final approach for landing. The left fuel tank contained no useable fuel, and the right tank contained full fuel. The left fuel gauge indication showed about 1/3 fuel remaining. The pilot selected the right fuel tank after the power loss but was unable to restart the engine. The pilot performed the landing on flat brush-covered terrain. The airplane came to rest on the edge of an asphalt road, which did not have any aerial obstructions. The airplane flaps were in the extended position.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                   |                    |                  |                       |  |
|-----------------------------------|--------------------|------------------|-----------------------|--|
| Accident Rpt# GAA17CA543          | 09/20/2017 900 MDT | Regis# N22650    | St George, UT         | Apt: St George Rgnl SGU                |
| Acft Mk/Mdl CESSNA T210-L         |                    | Acft SN 21059767 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONTINENTAL TSIO-520-H |                    | Acft TT 4367     | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: GARY SACKETT            |                    | Opr dba:         |                       | Aircraft Fire: NONE                    |
|                                   |                    |                  |                       | AW Cert: STN                           |

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## Events

1. Landing - Landing gear not configured

## Narrative

The pilot of the retractable landing gear airplane reported that he "neglected to lower the landing gear" before landing. The airplane landed with the landing gear retracted. He further added that he had "no recollection of hearing the gear horn".

The airplane sustained substantial damage to the fuselage.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|  |                     |                  |                       |                                       |
|--|---------------------|------------------|-----------------------|---------------------------------------|
| Accident Rpt# CEN18LA031               | 11/12/2017 1730 CST | Regis# N5300A    | Grayslake, IL         | Apt: Campbell C81                     |
| Acft Mk/Mdl CESSNA T210N               |                     | Acft SN 21063356 | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending |
| Eng Mk/Mdl CONTINENTAL MOTORS IO-550-P |                     | Acft TT 3996     | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091          |
| Opr Name: RUNZEL BROTHERS AVIATION LLC |                     | Opr dba:         |                       | Aircraft Fire: NONE                   |
|  |                     |                  |                       | AW Cert: STN                          |

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## Events

1. Approach - Loss of engine power (total)
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## Narrative

On November 12, 2017, about 1730 central standard time, a Cessna T210N airplane, N5300A, experienced a loss of engine power and landed short of runway 09 at Campbell Airport (C81), Grayslake, Illinois. The commercial rated pilot, who was the sole occupant, was not injured and the airplane sustained substantial damage. The airplane was registered to and operated by Runzel Brothers Aviation LLC under the provisions of 14 Code of Federal Regulations Part 91 as a positioning flight. Night instrument meteorological conditions prevailed at the time of the accident and the flight was operated on an instrument flight rules (IFR) flight plan. The airplane departed Pierre Regional Airport (PIR), Pierre, South Dakota, about 1440 and was en route to Chicago Executive Airport (PWK), Wheeling, Illinois.

The responding Federal Aviation Administration (FAA) inspector stated that the pilot noticed a slight decrease in oil pressure, then heard a "bang" and noticed smoke in the cockpit. The pilot diverted to C81 and landed in a field short of runway 09. The airplane sustained substantial damage to the left horizontal stabilizer. A large hole was found in the engine crankcase near the No. 4 cylinder.

The airplane was retained for further examination.

# National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN15LA404 09/05/2015 2336 UTC Regis# N4707S Midland, TX Apt: Midland Intl MAF  
Acft Mk/Mdl CESSNA TR182-NO SERIES Acft SN R18201393 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending  
Eng Mk/Mdl LYCOMING O-540-L3C5D Acft TT 2142 Fatal 1 Ser Inj 0 Flt Conducted Under: FAR 091  
Opr Name: FOREST G. DAWSON Opr dba: Aircraft Fire: NONE

## Summary

The commercial pilot took off from the airport in the airplane with three passengers on board. The pilot reported that, during the takeoff and while crossing the departure end of the runway, the engine began to lose power. The pilot managed to climb and level off the airplane about 40 ft above ground level. The airplane would not maintain altitude, so he conducted a wheels-up landing in a field. The passengers reported that, during the forced landing, the airplane struck a rock and stopped suddenly. The pilot sustained serious injuries and died 24 days after the accident.

Postaccident examination confirmed flight control continuity. An examination of the turbocharger revealed that the wastegate actuating cable was frayed and kinked at both ends. When the throttle was advanced, the cable bound. The bypass valve's actuator arm was corroded, and the bolt and nut used to fasten the actuator cable to the arm were seized and corroded. An examination of the single-driven dual magneto revealed that both sides had improper ignition timing. A subsequent examination revealed that the points were worn. During a bench test, the magneto operated normally. Because the engine was test run successfully with the wastegate cable, bypass valve actuator, and magneto in place, it is unlikely that they directly caused the partial loss of engine power. However, the role they might have played in the power loss could not be determined.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The partial loss of engine power for reasons that could not be determined based on the available evidence.

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## Events

1. Initial climb - Loss of engine power (partial)

## Findings - Cause/Factor

1. Not determined-Not determined-(general)-(general)-Unknown/Not determined - C
2. Aircraft-Aircraft power plant-Turbocharging (recip only)-Turbocharger-Damaged/degraded
3. Aircraft-Aircraft power plant-Ignition system-Magneto/distributor-Fatigue/wear/corrosion

## Narrative

On September 5, 2015, about 1836 central daylight time, a Cessna TR182 airplane, N4707S, impacted terrain following a forced landing to a field near Midland, Texas. The pilot was seriously injured at the time of the accident, but succumbed to his injuries 24 days later. The three passengers were not injured. The airplane was substantially damaged. The airplane was registered to E & B Aero LLC and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal cross-country flight. Visual meteorological conditions prevailed at the time of the accident and no flight plan had been filed. The flight originated from Midland International Air & Space Port (MAF), Midland, Texas, and was en route to El Paso International Airport (ELP), El Paso, Texas.

The airplane departed from runway 16R at MAF, and proceeded south. The airport elevation was 2,872 ft mean sea level (msl). GPS data showed the airplane climbed to an altitude of 2,910 ft, where it leveled off. This occurred about one minute after takeoff and the airplane's recorded groundspeed was 58 kts. The airplane remained around this altitude for about 32 seconds before descending to the ground. The airplane's groundspeed while level was about 60 kts. During the descent to the ground, the airplane's airspeed decreased to about 50 kts.

The passengers on board the airplane said that right after takeoff the pilot experienced difficulties with the airplane. It was not developing power and it would not climb. The pilot elected to put the airplane down in a field rather than bring the airplane back around to land at MAF. The passengers said he did a good job controlling the airplane. During the forced landing in the field, the airplane struck a rock. The sudden stop resulted in the pilot sustaining a broken back. The passengers were able to get out of the airplane on their own.

In a postaccident interview with the FAA, the pilot told the inspector that the wastegate might not have opened. It was a problem the pilot experienced during a previous flight, during which he described that engine was running, but the manifold pressure "overboosted." Three days before the accident he had a repair station replace the manifold pressure gauge and bypass valve. The pilot stated that during the accident flight the airplane was configured with 10 degrees of

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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flaps for takeoff and the mixture was full rich. During the takeoff, the engine was at full power and the airspeed increased to between 80 and 100 kts. As the airplane crossed the departure end of the runway, he realized that the manifold pressure was up and the rpms were low. He decided to continue the flight rather than land straight ahead. When he found that the airplane could not maintain altitude, he executed a wheels up forced landing in a field.

The airplane was located in grass field two miles south of the airport. An examination of the airplane at the scene showed substantial damage to the engine mounts and firewall. The airplane's lower cowling and nose gear doors were crushed upward. The fuselage, aft of the rear cabin at the baggage compartment, was bent downward. The main landing gear were crushed upward into their wheel wells. The propeller showed torsional bending, chordwise scratches and leading-edge nicks. One of the two propeller blades was bent and twisted aft under the nose cowling, and exhibited laterally running scrapes and material missing at the blade tip. Flight control continuity was confirmed. A portable GPS unit and an engine monitoring device were retained and sent to the NTSB Vehicle Recorders Laboratory for examination and data readout.

A review of the airplane's maintenance records showed it underwent an annual inspection on February 19, 2015. The airframe time at the inspection was 2,142.2 hours. Further review of the records showed that between July 29 and August 19, 2015, the turbocharger wastegate was checked, and it was found the pressure relief valve was not opening correctly to limit the manifold pressure. The valve was replaced and it functioned properly during a ground run of the engine. Also during the records review, it was discovered that a service bulletin, Lycoming Service Bulletin SB-643, had not been complied with.

The airplane was examined in Lancaster, Texas, on October 29-30, 2015. Examination of the engine showed continuity throughout. The single-drive dual magneto was tested for proper ignition timing. The left magneto was at 18-degrees before top center (BTC). The right magneto was at 16-degrees BTC. Proper ignition timing is 23-degrees BTC.

The turbocharger waste gate actuating cable was frayed and kinked at both ends. When the throttle was advanced, the cable binded. The actuator arm on the bypass valve was corroded and the bolt and nut used to fasten the actuator cable to the arm was seized and corroded.

The engine and airplane fuselage was secured to a trailer and using the on-board battery and engine starter, the engine was started and run to 1,400 rpm when the number 5 top spark plug shorted due to lead fouling. The spark plug was replaced and the engine operated to full power (2,400 rpm). The power was then reduced to 1,800 rpm and an ignition test was performed. Both magnetos dropped about 300 rpm. The operating limitation is a drop no lower than 150 rpm on each magneto. The turbocharger operated normally during the test run and manifold pressure achieved 31.5 inches of mercury at full power.

Following the engine run, the magneto was removed and disassembled for inspection. The points were excessively worn. The magneto was reassembled and tested and operated from 0 to 3,000 rpm with no defects.

The engine monitoring device was examined on November 20, 2015. The device was a panel mounted gauge that allowed the pilot to monitor and record up to 24 parameters related to engine operations. The data extracted included 15 sessions from May 23 to the accident flight. Data extracted from the accident flight revealed:

The engine monitor began recording at engine start. A plot of the data for the accident flight showed that about 420 seconds, EGT, manifold pressure (MAP) and engine rpm began to climb. RPM increased from 1,250 to about 1,750, MAP rose from 18 inches to 20 inches, and EGTs rose from about 1,200 to 1,300 degrees F.

About 540 seconds, these parameters increased again with EGT exceeding 1,400-degrees F, MAP rising to 31 inches, and RPM to 2,500. This would have occurred about the time the airplane took off.

At 700 seconds, engine RPM decreased to zero and EGT decreased to about 1,000 degrees F. MAP was about 30 inches. All recorded data ended 20 seconds later.

The pilot died on September 29, 2015. The El Paso County, Texas, Medical Examiner cited the cause of death as complications of multiple blunt injuries.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                               |            |          |                   |                       |  |
|-------------------------------|------------|----------|-------------------|-----------------------|--|
| Accident Rpt# GAA17CA549      | 09/05/2017 | 1500 AKD | Regis# N734GW     | Chicken, AK           | Apt: N/a                               |
| Acft Mk/Mdl CESSNA U206-G     |            |          | Acft SN U20604832 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONTINENTAL IO-550 |            |          |                   | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 135           |
| Opr Name: 40 MILE AIR LTD.    |            |          | Opr dba:          |                       | Aircraft Fire: NONE                    |
|                               |            |          |                   |                       | AW Cert: SPR                           |

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## Events

2. Takeoff - Dragged wing/rotor/float/other

## Narrative

The pilot reported that, while taking off from a road, the airplane struck a road sign with its left wing. He explained that, during takeoff the airplane had accelerated rapidly and in the next moment he felt a lurch to the left and at that moment the parking brake, which he had forgotten to release, released. He added that, he had "incorrectly assumed" that the brake had grabbed and caused the lurch, not the unknown to him, sign strike. Subsequently, he corrected with rudder and continued the flight.

He added that, the airplane flew "normally," but that it had a "slightly left-wing heavy feel". He continued the flight without further incident.

A post-accident examination revealed the airplane had sustained substantial damage to the left wing.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

# National Transportation Safety Board - Aircraft Accident/Incident Database

|                                     |                     |               |                       |  |
|-------------------------------------|---------------------|---------------|-----------------------|--|
| Accident Rpt# CEN16FA211            | 06/09/2016 1309 CDT | Regis# N4252G | Houston, TX           | Apt: William P Hobby HOU               |
| Acft Mk/Mdl CIRRUS DESIGN CORP SR20 |                     | Acft SN 2217  | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR IO-360-ES     |                     | Acft TT 429   | Fatal 3 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: SAFE AVIATION LLC         |                     | Opr dba:      |                       | Aircraft Fire: NONE                    |
|                                     |                     |               |                       | AW Cert: STN                           |

## Events

1. Approach-VFR go-around - Loss of control in flight

## Narrative

### HISTORY OF FLIGHT

On June 9, 2016, at 1309 central daylight time, a Cirrus SR20 airplane, N4252G, impacted terrain following a loss of control during a go-around at William P. Hobby Airport (HOU), Houston, Texas. The private pilot and the two passengers were fatally injured, and the airplane sustained substantial damage. The airplane was registered to and operated by Safe Aviation, LLC, Moore, Oklahoma, under the provisions of 14 Code of Federal Regulations (CFR) Part 91 as a personal flight. Visual meteorological conditions prevailed, and a visual flight rules flight plan had been filed. The airplane departed from University of Oklahoma Westheimer Airport (OUN), Norman, Oklahoma, about 1000 and was destined for HOU.

As the airplane approached HOU, a high-volume air carrier airport surrounded by Class B airspace, the pilot was given numerous instructions by air traffic controllers to sequence it between several Boeing 737 airplanes. An air traffic control (ATC) group was formed to review the interactions between the controllers and the pilot. The following information was extracted from the ATC group report, which is available in the public docket of this investigation.

1252:47 - The pilot contacted HOU tower, and the local controller cleared the pilot to land on runway 4 and told her to follow a Boeing 737 that was on a 3-mile final approach to runway 4.

1254:39 - The local controller directed the pilot to maintain maximum forward airspeed due to a Boeing 737 on a 9-mile final approach that was trailing the airplane and traveling 80 knots faster.

1256:58 - Due to the trailing Boeing 737, which was overtaking the airplane, the local controller directed the pilot to go around and fly runway heading.

1257:37 - The local controller instructed the pilot to make a right base to runway 35, informed her of another Boeing 737 on a 5-mile final for runway 4, and stated that she would be landing before the Boeing 737.

1258:16 - The local controller told the pilot that he would call her base turn.

1258:48 - The local controller issued a traffic advisory for an additional Boeing 737 inbound to runway 4, and the pilot reported that traffic in sight. The local controller told the pilot to pass behind that traffic and land on runway 35.

1259:20 - The local controller asked the pilot to turn left 300 to resolve a perceived traffic conflict between the airplane and the inbound Boeing 737.

1259:30 - The local controller asked the pilot if she would like to follow the Boeing 737 to runway 4. The pilot responded that she would, and the local controller cleared her to land on runway 4. A few seconds later the local controller told the pilot, "just maneuver back for the straight-in, I don't know which way you're going now, so just turn back around to runway 35."

1300:13 - The local controller asked the pilot which direction she was turning. She responded, "I thought I was turning a right base for 35." The controller asked her to keep the right turn "tight," and the pilot acknowledged.

1300:31 - The local controller cleared the pilot to perform a straight-in approach to runway 35, and the pilot replied, "straight in to runway 35 and I don't believe I'm lined up for that." According to radar data, at this time, the airplane was about 2 nautical miles south of runway 35. The local controller told the pilot to turn right to a heading of 040 and climb to 1,600 ft.

1301:16 - The airplane was southeast of runway 35, heading 040, and the local controller told the pilot to make a right turn to land on runway 35. 1302:02 - The local controller prompted the pilot to begin her descent to land on runway 35, and the pilot replied that she was "trying to lose altitude."

1303:25 - The local controller told the pilot that she "might be too high." The pilot replied that she would perform a go-around, and the controller acknowledged and told her to fly a right traffic pattern for runway 35.

1304:38 - The local controller told the pilot that she was cleared to land on runway 35 and that no other traffic was expected inbound.

1306:00 - The local controller advised the pilot of a Boeing 737 on a short final to runway 4 ahead of her, and the pilot acknowledged that she had the airplane in sight.

1307:03 - The local controller provided a wind check and cleared the pilot to land on runway 35, and the pilot replied, "35 cleared to land trying to get down again."

1307:49 - A new local controller took over the position.

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1308:21 - The airplane was over runway 35, and the pilot called that she was going around. The new local controller responded with the following 16-second transmission, "OK, Cirrus 52G, just go ahead and make the left turn now to enter the downwind, midfield downwind for runway 4, if you can just keep it in a nice tight low pattern, I'm going to have traffic 4 miles behind you so I need you to just kind of keep it in tight if you could." The pilot responded, "OK, this time will be runway 4, turning left, 4252G." The controller continued with the following 23-second transmission, "And actually I might end up sequencing you behind that traffic, he's on 4 miles a minute, um, it is gonna be a bit tight with the one behind it so when you get on the downwind, stay on the downwind and advise me when you have that 737 in sight. We'll either do 4 or we might swing you around to 35, uh, uh, ma'am, ma'am, uh, straighten up, straighten up!"

Witnesses saw the airplane at a low altitude when it turned to the left and descended. A security camera video showed that the airplane spun to the left and was about 45° nose down in a slightly left-wing-low attitude before impact with terrain. The airplane impacted an unoccupied automobile in a hardware store parking lot about ¼-mile north of runway 35. The video showed that the airplane's airframe parachute rocket motor activated during the impact; however, the parachute remained stowed in the empennage and did not deploy.

## PERSONNEL INFORMATION

A review of the pilot's logbook revealed that she received her private pilot certificate on May 2, 2014. According to the logbook, she had landed within Class B airspace at least four times. Her most recent flight in Class B airspace was to Dallas Love Field (DAL), Dallas, Texas, and consisted of a landing on May 30, 2016, and a takeoff on June 3, 2016. There was no evidence that she had flown to HOU before the accident flight.

Interviews with the pilot's flight instructors and review of her logbook did not find evidence that the pilot had completed a flight review in the previous 24 calendar months, as required by 14 CFR 61.56(c). (Title 14 CFR 61.56(c) states that a person may not act as pilot-in-command of an aircraft unless that person has accomplished a satisfactory flight review within the preceding 24 calendar months.)

## AIRCRAFT INFORMATION

The manufacturer's checklist for a balked landing/go-around states that the airplane should be pitched to maintain the best angle of climb, between 81 to 83 knots indicated airspeed (KIAS), before raising the flaps. The manufacturer's published stall speed at 0° bank angle, idle power, and flaps up is 69 KIAS. The stall speed at 0° bank angle, idle power, and flaps full down is between 59-61 KIAS. An excerpt from the pilot's operating handbook concerning stall speeds is located in the public docket of this investigation.

## METEOROLOGICAL INFORMATION

Data from the National Oceanic and Atmospheric Administration showed that, at the accident location, at 1309, the altitude of the sun was about 83° above the horizon, and the azimuth of the sun was about 158°.

## AIRPORT INFORMATION

HOU has 4 runways: 4/22, 35/17, 13L/31R, and 13R/31L. According to HOU tower personnel, in the period leading up to the accident, HOU was landing runways 4 and 35 and departing runways 4, 12L/R, and 35. Most of the traffic was landing on runway 4 and departing from runway 12R.

## WRECKAGE AND IMPACT INFORMATION

All major airplane components were accounted for at the accident site. The nose of airplane was aligned about 330° magnetic. The propeller was separated just aft of the propeller flange. All three blades remained attached to the hub and displayed curling, chordwise scratches, and leading edge nicks and gouges. The wing remained attached to the fuselage.

## MEDICAL AND PATHOLOGICAL INFORMATION

The Harris County Institute of Forensic Sciences, Houston, Texas, conducted an autopsy on the pilot. The cause of death was multiple blunt force injuries, and



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the manner of death was ruled an accident.

The FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed forensic toxicology on specimens from the pilot. Testing was negative for carbon monoxide and ethanol. The following substances were detected:

Ibuprofen detected in urine  
Naproxen detected in urine  
Zolpidem detected in heart blood

Ibuprofen and naproxen are non-steroidal anti-inflammatory drugs, and their use would generally not present a hazard to aviation safety. Zolpidem is a prescription medication used to treat insomnia and may impair mental and/or physical ability required for the performance of potentially hazardous tasks, such as driving, flying, and operating heavy machinery. Due to adverse side-effects, the FAA recommends waiting at least 24 hours after use of zolpidem before flying.

On the pilot's most recent medical application, she reported the use of doxycycline and dapsone for acne. The use of zolpidem was not reported.

## TESTS AND RESEARCH

The airplane was equipped with a Garmin G1000 Integrated Flight Deck and a Heads Up Technologies recoverable data module (RDM) data recorder. Flight data recorded by these devices were downloaded by the National Transportation Safety Board's Vehicle Recorder Division in Washington, DC. Review of the data revealed that, at 1308:19, the airplane began to pitch nose up, while at 63 knots indicated airspeed (KIAS) and 102.8 ft mean sea level (msl). The airplane began climbing at 9-11° nose up, while traveling at 66-74 KIAS with full flaps extended. According to ATC communications, at 1308:21 the pilot reported the go-around and the tower controller begin transmitting a clearance. At 1308:26, the airspeed was 74 KIAS, which was the highest airspeed that the airplane achieved during the climb out, and the airspeed then began to decrease. At 1308:36, the tower controller finished his clearance and began another part of the clearance at 1308:42 and continued transmitting past the last recorded point. At 1308:45, the airplane entered a left turn with the airspeed decreasing through 64 KIAS. At 1308:52, power was reduced from 94% to about 81%, with a corresponding reduction in engine parameters. The flaps were moved from full to half flaps at 1308:56, with the airplane at 13° nose up, 18° of left bank, and 62 KIAS. The flaps were fully retracted (0° flaps) at 1309:02 with the airplane in a 26° left bank and travelling at 58 KIAS. One second later, the airplane was in a 71° left bank, the pitch dropped to 5° nose low, and engine power increased to 90%. No further data were recorded.

## ADDITIONAL INFORMATION

FAA Advisory Circular (AC) 61-98C, "Current Requirements and Guidance for the Flight Review and Instrument Proficiency Check," dated November 20, 2015, states, in part, that the intent of a flight review is a routine evaluation of the pilot's ability to conduct a safe flight. The AC further states that, regardless of the pilot's experience, the flight instructor should review at least those maneuvers considered critical to safe flight such as stabilized approaches to landings, slow flight, stall recognition, stalls, stall recovery, and spin recognition and avoidance.

FAA Safety Team AFS-850 16-08, "Fly the Aircraft First," dated August 2016, provides a reminder to pilots to maintain aircraft control at all times. It states, in part, "The top priority - always - is to aviate." It further states, "Rounding out those top priorities are figuring out where you're going (Navigate), and, as appropriate, talking to ATC or someone outside the airplane (Communicate). It seems simple to follow, but it's easy to forget when you get busy or distracted in the cockpit."

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Accident Rpt# CEN16FA116 03/02/2016 800 MST Regis# N6464 Palmer Lake, CO Apt: N/a  
Acft Mk/Mdl CURTISS WRIGHT TRAVEL AIR 4000-NO SAcft SN 785 Acft Dmg: DESTROYED Rpt Status: Factual Prob Caus: Pending  
Eng Mk/Mdl WRIGHT J-6 Fatal 2 Ser Inj 0 Flt Conducted Under: FAR 091  
Opr Name: MURRAY DANIEL J TRUSTEE Opr dba: Aircraft Fire: GRD  
AW Cert: STN

## Summary

The commercial pilot and the pilot-rated passenger were flying the biplane to a fly-in gathering in another state. Witnesses saw the airplane flying over a frozen lake at a low altitude and low airspeed. One witness saw the airplane "listing" left and right before it entered a left turn, and he lost sight of it. Other witnesses saw the airplane turn left and nose-dive into the ground. A postimpact fire consumed most of the airplane. Damage to the wreckage indicated that the airplane impacted the ground in a nose-down attitude. The examination did not reveal evidence of any preimpact anomalies with the airframe, engine, or the control system of the airplane.

A witness reported that, at the time of the accident, the wind was from the south about 30 miles per hour. However, a burnt area extending east from the airplane's impact point indicated the wind was from the west. Additionally, although wind information from nearby weather stations varied in direction and intensity. One station, about 14 miles west-northwest of the accident site reported calm wind., However, another station, located about 11 miles south of the accident site, recorded wind from the west at 11 knots with gusts to 27 knots about the time of the accident and wind from the west at 33 knots with gusts to 48 knots about an hour after the accident. Further, the forecast for the accident area called for wind gusts to 40 knots from the west-northwest. Therefore, it is likely that strong gusty west winds prevailed in the accident area at the time of the accident.

Although some witnesses speculated that the pilot may have been attempting to land the airplane on the frozen lake, the airplane was not equipped to land on ice, and the reason the pilot was maneuvering at a low altitude in strong gusty winds could not be determined. Based on the witness observations and the damage to the wreckage, it is likely that the pilot allowed the airspeed to decrease to a point where the critical angle of attack was exceeded, and the airplane entered an aerodynamic stall/spin.

Although the pilot was known to have heart disease, it is unlikely that his medical condition contributed to the accident. The witness observations indicate that the pilot was actively flying the airplane before the loss of control.

Toxicology testing showed the presence of chlorpheniramine in the pilot's blood at a level that was likely in the therapeutic range. Chlorpheniramine is a sedating antihistamine available in a number of over the counter products, and it carries the warning, "May impair mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, operating heavy machinery)." Because of its sedating effect, chlorpheniramine may slow psychomotor functioning and cause drowsiness. It has also been shown in a driving simulator (after a single dose) to suppress visual-spatial cognition and visual-motor coordinating functions when compared to placebo. Such functions would have been necessary for the pilot to maintain control of the airplane while maneuvering close to the ground in the strong gusty wind conditions. Therefore, it is likely that the pilot's ability to safely operate the plane was impaired by the effects of chlorpheniramine.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to maintain sufficient airspeed while maneuvering at low altitude in strong gusting winds, which resulted in exceedance of the airplane's critical angle of attack and an aerodynamic stall/spin. Contributing to the accident was the pilot's impairment due to the effects of a sedating antihistamine.

## Events

1. Enroute-cruise - Loss of control in flight

## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Airspeed-Not attained/maintained - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Angle of attack-Capability exceeded - C
3. Personnel issues-Physical-Impairment/incapacitation-OTC medication-Pilot - F
4. Environmental issues-Conditions/weather/phenomena-Wind-High wind-Effect on operation - C
5. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation - C

## Narrative

HISTORY OF FLIGHT On March 2, 2016, about 0800 mountain standard time, a Curtis Wright Travel Air 4000 airplane, N6464, was destroyed when it impacted the ground in an uncontrolled descent near Palmer Lake, Colorado. The pilot and the pilot-rated passenger were fatally injured. The airplane was

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight; no flight plan had been filed. Visual meteorological conditions prevailed near the accident site. The flight originated from the Vance Brand Airport, near Longmont, Colorado, about 0715. An acquaintance of the pilot reported that the airplane was en route to a fly-in gathering at the Casa Grande Municipal Airport, Casa Grande, Arizona.

A witness, who had about 35 to 40 hours flight experience, reported seeing the airplane flying south over Palmer Lake at a low altitude and low airspeed. He stated that it appeared as if the airplane was making a "low slow scenic pass" over the lake. He said that the airplane was going "pretty slow," but it was flying south into a headwind of about 30 mph. He said that, while flying over the lake, the airplane started a left turn when it was near the south end of the lake at an altitude of about 200 ft above the ground. He said that the turn was about 20° to 30° in bank and that the airplane then "slid" before going out of view behind trees. He stated that as soon as he saw the airplane begin to turn he became very concerned. He drove to the scene and saw the airplane in flames.

Another witness reported seeing the airplane heading south at a low altitude over the north end of the lake. He stated that the airplane seemed to be out of control, back under control, and then it turned toward the north. He speculated that the pilot may have been trying to land on the frozen lake. The airplane then turned to the south again, banked left, and nosedived into the ground.

A third witness reported seeing the airplane flying above the lake. She reported that it seemed to "struggle" and then seemed to level out. The airplane then went out of control again, banked left, nosedived into the ground, and caught fire.

A fourth witness reported seeing the airplane flying southbound over the railroad tracks, about 100 ft above the ground. He stated that the airplane seemed to be floating in the air and did not seem to have a lot of power. He further stated that the airplane was "listing left and right greatly." He saw the airplane turn toward the east just past the lake. The turn appeared to be controlled, and he thought the airplane was possibly trying to land. By this time, the airplane had descended to about 15 to 20 ft above the ground. He did not see or hear the impact.

## PERSONNEL INFORMATION

### Pilot

The pilot held a commercial pilot certificate with airplane single-engine land and airplane multiengine land ratings. The multiengine rating was limited to private pilot privileges. The pilot's most recent third class medical certificate was issued on June 10, 2013, with the following limitations: "Must wear corrective lenses. Not valid for any class after June 30, 2015." At the time of the accident, this medical certificate had expired for all classes and had not been renewed. The pilot reported having 5,000 hours total flight experience and 50 hours in the 6 months preceding his most recent airman medical examination. The pilot's flight logbooks were not available for review during the investigation.

### Pilot-rated Passenger

The passenger held a commercial pilot certificate with airplane single-engine land, airplane single-engine sea, airplane multiengine land, and instrument airplane ratings. His most recent third class medical certificate was issued on October 14, 2010, with the limitation: "Must wear corrective lenses." At the time of the accident, this medical certificate had expired for all classes and had not been renewed.

## AIRCRAFT INFORMATION

The airplane was a 1928 Curtis Wright Travel Air 4000 airplane. It was a two-seat biplane with a conventional (tailwheel) landing gear arrangement. The wings were constructed of wood with a fabric covering. The fuselage used a steel tube structure with fabric covering. A 235-horsepower Wright Whirlwind, model R-760-8, seven-cylinder radial engine powered the airplane.

The most recent aircraft logbooks were not located during the investigation; however, the mechanic who certified the most recent annual inspection reported that it was completed on July 1, 2015.

The type certificate data sheet for the Travel Air 4000 indicated that the airplane was originally equipped with a Wright J-5, 220-horsepower, nine-cylinder radial engine. Research for aircraft specifications relating to the accident airplane did not reveal those for an airplane with the same engine model installation as the accident airplane. Specifications found for a Travel Air 4000 with a 165-horsepower Wright J-6 radial engine were as follows:

Engine: Wright J-6 "Whirlwind" five-cylinder radial, 165 hp at 1,800 rpm

Length overall: 24 ft. 1 in.

Height overall: 8 ft. 11 in.

Wingspan (upper): 33 ft.

Wingspan (lower): 28 ft. 9 in.

Wing chord (upper): 5 ft. 6 in.

Wing chord (lower): 4 ft. 8 in.

Wing area (upper): 171 sq. ft.

Wing area (lower): 118 sq ft.

Gross weight: 2,702 lbs.

Empty weight: 1,695 lbs.

Useful load: 1,007 lbs.

Payload with full fuel (67 gal.): 392 lbs.

Performance with full load

Maximum Speed: 120 mph

Cruise Speed (sl.): 103 mph

Rate of climb: 720 ft. per minute

Surface ceiling: 13,000 ft.

Landing speed: 48 mph.

Normal cruising range: 650 miles

Fuel capacity: 67 gal.

Oil capacity: 6 gal.

## METEOROLOGICAL INFORMATION

A weather observation station was located at the United States Air Force Academy Airfield (AFF) about 11 miles south-southeast of the accident site at an elevation of about 6,550 ft.

At 0758, AFF reported wind from 250° at 11 knots with gusts to 27 knots, visibility of 10 statute miles or greater, sky clear, temperature of 13°C, dew point temperature of -9°C, and altimeter setting of 29.86 inches of mercury. The remarks section of the observation included peak wind of 33 knots from 220° at 0720.

At 0848, AFF reported a wind from 270° at 33 knots with gusts to 48 knots, visibility of 10 statute miles or greater, squall, sky clear, temperature of 12°C, dew point temperature of -8°C, and altimeter setting of 29.84 inches of mercury.

An Automated Weather Observing System was located at Kelly Air Park (MNH) about 14 miles northwest-west of the accident site at an elevation of about 7,050 ft. At 0756, MNH reported a calm wind, visibility of 10 statute miles or greater, sky clear, temperature of 7°C, dew point temperature of -6°C, and altimeter setting of 29.91 inches of mercury.

An area forecast that included Colorado was issued at 0445. The portion of the area forecast that covered the accident area called for wind gusts of 40 knots from the west-northwest about the time of the accident.

## WRECKAGE AND IMPACT INFORMATION

The airplane came to rest on the crest of an embankment near a set of railroad tracks. A debris field was on a bearing of 110° where small articles and a postimpact fire had spread from the impact crater.

The main wreckage came to rest in its impact crater. The propeller was partially driven into the ground with the engine angled and the fuselage lying on the ground. The postimpact fire had consumed nearly all the airplane's fabric and wooden wing spars. Multiple pools of material consistent with solidified molten

aluminum were found throughout the wreckage.

The left rudder cable remained attached to the rudder and was traced to an overload break near the aft left rudder pedal. Following the break, the remainder of the broken cable led to the aft left rudder pedal. The right cable remained attached to the rudder and was traced to the right aft rudder pedal. Both rudder cables also remained connected to the tail wheel. Elevator cable continuity was established from the elevator to both control sticks. Both control sticks interfaced with the end caps beneath the cockpit area. The aileron push-pull rods were largely consumed by fire. The remaining pieces had signatures consistent with overload. The end caps near both lower aileron surfaces remained attached to their turnbuckles, and both aileron interconnect rods were traced to the upper aileron surfaces.

The postimpact fire consumed most of the cockpit area, and no gauges could be found. All webbing of the restraint systems was thermally destroyed, and only the metal portions remained. The front seat restraint system was unbuckled at the lap belt connector, but both shoulder harness latches remained in the tongue of the lap belt. The rear occupant restraint system remained latched. The airplane's data plate was not found at the accident site.

The oil screen was fractured loose from the engine and contained soil and rocks consistent with the soil at the accident site; no obviously metal flakes were seen on the screen. The carburetor was fractured from the engine, and bent cowl pieces precluded an on scene examination. Both metal propeller blades remained attached at the flange. The propeller could not be rotated by hand. Both blades remained relatively straight. One blade displayed twisting toward the non-cambered side. When the engine was moved, fuel and oil poured from an area aft of the engine.

Further examination of the engine was conducted after its removal from the accident site. The propeller and fragmented portions of the crankcase were removed to facilitate engine rotation. The engine was then rotated by hand using a tool on the crankshaft splines. Compression was verified on all cylinders, and valve train continuity was established. The engine magnetos had sustained substantial fire damage that precluding testing.

The examination of the wreckage did not reveal any evidence of preimpact anomalies with the airframe, engine, or the control system of the airplane.

## MEDICAL AND PATHOLOGICAL INFORMATION

### Pilot

The 77-year old male pilot had a complicated history of coronary artery disease that had required 5-vessel bypass surgery, diabetes, and multiple surgeries. As of his last medical exam, he reported using simvastatin (also called Zocor) and niacin (also called Niaspan) to treat his high cholesterol, metoprolol (also called Lopressor and Toprol) and lisinopril (also called Zestril or Prinivil) to treat his hypertension and prevent a heart attack, and pioglitazone (known as Actos) as well as the combination of sitagliptin and metformin (commonly marketed as Janumet) to treat his diabetes. None of these medications are generally considered impairing.

According to the autopsy performed by the El Paso County Coroner, the pilot's cause of death was a combination of smoke inhalation, thermal burns, and multiple blunt force injuries, and the manner of death was accident. The airways were described as covered in "dense black soot," and the carboxyhemoglobin level measure by the Coroner's office was 19.5%.

Examination of the body for natural disease identified an enlarged heart with previous coronary artery bypass grafts as well as underlying severe atherosclerotic heart disease in the native vessels. Four out of five grafts were widely patent but the graft to the posterolateral circumflex artery was completely thrombosed with hyaline changes on microscopy indicating this had occurred a long time before the accident. The left ventricular free wall contained numerous scattered foci of perivascular and interstitial fibrosis, also indicating ischemia long (months to many years) before the accident. There was no evidence of recent ischemia.

Toxicology testing performed by the Federal Aviation Administration's (FAA) Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, identified a carboxyhemoglobin level of 19% in cardiac blood as well as 0.066 ug/ml of chlorpheniramine and metoprolol. In addition, chlorpheniramine, metoprolol, diphenhydramine, and salicylate (a metabolite of aspirin) were identified in urine.

Chlorpheniramine is a sedating antihistamine available in a number of over-the-counter products, and it carries the warning, "May impair mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, operating heavy machinery)."

## Pilot-rated Passenger

At the time of his last medical exam, the 60-year old male pilot-rated passenger reported no chronic medical issues or any chronic medication use to the FAA. According to the autopsy performed by the El Paso County Coroner, the pilot-rated passenger's cause of death was blunt force injuries of the chest, and the manner of death was accident. There was no soot in his airways. No significant natural disease was identified by autopsy.

Toxicology testing performed by the El Paso Coroner's Office identified naproxen and one of its urinary metabolites as well as metoprolol in the pilot-rated passenger's urine. In addition, they rated "probable" the finding of chlorpheniramine in urine. Cardiac blood tested negative for ethanol and carboxyhemoglobin. Toxicology testing performed by the FAA's Bioaeronautical Sciences Research Laboratory identified only salicylate (a metabolite of aspirin) in urine.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|   |                    |                       |                     |                              |
|---|--------------------|-----------------------|---------------------|------------------------------|
| Accident Rpt# GAA17CA516                    | 09/02/2017 944 MST | Regis# N910XD         | Goodyear, AZ        | Apt: Phoenix Goodyear GYR    |
| Acft Mk/Mdl DIAMOND AIRCRAFT IND GMBH DA 40 | Acft SN 40.N303    | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual | Prob Caus: Pending           |
| Eng Mk/Mdl AUSTRO E4-A                      | Acft TT 1134       | Fatal 0               | Ser Inj 0           | Flt Conducted Under: FAR 091 |
| Opr Name: L3 CTC AVIATION TRAINING          | Opr dba:           | Aircraft Fire: NONE   | AW Cert: STN        |                              |

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## Summary

The solo student pilot reported that, during approach, he felt a "slight sink." He added that the main landing gears touched down, and the airplane began to porpoise. The student pilot added power to initiate a go-around, but the airplane veered left. The porpoising continued, so the pilot reduced the power to idle and attempted to use brakes to steer. The airplane exited the runway to the left and impacted a taxiway sign.

The airplane sustained substantial damage to the right wing.

The student pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The student pilot's improper landing flare and subsequent failure to maintain directional control during the landing roll.

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## Events

1. Landing - Abnormal runway contact
2. Landing - Loss of control on ground
3. Landing - Attempted remediation/recovery
4. Landing - Collision with terr/obj (non-CFIT)

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## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Landing flare-Not attained/maintained - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Directional control-Not attained/maintained - C
3. Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - C
4. Environmental issues-Physical environment-Object/animal/substance-Sign/marker-Contributed to outcome

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## Narrative

The solo student pilot reported that, during approach, he felt a "slight sink". He added that the main landing gears touched down and the airplane began to porpoise. The student pilot added power to initiate a go-around, but the airplane veered left. The porpoising continued, so the pilot reduced power to idle and attempted to use brakes to steer. The airplane exited the runway to the left and impacted a taxiway sign.

The airplane sustained substantial damage to the right wing.

The student pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|---|---------------------|-----------------|-----------------------|---------------------------------------|
| Accident Rpt# GAA18CA062                | 10/12/2017 2200 PDT | Regis# N965DS   | Phoenix, AZ           | Apt: Phoenix-mesa Gateway IWA         |
| Acft Mk/Mdl DIAMOND AIRCRAFT IND INC DA |                     | Acft SN 40.1035 | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending |
|   |                     |                 | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091          |
| Opr Name: CAE OXFORD AVIATION ACADEMY   |                     | Opr dba:        |                       | Aircraft Fire: NONE                   |
| PHOENIX INC                             |                     |                 |                       |                                       |

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|----------------------------------|---------------------|---------------|-----------------------|---------------------------------------|
| Accident Rpt# CEN18LA034         | 11/20/2017 1155 MST | Regis# N3067H | Aurora, CO            | Apt: N/a                              |
| Acft Mk/Mdl ERCOUPE 415 CD-CD    |                     | Acft SN 3692  | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR C85 SERIES |                     |               | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091          |
| Opr Name: PILOT                  |                     | Opr dba:      |                       | Aircraft Fire: NONE                   |
|                                  |                     |               |                       | AW Cert: STN                          |

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## Events

1. Maneuvering - Loss of engine power (total)
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## Narrative

On November 20, 2017, about 1155 mountain standard time, an Ercoupe 415-CD airplane, N3067H, had an inflight loss of engine power near Aurora, Colorado. The pilot was uninjured. The airplane sustained substantial damage when it impacted a fence. The airplane was registered to and operated by the pilot as a 14 Code of Federal Regulations Part 91 personal flight. Day visual meteorological conditions prevailed in the area about the time of the accident, and the flight was not operated on a flight plan. The local flight originated from the Centennial Airport (APA), near Denver, Colorado, about 1130.

At 1153, the recorded weather at APA was: Wind calm; visibility 10 statute miles; sky condition few clouds at 8,000 ft, few clouds at 12,000 ft, broken clouds 22,000 ft; temperature 16ø C; dew point -14ø C; altimeter 29.84 inches of mercury.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                   |                     |               |                       |                                       |
|-----------------------------------|---------------------|---------------|-----------------------|---------------------------------------|
| Accident Rpt# ERA18LA023          | 11/02/2017 1400 EDT | Regis# N3512L | Montague, MA          | Apt: Turners Falls Airport 0B5        |
| Acft Mk/Mdl GREAT LAKES 2T1A      |                     | Acft SN 0794  | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING AEIO-360-B1G6 |                     |               | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091          |
| Opr Name: MCGOWAN JON G           |                     | Opr dba:      |                       | Aircraft Fire: NONE                   |
|                                   |                     |               |                       | AW Cert: STA                          |

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## Events

1. Takeoff - Loss of control on ground
- 

## Narrative

On November 2, 2017, about 1400 eastern daylight time, a Great Lakes Aircraft Company 2T-1A-2, N3512L, experienced a runway excursion during takeoff and nosed over at Turners Falls Airport (0B5), Montague, Massachusetts. The private pilot was not injured and the airplane which was being operated under the provisions of 14 Code of Federal Regulations Part 91, as a personal flight, was substantially damaged. Visual meteorological conditions prevailed at the time and no flight plan was filed. The flight was originating at the time of the accident, and was destined for the Orange Municipal Airport (ORE), Orange, Massachusetts.

The pilot stated that after engine start he taxied to the run-up area of runway 16, and went through his preflight checklist. There were no discrepancies with the brakes while taxiing or during the run-up. He taxied onto the runway and began the takeoff roll reporting all was normal for the first 200 ft. With the empennage off the runway, the airplane suddenly veered to the left, which he could not correct. The airplane went off the left side of the runway, down a sharp incline, impacted a wing on the ground, and nosed over. He immediately released the restraint and exited the airplane.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# GAA18CA060    11/22/2017 1045 EST    Regis# N9685F    Woodlawn, VA    Apt: N/A  
Acft Mk/Mdl HUGHES 269C    Acft SN 620147    Acft Dmg: SUBSTANTIAL    Rpt Status: Prelim    Prob Caus: Pending  
Fatal 0    Ser Inj 0    Flt Conducted Under: FAR 091  
Opr Name:    Opr dba:    Aircraft Fire: NONE

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# National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# DCA16MA204 07/30/2016 0 Regis# N2469L Lockhart, TX Apt: N/a  
Acft Mk/Mdl KUBICEK BB85-Z Acft SN unknown Acft Dmg: DESTROYED Rpt Status: Factual Prob Caus: Pending  
Fatal 16 Ser Inj 0 Flt Conducted Under: FAR 091  
Opr Name: HEART OF TEXAS HOT AIR BALLOON RIDES Opr dba: Aircraft Fire: IFLT

## Summary

The NTSB's full report is available at <http://www.nts.gov/investigations/AccidentReports/Pages/AccidentReports.aspx>. The Aircraft Accident Report number is NTSB/AAR-17/03.

On July 30, 2016, about 0742 central daylight time, a Balçny Kubicek BB85Z hot air balloon, N2469L, operated by Heart of Texas Hot Air Balloon Rides, struck power lines and crashed in a field near Lockhart, Texas. The pilot and 15 passengers died, and the balloon was destroyed by impact forces and postcrash fire. The balloon was owned and operated by the pilot, and the flight was conducted under the provisions of 14 Code of Federal Regulations Part 91 as a sightseeing passenger flight. The flight originated about 0658, just after sunrise, from Fentress Airpark, Fentress, Texas.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's pattern of poor decision-making that led to the initial launch, continued flight in fog and above clouds, and descent near or through clouds that decreased the pilot's ability to see and avoid obstacles. Contributing to the accident were (1) the pilot's impairing medical conditions and medications and (2) the Federal Aviation Administration's policy to not require a medical certificate for commercial balloon pilots.

## Events

1. Approach - Controlled flight into terr/obj (CFIT)

## Findings - Cause/Factor

1. Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Pilot - C
2. Environmental issues-Conditions/weather/phenomena-Ceiling/visibility/precip-Fog-Decision related to condition - C
3. Personnel issues-Physical-Impairment/incapacitation-Prescription medication-Pilot - F
4. Personnel issues-Physical-Impairment/incapacitation-Illness/injury-Pilot - F
5. Organizational issues-Support/oversight/monitoring-Oversight-Oversight of personnel-FAA/Regulator - F

## Narrative

The NTSB's full report is available at <http://www.nts.gov/investigations/AccidentReports/Pages/AccidentReports.aspx>. The Aircraft Accident Report number is NTSB/AAR-17/03.

On July 30, 2016, about 0742 central daylight time, a Balçny Kubicek BB85Z hot air balloon, N2469L, operated by Heart of Texas Hot Air Balloon Rides, struck power lines and crashed in a field near Lockhart, Texas. The pilot and 15 passengers died, and the balloon was destroyed by impact forces and postcrash fire. The balloon was owned and operated by the pilot, and the flight was conducted under the provisions of 14 Code of Federal Regulations Part 91 as a sightseeing passenger flight. The flight originated about 0658, just after sunrise, from Fentress Airpark, Fentress, Texas.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                               |                     |               |                       |  |
|-------------------------------|---------------------|---------------|-----------------------|--|
| Accident Rpt# GAA17CA522      | 09/06/2017 1230 CDT | Regis# N1590K | Westminster, TX       | Apt: Baylie 66XS                       |
| Acft Mk/Mdl LUSCOMBE 8-A      |                     | Acft SN 4317  | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONTINENTAL A65-8A |                     | Acft TT 2681  | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: GARY HAASS          |                     | Opr dba:      |                       | Aircraft Fire: NONE                    |
|                               |                     |               |                       | AW Cert: STN                           |

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## Summary

The pilot of the tailwheel-equipped airplane reported that, during landing on a grass runway, a wind gust pushed the airplane off the runway to the left. The right wing impacted a tree, and the airplane spun clockwise 180° before coming to rest.

The airplane sustained substantial damage to the fuselage.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

The pilot reported that the wind was from 360° at 15 to 20 knots, gusting to greater than 20 knots. The airplane landed on runway 31.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to maintain directional control during the landing roll in gusting wind conditions.

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## Events

1. Landing - Loss of control on ground
2. Landing - Collision with terr/obj (non-CFIT)

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## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Directional control-Not attained/maintained - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
3. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation
4. Environmental issues-Physical environment-Object/animal/substance-Tree(s)-Contributed to outcome

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## Narrative

The pilot of the tailwheel-equipped airplane reported that, during landing on a grass runway, a wind gust pushed the airplane off the runway to the left. The right wing impacted a tree and the airplane spun clockwise 180° before coming to rest.

The airplane sustained substantial damage to the fuselage.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

The pilot reported that the wind was from 360° at 15 to 20 knots, gusting to greater than 20 knots. The airplane landed on runway 31.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                             |                     |               |                       |                                       |
|-----------------------------|---------------------|---------------|-----------------------|---------------------------------------|
| Accident Rpt# GAA18CA040    | 11/09/2017 1550 MST | Regis# N1869B | Prescott, AZ          | Apt: PRC                              |
| Acft Mk/Mdl LUSCOMBE 8-E    |                     | Acft SN 6296  | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending |
|                             |                     |               | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091          |
| Opr Name: VIRGINA A. KINACH |                     | Opr dba:      |                       | Aircraft Fire: NONE                   |

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                            |                     |               |                       |  |
|----------------------------|---------------------|---------------|-----------------------|--|
| Accident Rpt# GAA18CA061   | 11/23/2017 1816 CST | Regis# N1780K | Bryan, TX             | Apt: Texas A & M Flight Test Statio 83TX |
| Acft Mk/Mdl LUSCOMBE 8-F   |                     | Acft SN 4507  | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending    |
|                            |                     |               | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091             |
| Opr Name: KIM, JONATHAN S. |                     | Opr dba:      |                       | Aircraft Fire: NONE                      |

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# GAA18CA059    11/26/2017 1500 MST    Regis# N6002Q    Tucson, AZ    Apt: Ryan Field RYN  
Acft Mk/Mdl MOONEY M20-E    Acft SN 860    Acft Dmg: SUBSTANTIAL    Rpt Status: Prelim    Prob Caus: Pending  
Fatal 0    Ser Inj 0    Flt Conducted Under: FAR 091  
Opr Name: HOFFMAN WESTLY JAMES TRUSTEE    Opr dba:    Aircraft Fire: NONE

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|-------------------------------------|---------------------|-----------------|-----------------------|--|
| Accident Rpt# GAA17CA535            | 09/09/2017 1635 EDT | Regis# N1161Z   | Whitesburg, GA        | Apt: Lyons Landing 5GA2                |
| Acft Mk/Mdl MOONEY M20J             |                     | Acft SN 24-1356 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING IO-360-A3B6D    |                     | Acft TT 4455    | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: SOUTHPPOINT AVIATION LLC. |                     | Opr dba:        |                       | Aircraft Fire: NONE                    |
|                                     |                     |                 |                       | AW Cert: STN                           |

## Summary

The pilot reported that, during the approach to land on a down-sloped, grass runway, the airplane was "a little high." He added that he attempted to land short of a rise in the runway, which resulted in a hard landing followed by a bounce. After the airplane settled back on the runway, "[he] believed we [the airplane] could still stop in time." He applied the brakes, but the airplane failed to slow, and he attempted to skid the airplane sideways "with little effect." As the airplane went over another rise in the runway, it floated off the ground. Subsequently, the airplane came to rest in the trees beyond the end of the runway.

The airplane sustained substantial damage to both wings.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

The pilot reported that the weather at the accident site, about the time of the accident, was wind from 105ø, gusting to 10 to 15 knots. The pilot landed on runway 27.

An automated weather observation system about 13 nautical miles from the accident site reported, about the time of the accident, the wind was from 070ø at 8 knots.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's unstabilized approach while landing with a tailwind and his subsequent failure to go around, which resulted in a hard landing.

## Events

1. Landing - Hard landing
2. Landing - Landing area overshoot
3. Landing - Runway excursion
4. Landing - Collision with terr/obj (non-CFIT)

## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Descent/approach/glide path-Not attained/maintained - C
2. Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Pilot - C
3. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
4. Environmental issues-Conditions/weather/phenomena-Wind-Tailwind-Effect on operation
5. Environmental issues-Physical environment-Runway/land/takeoff/taxi surface-Soft surface-Effect on operation
6. Environmental issues-Physical environment-Terrain-Sloped/uneven terrain-Contributed to outcome

## Narrative

The pilot reported that, during the approach to land, on a down-sloped, grass runway, the airplane was "a little high." He added that, he attempted to land short of a rise in the runway, which resulted in a hard landing followed by a bounce. After the airplane settled back on the runway, "[he] believed we [the airplane] could still stop in time." He applied the brakes, but the airplane failed to slow, and he attempted to skid the airplane sideways "with little effect." As the airplane went over another rise in the runway it floated off the ground. Subsequently, the airplane came to rest in the trees beyond the end of the runway.

The airplane sustained substantial damage to both wings.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

The pilot reported the weather at the accident site, about the time of the accident was, wind from 105ø gusting 10 to 15 knots. The pilot landed on runway 27.

An automated weather observation system about 13 nautical miles from the accident site reported, about the time of the accident, the wind was 070ø at 8 knots.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                               |                     |               |                       |  |
|-------------------------------|---------------------|---------------|-----------------------|--|
| Accident Rpt# GAA17CA506      | 08/09/2017 1145 PDT | Regis# N6048H | Camas, WA             | Apt: Grove Field 1W1                   |
| Acft Mk/Mdl PIPER J3C-65      |                     | Acft SN 19194 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR A&C65-8 |                     | Acft TT 3991  | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: NEIL T. CAHOON      |                     | Opr dba:      |                       | Aircraft Fire: NONE                    |
|                               |                     |               |                       | AW Cert: STN                           |

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## Summary

The flight instructor, who was providing tailwheel instruction, reported that, after several dual landings, he exited the airplane to allow the pilot receiving instruction to conduct a solo flight. The flight instructor further reported that, during the pilot's third solo landing, he observed the pilot make a wheel landing. During the landing, the airplane exited the runway to the left and impacted a hangar.

The airplane sustained substantial damage to the fuselage.

The flight instructor reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot receiving instruction's failure to maintain directional control during landing.

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## Events

1. Landing - Loss of control on ground
2. Landing - Collision with terr/obj (non-CFIT)

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## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Directional control-Not attained/maintained - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - C
3. Environmental issues-Physical environment-Object/animal/substance-Airport structure-Contributed to outcome

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## Narrative

The flight instructor, who was giving tailwheel instruction reported that, after several dual landings, he exited the airplane to allow the pilot receiving instruction to conduct a solo flight. The flight instructor further reported that, during the pilot's third solo landing, he observed the pilot make a wheel landing. During the landing, the airplane exited the runway to the left and impacted a hangar.

The airplane sustained substantial damage to the fuselage.

The flight instructor reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                  |                     |               |                       |  |
|----------------------------------|---------------------|---------------|-----------------------|--|
| Accident Rpt# GAA17CA519         | 08/27/2017 1300 EDT | Regis# N30897 | Springfield, VT       | Apt: Hartness State (springfield) VSF  |
| Acft Mk/Mdl PIPER J5A-UNDESIGNAT |                     | Acft SN 5-279 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-235-C1     |                     | Acft TT 2805  | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: JONES, RALPH E.        |                     | Opr dba:      |                       | Aircraft Fire: NONE                    |
|                                  |                     |               |                       | AW Cert: STN                           |

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## Summary

The pilot of the tailwheel-equipped airplane reported that, during landing on grass surface next to a hard-surfaced runway, the airplane approached "too high and landed too fast." He added that he was "not sure" if he could stop the airplane in the remaining distance, so he "decided to go-around, but did not leave enough room to clear the trees" at the end of the landing area. Subsequently, the airplane impacted the trees and stopped.

The right wing, fuselage, and windscreen sustained substantial damage.

The pilot reported that there were no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

An automated weather observation station at the airport reported, about the time of the accident, wind from 320ø at 5 knots. The pilot reported that the wind was variable and that he landed parallel to runway 29.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's unstabilized approach, which resulted in landing long and fast, and his subsequent failure to maintain clearance from trees during a go-around.

## Events

1. Approach-VFR go-around - Loss of control in flight
2. Approach-VFR go-around - Collision with terr/obj (non-CFIT)

## Findings - Cause/Factor

1. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Descent/approach/glide path-Incorrect use/operation - C
3. Environmental issues-Physical environment-Object/animal/substance-Tree(s)-Effect on operation

## Narrative

The pilot of the tailwheel-equipped airplane reported that, during landing on grass surface next to a hard-surfaced runway, the airplane approached "too high and landed too fast." He added that he was "not sure" if he could stop the airplane in the remaining distance, so he "decided to go-around, but did not leave myself [himself] enough room to clear the trees" at the end of the landing area. Subsequently, the airplane impacted the trees and stopped.

The right wing, fuselage, and windscreen sustained substantial damage.

The pilot did not report that there were any preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

An automated weather observation station at the airport, about the time of the accident, reported wind from 320ø at 5 knots. The pilot reported that the wind was variable, and he landed parallel to runway 29.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                   |            |          |                |                       |  |
|-----------------------------------|------------|----------|----------------|-----------------------|--|
| Accident Rpt# GAA17CA544          | 09/13/2017 | 1730 AKD | Regis# N4741M  | Petersville, AK       | Apt: N/a                               |
| Acft Mk/Mdl PIPER PA 11-NO SERIES |            |          | Acft SN 11-254 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONT MOTOR O-200-A     |            |          | Acft TT 1377   | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: PHILIP N. LARSON        |            |          | Opr dba:       |                       | Aircraft Fire: NONE                    |
|                                   |            |          |                |                       | AW Cert: STN                           |

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## Summary

The pilot of the tailwheel-equipped airplane reported that, while performing a wheel landing on an unimproved gravel airstrip, a wind gust lifted the "weight off of [the] tires and initiated a skid." He added that, as the airplane settled back on the airstrip, the tail rose rapidly due to the brakes being applied, and the airplane nosed over.

The airplane sustained substantial damage to the left wing lift strut and empennage.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's overapplication of brakes, which resulted in a nose-over.

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## Events

1. Landing - Nose over/nose down

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## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Surface speed/braking-Capability exceeded - C
2. Personnel issues-Task performance-Use of equip/info-Use of equip/system-Pilot - C
3. Aircraft-Aircraft systems-Landing gear system-Brake-Incorrect use/operation - C
4. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation

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## Narrative

The pilot of the tailwheel-equipped airplane reported that, while performing a wheel landing on an unimproved gravel airstrip, a gust of wind lifted the "weight off of [the] tires and initiated a skid." He added that, as the airplane settled back on the airstrip the tail rose rapidly due to the brakes being applied, and the airplane nosed over.

The airplane sustained substantial damage to the left wing lift strut and empennage.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                   |                     |                 |                       |                                       |
|-----------------------------------|---------------------|-----------------|-----------------------|---------------------------------------|
| Accident Rpt# CEN18LA039          | 11/22/2017 1245 MST | Regis# N4040M   | Dickinson, ND         | Apt: N/a                              |
| Acft Mk/Mdl PIPER PA 12-NO SERIES |                     | Acft SN 12-2923 | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-235 SERIES  |                     |                 | Fatal 0 Ser Inj 1     | Flt Conducted Under: FAR 091          |
| Opr Name: GABRIEL R CHANDLER      |                     | Opr dba:        |                       | Aircraft Fire: NONE                   |
|                                   |                     |                 |                       | AW Cert: STN                          |

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## Events

1. Takeoff - Aerodynamic stall/spin

## Narrative

On November 22, 2017, about 1245 mountain standard time, a Piper PA-12 airplane, N4040M, was substantially damaged during an in-flight collision with a truck trailer near Dickinson, North Dakota. The pilot sustained serious injuries and the passenger sustained minor injuries. The airplane was registered to and operated by the pilot as a 14 Code of Federal Regulations Part 91 personal flight. Visual meteorological conditions prevailed. The flight was not operated on a flight plan. The flight was originating at the time of the accident. The intended destination was the Sloulin Field International Airport (ISN), Williston, North Dakota.

The accident occurred shortly after takeoff. The pilot noted that the airplane seemed to lose lift once out of ground effect and he was not able to maintain control. The airplane ultimately came to rest on the trailer of a truck located in the industrial yard from which the airplane was attempting to takeoff.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                             |                     |                 |                       |  |
|-----------------------------|---------------------|-----------------|-----------------------|--|
| Accident Rpt# GAA17CA416    | 07/18/2017 1820 EDT | Regis# N9807D   | Breckenridge, MI      | Apt: Ron's Private Strip PVT           |
| Acft Mk/Mdl PIPER PA 22     |                     | Acft SN 22-6694 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-320   |                     | Acft TT 2526    | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: RONALD L. SCHULTZ |                     | Opr dba:        |                       | Aircraft Fire: NONE                    |
|                             |                     |                 |                       | AW Cert: STN                           |

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## Events

2. Landing-flare/touchdown - Landing gear collapse

## Narrative

The pilot reported that he was practicing short-field, touch and go landings on the private grass airstrip. The final leg of the approach was over a cornfield and a road perpendicular to the approach end of the airstrip.

During final, the main landing gear struck corn stalks that were about 6-feet tall, the airplane landed short and struck the road. The right main landing gear collapsed, and the airplane slid across the road and onto the grass airstrip. The nose of the airplane dug into the grass and dirt, and the airplane nosed over.

The airplane sustained substantial damage to the right-wing strut and the rudder.

The pilot reported that, "This accident was pilot error" and that, "I believe that I fixated on the beginning of the grass and was oblivious to the height of the corn."

The pilot reported that there were no preaccident mechanical malfunctions or failures with the airplane that would have precluded normal operation.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                  |                     |                 |                       |  |
|----------------------------------|---------------------|-----------------|-----------------------|--|
| Accident Rpt# ERA17CA039         | 11/08/2016 1610 EST | Regis# N7682P   | Houlton, ME           | Apt: Houlton Intl HUL                  |
| Acft Mk/Mdl PIPER PA 24-250-250  |                     | Acft SN 24-2891 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-540 SERIES |                     | Acft TT 5617    | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: WESLEY TIDD            |                     | Opr dba:        |                       | Aircraft Fire: NONE                    |
|                                  |                     |                 |                       | AW Cert: STN                           |

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## Events

1. Approach-VFR pattern downwind - Fuel starvation

## Narrative

The private pilot had recently purchased the airplane; he and a flight instructor were conducting a local familiarization flight. After about one hour of flying with the left inboard fuel tank selected, he returned to the airport traffic pattern and performed two additional takeoffs. While on the left downwind leg of the traffic pattern, the engine experienced a total loss of power. The pilot checked that the fuel pump was on while the flight instructor attempted to determine why the engine lost power. The flight instructor then took control of the airplane and turned towards the runway. The airplane contacted the tops of some trees and landed on uneven terrain covered with tall grass and brush about 500 feet short of the runway, resulting in substantial damage to the firewall, fuselage, and wings. Before exiting the airplane, the pilot moved the fuel selector to the off position. A Federal Aviation Administration inspector examined the wreckage and found that the left inboard fuel tank was absent of fuel, while the right inboard fuel tank was full. The pilot reported no preimpact mechanical malfunctions or failures with the airplane that would have precluded normal operation. When asked how the accident could have been prevented, the pilot stated, "switched to the other fuel tank."

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|----------------------------------|---------------------|------------------|-----------------------|--|
| Accident Rpt# ERA17CA218         | 06/29/2017 1300 EDT | Regis# N6977W    | Honesdale, PA         | Apt: Cherry Ridge N30                  |
| Acft Mk/Mdl PIPER PA 28-140-140  |                     | Acft SN 28-21175 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-320 SERIES |                     | Acft TT 6457     | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: GREDEIN CRAIG A        |                     | Opr dba:         |                       | Aircraft Fire: NONE                    |
|                                  |                     |                  |                       | AW Cert: STN                           |

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## Events

1. Landing-flare/touchdown - Loss of control on ground
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## Narrative

The pilot reported that during the landing flare a gust of wind "picked up" the right wing and "spun" the airplane to the left. The airplane veered off the left side of the runway and came to rest in a ditch. The airplane sustained substantial damage to the forward portion of the fuselage. The pilot reported that there were no preaccident mechanical failures or malfunctions of the airplane that would have precluded normal operation. An automated weather observation system located about 13 nautical miles from the accident site reported that about the time of the accident, a right 70ø crosswind wind at 8 knots prevailed.



# National Transportation Safety Board - Aircraft Accident/Incident Database

|                                 |                    |                    |                       |  |
|---------------------------------|--------------------|--------------------|-----------------------|--|
| Accident Rpt# ANC17FA010        | 12/07/2016 935 AKS | Regis# N8648N      | Port Alsworth, AK     | Apt: Port Alsworth TPO                 |
| Acft Mk/Mdl PIPER PA 28-180-180 |                    | Acft SN 28-7105149 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-360-A4A   |                    | Acft TT 2153       | Fatal 4 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: KYLE LONGERBEAM       |                    | Opr dba:           |                       | Aircraft Fire: UNK                     |

## Events

1. Enroute - Unknown or undetermined

## Narrative

### HISTORY OF FLIGHT

On December 7, 2016, about 0935 Alaska standard time, a wheel-equipped Piper PA-28-180 airplane, N8648N, impacted the open waters of Lake Clark shortly after takeoff from the Port Alsworth Airport (PALJ), Port Alsworth, Alaska. The noninstrument-rated private pilot and three passengers are missing and presumed to have sustained fatal injuries. The airplane was not recovered and is presumed to have sustained substantial damage. The airplane was registered to a private individual in Port Alsworth, and the pilot had rented the airplane for the 14 Code of Federal Regulations Part 91 visual flight rules cross-country personal flight. Visual meteorological conditions prevailed at the airplane's point of departure, but instrument meteorological conditions were reported along the flight's anticipated route. The flight departed PALJ about 0930 with a destination of Merrill Field Airport (PAMR), Anchorage, Alaska. No flight plan was filed for the flight.

During a telephone conversation with a National Transportation Safety Board (NTSB) investigator on December 8, a friend of the pilot and passengers reported that the three passengers were part of a family traveling to Anchorage to meet up with other family members. They were originally scheduled to travel on a scheduled air carrier flight on the day of the accident, but canceled their reservations and elected to fly to Anchorage with the pilot instead. Another family member departed for Anchorage aboard the scheduled air carrier flight.

A pilot who was completing a flight from Anchorage to PALJ about the time of the accident reported speaking with the accident pilot a couple minutes after the accident airplane departed from PALJ. He told the accident pilot that the tops of the clouds were about 2,000 ft and that, from his perspective, it looked open at Miller Valley, which is located about 10 miles northeast of PALJ along the northern shore of Lake Clark. The accident pilot replied, "looking good under here, I'm gonna keep going." No further radio transmissions were received from the accident pilot.

When the airplane failed to arrive in Anchorage, family members and friends of the passengers reported the airplane overdue. An alert notice was issued by the Federal Aviation Administration (FAA) at 1501 on December 7, and an extensive search was launched. According to the airplane's owner, the airplane was equipped with a 406 MHz emergency transmitter locator, but no signal was received by search personnel.

On December 8, about 1530, searchers located personal items floating about 11 miles northeast of the airport in Lake Clark that were later positively identified as belonging to the occupants of the airplane. Also recovered were three airplane landing gear wheel assemblies, a co-pilot (right side) seat, and cargo from the airplane. The rest of the airplane was not located, and it is presumed to have sunk in Lake Clark.

The official search was suspended by the Lake Clark National Park and Preserve and the Alaska State Troopers on December 12, 2016. Family friends and volunteers continued to search for the missing airplane.

### PERSONNEL INFORMATION

The pilot, age 25, held a private pilot certificate with an airplane single-engine land rating. His most recent third class medical certificate was issued on February 1, 2013, and contained the limitation, "must wear corrective lenses."

A logbook belonging to the pilot was recovered from the waters of Lake Clark during the search for the airplane. The last entry, dated November 9, 2016, was for a flight in the accident airplane. The total flight time listed in the logbook was 257.2 hours.

### AIRCRAFT INFORMATION

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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The airplane was manufactured in 1971 and equipped with a Lycoming O-360 series engine. The airplane was not equipped or certified for flight into known icing conditions. No airframe or engine logbooks were located for the accident airplane.

## METEOROLOGICAL INFORMATION

The closest official weather station was at PALJ, located about 8 miles southwest of the accident site. PALJ used Aviation Paid Weather Observers (A-Paid) who are individuals trained by the National Weather Service and/or the FAA and stationed in locations where the NWS has determined that it is necessary to take weather observations to help provide NWS forecast responsibilities. A-Paid observers are certified by the NWS to take surface observations (that is, hourly reports of temperature, dew point, estimated cloud cover, estimated visibility, pressure, weather, and wind direction and speed) using equipment provided by the NWS. These observers are compensated for their work on a per-observation basis. Between December 5 and December 7, there were a total of four observations taken by the A-Paid observer at PALJ. The only observation from the day of the accident was timestamped 1459 and stated in part: wind from 140ø at 5 knots, 7 miles visibility, overcast ceiling at 500 ft above ground level (agl), temperature 3øF, dew point 0øF, and altimeter setting 30.18 inches of mercury.

Iliamna Airport (PAIL), Iliamna, Alaska, was the next closest official weather station, located 40 miles southwest of the accident site. PAIL had an Automated Surface Observing System (ASOS); the reports were supplemented by air traffic controllers.

At 0911, a METAR from PAIL reported in part: wind from 360ø at 13 knots with gusts to 23 knots, 10 miles visibility, overcast ceiling at 1,100 ft agl, temperature of -3øC, dew point temperature of 1øF, and an altimeter setting of 30.17 inches of mercury.

At 0953, a METAR from PAIL reported in part: wind from 360ø at 16 knots with gusts to 22 knots, 10 miles visibility, overcast ceiling at 1,200 ft agl, temperature of -3øF, dew point temperature of 1øF, and an altimeter setting of 30.16 inches of mercury.

The FAA had a weather camera at Lake Clark Pass located about 8 miles east-northeast of the accident site that took images facing the accident location. The reference image provided by the FAA for interpreting the weather camera's images is shown in Figure 1.

The image shown in Figure 2 was taken at 0941. Although slightly dark due to the sun not rising until 1007 (about 32 minutes after the accident occurred), the visibility can still be distinguished as limited.

The image shown in Figure 3 was taken at 0951 and more clearly shows the limited visibility.

The closest official upper air sounding to the accident site was from King Salmon, Alaska, (PAKN), located 124 miles southwest of the accident site at an elevation of 46 feet.

The 0300 PAKN sounding indicated a conditionally unstable layer between the surface and 750 feet with a stable layer from 750 feet through 3,250 feet. An inversion (increase in temperature with height) was located immediately above the surface to 2,488 feet and this inversion would have kept any clouds that formed below the inversion in place if the background wind environment was relatively light. With the relative humidity greater than 80% from the surface to 10,000 feet, the complete Rawinsonde Observation program (RAOB) indicated that clouds were likely from the surface through 10,000 feet. Moderate or greater icing conditions were indicated by RAOB in the cloud cover between 750 feet and 6,500 feet. A detailed meteorology study is located in the public docket for this accident.

## WRECKAGE AND IMPACT INFORMATION

The airplane is presumed to have sustained substantial damage during impact with the open waters of Lake Clark shortly after takeoff. Due to the depth of the lake, about 500 ft in some locations, there are no search and recovery efforts planned at the time of this report.

## MEDICAL AND PATHOLOGICAL INFORMATION

To date, the remains of the pilot have not been located; therefore, no pathological or toxicology information exists. At the time of his last medical examination, the pilot reported no medical concerns, and no significant issues were identified by the aviation medical examiner.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|----------------------------------|---------------------|-------------------|-----------------------|---------------------------------------|
| Accident Rpt# CEN18LA036         | 11/08/2017 1345 EST | Regis# N10GJ      | Carol, OH             | Apt: Fairfield County LHQ             |
| Acft Mk/Mdl PIPER PA 28-180-180  |                     | Acft SN 287205192 | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O&VO-360 SER |                     |                   | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091          |
| Opr Name: HALL BRUCE M           |                     | Opr dba:          |                       | Aircraft Fire: NONE                   |
|                                  |                     |                   |                       | AW Cert: STN                          |

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## Events

1. Approach-VFR pattern base - Loss of engine power (total)

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## Narrative

On November 8, 2017, about 1345 eastern standard time, a Piper PA-28-180 airplane, N10GJ, was damaged during a forced landing following a loss of engine power near Carroll, Ohio. The pilot was not injured. The airplane received substantial damage to its left wing. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which was not on a flight plan. The flight originated from the Fairfield County Airport(LHQ), Lancaster, Ohio, at an undetermined time.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# GAA18CA053 11/16/2017 1510 EST Regis# N5381F Melborne, FL Apt: Melbourne Intl MLB  
Acft Mk/Mdl PIPER PA 28R-200 Acft SN 28R-7635462 Acft Dmg: SUBSTANTIAL Rpt Status: Prelim Prob Caus: Pending  
Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091  
Opr Name: STEPHEN J. WINTER Opr dba: Aircraft Fire: NONE

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# National Transportation Safety Board - Aircraft Accident/Incident Database

|                                  |                     |                |                     |                                       |
|----------------------------------|---------------------|----------------|---------------------|---------------------------------------|
| Accident Rpt# ERA18FA022         | 11/12/2017 1410 CST | Regis# N3371W  | Fountain Run, KY    | Apt: N/a                              |
| Acft Mk/Mdl PIPER PA 32-260-260  |                     | Acft SN 32-217 | Acft Dmg: DESTROYED | Rpt Status: Prelim Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-540 SERIES |                     | Acft TT 2777   | Fatal 4 Ser Inj 0   | Flt Conducted Under: FAR 091          |
| Opr Name: FOSTER SCOTT THOMAS    |                     | Opr dba:       |                     | Aircraft Fire: NONE                   |
|                                  |                     |                |                     | AW Cert: STN                          |

## Events

2. Enroute-cruise - Loss of control in flight

## Narrative

On November 12, 2017, at 1410 central standard time, a Piper PA-32-260, N3371W, was destroyed during an in-flight break-up and collision with trees and terrain following a loss of control while maneuvering near Fountain Run, Kentucky. The private pilot/owner and three passengers were fatally injured. Instrument meteorological conditions (IMC) prevailed, and no flight plan was filed for the personal flight that departed Everett-Stewart Regional Airport (UCY), Union City, Tennessee, at 1303, and was destined for Lake Cumberland Regional Airport (SME), Somerset, Kentucky. The flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

The pilot and his passengers were returning from a hunting trip. Preliminary radar and voice information from the Federal Aviation Administration (FAA) revealed the airplane contacted the Memphis Air Route Traffic Control Center (ARTCC) and was receiving flight following services. The airplane was in cruise flight travelling eastbound about 5,500 feet for about 30 minutes before the radar track depicted a slight turn to a northeasterly heading. At 1356, the radar track indicated a climb to between 7,000 and 7,500 feet and a series of left and right turns while maintaining a generally northeast track. Shortly thereafter, the radar track depicted an erratic series of left, right, and 180-degree turns before a sharp right turn. From that point, the radar target descended from about 7,000 feet to 2,800 feet over a 30-second span, before radar contact was lost in the area of the accident site.

One witness near the accident site described seeing the airplane "in a nosedive" before he lost sight of it behind trees.

The pilot/owner held a private pilot certificate with ratings for airplane single-engine land. The pilot did not possess an instrument rating.

His most recent FAA third class medical certificate was issued on October 17, 2014. A review of the pilot's logbook revealed the pilot had logged 251 total hours of flight experience, of which 246 were in the accident airplane make and model.

According to FAA and maintenance records, the airplane was manufactured in 1965, and had accrued 2,776.97 total aircraft hours. The most recent annual inspection was completed October 10, 2017, at 2,771.94 total aircraft hours.

The 1415 weather observation at Glasgow Municipal Airport (GLW), 15 miles north of the accident site, included a broken ceiling at 500 ft, an overcast ceiling at 1,300 ft and 10 miles visibility. The wind was from 210 at 4 knots. The temperature was 11°C, the dew point was 11°C, and the altimeter setting was 30.25 inches of mercury.

A preliminary review of high-resolution weather data by an NTSB meteorologist suggested a solid cloud layer between 2,000 feet and 8,000 feet mean sea level (msl) in the area surrounding the accident site.

The ceiling at SME at the estimated time of arrival was 600 feet overcast.

The pilot did not file a flight plan nor obtain a weather briefing from Lockheed Flight Services or through the Direct User Access Terminal Service prior to departure.

The wreckage was examined at the accident site on November 13, 2017. There was an odor of fuel, and all major components of the airplane were accounted for at the scene except for the left aileron balance weight, left tip tank, the stabilator trim tab, and about 6 feet of the right wing and right aileron. Parts associated with the rudder and right wing were located about .75 miles prior to the main wreckage. The entire wreckage path was oriented about 240° magnetic, and the main wreckage path was approximately 100 ft in length.

The initial impact point was in treetops approximately 60 ft high, and the main wreckage came to rest wedged in between tree trunks. The cockpit, cabin area,

and empennage were destroyed by impact. Pieces of angularly-cut wood were entangled with the wreckage.

The engine was separated from the airframe and marked the end of the debris path. The propeller was separated from the engine, and came to rest 25 feet prior to the engine. The propeller blades displayed similar "S" bending, trailing-edge gouges, and chordwise scratching.

The airplane was fragmented and scattered along the length of the wreckage path. Control continuity to the wings, rudder, and elevator was confirmed through the control cables and bellcranks to the cockpit area. Separations in the control cabling displayed signatures consistent with cuts by recovery personnel or overload separation.

The engine crankshaft was rotated by hand through the vacuum pump drive pad. Continuity was confirmed through the accessory section to the valve train and crankshaft. Compression was confirmed on all cylinders using the thumb method. The magnetos were intact in their mounts. Once removed, they produced spark at all terminal leads when tested.

The vacuum pump rotated smoothly, and the when disassembled, the rotor and vanes were intact.

The carburetor and fuel pump were destroyed by impact.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                |            |          |                 |                       |  |
|--------------------------------|------------|----------|-----------------|-----------------------|--|
| Accident Rpt# GAA17CA501       | 08/17/2017 | 1200 AKD | Regis# N7678D   | Tyonek, AK            | Apt: N/a                               |
| Acft Mk/Mdl PIPER PA18-A150    |            |          | Acft SN 18-5900 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-320-B2B  |            |          | Acft TT 6761    | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: ELDRIDGE, WILLIAM D. |            |          | Opr dba:        |                       | Aircraft Fire: NONE                    |
|                                |            |          |                 |                       | AW Cert: SPR                           |

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## Summary

The pilot of the tailwheel-equipped airplane reported that, during an off-airport landing on wet, marsh vegetation, he used "excessive braking," and the airplane nosed over.

The airplane sustained substantial damage to the left wing lift struts and rudder.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's use of excessive braking during the landing roll, which resulted in a nose-over.

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## Events

1. Landing - Loss of control on ground
2. Landing - Nose over/nose down

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## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Surface speed/braking-Capability exceeded - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
3. Environmental issues-Physical environment-Terrain-Wet/muddy terrain-Effect on operation

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## Narrative

The pilot of the tailwheel-equipped airplane reported that during an off airport landing on wet, marsh vegetation, he used "excessive braking" and the airplane nosed over.

The airplane sustained substantial damage to the left wing lift struts and rudder.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.



# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                      |                     |               |                       |  |
|--------------------------------------|---------------------|---------------|-----------------------|--|
| Accident Rpt# GAA17CA509             | 08/24/2017 1335 PDT | Regis# N7198J | Bremerton, WA         | Apt: Bremerton National PWT            |
| Acft Mk/Mdl ROBINSON HELICOPTER R22  |                     | Acft SN 3232  | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-360-J2A        |                     | Acft TT 7188  | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: HELICOPTERS NORTHWEST, INC |                     | Opr dba:      |                       | Aircraft Fire: NONE                    |
|                                      |                     |               |                       | AW Cert: STN                           |

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## Summary

The flight instructor reported that, after the student pilot performed several practice approaches, they landed the helicopter, and the flight instructor exited. The instructor reported that, after the start, the student pilot attempted to take off; the left skid lifted off the ground, but the right skid did not. Subsequently, the helicopter rolled to the right and came to rest on its right side.

The helicopter sustained substantial damage to the main rotor system.

The flight instructor reported that there were no preaccident mechanical failures or malfunctions with the helicopter that would have precluded normal operation.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The student pilot's improper bank control during takeoff, which resulted in a dynamic rollover.

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## Events

1. Takeoff - Dynamic rollover
2. Takeoff - Collision with terr/obj (non-CFIT)

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## Findings - Cause/Factor

1. Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Lateral/bank control-Not attained/maintained - C

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## Narrative

The flight instructor reported that, after the student pilot performed several practice approaches, they landed the helicopter and the flight instructor exited. The instructor reported that after the start, the student pilot attempted to takeoff; the left skid lifted off the ground, but the right skid did not. Subsequently, the helicopter rolled to the right and came to rest on its right side.

The helicopter sustained substantial damage to the main rotor system.

The flight instructor reported that there were no preaccident mechanical failures or malfunctions with the helicopter that would have precluded normal operation.

# National Transportation Safety Board - Aircraft Accident/Incident Database

|   |                     |               |                       |                              |                    |
|---|---------------------|---------------|-----------------------|------------------------------|--------------------|
| Accident Rpt# CEN18FA035                    | 11/20/2017 1505 CST | Regis# N4179M | Electra, TX           |                              |                    |
| Acft Mk/Mdl ROBINSON HELICOPTER R22 BETA    |                     | Acft SN 4413  | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim           | Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-360-J2A               |                     |               | Fatal 1 Ser Inj 0     | Flt Conducted Under: FAR 091 |                    |
| Opr Name: CARMICHAEL HELICOPTER SERVICE LLC |                     | Opr dba:      |                       | Aircraft Fire: GRD           |                    |
|   |                     |               |                       | AW Cert: STN                 |                    |

## Events

1. Maneuvering-low-alt flying - Low altitude operation/event

## Narrative

On November 20, 2017, about 1505 central standard time, a Robinson Helicopter R22 Beta, N4179M, impacted power lines and terrain near Electra, Texas. The commercial pilot was fatally injured. The helicopter was destroyed during a subsequent ground fire. The helicopter was registered to the pilot and operated by Carmichael Helicopter Service LLC as a 14 Code of Federal Regulations Part 91 cattle herding flight. Day visual meteorological conditions prevailed in the area about the time of the accident, and the flight was not operated on a flight plan. The local flight originated at time unknown.

According to initial witness information, the helicopter was observed herding cattle and a horn could heard during the low-level operation. The helicopter was observed over the powerlines and it maneuvered until it descended in a nose low attitude. The helicopter impacted terrain and a ground fire occurred.

According to initial information from repair personnel, powerlines were found damaged above the helicopter wreckage. A powerline was found nicked and another line was found with strands that were separated. A nearby cross arms support was found damaged. The powerline height was about 29 ft 3 inches above ground level.

The 25-year-old pilot held a Federal Aviation Administration (FAA) commercial pilot certificate with a rotorcraft helicopter rating. He held an FAA second-class medical certificate issued on December 15, 2016, with no limitations. At the time of that medical, he reported accumulating 2,100 hours total flight time and 400 hours of flight time in the six months before that exam.

N4179M, serial number 4413, was a Robinson Helicopter R22 Beta, two-place, single main rotor, single-engine helicopter, with a spring and yield skid type landing gear. The primary structure of its fuselage was welded steel tubing and riveted aluminum sheet. The tailcone was a monocoque structure consisting of an aluminum skin. Fiberglass and thermoplastics were used in the secondary structure of the cabin, engine-cooling system, and in other ducts and fairings. The doors were constructed of fiberglass and thermoplastics. A 145-horsepower Lycoming O-360-J2A engine, serial number L-40955-36E, powered the helicopter.

At 1452, the recorded weather at the Sheppard Air Force Base/Wichita Falls Municipal Airport, near Wichita Falls (SPS), Texas, was: Wind 190° at 15 kts; visibility 10 statute miles; sky condition few clouds at 25,000 ft; temperature 19° C; dew point -3° C; altimeter 29.91 inches of mercury. Peak wind at 1400 was 190° at 28 kts.

The main wreckage came to rest with a 110° heading on its right side about 21 nautical miles and 276° from SPS. The fuselage forward of the firewall was discolored, deformed, and charred consistent with a ground fire. Both skids were found separated from the fuselage and one skid tip had semicircular witness marks consistent with arcing. The main rotor blades remained attached to its mast. The helicopter's beacon light separated from the tailboom and the tailboom had sliding witness marks consistent with powerline contact. The aft portion of the tailboom separated and its tail rotor driveshaft was torn. The twisting separation of the driveshaft was consistent with overload. The aft section of the tail boom was found about 15° and 27 ft from the main wreckage. One tail rotor blade separated and its two liberated sections were found. The tail rotor blade tip was found about 340° and 120 ft from the main wreckage and the other section of the tail rotor blade was found about 80° and 85 ft from the main wreckage. The liberated blade sections separations mated and these sections exhibited semicircular deformation consistent with the shape and size of the powerline. The engine was discolored and deformed consistent with a ground fire. Flight and engine controls could not be traced due to the fire damage. However, all observed discontinuities were consistent with overload or melting separations.

The Wichita County Coroner was asked to perform an autopsy on the pilot and to take samples for toxicological testing.

# National Transportation Safety Board - Aircraft Accident/Incident Database

|  |                     |                       |                              |                    |
|--|---------------------|-----------------------|------------------------------|--------------------|
| Accident Rpt# WPR17FA047                 | 01/04/2017 1736 PST | Regis# N702JJ         | San Pedro, CA                | Apt: N/a           |
| Acft Mk/Mdl ROBINSON HELICOPTER R22 BETA | Acft SN 3791        | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual          | Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-360-J2A            | Acft TT 5000        | Fatal 2 Ser Inj 0     | Flt Conducted Under: FAR 091 |                    |
| Opr Name: JJ HELICOPTERS INC             | Opr dba:            | Aircraft Fire: NONE   |                              |                    |

## Events

1. Maneuvering-low-alt flying - Fuel related

## Narrative

### HISTORY OF FLIGHT

On January 4, 2017, about 1736 Pacific standard time, a Robinson Helicopter Company (RHC) R22, N702JJ, collided with the water near San Pedro, California. The commercial pilot and the passenger sustained fatal injuries; the helicopter sustained substantial damage. JJ Helicopters was operating the helicopter under the provisions of 14 Code of Federal Regulations Part 91. The local photography flight departed Torrance Municipal Airport, Torrance, California, about 1635. Night visual meteorological conditions prevailed at the time of the accident, and no flight plan had been filed.

The operator reported that the purpose of the flight was to take aerial photos of several cruise ships in a nearby harbor.

Recorded radar data showed that the helicopter departed from Torrance Municipal Airport and proceeded toward the Los Angeles harbor area. The helicopter made numerous circles, and the last portion of the track showed the helicopter on a southeasterly course crossing perpendicular to a jetty that terminated at a lighthouse marking the west side of the harbor mouth. When the helicopter was southwest of the lighthouse, it made a sweeping left 270° turn that went past the lighthouse and then began a slightly curved course parallel to the ocean side of the jetty. The last few targets indicate a sharp turn to the right and terminated on the inland side of the jetty. The data points for the last 11 minutes recorded mode C altitudes that varied between 100 ft and 700 ft.

Numerous witnesses on a cruise ship that was exiting the harbor mouth at the time of the accident reported that the helicopter started spinning as it descended straight down into the water. One witness commented that it was "just dark enough to make it difficult to see the helicopter, all you could see clearly were the [spinning] lights."

Several local agencies initiated a search, and the wreckage was located about 1015 on January 5, 2017. The wreckage was on the inland side of the jetty, and southwest of the lighthouse at the end of the jetty.

### PERSONNEL INFORMATION

The pilot had 90 hours total time in rotorcraft, and 45 as pilot-in-command in the accident make/model. His initial training was in fixed wing airplanes, and all helicopter flight time had occurred during the current year.

### AIRCRAFT INFORMATION

Fueling records established that the helicopter was last fueled on January 3, 2017, with the addition of 11.9 gallons of 100-octane aviation fuel. The owner flew the helicopter just before the accident flight, and said that 15 gallons of fuel remained at the conclusion of that flight.

Investigators drained the fuel tanks. Clear fluid was in the bottom of the buckets with blue fluid on top, and investigators estimated that the 5 gallons of blue fluid looked and smelled like 100-octane aviation fuel.

The pilot and passenger recorded their weights before takeoff. Based on these weights, the operator determined that the helicopter was within both longitudinal and lateral weight and balance limitations at takeoff and at the time of the accident. RHC computations concurred with this determination. Using weights provided by the coroner, RHC determined that the helicopter was slightly out of longitudinal limits at takeoff and at the time of the accident.

### METEOROLOGICAL CONDITIONS

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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FAA Special Airworthiness Information Bulletin CE-09-35 contains a graph that illustrates the probability of carburetor icing for various temperature and relative humidity conditions. The conditions encountered in this accident (ambient temperature 55ø F / dew point 52ø F, 88% relative humidity), were in the area of serious icing at cruise power.

The passenger's camera was examined by the National Transportation Safety Board's Recorders Division. Most of the photographs were of Los Angeles harbor and several cruise ships in the area. The last photograph was an aerial shot of a cruise ship leaving the harbor area and depicted dark light conditions. The helicopter's location was outside of the breakwater and lighthouse at the entrance to the harbor.

## WRECKAGE AND IMPACT INFORMATION

The local agencies that recovered the helicopter reported that the helicopter came to rest upright in about 18 ft of water. The first responder dive team noted that the pilot was in the right seat, and the passenger was in the left seat; both victims still had their seat belts fastened. The pilot was wearing a helmet and an inflated life vest. All major components of the helicopter were recovered except the outboard 3/4 of one main rotor blade. The fracture surface at the separation point was jagged and angular. Multiple searches did not locate the missing portion of the main rotor blade.

The throttle, mixture, and carburetor heat controls were connected at both ends; the airframe structure was collapsed around the controls, and they would not move. The throttle arm at the carburetor was about 3/4 open. The mixture was in the full rich position. The carburetor heat control knob in the cockpit was in the full down or "OFF" position and unlocked. The slider on the carburetor heat airbox was in a midrange position; the airbox was deformed, and the slider cable was displaced.

There were no holes in the crankcase or cylinders that indicated a catastrophic failure of the engine. The tail pipe coloration was light gray with no oil residue. There were no rotational signatures between the cooling fan and scroll or the upper sheave and the airframe.

Investigators left the engine in place, and removed the valve covers. They manually rotated the crankshaft by turning the fan wheel. The crankshaft rotated freely, and the valves moved about the same amount of lift in firing order. The gears in the accessory case turned freely. Investigators obtained thumb compression on all cylinders in firing order.

A borescope inspection revealed no mechanical deformation on the valves, cylinder walls, or internal cylinder head.

Both main rotor blades were bent down at the hub, and then bent upward about 2 ft out from the hub. One blade separated at that point along a jagged angle. The other main rotor blade coned upward at that point; it retained its full length but had a tear at midspan from the trailing edge to the back of the spar.

## MEDICAL AND PATHOLOGICAL INFORMATION

The Los Angeles County Coroner, Los Angeles, California, completed an autopsy on the pilot and determined that the cause of death was drowning.

Toxicology testing of specimens from the pilot by the FAA's Bioaeronautical Science's Research Laboratory, Oklahoma City, Oklahoma, were negative for carbon monoxide, ethanol and tested drugs.

## ADDITIONAL INFORMATION

RHC Safety Notice (SN) SN-10 stresses the importance of instantly adding throttle and lowering the collective to maintain main rotor rpm in an emergency. It states that failure to do so can result in low rotor rpm stall, and the helicopter can fall at an extreme rate. It notes that failure to maintain main rotor rpm is a leading cause of fatal accidents in light helicopters.

SN-18 states that flying a helicopter in obscured visibility or even on a dark night can be fatal.

SN-19 notes that flying over water is very hazardous. It recommends that a pilot maintain 500 ft above ground level (agl) whenever possible, and avoid

maneuvers over water below 200 ft agl.

SN-24 emphasizes that rotor stall due to low rpm causes a very high percentage of helicopter accidents, both fatal and non-fatal. It states that when rotor stall occurs above 40 to 50 ft, it will most likely be fatal.

SN-25 discusses carburetor ice. It stated that carburetor ice could cause engine stoppage, and was most likely to occur when there was high humidity or visible moisture, and the air temperature was below 70° F. It stated that even in generally dry air, local conditions such as a nearby body of water could be conducive to carburetor ice. It stated that during descent or autorotation, the pilot should ignore the carburetor air temperature gauge, and apply full carburetor heat. RHC published a revision to SN-25 in July 2012 stating that carburetor heat may be required on takeoff, and the carburetor heat control knob should be left unlatched unless it was obvious that conditions were not conducive to carburetor ice. It also noted that carburetor ice could form at outside air temperatures as high as 30° C (86° F).

SN-29 states that there have been a number of fatal accidents involving experienced pilots with many hours in airplanes, but limited experience flying helicopters. The ingrained reactions to an emergency could have fatal results. All of the pilot's helicopter time was attained in the current year and was just over 10% of his total time.

SN-31 notes that the governor can mask carburetor ice. With the throttle governor on, carburetor ice will not become apparent as a loss of either rpm or manifold pressure. The governor will automatically adjust throttle to maintain a constant rpm, which will also result in a constant manifold pressure. It states that when in doubt, the pilot should apply carburetor heat as required to keep the carburetor air temperature out of the yellow arc during hover, climb, or cruise, and apply full carburetor heat when the manifold pressure is below 18 inches.

Safety Notice 34 emphasizes that aerial survey and photography flights are high risk.

The R22 Pilot's Operating Handbook (POH) stated that a carburetor heat assist device was installed on the helicopter. The device correlated application of carburetor heat with changes in the collective setting. Lowering the collective mechanically added heat and raising collective reduced heat. The system included a latch at the control knob to lock the carburetor heat off when not required. The system contained a friction clutch that allowed the pilot to override the system. It instructed the pilot to readjust carburetor heat as necessary following any change in power. The POH included "set as required" for the carburetor heat line of the starting engines and run-up checklist, and "adjust carb heat as required" to the takeoff procedure in the normal procedures section of the POH.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|  |                     |                       |                     |                               |
|--|---------------------|-----------------------|---------------------|-------------------------------|
| Accident Rpt# GAA17CA514                 | 08/29/2017 1330 PDT | Regis# N622MP         | Sacramento, CA      | Apt: Sacramento Executive SAC |
| Acft Mk/Mdl ROBINSON HELICOPTER R22-BETA | Acft SN 4016        | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual | Prob Caus: Pending            |
| Eng Mk/Mdl LYCOMING O-360-J2A            | Acft TT 274         | Fatal 0               | Ser Inj 0           | Flt Conducted Under: FAR 091  |
| Opr Name: CAPITOL HELICOPTERS            | Opr dba:            | Aircraft Fire: NONE   |                     | AW Cert: STN                  |

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## Summary

The helicopter flight instructor reported that the student was practicing quick-stops on the taxiway. The student was hovering with a tailwind and began to accelerate when the helicopter started a "fast yaw to the right." He added that they stopped the acceleration, checked the engine gauges, and then accelerated again. As the helicopter was going through effective translational lift, it spun to the right. The flight instructor took the flight controls, noticed the rpm was high, and reduced the throttle. The helicopter impacted the ground backward and slid before coming to rest.

The helicopter sustained substantial damage to the vertical stabilizer.

The flight instructor reported that there were no preaccident mechanical failures or malfunctions with the helicopter that would have precluded normal operation.

A review of recorded data from the automated weather observation station located on the airport reported that, about 37 minutes before the accident, the wind was from 190° at 7 knots. The helicopter was taxiing to the north.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The student pilot's failure to maintain yaw control and the flight instructor's delayed remedial action.

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## Events

1. Taxi - Loss of control in flight
2. Taxi - Abrupt maneuver
3. Taxi - Attempted remediation/recovery
4. Taxi - Collision with terr/obj (non-CFIT)

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## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Yaw control-Not attained/maintained - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - C
3. Personnel issues-Action/decision-Action-Delayed action-Instructor/check pilot - C

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## Narrative

The helicopter flight instructor reported that the student was practicing quick-stops on the taxiway. The student was hovering with a tailwind and began to accelerate when the helicopter started a "fast yaw to the right". He added that they stopped the acceleration, checked the engine gauges, and then accelerated again. As the helicopter was going through effective translational lift (ETL), it spun to the right. The flight instructor took the flight controls, noticed the rpm was high, and reduced the throttle. The helicopter impacted the ground backwards and slid before coming to rest.

The helicopter sustained substantial damage to the vertical stabilizer.

The flight instructor reported that there were no preaccident mechanical failures or malfunctions with the helicopter that would have precluded normal operation.

A review of recorded data from the automated weather observation station located on the airport reported that, about 37 minutes before the accident, the wind was from 190° at 7 knots. The helicopter was taxiing to the north.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                 |                     |              |                       |  |
|---------------------------------|---------------------|--------------|-----------------------|--|
| Accident Rpt# GAA17CA491        | 08/14/2017 1315 CDT | Regis# N97UP | Westby, WI            | Apt: N/a                               |
| Acft Mk/Mdl ROBINSON HELICOPTER |                     | Acft SN 0237 | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl LYCOMING O-540-F1B5  |                     | Acft TT 5353 | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 137           |
| Opr Name: MF HELICOPTERS LLC.   |                     | Opr dba:     |                       | Aircraft Fire: NONE                    |
|                                 |                     |              |                       | AW Cert: SPR                           |

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## Summary

The helicopter pilot reported that, during an agricultural application flight, he performed a "high.[reconnaissance]" pass over the field and observed houses, tree lines, and power lines surrounding the field. He added that he descended for the first pass, about 70 mph and 100 to 150 ft above ground level, and as he approached the end of the field, he "suddenly became aware of two [additional] large power lines stretched out in front of [him] at eye level and closing fast." He further added that he "instinctively pulled up on the collective and back on the cyclic," and the fuselage cleared the wire, but suddenly there was a "violent lurch" when the tail rotor contacted the wire. Subsequently, the helicopter started to "spin out of control," the pilot braced for impact, and the helicopter impacted the terrain.

The fuselage, tailboom, and main rotor sustained substantial damage.

The pilot reported that there were no preaccident mechanical malfunctions or failures with the helicopter that would have precluded normal operation.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to see and avoid power lines while maneuvering at low altitude.

## Events

1. Maneuvering-low-alt flying - Low altitude operation/event
2. Maneuvering-low-alt flying - Loss of control in flight
3. Maneuvering-low-alt flying - Collision with terr/obj (non-CFIT)

## Findings - Cause/Factor

1. Personnel issues-Psychological-Attention/monitoring-Monitoring environment-Pilot - C
2. Environmental issues-Physical environment-Object/animal/substance-Tower/antenna (incl guy wires)-Awareness of condition - C

## Narrative

The helicopter pilot reported that, during an aerial application flight, he performed a "high recon [reconnaissance]" pass over the field and observed houses, tree lines, and power lines surrounding the field. He added that he descended for the first pass, about 70 mph and 100 to 150 ft. above ground, and as he approached the end of the field, he "suddenly became aware of two [additional] large power lines stretched out in front of [him] at eye level and closing fast." He further added that, he "instinctively pulled up on the collective and back on the cyclic" and the fuselage cleared the wire, but suddenly there was a "violent lurch" when the tail rotor contacted the wire. Subsequently, the helicopter started to "spin out of control," the pilot braced for impact, and the helicopter impacted the terrain.

The fuselage, tail boom, and main rotor sustained substantial damage.

The pilot reported that there were no preaccident mechanical malfunctions or failures with the helicopter that would have precluded normal operation.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|----------------------------|------------------|---------------|-----------------------|---------------------------------------|
| Accident Rpt# GAA17CA575   | 09/28/2017 0 CST | Regis# N9902C | Texarkana, AR         | Apt: Texarkana Rgnl-webb Field TXK    |
| Acft Mk/Mdl SILVAIRE 8-F   |                  | Acft SN S-5   | Acft Dmg: SUBSTANTIAL | Rpt Status: Prelim Prob Caus: Pending |
|                            |                  |               | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091          |
| Opr Name: THOMAS L. WILSON |                  | Opr dba:      |                       | Aircraft Fire: NONE                   |

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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|                                |                     |               |                       |  |
|--------------------------------|---------------------|---------------|-----------------------|--|
| Accident Rpt# GAA17CA523       | 09/07/2017 1800 CDT | Regis# N95356 | Redgranite, WI        | Apt: Buzzards Roost 1WI7               |
| Acft Mk/Mdl TAYLORCRAFT BC12-D |                     | Acft SN 9756  | Acft Dmg: SUBSTANTIAL | Rpt Status: Factual Prob Caus: Pending |
| Eng Mk/Mdl CONTINENTAL A-65-8  |                     |               | Fatal 0 Ser Inj 0     | Flt Conducted Under: FAR 091           |
| Opr Name: MERRICK, SHANE R.    |                     | Opr dba:      |                       | Aircraft Fire: NONE                    |
|                                |                     |               |                       | AW Cert: STN                           |

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## Summary

The pilot of the tailwheel-equipped airplane reported that, during the landing roll, as the tail settled onto the grass airstrip, the airplane veered to the left. He added that he applied right rudder and brake inputs, but the left wing exited the airstrip and struck farm equipment, which caused the airplane to rotate counter-clockwise before coming to rest.

The airplane sustained substantial damage to both wings and the right wing lift strut.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

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## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to maintain directional control during the landing roll.

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## Events

1. Landing-landing roll - Loss of control on ground
2. Landing-landing roll - Attempted remediation/recovery
3. Landing-landing roll - Collision with terr/obj (non-CFIT)
4. Landing-landing roll - Runway excursion

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## Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Directional control-Not attained/maintained - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
3. Environmental issues-Physical environment-Object/animal/substance-Ground vehicle-Contributed to outcome

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## Narrative

The pilot of the tailwheel-equipped airplane reported that, during the landing roll as the tail settled onto the grass airstrip, the airplane veered to the left. He added that he applied right rudder and brake inputs, but the left wing exited the airstrip and struck farm equipment, which caused the airplane to rotate counter-clockwise before coming to rest.

The airplane sustained substantial damage to the both wings and the right wing lift strut.

The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane that would have precluded normal operation.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# GAA18CA026 10/26/2017 1640 UTC Regis# N230MG

Bristol, TN

Apt: Tri-cities TRI

Acft Mk/Mdl JOHN A BREWER ELA AVIACION 10 ECLI Acft SN 1014

Acft Dmg: SUBSTANTIAL

Rpt Status: Prelim

Prob Caus: Pending

Fatal 0 Ser Inj 0

Flt Conducted Under: FAR 091

Opr Name: ANTHONY CROENLEIN

Opr dba:

Aircraft Fire: NONE

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