

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN17LA234 06/17/2017 1330 EDT Regis# N33778 Mount Vernon, OH Apt: Wynkoop Airport 6G4
Acft Mk/Mdl AERONCA 65 CA-NO SERIES Acft SN C13421 Acft Dmg: MINOR Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONT MOTOR A&C65 SERIES Fatal 1 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: HOOVER LARRY L Opr dba: Aircraft Fire: NONE

Summary

The private pilot prepared to hand-prop the airplane, which was not equipped with an electrical starter, by tying the tail down with a nylon rope. The pilot then hand-propped the engine, which started at a high power setting. The airplane moved forward, breaking the rope, and continued to taxi in circles. The pilot and another individual tried to stop the airplane; however, the propeller struck the pilot, resulting in fatal injuries. The airplane eventually came to stop farther down the runway. Although the pilot attempted to secure the airplane by tying down the tail, the throttle was set at a high engine power setting, allowing the airplane's movement.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's improper starting procedure before hand propping the engine, and his subsequent attempt to stop the moving airplane, which resulted in him being struck by the propeller.

Events

1. Prior to flight - AC/prop/rotor contact w person
2. Prior to flight - Miscellaneous/other

Findings - Cause/Factor

1. Aircraft-Aircraft power plant-Engine starting-(general)-Not specified - C
2. Personnel issues-Action/decision-Action-(general)-Pilot - C

Narrative

On June 17, 2017, about 1330 eastern daylight time, an Aeronca 65-CA airplane, N33778, experienced a propeller blade strike during an attempted hand prop of the engine at the Wynkoop Airport (6G4), Mount Vernon, Ohio. The pilot, and intended sole occupant, was fatally injured and the airplane sustained minor damage. The airplane was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the planned flight.

Information collected by the responding Federal Aviation Administration (FAA) inspector and an Ohio State Patrol officer, indicate the pilot attempted to start the engine by hand-propping the airplane.

According to a person located at 6G4, the pilot had flown in arrived at 6G4 earlier and was to depart. The person added that the pilot tied the tail of the airplane off with a nylon rope that he had brought with him. The airplane wheels were not chocked and the pilot was having difficulties starting the engine. The witness was in the hangar when he heard the airplane start at a high rpm, so he quickly stepped outside. The witness reported the airplane had broken the rope and was taxiing around in circles while the pilot attempted to stop the airplane. The witness joined the pilot in trying to stop the airplane; however, the propeller struck the pilot, knocking him down.

The airplane eventually came to stop further down the runway.

The vintage airplane was not equipped with an electrical system or an electric starter.

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Accident Rpt# ERA17LA247	07/16/2017 2010 EDT	Regis# N55US	Shirley, NY	Apt: Brookhaven Airport HWV
Acft Mk/Mdl AEROPRAKT A 20 VISTA CRUISER-N	Acft SN 047	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual	Prob Caus: Pending
Eng Mk/Mdl ROTAX 912 S	Acft TT 430	Fatal 0	Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: YURIY KOZIY	Opr dba:	Aircraft Fire: NONE		

Events

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

On July 16, 2017, about 2010 eastern daylight time, an experimental light sport Aeroprakt A-20 Vista Cruiser, N55US, was substantially damaged during a forced landing into trees, following a total loss of engine power on final approach to Brookhaven Airport (HWV), Shirley, New York. The private pilot was not injured. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and no flight plan was filed for the local flight.

The pilot reported that he was performing touch-and-go landings to runway 24 at HWV. About 700 feet above ground level, the airplane encountered a downdraft and the engine lost all power. The pilot was unable to restart the engine and realized that the airplane would not glide all the way to the runway. He elected to land in the tops of trees approximately .3 mile from the runway threshold. The airplane subsequently contacted the tree tops and descended left wing low to the ground.

Examination of the wreckage by a Federal Aviation Administration (FAA) inspector revealed substantial damage to the wings and fuselage. The airplane was equipped with a Rotax 912 S, 100-horsepower engine. Subsequent examination and successful test-runs of the engine by the pilot and FAA inspectors did not reveal any preimpact mechanical malfunctions. The engine operated continuously at multiple power settings, including full power.

The engine's choke control was located in the vicinity of the throttle lever. During one of the test-runs, the pilot and FAA inspectors noted that when the choke control was moved approximately halfway (1 inch), the engine lost all power. The pilot and inspectors believed that during the downdraft/turbulence encounter, the pilot's hand on the throttle accidentally bumped the choke control, which resulted in a total loss of engine power.

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Accident Rpt# GAA17CA421	07/02/2017 2030	Regis# N368HY	Dixie, ID	Apt: N/a
Acft Mk/Mdl AVIAT AIRCRAFT INC A 1-B		Acft SN 2363	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-360-A1P		Acft TT 1235	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: BABOCHKA LLC		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Summary

The pilot reported that, while on short final approach to a back-country airstrip and approaching into a setting sun glare, the airplane encountered a downdraft. He added that he increased power and pitched up slowly, but the "sun came lower" and blocked his vision to the runway. Subsequently, the airplane landed short of the runway in a ravine that was about 20 ft lower than the runway.

The fuselage, wings, and elevator sustained substantial damage.

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 maintain an appropriate glidepath to landing with sun glare and downdraft conditions, which resulted in the airplane landing in a ravine short of the runway.

Events

1. Approach-VFR pattern final - Other weather encounter
2. Approach-VFR pattern final - Loss of visual reference
3. Approach-VFR pattern final - Loss of control in flight
4. Approach-VFR pattern final - 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-Not attained/maintained - C
3. Environmental issues-Conditions/weather/phenomena-Light condition-Glare-Effect on personnel
4. Environmental issues-Conditions/weather/phenomena-Wind-Downdraft-Effect on operation

Narrative

The pilot reported that, while on short final approach to a back-country airstrip, approaching into a setting sun glare, he encountered a downdraft. He added that he increased power and pitched up slowly, but the "sun came lower" and blocked his vision to the runway. Subsequently, the airplane landed short of the runway in a ravine that was about 20 ft. lower than the runway.

The fuselage, wings, and elevator sustained substantial damage.

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

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Accident Rpt# WPR18LA023	11/02/2017 1735 PDT	Regis# N9628R	Las Vegas, NV	Apt: North Las Vegas VGT
Acft Mk/Mdl BEECH B95-UNDESIGNAT		Acft SN TD-304	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim Prob Caus: Pending
			Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: SIN CITY FLYING CLUB LLC		Opr dba:		Aircraft Fire: NONE

Events

1. Approach-IFR final approach - Loss of engine power (total)

Narrative

On November 02, 2017, about 1735 Pacific daylight time, a Beech B95, N9628R, sustained substantial damage during a forced landing after a reported loss of engine power near the North Las Vegas Airport (VGT) Las Vegas, Nevada. The flight instructor and commercial rated pilot sustained minor injuries. The airplane was registered to Sin City Flying Club LLC, and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as an instructional flight. Visual meteorological conditions prevailed, and no flight plan was filed for the local flight. The flight departed VGT about 1630.

According to the pilot, on final approach, the engine began to surge and lost power. Unable to make the airport, he decided to land on a nearby field located on a golf course. During the landing, the airplane's right wing struck an obstacle which resulted in substantial damage to the wing. The airplane came to rest in a pond, submerged in water.

The airplane was recovered to a secure storage facility for further examination.

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Accident Rpt# CEN17LA301	08/03/2017 1130	Regis# N44562	Colorado Spring, CO	Apt: City Of Colorado Springs Muni COS
Acft Mk/Mdl BEECH D17S		Acft SN 6923	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl PRATT & WHITNEY R985-AN-6		Acft TT 3264	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: CUTTER WILLIAM R		Opr dba:		Aircraft Fire: NONE

Summary

The airline transport pilot was landing in the tailwheel-equipped airplane in right quartering tailwind conditions. After touchdown, with the tailwheel on the runway, the airplane drifted to the right and the pilot applied left brake. The right landing gear collapsed, and the airplane ground looped and came to rest upright near the right edge of the runway. The pilot stated there were no mechanical malfunctions with the airplane, and that, "it got away from me, I guess."

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 with a quartering tailwind.

Events

1. Landing-landing roll - Dragged wing/rotor/float/other
2. Landing-landing roll - Landing gear collapse
3. Landing-landing roll - Loss of control on ground

Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Directional control-Not attained/maintained - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Crosswind correction-Not attained/maintained - C
3. Environmental issues-Conditions/weather/phenomena-Wind-Tailwind-Response/compensation - C
4. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C

Narrative

On August 3, 2017, about 1130 mountain daylight time, a Beech D17S airplane, N44562, ground looped during landing at City of Colorado Springs Municipal Airport (COS), Colorado Springs, Colorado. The pilot and one passenger were not injured and 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 at the time of the accident and no flight plan had been filed. The flight departed Gallup Municipal Airport (GUP), Gallup, New Mexico, about 0900.

The pilot stated during landing the right quartering tailwind was 10 to 13 mph. He made a normal landing with a lot of left rudder application to keep the airplane straight. After touchdown, with the tailwheel on the runway, the airplane drifted to the right and he applied left brake. The right landing gear collapsed and the airplane continued to the right edge of the runway where it came to rest upright. The pilot stated there were no mechanical malfunctions with the airplane and that "it got away from me, I guess."

The responding Federal Aviation Administration (FAA) inspector reported that the airplane landed on runway 35L and ground looped during the landing roll. The right main landing gear collapsed (figure 1), the lower right wing struck the ground. A postaccident examination revealed no anomalies with the landing gear.

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Accident Rpt# CEN17FA005 10/04/2016 1826 CDT Regis# N76S Hitchcock, TX Apt: N/a
Acft Mk/Mdl BEECH D95A Acft SN TD-605 Acft Dmg: DESTROYED Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-360-B1B Fatal 1 Ser Inj 1 Flt Conducted Under: FAR 091
Opr Name: DAVID SANDERS Opr dba: Aircraft Fire: NONE
AW Cert: STN

Summary

A flight instructor and private pilot receiving instruction departed on the accident flight to practice aerodynamic stalls in the multiengine airplane. After the accident, the pilot recalled that the instructor initiated an aerodynamic stall maneuver about 4,000 ft mean sea level, then recalled the instructor "cursing" the airplane when it would not recover from the stall. The pilot could not recall any further details of the accident flight. A witness about one 1 mile south of the accident site saw the airplane descending in a fully- developed right spin. Data retrieved from an onboard GPS unit revealed that the airplane entered a climb from about 4,000 ft, reaching a peak altitude of about 4,800 ft. The airplane then immediately entered a descent that continued until the end of the recorded data. Post-accident examination of the airplane revealed no mechanical malfunctions or anomalies that would have precluded normal operation.

Review of the flight instructor's logbooks indicated that he had accumulated over 9,800 total hours of flight experience, with over 4,600 hours in multiengine airplanes; however, he had only accumulated 16 hours in the 11 years before the accident. He had logged about 11 hours in the accident airplane, of which about 6 hours were as a flight instructor, all within the previous two months. His logbooks did not indicate that he had previously practiced aerodynamic stalls in the accident airplane; therefore, he was likely unfamiliar with the airplane's stall characteristics.

Following a series of fatal accidents in Beech Baron/Travel Air airplanes between 1978 and 1980, the National Transportation Safety Board issued safety recommendations to the Federal Aviation Administration, stating that these airplanes have a propensity for entering flat spins under high asymmetric power and low speed conditions; such conditions are frequently encountered during multiengine emergency (engine-out) training. It is likely that, while demonstrating aerodynamic stalls, the airplane entered a spin from which the flight instructor was unable to recover.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The flight instructor's loss of control during an aerodynamic stall demonstration, which resulted in an inadvertent spin from which he was unable to recover. Contributing to the accident was the flight instructor's lack of familiarity with the airplane's stall characteristics.

Events

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

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-(general)-Not attained/maintained - C
3. Personnel issues-Experience/knowledge-Experience/qualifications-Total experience w/ equipment-Instructor/check pilot - F

Narrative

HISTORY OF FLIGHT

On October 4, 2016, at 1826 central daylight time, a Beech D95A airplane, N76S, was destroyed after impacting trees and terrain near Hitchcock, Texas. The flight instructor was fatally injured and the pilot receiving instruction was seriously injured. The instructional flight was operated by Bay Area Flying Club, Pearland, Texas, under the provisions of Title 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and no flight plan was filed for the local flight, which originated from Pearland Regional Airport (KLVJ), Pearland, Texas.

According to the pilot's brother who spoke with the pilot in the hospital following the accident, the purpose of the flight was for the flight instructor to demonstrate aerodynamic stalls. The pilot said that a stall was initiated from about 4,000 ft mean sea level (msl). The pilot then vaguely remembered the instructor "cursing" the airplane because the flight instructor was unable to recover from the stall maneuver. The pilot was unable to recall any further details of the accident.

A duck hunter, located about 1 mile south of the accident site, took a cell phone video that captured the airplane descending in a fully-developed right spin.

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According to data retrieved from an onboard GPS unit, the airplane entered a climb from about 4,000 ft at 1825:23, reaching a peak altitude of about 4,800 ft about 1825:50. The airplane then entered a descent that continued until the end of the recorded data at 1826:44.

PERSONNEL INFORMATION

Flight Instructor

The flight instructor held an airline transport pilot certificate with an airplane multiengine land rating, and commercial privileges with airplane single-engine land, and glider ratings. He also held a flight instructor certificate with airplane single-engine, multiengine, glider, and instrument ratings. His most recent second-class Federal Aviation Administration (FAA) medical certificate, dated September 2, 2015, contained the restriction, "Must wear corrective lenses."

According to the flight instructor's logbooks, he had accumulated 9,898 total hours of flight experience, of which 4,635 hours were in multiengine airplanes, 16 of the multiengine airplane hours were logged in the previous 11 years. He had logged 11.6 total hours in the accident airplane make and model, all within the previous two months, of which 6.7 hours were as a flight instructor. His logbooks indicated that he had never practice stalls in the accident airplane make and model.

Pilot Receiving Instruction

The pilot receiving instruction held a private pilot certificate with an airplane single-engine land rating. His third-class FAA medical certificate, dated September 2, 2014, contained no restrictions or limitations.

According to the pilot's logbook, he had acquired 113.7 total flight hours, of which 110.3 hours were in single-engine airplanes. The remaining 3.4 hours were in the accident airplane make and model.

AIRCRAFT INFORMATION

The accident airplane, serial number TD-605, was manufactured by the Beech Aircraft Corporation in 1965. It was powered by two Lycoming IO-360-B1B engines, serial numbers RL-29744-51A (left) and RL-28158-51A (right), each rated at 180 horsepower, and driving Hartzell HC-92WK-2B two-blade, all-metal, constant-speed propellers.

The left engine and propeller were overhauled on February 28, 2014, due to a propeller strike. It had accumulated 2,672.1 total hours (1,042.7 hours since the previous major overhaul). According to the maintenance records, the airframe, both engines, and both propellers received a 100-hour/annual inspection on August 1, 2016. The tachometer read 2,696.1 hours, and the airframe has accumulated 4,085.2 hours at the time of the inspection. At the time of the 100-hour/annual inspection,

- the left engine had accrued 2,696.1 total hours (1,066.9 hours since major overhaul).
- the left propeller had accrued 4,085.2 total hours (24.0 hours since major overhaul)
- the right engine had accumulated 700.7 since being factory-remanufactured on July 25, 2003, and
- the right propeller had accrued 4,085.2 total hours, and 329.2 hours since major overhaul.

The last altimeter, transponder, encoder, and static system checks were made on August 12, 2014.

METEOROLOGICAL INFORMATION

At 1752, Scholes International Airport (KGLS), Galveston, Texas, Automated Surface Observation System, about 11 miles east of the accident site, reported wind from 110° at 11 knots, visibility, 10 miles, scattered clouds at 2,300 ft, temperature, 28° C., dew point, 24° C., and an altimeter setting of 29.79 inches of mercury. Data from the U. S. Naval Observatory showed that sunset occurred at 1902 and the end of evening nautical twilight occurred at 1925.

WRECKAGE AND IMPACT INFORMATION

The airplane impacted a tree-lined canal next to a fallow rice field in a slightly wings-level, nose-down attitude. The aircraft wreckage was recovered and transported to Air Salvage of Dallas, Lancaster, Texas, where examinations were conducted. No pre-existing discrepancies or anomalies were noted with the airframe or either engine, and nothing was found that would have precluded the engines from developing power. The bottoms of both propeller spinners were flattened.

MEDICAL AND PATHOLOGICAL INFORMATION

The Galveston County Medical Examiner, Texas City, Texas, conducted an autopsy on the flight instructor. The cause of the pilot's death was listed as blunt force injuries.

FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing. Testing was negative for carbon monoxide and ethanol. Metoprolol was detected in urine and subclavian blood. According to FAA's Forensic Toxicology Drug website, metoprolol is a "beta-adrenergic receptor antagonist, 'beta blocker,' used in the treatment of hypertension and certain arrhythmias."

ADDITIONAL INFORMATION

Following a series of fatal accidents in Beech Baron- and Travel Air-series airplanes, the National Transportation Safety Board issued Safety Recommendations A-81-49 through -53 on May 7, 1981, because of the propensity of these airplanes to enter flat spins under conditions of high asymmetric power and low speed. Training for a potential emergency, such as an engine-out condition, "may be more hazardous than the emergency itself." In 1974, the U.S. Army issued a report on the stall characteristics of the Beech T-42A, which is similar to the B55B and D95A airplanes.

Section 3, page 6, of the Beech D95A Owner's Manual states: "This is a normal category airplane. Maneuvers, including spins, are prohibited."

Section 4, page 9, states: "If a spin is entered inadvertently, cut the power on both engines. Apply full rudder opposite the direction of rotation and then move the elevator forward until rotation stops. When the controls are fully effective, bring the nose up smoothly to a level flight attitude. Don't pull out too abruptly."

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Accident Rpt# CEN18FA023	11/04/2017 1728 CDT	Regis# N777PH	Alva, OK	Apt: Alva Rgnl AVK
Acft Mk/Mdl BEECH V35B		Acft SN D-9544	Acft Dmg: DESTROYED	Rpt Status: Prelim Prob Caus: Pending
Eng Mk/Mdl CONTINENTAL MOTORS IO-520-BA10	Acft TT 1944	Fatal 2 Ser Inj 0	Flt Conducted Under: FAR 091	
Opr Name: CORTNEY L. WASHBURN	Opr dba:		Aircraft Fire: GRD	
			AW Cert: STU	

Events

1. Approach-VFR pattern final - Unknown or undetermined

Narrative

On November 4, 2017, at 1728 central daylight time, a Beech V35B airplane, N777PH, impacted terrain during approach to the Alva Regional Airport (AVK), Alva, Oklahoma. The airplane was destroyed and the flight instructor and pilot were fatally injured. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as an instructional flight. Day visual meteorological conditions prevailed for the local flight, which departed without a flight plan about 1710.

According to a state trooper who spoke with the pilot in the emergency room at Alva, the pilot and flight instructor flew to Cherokee Municipal Airport (4O5), Cherokee, Oklahoma for a practice approach and were returning to AVK. While on a visual approach to Runway 18, the pilot and flight instructor noticed the left engine cowling pop up. According to the pilot, the flight instructor assumed control of the airplane. The airplane continued its descent until striking trees and a power line, which were about 40 ft higher than the airport's elevation and 3,000 ft prior to the Runway 18 threshold. The airplane came to rest on its left side and a post-crash fire ensued.

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Accident Rpt# GAA17CA330	06/03/2017 1020 EDT	Regis# N218DL	Williamson, GA	Apt: Alexander Memorial GA2
Acft Mk/Mdl BOEING B75N1-N1		Acft SN 75-7389	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl JACOBS B755			Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: EVELYN, RICHARD G		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Summary

The pilot of the tailwheel-equipped airplane reported that he was performing a wheel landing on a turf runway. He recalled that he was too aggressive and too early moving the stick forward during the touchdown and landing roll. The airplane's tail lifted, the nose pitched down, and the propeller stuck the ground. The airplane nosed over and came to rest inverted. The airplane sustained substantial damage to the vertical stabilizer and the rudder.

Per the National Transportation Safety Board Pilot Aircraft Accident Report, the pilot reported that the accident could have been prevented "by not being so early moving the stick forward in a taildragger during a wheel landing."

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 aggressive and early forward stick application during the landing roll, which resulted in his failure to maintain pitch control and a subsequent nose-over.

Events

1. Landing-landing roll - Nose over/nose down
2. Landing-landing roll - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Pitch control-Not attained/maintained - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
3. Personnel issues-Task performance-Use of equip/info-Use of equip/system-Pilot - C
4. Personnel issues-Action/decision-Action-Incorrect action sequence-Pilot - C

Narrative

The pilot of the tailwheel equipped airplane reported that he was performing a wheel landing on a turf surface runway. He recalled that he was too aggressive and too early moving the stick forward during the touchdown and landing roll. The airplane's tail ascended, the nose pitched down and the propeller stuck the ground. The airplane nosed over and came to rest inverted. The airplane sustained substantial damage to the vertical stabilizer and the rudder.

Per the National Transportation Safety Board Pilot Aircraft Accident Report, the pilot reported that the accident could have been prevented, "by not being so early moving the stick forward in a taildragger during a wheel landing."

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

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Accident Rpt# WPR18LA020	10/30/2017 1150 PDT	Regis# N72399	Port Townsend, WA	Apt: Port Townsend Intl Airport 0S9
Acft Mk/Mdl CESSNA 140-G		Acft SN 9585	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: MORTON ROBINSON		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Events

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

Narrative

On October 30, 2017, about 1150 Pacific daylight time, N72399, a Cessna 140, was substantially damaged following a total loss of engine power and subsequent forced landing about 0.4 nautical miles east-southeast of the Port Townsend/Jefferson County International Airport (0S9), Port Townsend, Washington. The commercial pilot, the sole occupant, sustained minor injuries. The local flight was being operated in accordance with 14 Code of Federal Regulation Part 91, and a flight plan was not filed. The flight originated from 0S9 about 20 minutes prior to the accident.

In a telephone interview with the National Transportation Safety Board investigator-in-charge on the day following the accident, the pilot reported that he had purchased the airplane two days prior to the accident, October 28th. He then flew it briefly on both October 28th and October 29th, at which time he observed no issues with the airplane. The pilot stated that on the morning of the accident and during the preflight inspection of the airplane, the left fuel tank was full, 12 gallons, and the right fuel tank had 8 gallons remaining; the fuel selector was in the right tank position for takeoff. The pilot further stated that during the engine runup everything checked out normal, after which he departed on runway 09 to do some touch-and-go takeoffs and landings. Having completed three takeoffs and landings and during initial climb on the fourth takeoff, and at an altitude of about 200 feet above ground level, the engine lost power, then completely quit. The pilot stated that he immediately switched over from the right tank to the left tank position, however, at such a low altitude he did not have time to attempt a restart of the engine. During the forced landing, the pilot impacted a stand of trees before coming to rest on the ground and on its left side. The airplane sustained substantial damage to the left wing and fuselage.

The airplane was recovered to secured storage facility for further examination.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA445 07/27/2017 1330 PDT Regis# N5596C San Andreas, CA Apt: Calaveras Co-maury Rasmussen F CPU
Acft Mk/Mdl CESSNA 170-A Acft SN 19650 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-360-A1A Acft TT 4200 Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: PETER L. SWORD Opr dba: Aircraft Fire: NONE
AW Cert: STN

Summary

The pilot of the tailwheel-equipped airplane reported that he landed on the main wheels, and while waiting for the tailwheel to drop, the "tailwheel jammed." He added that, when the tailwheel touched down, the airplane was difficult to control and veered to the left. He corrected for the veer, but the airplane veered to the right. He then conducted a go-around; however, once airborne, the airplane "did not appear to be producing proper power." He then aborted the go-around and opted to land on the remaining runway. About 25 ft above the runway, he set the airplane up for a wheel landing and descended. When the airplane was about 5 to 10 ft above the runway, the airplane "abruptly" sank and landed hard, and the main landing gear collapsed. Subsequently, the airplane came to rest nose down on the runway.

The airplane sustained substantial damage to the fuselage.

During a telephone interview, the pilot reported that he believed the tailwheel had jammed before touchdown and that he had previously redesigned and altered the tailwheel. Further, the airplane produced insufficient power during the go-around. He reported that the tailwheel was mechanically "okay" when examined after the accident.

Additionally, an airframe and powerplants mechanic reported that he examined the tailwheel assembly after the accident and found no defects and no binding.

The pilot reported that the weather at the accident airport, about the time of the accident, was wind from 320° at 10 knots, gusting to 12 knots. The pilot landed on runway 31.

Photographs taken at the accident site showed torsional twisting of the propeller, consistent with the engine producing power at the time of impact. The National Transportation Safety Board did not examine the engine.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's improper landing flare during an aborted go-around in gusting wind conditions, which resulted in a hard landing.

Events

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

Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Landing flare-Not attained/maintained - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
3. Aircraft-Aircraft systems-Landing gear system-Nose/tail landing gear-Not specified
4. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation

Narrative

The pilot of the tailwheel-equipped airplane reported that, he landed on the main wheels, and while waiting for the tailwheel to drop, the "tailwheel jammed." He added, that when the tailwheel touched down, the airplane was difficult to control, and veered to the left. He corrected for the veer, but the airplane veered to the right. He then did a go-around, however, once airborne the airplane "did not appear to be producing proper power." He then aborted the go-around, and opted to land on the remaining runway. About 25 ft. above the runway, he set the airplane up for a wheel landing and descended. When the airplane was about 5-10 ft. above the runway, the airplane "abruptly" sank, landed hard and collapsed the main landing gear. Subsequently, the airplane came to rest nose down on the runway.

The airplane sustained substantial damage to the fuselage.

During a telephone interview, the pilot reported that he believed the tailwheel had jammed prior to touchdown, and that he had previously re-designed and altered the tailwheel. Further, the airplane produced insufficient power during the go-around. He reported that, the tailwheel was mechanically "okay" when inspected after the accident.

National Transportation Safety Board - Aircraft Accident/Incident Database

Additionally, an airframe and powerplant mechanic reported that he inspected the tailwheel assembly after the accident, and found no defects and no binding.

The pilot reported the weather at the accident airport, about the time of the accident to be, wind from 320ø at 10 knots, gusting to 12 knots. The pilot landed on runway 31.

Photographs taken at the accident site showed torsional twisting of the propeller, consistent with the engine producing power at the time of impact. The National Transportation Safety Board did not examine the engine.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA382	06/28/2017 1315	Regis# N2774D	Alamogordo, NM	Apt: Alamogordo-white Sands Rgnl ALM
Acft Mk/Mdl CESSNA 170-B		Acft SN 25316	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-360-AIA		Acft TT 6880	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: SASQUATCH AIR LLC.		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Summary

The flight instructor in the tailwheel-equipped airplane reported that the pilot flying was receiving instruction for a tailwheel endorsement. He added that, during the seventh landing of the day, the pilot extended the downwind to allow for traffic that landed ahead of them. He further added that, during the wheel landing touchdown, as the tail was settling to the ground, a wind gust "turned the airplane's tail," which resulted in a ground loop on the runway.

The left wing, engine mounts, and windscreen sustained substantial damage.

The flight instructor and pilot receiving instruction 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 accident airport recorded wind from 240° at 6 knots. The flight instructor reported that the landing was on runway 22.

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, which resulted in a ground loop.

Events

1. Landing-landing roll - Loss of control on ground
2. Landing-landing roll - Abnormal runway contact

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-Task performance-Use of equip/info-Aircraft control-Instructor/check pilot - C
4. Personnel issues-Action/decision-Action-Delayed action-Instructor/check pilot - C

Narrative

The flight instructor in the tailwheel-equipped airplane reported that the pilot flying was receiving instruction for a tailwheel endorsement. He added that, during the 7th landing of the day, the pilot extended the downwind to allow for traffic that landed ahead of them. He further added that, during the wheel landing touchdown, as the tail was settling to the ground, a wind gust "turned the airplane's tail," which resulted in a ground loop on the runway.

The left wing, engine mounts, and windscreen sustained substantial damage.

The flight instructor and pilot receiving instruction 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 accident airport, recorded wind from 240° at 6 knots. The flight instructor reported that the landing was on runway 22.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA318	06/04/2017 1024 MST	Regis# N50526	Payson, AZ	Apt: Payson PAN
Acft Mk/Mdl CESSNA 172-M		Acft SN 17264211	Acft Dmg: DESTROYED	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-320		Acft TT 5321	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: CLASSIC AIR AVIATION LLC		Opr dba:		Aircraft Fire: GRD
				AW Cert: STN

Summary

The pilot reported that, during an approach to runway 22, the airplane drifted to the right of the runway centerline. He initiated a go-around by turning off the carburetor heat, applying full throttle, decreasing the flaps from 30° to 20°, and pushing forward on the yoke to increase airspeed; the airplane then began to settle into ground effect. The pilot saw that the terrain began to rise, and he recalled that the noise abatement procedure called for a right turn to 270°, so he turned to the right before establishing a climb. The airplane descended into rising terrain, struck trees, and impacted the ground and became engulfed in flames. The postcrash fire destroyed the fuselage.

The METAR reported that the wind was variable at 4 knots and that the temperature was 84°F. The field elevation was 5,504 ft, and the altimeter setting was 30.14 inches of mercury. The density altitude was 8,255 ft.

Per the National Transportation Safety Board Pilot Aircraft Accident Report, the pilot reported that the accident could have been prevented by reviewing the airplane's performance data and atmospheric conditions, especially density altitude and its effect on performance per the manufacturer's Pilot's Operating Handbook. The pilot stated that he would place greater emphasis on performance planning as an essential activity during flight planning.

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 inadequate preflight planning that did not account for high-density altitude conditions and his subsequent attempted go-around in conditions that prevented the airplane from attaining a positive climb rate and resulted in its subsequent descent and impact with rising terrain.

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. Personnel issues-Action/decision-Info processing/decision-Identification/recognition-Pilot - C
3. Personnel issues-Task performance-Planning/preparation-Performance calculations-Pilot - C
4. Environmental issues-Conditions/weather/phenomena-Temp/humidity/pressure-High density altitude-Effect on operation - C
5. Aircraft-Aircraft oper/perf/capability-Aircraft capability-Climb capability-Not attained/maintained - C

Narrative

The pilot reported that during an approach to runway 22, the airplane drifted to the right of the runway centerline. He initiated a go-around by turning off the carburetor heat, he applied full throttle, he increased the flaps from 30° to 20°, and he pushed forward on the yoke to increase airspeed. He noticed that the airplane began to settle into ground effect. He saw that the terrain began to rise and he recalled that the noise abatement procedure called for a right turn to 270°, so the pilot turned to the right before establishing a climb. The airplane descended into rising terrain, struck trees and impacted the ground and became engulfed in flames. The post-crash fire destroyed the airplane's fuselage.

The METAR reported that the wind was variable at 4 kts. and the temperature was 84° Fahrenheit. The field elevation was 5,504 ft. and the altimeter setting was 30.14. The density altitude was 8,255 ft.

Per the National Transportation Safety Board Pilot Aircraft Accident Report, the pilot reported that the accident could have been prevented by reviewing the airplane's performance data and atmospheric conditions, especially density altitude and its effect on performance per the manufacturer pilot operating handbook. In the future, the pilot vowed to place greater emphasis on performance planning as an essential activity during flight planning.

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

Accident Rpt# GAA17CA394	07/02/2017	1530 LCL	Regis# N80328	Tamuning, GU	Apt: Guam Intl GUM
Acft Mk/Mdl CESSNA 172-M			Acft SN 17266522	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-320-E2D			Acft TT 13864	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: MICRONECIAN AVIATION SYSTEM			Opr dba:		Aircraft Fire: NONE
					AW Cert: STN

Events

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

Narrative

The pilot reported that, the airplane approached the runway with a "steep angle [and] high descent rate." He added that the airplane "touched the ground before flaring" and the airplane porpoised on the runway. Subsequently, the nose wheel tire popped and strut partially collapsed. The pilot reported that he stopped the airplane on the runway and radioed for assistance.

The firewall 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.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA540	09/15/2017 2000 EDT	Regis# N5396D	Lynchburg, VA	Apt: Falwell W24
Acft Mk/Mdl CESSNA 172-N		Acft SN 17272562	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-320 SERIES			Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: ETHAN COCKERHAM		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Events

3. Landing-flare/touchdown - Hard landing

Narrative

The pilot reported that, during landing the airplane approached with "extra speed" and ballooned in the landing flare. He added that, "instantly my training took over" and he applied power to go-around, but then also remembered you "cannot go around" when landing in this direction, at this airport, due to terrain and obstacles. He further added that, he then reduced power to idle and "stalled the airplane to the ground" and impacted the remaining runway hard. Subsequently, he taxied the airplane to the ramp without further incident.

The ailerons, wings, and firewall sustained substantial damage.

During a telephone conversation with the NTSB investigator-in-charge, the pilot reported that he had flown into this airport numerous times prior to the accident and knew that, "once you get to the powerlines you are committed to landing." The power lines were located about one 1/4 nautical miles from the runway threshold.

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

The Federal Aviation Administration Chart Supplement for the airport stated in part: "Land Rwy [runway] 28 (west) tkf [takeoff] Rwy [runway] 10 (east). The pilot reported that the landing was on runway 28.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA470	07/30/2017 1330 PDT	Regis# N497TC	Carlsbad, CA	Apt: Mc Clellan-palomar CRQ
Acft Mk/Mdl CESSNA 172-S		Acft SN 172S9870	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-360-L2A		Acft TT 5413	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: PINNACLE AVIATION ACADEMY, INC.		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Summary

The solo student pilot reported that, during landing, the airplane porpoised, and the propeller struck the runway. He added that he initiated a go-around, landed, and taxied back to the ramp without further incident.

The airplane sustained substantial damage to the fuselage and firewall.

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

The automated weather observation station located on the airport reported that, about 37 minutes before the accident, the wind was from 250ø at 8 knots, gusting 16 knots. The same weather observation station reported that, about 23 minutes after the accident, the wind was from 250ø at 10 knots. The airplane was landing on runway 24.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The student pilot's improper landing flare in gusting wind conditions.

Events

1. Landing - Abnormal runway contact

Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Landing flare-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-Gusts-Effect on operation

Narrative

The solo student pilot reported that, during landing, the airplane porpoised and the propeller struck the runway. He added that he initiated a go-around, landed, and taxied back to the ramp without further incident.

The airplane sustained substantial damage to the fuselage and firewall.

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 37 minutes before the accident the wind was from 250ø at 8 knots, gusting 16 knots. The same weather observation station reported that about 23 minutes after the accident the wind was from 250ø at 10 knots. The airplane was landing on runway 24.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA300	05/14/2017 1245 CDT	Regis# N53460	Clarksville, TN	Apt: Outlaw Field CKV
Acft Mk/Mdl CESSNA 172-S		Acft SN 172S9351	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-360-L2A			Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: L & W LEASING LLC		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Summary

The pilot reported that, during his approach, he turned to base too early. His approach glide angle was too high, and "I reduced power but also nosed the plane over in order to descend." The airplane's airspeed increased, and the airplane ballooned during the landing flare. The airplane touched down hard, porpoised on the runway, and a propeller strike occurred. He taxied to park and noticed that the firewall had sustained substantial damage.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's unstabilized approach and improper landing flare, which resulted in a hard, porpoised landing.

Events

1. Landing-flare/touchdown - Abnormal runway contact
2. Landing-flare/touchdown - Hard landing

Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Descent/approach/glide path-Not attained/maintained - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Landing flare-Not attained/maintained - C
3. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C

Narrative

The pilot reported that during his approach, he made his turn to base too early. His approach glide angle was too high and, "I reduced power but also nosed the plane over in order to descend." The airplane's airspeed increased and the airplane ballooned during the landing flare. The airplane touched down hard, it porpoised on the runway and a propeller strike occurred. He taxied to parking and noticed that substantial damage was sustained to the fire wall.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ERA17LA158	04/18/2017 1350 EDT	Regis# N8368B	Euharlee, GA	Apt: N/a
Acft Mk/Mdl CESSNA 172-UNDESIGNAT		Acft SN 36168	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-340-A1A			Fatal 0 Ser Inj 2	Flt Conducted Under: FAR 091
Opr Name: DANIEL DE JESUS CADENA		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Summary

On April 18, 2017, about 1350 eastern daylight time, a Cessna 172, N8368B, was substantially damaged when it impacted terrain in Euharlee, Georgia. The private pilot and passenger were seriously injured. The airplane was registered to PMG Project Management Group, and privately operated. Visual meteorological conditions prevailed, and no flight plan was filed for the flight, which was conducted under the provisions of Title 14 Code of Federal Regulations Part 91. The flight departed from Spartanburg Downtown Memorial Airport (SPA), Spartanburg, South Carolina, and was destined for Skyway Manor Airport (T79), Pearland, Texas.

The investigation of this event is being conducted under the jurisdiction of the Federal Bureau of Investigation (FBI). The NTSB provided requested technical assistance to the FBI, and any material generated by the NTSB is under the control of the FBI. The NTSB does not plan to issue a final report or open a public docket.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The NTSB did not determine the probable cause of this event and does not plan to issue a report or open a public docket. The investigation of this event is being conducted under the jurisdiction of the Federal Bureau of Investigation.

Events

1. Other - Security/criminal event

Findings - Cause/Factor

1. Not determined-Not determined-(general)-(general)-Other authority investigated - C

Narrative

On April 18, 2017, about 1350 eastern daylight time, a Cessna 172, N8368B, was substantially damaged when it impacted terrain in Euharlee, Georgia. The private pilot and passenger were seriously injured. The airplane was registered to PMG Project Management Group, and privately operated. Visual meteorological conditions prevailed, and no flight plan was filed for the flight, which was conducted under the provisions of Title 14 Code of Federal Regulations Part 91. The flight departed from Spartanburg Downtown Memorial Airport (SPA), Spartanburg, South Carolina, and was destined for Skyway Manor Airport (T79), Pearland, Texas.

The investigation of this event is being conducted under the jurisdiction of the Federal Bureau of Investigation (FBI). The NTSB provided requested technical assistance to the FBI, and any material generated by the NTSB is under the control of the FBI. The NTSB does not plan to issue a final report or open a public docket.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA248	04/28/2017 1300 PDT	Regis# N796SP	Jean, NV	Apt: Jean 0L7
Acft Mk/Mdl CESSNA 172S-S		Acft SN 172S8720	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-360		Acft TT 7148	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: SANTA MONICA FLYERS		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Summary

The pilot reported that he chose to make an emergency landing due to his passenger not being responsive. He added that, during the landing, he "shot over and ended up in the grass at the end of the runway."

The airplane sustained substantial damage to the empennage.

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 located about 16 miles northeast of the accident airport reported that, about the time of the accident, the wind was from 340ø at 20 knots, gusting to 32 knots. The pilot reported that the landing was on runway 20.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's runway selection, which resulted in landing with a tailwind and an unstabilized approach and subsequent runway overrun.

Events

1. Landing - Other weather encounter
2. Landing - 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-Descent/approach/glide path-Not attained/maintained - C
3. Environmental issues-Conditions/weather/phenomena-Wind-Tailwind-Decision related to condition

Narrative

The pilot reported that he elected to make an emergency landing due to his passenger not being responsive. He added that added that during the landing he "shot over and ended up in the grass at the end of the runway".

The airplane sustained substantial damage to the empennage.

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 located about 16 miles north east the accident airport reported that, about the time of the accident, the wind was from 340ø at 20 knots, wind gusts at 32 knots. The pilot reported that the landing was on runway 20.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA18CA039 11/10/2017 1105 CST Regis# N6547A Panama City, FL Apt: Northwest Florida Beaches Intl ECP
Acft Mk/Mdl CESSNA 180-UNDESIGNAT Acft SN 32444 Acft Dmg: SUBSTANTIAL Rpt Status: Prelim Prob Caus: Pending
Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: DYER, BRADLEY L. Opr dba: Aircraft Fire: NONE

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA525	09/04/2017 1000 CDT	Regis# N6849M	Lockwood, MO	Apt: Woodfield Airpark Inc MU27
Acft Mk/Mdl CESSNA 182-P		Acft SN 18263860	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONT MOTOR O-470-S		Acft TT 3895	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: DAVID A. KRAHN		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Events

1. Landing - Loss of control on ground
-

Narrative

The pilot reported that, the airplane touched down on the first 1/3 of the wet grass runway, at 80 mph with 10ø of flaps extended. He added, that about 2/3 of the way down the runway the airplane "hit a bump and became airborne again." As the airplane touched down for the second time, he felt as though he was running out of room and applied the brakes. Subsequently, the end of the runway was approaching fast and he attempted to turn the airplane, but continued to slide off the runway, "as the brakes were locked."

The airplane sustained substantial damage to the firewall.

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# ANC18FA003	10/16/2017	1430 AKD	Regis# N8347Z	Russian Mission, AK	Apt: N/a
Acft Mk/Mdl CESSNA 210			Acft SN 205-0347	Acft Dmg: DESTROYED	Rpt Status: Prelim Prob Caus: Pending
Eng Mk/Mdl TCM O-470				Fatal 1 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: STEVENS KYLE D			Opr dba:		Aircraft Fire: NONE
					AW Cert: STN

Events

1. Enroute - VFR encounter with IMC

Narrative

On October 16, 2017, about 1430 Alaska daylight time, a Cessna 210-5 airplane, N8347Z, impacted the waters of the Yukon River, about 10 miles southwest of Russian Mission, Alaska. The private pilot sustained fatal injuries, and the airplane was destroyed. The flight was being operated by the pilot as a 14 Code of Federal Regulations (CFR) Part 91 visual flight rules (VFR) flight. Visual meteorological conditions were reported at the time of departure. No flight plan had been filed and there is no record of the pilot receiving a preflight weather briefing. The flight originated about 1415 from the Kako Airport, Kako, Alaska, and it was destined for Bethel, Alaska.

According to a pilot that departed about 10 minutes ahead of the accident pilot on the same route of flight and also destined for Bethel, wide-spread areas of low level fog existed along the route. He stated in an interview that after both aircraft departed and were airborne, he conversed with the accident pilot and discussed the fog layers. He flew his route at 1,500ft above ground level (agl), above the fog and in good visibility but he was unsure of the altitude of the accident pilot. He estimated the fog existed between 400ft agl and 600ft agl. When he tried to contact the accident pilot about 15 minutes later, there was no response and no further radio communications were received.

After arriving in Bethel and loading passengers, the interviewed pilot departed for a return flight to Kako. Along the flight, he searched for the second airplane, but was unsuccessful in locating the airplane. After landing at Kako, he notified the FAA Flight Service Station and an alert notice (ALNOT) was issued at 1748. On October 17, the airplane was located about 10 miles southwest of Russian Mission, submerged in the waters of the Yukon River. The main wreckage was recovered and moved to shore. To date, a portion of the forward fuselage, the engine and wings remain submerged. The location of these items has been confirmed using SONAR equipment and will be examined if recovered later.

The closest official weather observation station is Russian Mission, which is located about 10 miles northeast of the accident site. At 1413, a METAR was reporting, in part, wind 140ø at 3 knots; visibility 10 statute miles; clouds and ceiling 200 ft scattered, 2,600 ft scattered, 3,600 ft broken; temperature 37ø F; dew point 36ø F; altimeter 29.68 inches of Mercury.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA531	09/12/2017 1039 CDT	Regis# N9595X	Kinsley, KS	Apt: Kinsley Muni 33K
Acft Mk/Mdl CESSNA 210-B		Acft SN 21057895	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONT MOTOR IO-470 SERIES			Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: PRUE, EDMUND B.		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Events

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

Narrative

During a telephone interview with the NTSB investigator-in-charge, the pilot reported that, he "landed around 80 knots" and "didn't get the flaps down" before landing. He further reported that, the airplane "didn't want to stop" and it then "ran off the runway." During the runway excursion, the nose wheel collapsed, and the airplane nosed over.

The fuselage, wings, and vertical stabilizer 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, about the time of the accident, 28 nautical miles west from the accident site, reported wind from 170ø at 7 knots. The landing was on runway 36.

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

A witness reported that he was at the airport in a hangar, and noticed that the accident airplane was "high, fast, and down wind." He added that he observed the airplane overrun the runway and nose over into the grass.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA346	06/12/2017 1030	Regis# N305CM	Rexberg, ID	Apt: Rexburg-madison County RXE
Acft Mk/Mdl CESSNA 305C (0 1E)-E		Acft SN 24558	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONTINENTAL O-470-11		Acft TT 3511	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: LEGACY FLIGHT MUSEUM		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Summary

The pilot in the tailwheel-equipped airplane reported that he attempted a crosswind landing to the asphalt surface of runway 35. He had about 300 hours of total tailwheel flight time, and he had 5 hours of flight time in the accident airplane. This was the pilot's first flight as the pilot-in-command. He recalled that the Automated Surface Observing System reported that the wind was from 050ø at 5 knots, gusting to 21 knots. During the landing roll, the airplane encountered a wind gust from the right, and the tail lifted. The pilot lost directional control of the airplane, and the airplane faced southeast when another wind gust lifted the left wing, and the right wing struck the ground. The wind gust subsided, and the airplane came to rest upright. The airplane sustained substantial damage to the right wing, the right aileron, and the elevator.

Per the National Transportation Safety Board Pilot Aircraft Accident Report, the pilot reported that the accident could have been prevented if he had received more instruction from a Federal Aviation Administration certificated flight instructor in the accident airplane that was specific to crosswind landings. "But more important, I should have flown the airplane to an airport with a runway that was more in line with the wind."

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 maintain directional control during landing in gusting wind conditions.

Events

1. Landing-landing roll - Loss of control on ground
2. Landing-landing roll - Abnormal runway contact
3. Landing-landing roll - Collision with terr/obj (non-CFIT)

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-Crosswind-Effect on operation - C
4. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation - C

Narrative

The pilot in the tailwheel equipped airplane reported that he attempted a crosswind landing to the asphalt surface of runway 35. He had about 300 hours of total tailwheel flight time and he had 5 hours of flight time in the accident airplane. This was the pilot's first flight as the pilot in command. He recalled that the Automated Surface Observing System reported that the wind was from 050ø at 5 kts. gusting to 21 kts. During the landing roll, the airplane encountered a gust of wind from the right and the tail ascended. The pilot lost directional control of the airplane and airplane faced southeast when another gust of wind lifted the left wing and the right wing struck the ground. The wind gust subsided and the airplane came to rest upright but it sustained substantial damage to the right wing, the right aileron and the elevator.

Per the National Transportation Safety Board Pilot Aircraft Accident Report, the pilot reported that the accident could have been prevented, if he had received more instruction from a Federal Aviation Administration Certificated Flight Instructor in the accident airplane that was specific to crosswind landings. "But more important, I should have flown the airplane to an airport with a runway that was more in line with the wind."

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

Accident Rpt# GAA17CA539	09/16/2017	1630 AKD	Regis# N123LR	Talkeetna, AK	Apt: N/a
Acft Mk/Mdl CESSNA A185-E			Acft SN 185-1589	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONTINENTAL IO-550D2B			Acft TT 3852	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: BRADLEY SZUTZ			Opr dba:		Aircraft Fire: NONE
					AW Cert: STN

Events

1. Landing - Loss of control on ground
-

Narrative

The pilot of the tailwheel-equipped airplane reported that, during landing, after a stabilized approach, the airplane touched down on the main gear first for a wheel landing. The airplane bounced twice and shortly before the tail settled on the ground, the "crosswind increased causing the aircraft to weathervane to the left." He added that, he increased left aileron and right rudder to keep the airplane on the gravel airstrip; however, the "wind gust then all but stopped as the tailwheel settled to the ground causing the aircraft to turn rapidly to the right." He further added that, he increased left rudder and brake, but the main gear started to depart the gravel airstrip and enter the softer shoulder. The "tail swung to the left of the aircraft direction of travel" and he was unable to correct the continued tightening right turn. Subsequently, the airplane rolled onto the left wing and left horizontal stabilizer and came to rest on the main landing gear.

The airplane sustained substantial damage to the left wing and left horizontal stabilizer

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 wind at the accident site, about the time of the accident, as variable at 0 to gusting 10 knots. The pilot landed to the northeast.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ANC17LA005	11/12/2016 1215 AKS	Regis# N4918Q	Ninilchik, AK	Apt: Ninilchik NIN
Acft Mk/Mdl CESSNA A185-F		Acft SN 18503575	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONTINENTAL MOTORS IO-520D		Acft TT 4587	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: LARRY D. NAUTA		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Summary

The airline transport pilot of the tailwheel-equipped airplane reported that the previous landing, which was flown by the pilot-rated passenger, was uneventful. The pilot then conducted the second landing, during which he reported that the right brake was not operating correctly, which resulted in asymmetrical braking. The airplane ground looped and sustained substantial damage. Postaccident testing of the brake system revealed that the right brake had a small leak from both o-rings only while pressurized. Both o-rings on both calipers were replaced, the brake system was pressurized, and no further leaks were found.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: A loss of brake system fluid due to leaks in the o-rings, which resulted in asymmetrical braking and a subsequent loss of directional control during the landing roll.

Events

1. Landing-landing roll - Sys/Comp malf/fail (non-power)
2. Landing-landing roll - Miscellaneous/other
3. Landing-landing roll - Loss of control on ground
4. Landing-landing roll - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Aircraft-Fluids/misc hardware-Fluids-Hydraulic fluid-Fluid level - C
2. Aircraft-Aircraft systems-Landing gear system-Brake-Malfunction - C
3. Aircraft-Aircraft oper/perf/capability-Aircraft capability-Braking capability-Attain/maintain not possible - C
4. Aircraft-Aircraft systems-Landing gear system-Master cylinder/brake valve-Malfunction - C
5. Aircraft-Aircraft systems-Landing gear system-Master cylinder/brake valve-Damaged/degraded - C

Narrative

On November 12, 2016, about 1215 Alaska standard time, a tailwheel-equipped Cessna A185F airplane, N4918Q, sustained substantial damage during the landing roll at the Ninilchik Airport, Ninilchik, Alaska. The certificated airline transport pilot and the pilot-rated passenger sustained no injuries. The airplane was registered to, and operated by, the pilot as a visual flight rules (VFR) flight under the provisions of 14 Code of Federal Regulations (CFR) Part 91. Visual meteorological conditions prevailed at the time of the accident, and a VFR flight plan had been filed. The flight originated from the Soldotna Airport, Soldotna, Alaska, about 1200.

During a telephone interview with the National Transportation Safety Board (NTSB) investigator-in-charge on November 13, the flying pilot, who was seated in the right seat at the time of the accident, stated that after an uneventful touchdown on the slightly wet and gravel surface of runway 10, the right-side brake system did not function as designed, which resulted in an asymmetrical braking condition. As the airplane continued the landing roll, the airplane ground looped to the left and the right wing and right horizontal stabilizer impacted the runway surface. The airplane came to rest on the runway without further incident.

The accident pilot stated that the previous landing was accomplished by the pilot-rated passenger and she reported no issues with the brake system during that landing sequence. The pilot further stated at the time of the accident, the wind condition originated from the north, about 10 to 15 knots. The airplane sustained substantial damage to the right wing and the right horizontal stabilizer.

In a written statement from a Federal Aviation Administration (FAA) aviation safety inspector (ASI) on November 16, he reported that he conducted an onsite examination of the airplane's brake system. He reported that he attempted to actuate the right brake, but the brake just went to the full travel stop. The right brake master cylinder filler plug was removed and a small tie wrap was utilized as a dip stick, and no fluid was observed on the tie wrap. The bottom of the fuselage and the right brake caliper were visually examined, and no signs of fluid leaks were observed. The accident pilot was asked if he previously observed the ground under the brake calipers at his parking space for evidence of any fluid leaks and the pilot reported he did look and did not observe any signs of fluid. The ASI additionally reported that the runway utilized by the accident pilot was in a useable condition, and that ice patches on the side of the runway were not a

factor with the accident sequence.

In the recommendation section of the NTSB Accident/Incident Reporting Form 6120.1, the pilot stated that the accident may have been avoided if he depressed the brakes prior to landing to confirm both were functioning.

METEOROLOGICAL INFORMATION

The closest weather reporting facility was the Homer Airport, Homer, Alaska. At 1153, an Aviation Routine Weather Report (METAR) was reporting in part: wind from 080 degrees at 17 knots, gusting 24 knots; visibility 6 statute miles; sky condition broken 3,600 feet; temperature 45 degrees F; dew point 37 degrees F; altimeter 29.11 inHg.

TESTS AND RESEARCH

In a written statement from the accident pilot on December 20, he reported that the entire brake system was tested. The testing revealed that the right brake had an "extremely small leak (one drop)" from both o-rings at 500 pounds per square inch. The rest of the brake system appeared normal and no signs of brake fluid were found on the underside of the fuselage. He reported he assumed the leak was small and that only under pressure would it show signs of leaking, that is why no evidence of leaking was observed on any preflight activity prior to the accident. He further reported the o-rings on both calipers were replaced, the brake system was pressurized, and no further leaks were found.

In a written statement from the pilot on April 4, he reported that after replacing the brake lines, the right brake did not readily take fluid when pumped from the caliper. The right brake master cylinder was disassembled, and the spring was observed to be deformed. He reported that in certain positions, the spring would block the flow of fluid in or out.

ADDITIONAL INFORMATION

The FAA has published the Aviation Maintenance Technician Handbook - Airframe FAA-H-8083-31 (2012). This document discusses airplane brake systems and states in part:

Brake seals are very important. Without properly functioning seals, brake operation will be compromised or the brakes will fail. Over time, heat and pressure mold a seal into the seal groove and harden the material. Eventually, resilience is reduced and the seal leaks. New seals should be used to replace all seals in the brake assembly. Acquire seals by part number in a sealed package from a reputable supplier to avoid bogus seals and ensure the correct seals for the brake assembly in question. Check to ensure the new seals have not exceeded their shelf life, which is typically three years from the cure date.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# WPR18LA022	10/28/2017 1250 PDT	Regis# N6582P	Mount Vernon, WA	Apt: Skagit Rgnl BVS
Acft Mk/Mdl CESSNA P210N-N		Acft SN P21000191	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim Prob Caus: Pending
Eng Mk/Mdl CONTINENTAL TSIO-510-P5B		Acft TT 4342	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: RANDY HARBO		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Events

1. Landing-landing roll - Landing gear collapse

Narrative

On October 28, 2017, about 1250 Pacific daylight time, a Cessna P210N airplane, N6582P, was substantially damaged following a collapse of its right main landing gear near Skagit Regional Airport (BVS), Burlington/Mount Vernon, Washington. The commercial pilot and two passengers were not injured. The airplane was registered to Insurance Solutions, Inc. and operated by a private individual as a personal flight, conducted under the provision of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and a flight plan was not filed for the local flight, which had departed Everett, Washington at 1150.

According to the pilot, after an uneventful flight he descended the airplane for a straight in landing for runway 29 and deployed the landing gear about 8 nm from the airport. He verified that the landing gear down indicator light had illuminated and then observed the landing gear in the down position through a mirror mounted to the radar on the right wing. The pilot subsequently checked the gear position again when the airplane was about 4 nm from the airport and then configured the airplane for a normal landing with 10° of wing flaps. Moments before the airplane touched down, the pilot deployed 30° of wing flaps. The airplane then crossed the runway numbers about 75 knots indicated airspeed and touched down about 67 knots. The pilot recounted that the landing roll was normal until the right main landing gear collapsed, which he perceived as a loss tire pressure to the right main landing gear wheel. He subsequently retarded the mixture control to the aft position and shut off the engine while he steered the airplane, which came to rest in a grass area to the right of the runway.

A postaccident examination of the airplane by Federal Aviation Administration inspectors revealed substantial damage to the elevator and right wing spar.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN15FA425 09/25/2015 1550 CDT Regis# N301JA Wichita, KS Apt: Wichita Dwight D Eisenhower Na ICT
Acft Mk/Mdl CESSNA T310Q-Q Acft SN T310Q-0611 Acft Dmg: DESTROYED Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONTINENTAL MOTORS TSIO-520-B12B Acft TT 188 Fatal 1 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: AARON WATERS Opr dba: Aircraft Fire: NONE

Summary

The commercial pilot was departing on a personal cross-country flight in the airplane. During initial climb after takeoff, witnesses saw the airplane suddenly pitch down into a rapid descent that continued to ground impact. Postaccident examination revealed that the elevator trim pushrod was attached to the trim tab but not attached to the trim tab actuator. The bolt, nut, and cotter pin securing the elevator trim tab pushrod to the actuator were missing and not recovered. Examinations of the elevator and the pushrod revealed that the pushrod became jammed aft of the forward elevator spar creating an abnormally large trim tab up (nose down) condition.

Measurements taken from an exemplar airplane of the same make and model as the accident airplane indicated that the elevator trim tab deflection with the pushrod jammed aft of the forward elevator spar would be over three times the normal maximum trailing-edge-up deflection. The airplane nose-down pitching moment at this increased deflection would create a forward force on the control yoke that a pilot would likely not be able to overcome.

Following the accident, the manufacturer issued a service bulletin that required the hardware securing the elevator trim pushrod be replaced and specified the hardware to be used. Subsequently, the Federal Aviation Administration issued an airworthiness directive that required compliance with the service bulletin.

Although the pilot's toxicology results were positive for ethanol in muscle tissue, when detected only in the muscle tissue, ethanol is likely from a source other than ingestion. No medications or illicit drugs were found that could pose hazards to flight safety.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The separation of the attachment hardware connecting the elevator trim tab pushrod to the elevator trim actuator, which resulted in the elevator trim tab jamming in a position outside the limits of normal travel and a subsequent loss of airplane control.

Events

1. Initial climb - Flight control sys mal/fail

Findings - Cause/Factor

1. Aircraft-Aircraft systems-Flight control system-Elevator tab control system-Malfunction - C
2. Aircraft-Aircraft systems-Flight control system-Elevator tab control system-Inoperative - C
3. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Pitch control-Attain/maintain not possible - C
4. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Pitch control-Capability exceeded - C

Narrative

HISTORY OF FLIGHT

On September 25, 2015, about 1550 central daylight time, a Cessna T310Q airplane, N301JA, experienced a flight control malfunction during takeoff initial climb and impacted the ground near Wichita, Kansas. The commercial pilot was fatally injured, and the airplane was destroyed. The airplane was registered to Celestial Knights, LLC, 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, and an instrument flight rules (IFR) flight plan had been filed. The flight originated at Wichita Dwight D Eisenhower National Airport (ICT), Wichita, Kansas, and was destined for Centennial Airport (APA), Denver, Colorado.

According to witnesses, the airplane appeared to be flying normally, and then it suddenly pitched down and entered a rapid descent. The descent angle was described by witnesses as "greater than 45 degrees" and "50 to 70 degrees." The witnesses reported hearing both engines at "full throttle" during the descent. The airplane impacted the ground on the east side of Cowskin Creek about 2 nautical miles northeast of ICT.

PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with airplane multi-engine land, airplane single-engine land, glider, and instrument airplane ratings. No pilot logbooks were recovered during the investigation. The pilot's most recent Federal Aviation Administration (FAA) second-class medical certificate was issued on June 23,

National Transportation Safety Board - Aircraft Accident/Incident Database

2015, with the limitation: "must wear lenses for distant, have glasses for near vision." On his medical certificate application, the pilot reported that he had about 470 total hours of flight time.

AIRCRAFT INFORMATION

According to FAA records, the six-seat airplane, serial number T310Q0611, was manufactured by the Cessna Aircraft Company (now Textron Aviation). The FAA issued its original airworthiness certificate on October 16, 1972, and the airplane was registered to the pilot on September 26, 2014. According to aircraft maintenance records, the last annual inspection was completed on May 8, 2015, at a recorded tachometer time of 187.7 hours.

METEOROLOGICAL INFORMATION

The 1553 recorded weather observation at ICT, included calm winds, visibility 10 miles, scattered clouds at 6,000 ft, broken ceiling at 8,000 ft, broken ceiling at 12,000 ft, broken ceiling at 15,000 ft, temperature 29°C, dew point 14°C; barometric altimeter 30.06 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

Impact marks at the accident site were consistent with a steep nose-down, right-wing-low attitude, with the right wingtip striking the ground first. The fuselage and wings came to rest on the west side of the creek in an inverted position with the right wing folded under the fuselage section. The fuselage from the aft baggage compartment through the tail section was intact but exhibited substantial impact damage. The fuselage forward of the aft baggage compartment through the cabin compartment was substantially damaged. The right and left engines were underwater, imbedded in the soil at the bottom of the creek. The right and left propeller assemblies, a section of the left wing including the left main landing, and the nose landing gear were found underwater in the creek bed. The landing gear actuator was found in the fully retracted position.

The right elevator remained partially attached to its attachment points. The elevator was separated spanwise outboard of the elevator trim tab, and the inboard portion of the elevator was distorted. The trim tab remained attached to the elevator at its hinge. The elevator trim pushrod was found attached to the trim tab but not attached to the trim tab actuator. The bolt, washer, castellated nut, and cotter pin securing the elevator trim tab pushrod to the actuator were missing. The elevator trim actuator remained attached to its attachment point on the horizontal stabilizer and was extended about 5/8 inch, which corresponded to a position outside its normal limits.

Flight control cable continuity was established for the rudder, right aileron, and elevators. The left aileron, all trim systems, and the right and left flaps exhibited control cable overload separations.

The engines were recovered from the creek bed, rinsed with water, and examined on-scene. The engine examinations revealed no evidence of preimpact anomalies or malfunctions.

The left engine's propeller flange was distorted. All six of the propeller bolts remained with the propeller flange, and the bolt threads contained remnants of the propeller hub threads. The propeller flange was manually rotated, and crankshaft and camshaft continuity were confirmed to the pistons. The left engine's magnetos were separated from their respective mounting pads but remained attached to the engine via the ignition harness. All of the ignition terminal ends remained attached to their respective sparkplugs. The magnetos and ignition harness were removed as were the top sparkplugs for each cylinder. The top sparkplugs were covered with mud, water, and oil. After being rinsed with freshwater, each electrode displayed a normal worn condition when compared to the Champion Aviation Service Manual (AV6-R). No internal, pre-accident anomalies were observed with the magnetos. The cylinders were photographed internally with a borescope. Each cylinder contained mud and water from the creek and exhibited normal combustion deposits. No preaccident anomalies were noted with the cylinders, valves, valve seats, rockers, or springs.

The engine-driven fuel pump was attached to the back of the engine and its drive coupling remained intact. Manual rotation of the drive coupling while installed in the driveshaft resulted in rotation of the driveshaft with a gritty feel to the rotation, but no binding was noted. The fuel pump was disassembled, and no preaccident anomalies were noted with any of the internal components. The throttle body/fuel metering unit remained attached to the engine via the fuel line between the fuel pump and the metering unit. The metering unit fuel inlet filter was removed and no obstructions or blockage were noted, but mud and dirty water were observed. The metering unit was disassembled, and no preaccident anomalies were noted with the internal components. The fuel manifold valve was disassembled, and aviation gasoline, mud and water were noted in the manifold. No pre-accident anomalies were noted with the diaphragm, plunger,

spring, or screen.

The left propeller hub was fractured, and only two of the three blades were recovered with remnants of the hub remaining attached to one of the blades. The two blades displayed S-bending, and both were twisted toward low pitch.

The right engine's propeller flange was distorted; five of the six propeller bolts remained with the propeller flange; and the bolt threads contained remnants of the propeller hub threads. The propeller flange was manually rotated, and crankshaft and camshaft continuity were confirmed out to each piston. The right engine's magnetos were separated from their respective mounting pads and only the right magneto was recovered from the creek bed. No internal, preaccident anomalies were observed with the right magneto. All of the ignition terminal ends remained attached to their respective sparkplugs. The ignition harness remnants were removed as were the top sparkplugs for each cylinder. The top sparkplugs were covered with mud, water, and oil. All electrodes displayed a normal worn condition when compared to the Champion Aviation Service Manual (AV6-R). The cylinders were photographed internally with a borescope. Mud, water, and combustion deposits consistent with normal operation were noted within each of the cylinders. No preaccident anomalies were noted with the cylinders, valves, valve seats, rockers, or springs.

The engine-driven fuel pump was attached to the backside of the engine. The drive coupling was intact, and rotation of the drive coupling while installed in the driveshaft resulted in rotation of the driveshaft with no binding noted. The fuel pump was disassembled, and no preaccident anomalies were noted with any of the internal components. The throttle body/fuel metering unit remained attached to the engine nacelle. The metering unit fuel inlet filter was removed, and no obstructions or blockage was noted, but mud and dirty water were observed. The metering unit was disassembled, and no preaccident anomalies were noted with the internal components. The fuel manifold valve was disassembled, and aviation gasoline, mud and water were noted in the manifold. No preaccident anomalies were noted with the diaphragm, plunger, spring, or screen.

The right propeller hub was fractured, and two of the three blades remained attached to the hub. The separated blade was recovered. All of the blades' pitch change links were fractured. All three blades were twisted toward low pitch. One blade displayed heavy S-bending, leading edge gouging, and was bent into a U-shape.

MEDICAL AND PATHOLOGICAL INFORMATION

The Regional Forensic Science Center, Sedgwick County, Kansas, conducted an autopsy of the pilot. The cause of death was attributed to "multiple blunt force injuries."

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicology testing on specimens from the pilot. The toxicology results were negative for carbon monoxide, cyanide, and drugs. The toxicology was positive for ethanol detected in muscle tissue, and no ethanol was detected in the liver.

TESTS AND RESEARCH

On September 28, 2015, the right elevator, trim tab, and trim actuator were taken to Textron Aviation's laboratory in Wichita, Kansas, where they were examined under the supervision of National Transportation Safety Board (NTSB) investigators. A portion of the elevator's upper skin was removed to examine witness marks on the elevator's leading-edge spar, the trim tab pushrod, and the trim actuator. Witness marks were found on the pushrod, the actuator, and the elevator spar that were consistent with the pushrod moving both fore and aft relative to the actuator. Scrape marks on the aft side of the elevator spar below the guide hole for the trim tab pushrod were consistent with the pushrod's forward (disconnected) end hitting against the spar's aft side after the pushrod separated from the actuator and became trapped behind the elevator spar.

Measurements taken from an exemplar Cessna 310 indicated that, if the pushrod is disconnected from the actuator, the elevator trim tab deflects 39° trailing edge up (TEU) when the forward end of the pushrod is positioned aft of the spar. Additional measurements indicated that, if the pushrod is properly connected, the elevator trim tab deflects about 12° TEU when the actuator is fully extended. The TEU elevator trim tab position pushes down on the elevator's trailing edge, which produces an airplane nose-down pitching moment.

ADDITIONAL INFORMATION

National Transportation Safety Board - Aircraft Accident/Incident Database

On August 10, 1973, Cessna Aircraft Company issued multi-engine service letter ME73-15, "Inspection and Replacement of Self-Locking Fasteners," which was applicable to the accident airplane. This service letter recommended the replacement of self-locking nuts used in primary and secondary control systems with a self-locking castellated nut and cotter pin.

On February 13, 1978, Cessna Aircraft Company issued multi-engine service letter ME77-34 (Supplement #1), "Trim Control System," which was applicable to the accident airplane. This service letter provided information for conducting a general inspection of the aileron, elevator, and rudder trim systems. The letter specified an inspection procedure that "places particular emphasis on the mounting and security of the trim tab actuator and associated linkage" and stated that the inspection should be completed at the next 100 hour or annual inspection, whichever came first, and repeated every 100 hours thereafter. The inspection items included "inspect push rod attach bolt at the actuator and trim tab horn for proper safetizing of nut with cotter pin."

On August 1, 1979, Cessna Aircraft Company issued multi-engine service letter ME79-28, "Trim Tab Actuator Inspection," which was applicable to the accident airplane. This service letter changed the inspection/lubrication interval for the aileron, elevator, and rudder trim actuators from every 1,500 hours to every 1,000 hours or 3 years, whichever comes first. Inspection/lubrication of a trim actuator requires that it be removed from the airplane, which requires removal of the bolt, nut, and cotter pin that attaches the pushrod to the actuator.

Given the 3-year or 1,000-hour overhaul cycle specified in ME79-28, an overhaul of the elevator trim actuator on the airplane would have been due no later than 2014. A review of the aircraft logbook of maintenance actions performed from February 2006 through August 2015 revealed no entries of an elevator trim actuator overhaul. Manufacturers' service letters are not mandatory for Part 91 operators; only FAA issued airworthiness directives (AD) require mandatory compliance.

In response to this accident, on February 29, 2016, Textron Aviation issued multi-engine service bulletin MEB-27-02, "Flight Controls - Elevator Trim Push-Pull Rod Hardware Replacement," that required the hardware securing the elevator trim pushrod be replaced in airplane models including the accident airplane model. The service bulletin stated that the hardware replacement "must be accomplished at the next 100-hour or 12-month (annual-type) inspection, whichever occurs first." The service bulletin specified that use of the correct cotter pin (part number MS24665-132) was critical to the installation and warned that the use of a different cotter pin could result in the hardware becoming loose. The attachment hardware of the elevator trim pushrod to the elevator trim tab is visible during preflight inspections, however, inspection of the attachment hardware is not included in Textron Aviation's preflight inspection checklist.

Subsequently, the FAA issued AD 2016-07-24 that required replacement and repetitive inspections of the hardware securing the elevator trim pushrod per MEB-27-02. Initial replacement of the hardware was required within 90 days of the publication of the AD with repetitive inspections of the hardware at every 100-hour or annual maintenance check. The AD explained that, following the loss of the attachment hardware connecting the elevator trim tab actuator to the elevator trim tab pushrod, the elevator tab may jam in a position outside the normal limits of travel and create an unsafe condition that could result in a loss of ability to control the airplane.

Shortly after AD 2016-07-24 was issued, it was superseded by AD 2016-17-08 due to comments received from industry professionals indicating difficulties with the specified bolt installation and requesting revision to the repetitive inspection intervals to coincide with established inspection intervals. Textron Aviation issued Revision 1 to MEB-27-02 to modify the hardware specified. No other changes were made to the service bulletin.

Similar Accidents

On May 25, 1988, in West Columbia, South Carolina, a Cessna 402B, N8493A, was involved in a fatal accident after the pilot radioed shortly after takeoff that he was having a problem with the elevator that required "full back pressure" to keep the nose up (NTSB accident number ATL88FA186). While attempting to return to land, the airplane pitched 70-80° nose down and descended into terrain. A postaccident examination revealed that the bolt securing the elevator trim tab push rod to the actuator was missing. The rod had become wedged inside the elevator, which led to an "extreme tab up" (nose down) condition.

On July 28, 1995, in Wenatchee, Washington, a Cessna 402B, N51816, experienced a "greater than normal" nose-down trim and impacted terrain during an attempted emergency landing, resulting in substantial damage (NTSB accident number SEA95LA159). The operator reported that the elevator trim actuator rod failed during takeoff. A postaccident examination by FAA investigators found the elevator trim pushrod jammed behind the elevator spar. The elevator was in the extreme nose-down position, and the cockpit trim wheel was found in the extreme nose-up trim position. The trim wheel was tested with no effect.

On April 26, 2001, in Del Rio, Texas, a Cessna 402B, N80Q, was involved in a fatal accident after the pilot reported that he would circle the airport a few times

"because he was having trouble with his autopilot" (NTSB accident number FTW01FA104). A witness observed the airplane turn onto final and stated that the airplane "suddenly stalled and slammed into the ground from about two hundred feet." During the investigation, the elevator trim tab was found to be in the 28ø tab-up position (airplane nose-down). According to the airplane manufacturer's specifications, the maximum tab-up travel limit (when connected) is 5ø. The trim tab would not move freely by hand forces and appeared to be jammed. The elevator skin was cut open to observe the trim tab connecting hardware. The clevis end of the trim tab pushrod was wedged against the front spar of the elevator's internal structure. Additionally, the bolt that connected the clevis end of the pushrod to the actuator was missing. After further inspection, neither the bolt nor the nut were found in the cavity of the elevator structure or the surrounding area. The clevis end of the pushrod and the actuator were not damaged, and no impact damage was apparent on the trim tab. The operator's maintenance records showed that the right elevator had been replaced 10 flight hours before the accident.

On November 7, 2001, in Winston Salem, North Carolina, a Cessna M310Q, N7648Q, was involved in a fatal accident after the pilot radioed that he was experiencing oscillations in the airplane's controls (NTSB accident number ATL02FA010). He then radioed that the problem was under control, but shortly after he radioed that he was experiencing a lot of down pressure on the yoke. The airplane crashed shortly after this transmission. The elevator trim tab assembly, the elevator trim tab pushrod, and part of the elevator were cut from the airplane at the crash site and brought back to Cessna's laboratory for examination. The forward end of the pushrod had separated from the actuator. The following observations were made during the examination: (1) the dry, oxidized condition of the pushrod's forward end was consistent with the attaching bolt likely being missing for some time before the crash; (2) rub marks on the opening in the forward elevator spar corresponded to rub marks found on the underside of the pushrod; and (3) the geometry of the disconnected pushrod allowed it to pass behind the forward elevator spar. The observed damage was consistent with the elevator trim tab being in the full TEU position at the time of the crash.

Textron Aviation personnel stated that the company is working with the FAA on a design change to prevent the elevator trim tab pushrod from jamming behind the forward elevator spar in the event that the pushrod becomes disconnected from the actuator. Textron Aviation personnel further stated that, when the design change is completed, the company plans to issue a service bulletin.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA253	05/01/2017 1657 EDT	Regis# N68VY	Lakewood, NJ	Apt: Lakewood N12
Acft Mk/Mdl CIRRUS SR20		Acft SN 2346	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-390-C3B6		Acft TT 61	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: NASSAU FLYERS, INC.		Opr dba: NASSAU FLYERS		Aircraft Fire: GRD
				AW Cert: STN

Summary

The student pilot reported that, during crosswind landing conditions, the airplane landed hard and subsequently bounced. He added that he initiated a go-around, and then the flight instructor took the flight controls.

The flight instructor reported that, after the bounce, the airplane "began to roll to the left in a manner similar to that of an uncoordinated stall." He added that he attempted to regain control of the airplane but was unsuccessful. The airplane rolled right, and the right wing impacted the ground.

The airplane sustained substantial damage to both wings.

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

The automated weather observation station located about 7 miles north of the airport reported that, about 1 minute before the accident, the wind was from 150ø at 11 knots. The airplane landed on runway 24.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The student pilot's failure to adequately compensate for crosswind conditions during a go-around and the flight instructor's delayed remedial action.

Events

1. Landing - Hard landing
2. Landing - Attempted remediation/recovery
3. Landing - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Crosswind correction-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
4. Environmental issues-Conditions/weather/phenomena-Wind-Crosswind-Effect on operation

Narrative

The student pilot reported that, during crosswind landing conditions, the airplane landed hard and subsequently bounced. He added that, he initiated a go-around, then the flight instructor took the flight controls.

The flight instructor reported that, after the bounce, the airplane "began to roll to the left in a manner similar to that of an uncoordinated stall". He added that, he attempted to regain control of the airplane, but was unsuccessful. The airplane rolled right and the right wing impacted the ground.

The airplane sustained substantial damage to both wings.

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

A review of recorded data from the automated weather observation station, located about 7 miles north of the airport, reported that about 1 minute before the accident the wind was from 150ø at 11 knots. The airplane landed on runway 24.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# WPR18LA012	10/20/2017 1756 PDT	Regis# N3636E	San Carlos, CA	Apt: San Carlos SQL
Acft Mk/Mdl CIRRUS DESIGN CORP SR22T-GTS		Acft SN 1591	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim Prob Caus: Pending
Eng Mk/Mdl CONTINENTAL ENGINES IO-550			Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: BLAKE BYERS		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Events

1. Takeoff - Unknown or undetermined

Narrative

On October 20, 2017, at 1756 Pacific daylight time, a Cirrus Design Corp SR22T GTS, N3636E, struck a ditch at the end of the runway following an aborted takeoff from San Carlos Airport, San Carlos, California. The private pilot and passenger sustained minor injuries, and 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. The cross-country personal flight was departing with a planned destination of Santa Monica Municipal Airport, Santa Monica, California. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot reported that after being cleared for takeoff by the tower controller, he began the takeoff roll, and initiated the rotation at a speed of about 75 to 77 knots. Immediately after the airplane took off, he perceived a change in engine power. He did not look at the engine instruments to gauge the power change, but the airplane did not climb as expected. With runway remaining he decided to abort the takeoff by reducing the engine throttle, and applying full braking effort. The airplane passed beyond the runway threshold, into a ditch, and came to rest on the airport perimeter road.

The airplane sustained substantial damage to the forward fuselage and both wings during the accident sequence, and both the pilot and passenger were able to egress unaided.

National Transportation Safety Board - Aircraft Accident/Incident Database

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	Fatal 2	Ser Inj 0	Rpt Status: Factual	Prob Caus: Pending
Eng Mk/Mdl WRIGHT J-6	Opr Name: MURRAY DANIEL J TRUSTEE	Opr dba:	Flt Conducted Under: FAR 091			
			Aircraft Fire: GRD			AW Cert: STN

Events

1. Enroute-cruise - Loss of control in flight
-

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 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

National Transportation Safety Board - Aircraft Accident/Incident Database

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 110ø 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

Accident Rpt# WPR18FA013	10/21/2017 1611 PDT	Regis# N414MT	Four Corners, CA	Apt: N/a
Acft Mk/Mdl EXTRA FLUGZEUGPRODUKTIONS-UND	Acft SN 1300	Acft Dmg: DESTROYED	Fatal 2	Ser Inj 0
Eng Mk/Mdl LYCOMING AEIO-580-B1A			Rpt Status: Prelim Prob Caus: Pending	
Opr Name: CALIFORNIA EXTREME ADVENTURES LLC.	Opr dba: SKY COMBAT ACE		Flt Conducted Under: FAR 091	
			Aircraft Fire: GRD	

Events

1. Maneuvering-aerobatics - Unknown or undetermined
-

Narrative

On October 21, 2017, at 1611 Pacific daylight time, an Extra Flugzeugproduktions-Und EA 300/L, N414MT (Callsign Ace 5), collided with terrain within the watershed of the El Capitan Reservoir, near Four Corners, California. The flight instructor and passenger sustained fatal injuries and the airplane was destroyed. The airplane was registered to KD Leasing LLC., and operated by California Extreme Adventures LLC. (doing business as Sky Combat Ace), under the provisions of 14 Code of Federal Regulations Part 91. The local instructional flight departed Gillespie Field Airport, San Diego/El Cajon at 1557. Visual meteorological conditions prevailed, and no flight plan had been filed.

The operator's website described itself as an "extreme aviation attraction," providing a series of aviation related "experiences", including aerobatics, air combat, and flight training. The passenger had signed up for the 25-minute-long, "Top Gun" experience, which according to their website was a flight which included, "Advanced Aerobatics", "Basic Aerobatics", a "Low Level Bombing Run", "You Fly Maneuvers", and "You Fly Departure".

Preliminary radar data provided by the FAA indicated a target initiating a climbing left turn after departing from runway 17, and reaching a mode C reported altitude of about 4,700 ft mean sea level (msl), 5 miles northeast of the airport. For the next 10 minutes, the target followed a track along the general path of the San Diego River, then east of the El Capitan Reservoir, and north towards the town of Four Corners. The track followed a meandering path at varying airspeeds and altitudes ranging between 4,500 and 7,100 ft in a manner consistent with aerobatic maneuvers, and multiple witnesses along the route indicated seeing an airplane performing aerobatic-like maneuvers about that time.

At 1610 the target had reached its farthest point from the airport, just north of the reservoir. It then began to track back to the southwest, climbing from 5,000 ft to 6,900 ft over the next 90 seconds. About 15 seconds later, the last target was recorded just to the southeast at an altitude of 4,500 ft.

The accident site was located within the river valley, on a hillside slope at an elevation of about 775 ft, about 1,000 ft east of the last radar target. The primary wreckage consisted of a 4-ft-deep by 6-ft-wide crater which contained fragmented engine and airframe components. The outboard left wingtip rib, along with shards of the red position lamp were located about 14 ft west, with the corresponding right wingtip rib and green position lamp shards about the same distance to the east. The debris field continued about 75 ft downhill to the north, and contained the engine crankcase, instrument panel components, fragmented tubular airframe material, the crumpled tubular steel remains of the tail section, and burnt composite structure.

Most of the airplane's structure was consumed by fire, except for the right rear section of the canopy frame and about a dozen composite skin fragments which were interspersed in the surrounding trees and immediate vicinity of the impact site. The impact ignited a brushfire, which burnt about 45 acres of land northeast of the accident site along the flank of the adjacent hillside.

A secondary debris field was located in the dry river bed about 400 ft north of the crater. The debris was oriented east-west, about 800 ft long, and contained the left (lock side) and rear sections of the canopy frame, multiple pieces of canopy plexiglass material, and a fragmented headset. Neither the debris field, nor the canopy components displayed any indications of fire.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA295	05/21/2017 1300 EDT	Regis# N25329	Catlett, VA	Apt: Maples Field VG57
Acft Mk/Mdl FAIRCHILD 24R-40		Acft SN R40-404	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl RANGER R440		Acft TT 210	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: WILLIAM A. HARGREAVES		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Summary

The pilot in the tailwheel-equipped airplane reported that, during the approach to land on a grass airstrip, he avoided power lines and buildings that were located at the approach end of what he perceived to be the runway. Before the landing flare, he realized that what he perceived as the runway was a wheat field. The airplane's main landing gear became entangled with the wheat stocks, and the airplane impacted the ground. The airplane nosed over and came to rest inverted. Substantial damage was sustained to the engine mounts, the rudder, the vertical stabilizer, and the wing strut.

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 selection of an unsuitable landing area, which resulted in the airplane impacting wheat stalks and a subsequent nose-over.

Events

1. Landing - Abnormal runway contact
2. Landing - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Pilot - C
2. Environmental issues-Physical environment-Terrain-(general)-Decision related to condition - C

Narrative

The pilot in the tail-wheel equipped airplane reported that he accomplished an approach to land on a grass airstrip. During the approach he avoided powerline wires and buildings that were located at the approach end of what he perceived to be the runway. Prior to the landing flare he realized that what he perceived as the runway was a wheat field. The airplane's main landing gear became entangled with the wheat stocks and the airplane impacted the ground. The airplane nosed over and came to rest inverted. Substantial damage was sustained to the engine mounts, the rudder, the vertical stabilizer and the wing strut.

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

Accident Rpt# GAA17CA247	03/28/2017 1700 EDT	Regis# N9613L	Flushing, MI	Apt: Dalton 3DA
Acft Mk/Mdl GRUMMAN AMERICAN AVN. CORP. AA-1BAcft SN AA1B0113			Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-320 B2B	Acft TT 3426		Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: MITCHELL F. BARMAN	Opr dba:			Aircraft Fire: NONE
				AW Cert: STN

Summary

The pilot reported that, during the landing, he was "going.[too] fast," overran the runway, and impacted trees.

The airplane sustained substantial damage to both wings.

The pilot reported that there were no preimpact mechanical failures or malfunctions with the airframe or engine that would have precluded normal operation.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's unstabilized approach and subsequent failure to attain the proper touchdown point, which resulted in a runway overrun.

Events

1. Landing-landing roll - Runway excursion
2. Landing-landing roll - 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-Task performance-Use of equip/info-Aircraft control-Pilot - C
3. Environmental issues-Physical environment-Object/animal/substance-Tree(s)-Contributed to outcome

Narrative

The pilot reported that, during the landing he was "going to[too] fast", over ran the runway, and impacted trees.

The airplane sustained substantial damage to both wings.

The pilot reported that there were no preimpact mechanical failures or malfunctions with the airframe or engine that would have precluded normal operation.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN16LA330 08/23/2016 745 MDT Regis# N97TH Cokeville, WY Apt: N/a
Acft Mk/Mdl HILLER UH 12D-NO SERIES Acft SN 1165 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending
Acft TT 14494 Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 137
Opr Name: WYOMING HELICOPTERS INC DBA Opr dba: Aircraft Fire: NONE

Summary

The commercial pilot was conducting an agricultural spray run in the helicopter when he felt a "bump" in the cyclic. The helicopter began to shake violently, and the pilot tried to conduct a forced landing; however, the skid caught on bushes and the helicopter impacted terrain. A control rotor cuff was located about 150 ft from the main wreckage. Examination of the component at the NTSB materials laboratory found a fatigue crack starting at the cuff's bolt hole and progressing until the part separated from overload. A review of maintenance records revealed that the cuff was overhauled at 988.7 hours and had accumulated 131.9 hours since overhaul. The rotor cuff was subject to an airworthiness directive (AD) which required repetitive inspections, though the investigation was unable to determine whether the AD had been complied with. The investigation also noted ambiguity with the wording used in the AD; it was unclear whether the part was subject to replacement at 225 hours total time in service, or if the 225-hour replacement was only applicable to components without known service history. The accident is consistent with an in-flight separation of the control rotor cuff due to fatigue failure.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: Failure of the control rotor cuff due to fatigue.

Events

1. Maneuvering-low-alt flying - Part(s) separation from AC
2. Maneuvering-low-alt flying - Loss of control in flight
3. Uncontrolled descent - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Aircraft-Aircraft propeller/rotor-Main rotor system-Main rotor head system-Fatigue/wear/corrosion - C

Narrative

On August 23, 2016, about 0745 mountain daylight time, a Hiller UH-12D helicopter, N97TH, impacted terrain near Cokeville, Wyoming. The pilot received minor injuries and the helicopter was substantially damaged during the accident. The helicopter was registered to and operated by Wyoming Helicopters, Inc., Boulder, Wyoming, under the provisions of 14 Code of Federal Regulations Part 137 as an agricultural flight. Visual meteorological conditions prevailed at the time.

The pilot reported that he started a spray application run and was about 15 ft agl (above ground level) and at 50 mph when he felt a "bump" in the cyclic control. The helicopter began to shake violently and the pilot tried to slow the helicopter down for a landing. However, the helicopter's skid caught on some bushes, and the helicopter rolled over, coming to rest on its side. During the accident, the tail boom and right skid tube were torn from the fuselage and the rotor head separated from the mast. An outboard section of the rotor cuff/paddle was located about 150 ft from the helicopter wreckage. The rotor cuff's spar had separated near a bolted part of a joint.

The separated section of the rotor cuff was sent to the NTSB materials laboratory in Washington D.C. for examination. The examination found fatigue cracks, starting at a bolt hole, that progressed around the rotor cuff spar tube.

The specialist's full materials laboratory factual report is located in the docket for this accident.

A review of the Federal Aviation Administration (FAA) airworthiness directives (AD) notes AD 97-10-16 applicable to the Hiller UH-12 helicopter. The AD requires (in part) that the control rotor blade spar tube be inspected "for corrosion or cracks, or elongation, corrosion, burrs, pitting or fretting of the bolts holes." "During the annual inspection, not to exceed 100 hours and every 100-hours, thereafter."

The AD also specifies for helicopters with cuff part number 36124:

(d) For cuffs, P/N 36124, without a complete prior service history, within the next 25 hours TIS, unless already accomplished within the last 25 hours TIS prior to the effective date of this AD, and at intervals not to exceed 50 hours TIS, perform a dye penetrant inspection of the cuff in accordance with paragraph G of

National Transportation Safety Board - Aircraft Accident/Incident Database

the Accomplishment Instructions of Hiller Aviation Service Bulletin, No. 36-1, Revision 3, dated October 24, 1979. If a crack is discovered, remove the cracked cuff from service prior to further flight. A cuff for which the prior service history cannot be documented cannot be used as a replacement part. Remove from service all cuffs prior to the accumulation of 225 hours total TIS since April 7, 1977.

A review of the helicopter's maintenance records indicated that a rotor cuff (part number 36124) was installed on February 11, 2013 with a component total time of 988.7 hours, and 0 since overhaul. A component listing dated September 28, 2015, noted the helicopter's Hobbs time of 1,093.3 hours. At the time of the accident, the Hobbs meter read 1,225.2 hours; 131.9 hours had accumulated on the part since the September 2015 listing. The pilot reported that the helicopter was on an annual inspection program, and its last 100-hour inspection was done on August 5, 2016.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN17LA184	05/15/2017 1330 EDT	Regis# N9265M	Dowling, MI	Apt: Private NA
Acft Mk/Mdl MOONEY M20E		Acft SN 1208	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-360-A1A		Acft TT 3225	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: KOBE THOMAS J		Opr dba:		Aircraft Fire: NONE

Summary

The private pilot stated that, during the flight, the airspeed indicator displayed a lower than normal airspeed. The pilot landed the airplane at an intermediate airport to drop off a passenger, then continued to his home airport, a privately-owned, 2,000-ft-long turf runway. During the first attempted landing, the airplane would not "settle," and the pilot initiated a go-around. During the second landing, the airplane floated again, consistent with a higher-than-indicated airspeed, and the pilot "forced" the airplane onto the runway. The airplane porpoised and continued off the runway, hitting trees, a fence, and a pole, resulting in substantial damage. During postaccident examination, the remains of an insect were found in the pitot tube. A functional test of the airspeed indicator revealed no anomalies. It is likely that the inaccurate airspeed indications were due to the contamination of the pitot static system, which subsequently resulted in a high approach and landing speed and subsequent runway overrun.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: Inaccurate airspeed indications due to contamination of the pitot-static system with insect remains, which resulted in a high approach and landing speed and subsequent runway overrun.

Events

1. Landing-flare/touchdown - Flight instrument malf/fail
2. Landing-landing roll - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Aircraft-Aircraft systems-Navigation system-Pitot/static system-Related operating info - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Airspeed-Related operating info - C

Narrative

On May 15, 2017, about 1330 eastern daylight time, a Mooney M20E airplane, N9265M, was substantially damaged when it impacted trees, a fence, and a pole, while landing at a private grass airstrip near Dowling, Michigan. The private pilot was not injured. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91 without a flight plan. Visual meteorological conditions prevailed for the flight that departed W K Kellogg Airport (BTL), Battle Creek, Michigan, and was en route to the private airstrip.

According to the pilot, during the flight the airspeed indicator did not indicate as high as it normally would. He landed uneventfully at BTL to drop off a passenger and then continued to the private airstrip (2,000 feet by 120 feet, grass) for a full-stop landing. While on final approach, the pilot decreased airspeed to 70 miles per hour (mph); however, the airplane would not settle so he initiated a go around. During the second attempt to land, the pilot decreased airspeed to 60 mph, but the airplane still would not land. The pilot stated that he "forced" the airplane to land.

During touchdown the airplane porpoised and continued off of the runway hitting trees, a fence, and a pole. According to the Federal Aviation Administration inspectors who responded to the accident, the left main landing gear and nose gear collapsed. The right wing sustained substantial impact damage to the leading edge and the spar. The pitot tube separated from the airplane and could not be functionally tested.

During the examination of the pitot static system debris was recovered from the pitot tube that appeared organic in nature, consistent with the remains of an insect. A functional test of the airspeed indicator revealed no anomalies that would have precluded normal operation.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ERA16FA150	04/09/2016 850 EDT	Regis# N96398	Ocala, FL	Apt: Ocala Intl-jim Taylor Field OCF
Acft Mk/Mdl MOONEY M20K		Acft SN 25-0531	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONT MOTOR TSIO-360 SER		Acft TT 2435	Fatal 1 Ser Inj 1	Flt Conducted Under: FAR 091
Opr Name: ROSS A. GRAND		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Events

2. Emergency descent - Aerodynamic stall/spin

Narrative

HISTORY OF FLIGHT

On April 9, 2016, about 0850 eastern daylight time, a Mooney M20K, N96398, was substantially damaged during a forced landing following a total loss of engine power after takeoff from Ocala International Airport (OCF), Ocala, Florida. The commercial pilot was fatally injured, and the passenger was seriously injured. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed, and no flight plan was filed for the flight, which had an intended destination of Lakeland Regional Airport, Lakeland, Florida.

Information from the OCF air traffic control tower revealed that the airplane was cleared for takeoff and began its takeoff roll from runway 36 with about 7,000 ft of runway available. About 1 minute after the airplane was cleared for takeoff, the pilot announced, "I'm losing my engine. I'm going down on [runway] 26." Runway 26 was located at the end of and perpendicular to the takeoff runway.

The OCF ground controller (GC) was receiving a clearance by telephone when he overheard the pilot's radio call. He estimated that the airplane was north of the tower about 200 to 300 ft above the runway before it turned west. According to the GC, "The wings rocked a little in the turn, but when he lined up with the runway [26] he looked clean. He still looked high, like he might touchdown past midfield and go off the departure end. He looked stable, but then he turned left. The more he turned the steeper the turn got, and then when the wingtip hit the ground the airplane was 90 degrees."

The passenger was interviewed the day after the accident. She stated that she was not a pilot but had flown in the airplane several times. After landing at OCF the day before the accident, the pilot requested a fuel service of 10 gallons per wing, and they then spent the night with family. On the morning of the accident, they boarded the airplane for a flight to the Sun-n-Fun fly-in event. According to the passenger, engine start, taxi, run-up, acceleration, takeoff, and initial climb from runway 36 were "normal."

The passenger said she heard a sudden noise "like a click," and the engine stopped producing power. The pilot announced the loss of power and his plan for the forced landing over the radio. The airplane was north of both runways, and the left turn westbound was "steady" until the airplane was about over runway 26. The wings began "rocking," and the turn continued to the left until the bank angle was 90° and the left wing struck the ground.

An airport employee said that his attention was drawn to the airplane by a "sputter-cough" sound. Demonstrating what he observed with a model of an airplane, he described a straight-ahead descent, followed by a left turn over runway 26, two "dips" that resembled a porpoising motion, and then a sharp, 90° left turn to ground contact.

PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with ratings for airplane single-engine land, rotorcraft-helicopter, and instrument airplane. His most recent Federal Aviation Administration (FAA) third-class medical certificate was issued on February 7, 2014. He reported 1,670 total hours of flight experience on that date.

AIRCRAFT INFORMATION

According to FAA records, the airplane was manufactured in 1981. The maintenance records were not recovered, but a copy of the airplane's most recent annual inspection showed that it was performed on June 10, 2015, at 2,435.2 total aircraft hours.

METEOROLOGICAL INFORMATION

National Transportation Safety Board - Aircraft Accident/Incident Database

Weather reported at the time of the accident included wind from 010ø at 9 knots, 10 statute miles visibility, clear skies, temperature 14øC, dew point 3øC, and an altimeter setting of 30.15 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The airplane came to rest on the flat, grass surface of the airport infield, and all major components were accounted for at the scene. The wreckage path was oriented 212ø and was about 300 ft long. The airplane came to rest upright. The engine and its mount were separated from the airframe but remained attached by cables and wires. The propeller was separated and located 45 ft down the wreckage path from the first ground scar.

The firewall, instrument panel, and center console were crushed aft in compression and canted about 45ø to the airplane's left. The windshield was destroyed, and the cabin roof was torn spanwise from the door opening to about mid-cabin. The inboard sections of both wings were intact and remained attached to the fuselage. The left wing outboard of the flap was separated by impact. The leading edge of the right wing was crushed aft in compression. Both wing fuel tanks contained fuel.

Control continuity could not be immediately established due to impact damage and the airplane's resting position. As the wreckage was sectioned for recovery, control continuity was established from the cockpit through impact breaks and saw cuts to the flight control surfaces.

The fuel selector handle was found between the "Left Tank" and the "Off" placard positions. Crushed airplane structure surrounded the selector handle and preserved its position at the time of impact.

The engine was rotated by hand through the vacuum pump drive pad. Continuity was established from the accessory section to the valvetrain and powertrain. Compression was confirmed using the thumb method. The turbocharger impeller moved freely when rotated.

MEDICAL AND PATHOLOGICAL INFORMATION

The Medical Examiner for District 5, Leesburg, Florida, performed the autopsy on the pilot and determined the cause of death was blunt chest trauma. The FAA Bioaeronautical Research Sciences Laboratory, Oklahoma City, Oklahoma, performed toxicology testing on specimens from the pilot; the testing was negative for alcohol and drugs.

TESTS AND RESEARCH

Engine-Monitoring Instrument Data Download

The airplane was equipped with an Electronics International CGR-30P, panel-mounted instrument that monitored and recorded up to 66 parameters related to engine operations. The device was downloaded in the NTSB Recorders Laboratory.

The data began at 0741:04, at a point consistent with the engine at idle at device power-up, and the parameters continued through what was consistent with taxi, run-up, and eventually takeoff power application at 0751:04. At 0751:28, there was a rapid decrease in fuel flow, and, at 0751:42, there was a decrease in engine rpm and manifold pressure. Subsequently, manifold pressure and rpm stabilized around 14 inches and 1,300, respectively, and remained at these values until the end of the recording.

Engine Examination/Test Run

The engine was examined and test run in Mobile, Alabama, between May 31 and June 2, 2016. During examination and preparation, the crankshaft was sleeved, and the fractured propeller flange was welded back onto the crankshaft. The aft left oil cooler mount/mount leg and the magneto ignition harnesses were replaced due to impact damage. The magnetos remained secured in their mounts, and timing was confirmed at 20ø before top dead center.

The engine starter, Nos. 3 and 5 cylinder intake tubes, and the entire exhaust system were replaced due to impact damage and for compatibility with the engine test cell equipment. The engine's turbocharger and waste gate were intact and installed for the engine test run without modification.

The engine started immediately, accelerated smoothly, and ran continuously without interruption. The engine was run through the manufacturer's entire test run protocol with no anomalies noted. After completion of the test protocols, the engine was accelerated and decelerated rapidly several times between idle and full power. During the accelerations and decelerations, the engine ran smoothly and without interruption.

Fuel Selector Valve Tests

The 3-position fuel selector valve had detents corresponding to "Right Tank," "Left Tank," and "Off." When viewed relative to a clock face, the detents for "Right Tank," "Left Tank," and "Off" were positioned at 2 o'clock, 10 o'clock, and 8 o'clock, respectively.

As previously mentioned, the fuel selector valve handle was found in an intermediate position between the "Off" and "Left Tank" placard positions. Computerized axial tomography scan imagery revealed that the valve handle was positioned between the "Left Tank" and "Right Tank" detent positions and that all three valve ports were open to each other. The difference between the handle's position according to the placard and its actual position was consistent with the valve placard having been displaced relative to the handle.

The valve was placed on a flow bench in its as-found condition. When fuel was drawn through the selector valve at the engine port, fuel was drawn from both the left and the right tank ports simultaneously.

An exemplar Continental TSIO-360GB engine was placed in a test cell, and the engine fuel system was set up and adjusted to factory specifications of unmetered fuel pressure of 45 to 49.5 pounds per square inch (psi). The engine was then stopped, and the test stand fuel system was disconnected.

Fuel was then provided to the engine from an external fuel tank and a fuel system mockup (left tank, right tank, left and right vapor return, engine supply and return lines) through the accident fuel selector valve. The accident fuel selector valve was tested in the as-found position between the left tank and the right tank detent positions.

The engine was primed using the test cell's fuel system, but it was started and run on an external fuel tank that was positioned about wing level. The engine started immediately and ran continuously without interruption to full power of 2,700 rpm and 40 inches of manifold pressure. During the full-power portion of the run, which was between 8 and 10 minutes, the unmetered fuel pressure maintained 49 psi. Engine power was reduced to idle and the engine continued to run normally.

ADDITIONAL INFORMATION

Step two in the Before Takeoff checklist found in the manufacturer's Pilot's Operating Handbook was: "Fuel Selector . FULLEST TANK."

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA456	07/29/2017 1533 EDT	Regis# N817V	Mocksville, NC	Apt: Bahnson 43NC
Acft Mk/Mdl PDPS PZL-BIELSKO SZD 55-1		Acft SN 551192035	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
		Acft TT 1272	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: CLAY SHOLAR		Opr dba:		Aircraft Fire: NONE
				AW Cert: SPE

Summary

The glider pilot reported that, during landing in gusting wind conditions, the glider bounced, so the pilot added "more spoiler" to help the glider settle back onto the ground. He added that a wind gust "rotated" the glider to the left, and the glider bounced about 3 to 4 ft. After the second bounce, the glider landed hard "with the nose yawed to the left."

The glider sustained substantial damage to the fuselage.

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

A review of recorded data from the automated weather observation station located 16 nautical miles east of the accident airport reported that, about 40 minutes before the accident, the wind was from 30ø at 17 knots, gusting to 20 knots. The pilot reported that the wind was from 360ø at 15 knots, gusting to 20 knots.

The glider landed on runway 1.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's improper landing flare in gusting wind conditions.

Events

1. Landing - Abnormal runway contact
2. Landing - Attempted remediation/recovery
3. Landing - Hard landing

Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Landing flare-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

Narrative

The glider pilot reported that, during landing in gusting wind conditions, the glider bounced, so the pilot added "more spoiler" to help the glider settle back onto the ground. He added that a gust of wind "rotated" the glider to the left and the glider bounced again, about 3-4 ft into the air. After the second bounce, the glider landed hard "with the nose yawed to the left".

The glider sustained substantial damage to the fuselage.

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

A review of recorded data from the automated weather observation station located 16 nautical miles east from the accident airport reported that, about 40 minutes before the accident, the wind was from 30ø at 17 knots, gusting 20 knots. The pilot reported that the wind was from 360ø at 15 knots, gusting to 20 knots. The glider landed on runway 1.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA560	09/27/2017 1245 EDT	Regis# N38633	Geneseo, NY	Apt: Geneseo D52
Acft Mk/Mdl PIPER J5A-UNDESIGNAT		Acft SN 5-1016	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONT MOTOR O-200			Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: PETER BONNEAU		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Events

1. Standing-engine(s) start-up - Loss of control on ground
-

Narrative

The pilot reported that, during a hand propeller start, the tailwheel-equipped airplane was secured by having the passenger stand in front of the horizontal stabilizer. He added that, as he rotated the propeller with the throttle "cracked", the engine started, but "it ran fast enough" to break the passenger's hold. As the airplane began to move forward, he grabbed onto the lower right-wing strut in an attempt to enter the airplane. Subsequently, he let go, the left main landing gear ran over his shoulder, and the airplane stuck maintenance equipment.

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

During a telephone conversation with the NTSB investigator-in-charge, the pilot reported that, the throttle was "cracked a little more than it should have been." He added that, he did not use wheel chocks before attempting the start.

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

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# WPR17LA145	07/08/2017 1045	Regis# N99031	Big Timber, MT	Apt: N/a
Acft Mk/Mdl PIPER L 21B-B		Acft SN 54-2590	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-320-A2B		Acft TT 2557	Fatal 0 Ser Inj 2	Flt Conducted Under: FAR 091
Opr Name: BRYANS MACHINE SHOP LLP		Opr dba:		Aircraft Fire: NONE

Summary

The private pilot reported that, after departure, he followed the course of a river at an altitude about level with the treetops. Although the pilot was aware of powerlines in the area, he did not see them before the airplane collided with the powerlines about 90 ft above ground level. The airplane subsequently nosed down and impacted the river, resulting in substantial damage.

According to the manager of the airport from which the airplane departed, it is not uncommon for pilots to fly at low altitudes in that area to avoid turbulent air in the summertime. He further reported that the power lines were not equipped with aerial marker balls. Following the accident, the airport manager agreed to install signage in the fixed base operator at the airport to caution pilots of the presence of power lines in that area.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's decision to fly at low altitude in the vicinity of power lines, which resulted in a wire strike.

Events

1. Maneuvering-low-alt flying - Collision with terr/obj (non-CFIT)
2. Maneuvering-low-alt flying - Loss of control in flight
3. Uncontrolled descent - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Pilot - C
2. Personnel issues-Psychological-Attention/monitoring-Monitoring environment-Pilot - C
3. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Altitude-Not attained/maintained - C

Narrative

On July 8, 2017, about 1045 mountain daylight time, a Piper L-21B, N99031, was substantially damaged during a wire strike and subsequent impact with the Yellowstone River in Big Timber, Montana. The private pilot and his passenger were seriously injured. The airplane was owned by a private individual and operated by the pilot as a 14 Code of Federal Regulations Part 91 personal flight. Visual meteorological conditions prevailed and no flight plan was filed for the local flight. The flight departed Big Timber Airport (6S0), Big Timber, Montana about 1030.

According to the pilot, he departed the airport to the north with a family member onboard. The pilot then turned east to follow the river and look for his sister who was participating in a water sport. The airplane was about at tree level when it collided with a set of power lines and then immediately impacted the water. The pilot reported to his father that he observed sparks and wires before the airplane entered a nose-down dive.

The 1055 recorded weather observation at 6S0 included wind 220ø true at 11 knots, visibility 10 statute miles, clear skies, temperature 25ø C, dew point 11ø C, and an altimeter setting of 30.20 inches of mercury. According to the U.S. Naval Observatory, the sun azimuth at the time of the accident would have been 116ø.

The airplane came to rest near an eyot approximately 4 nm northeast of 6S0. Photographs from the Federal Aviation Administration revealed that the airplane sustained substantial damage to the wings, empennage, and fuselage.

The pilot reported that the airplane was on a southeast course at the time of the accident. He noted that the sun was on the horizon, but did not obstruct his vision. The pilot further remarked that he was aware of the presence of these power lines from a previous experience flying over the Yellowstone River, several years ago.

A law enforcement representative stated that he observed a broken residential power line near the accident site and that he received reports of a disruption in power service from nearby residents around the time of the accident. The silver colored power line was one of a three phase power configuration that ran between two distribution towers on both sides of the river from a height of approximately 90 feet. The towers were about 4 nm east of the airport.

According to the pilot's father, who is also the 6S0 airport manager, transient pilots frequently fly at low altitudes over this particular portion of the Yellowstone

National Transportation Safety Board - Aircraft Accident/Incident Database

River to avoid turbulent air in the summertime. The airport manager further reported that the power lines were not equipped with aerial marker balls for identification. At the request of the NTSB Investigator-in-Charge, the airport manager agreed to install signage in the local fixed based operator office at 6S0 to caution pilots of the presence of power lines over the Yellowstone River.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# WPR14LA368 09/06/2014 1226 MST Regis# N5966P Mesa, AZ Apt: Falcon Fld FFZ
Acft Mk/Mdl PIPER PA 24-250 Acft SN 24-1059 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-540 SERIES Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: CHRISTOPHERSON JACK T TRUSTEE Opr dba: Aircraft Fire: NONE
AW Cert: STN

Summary

The airline transport pilot reported that, during the approach to land, the right main landing gear (MLG) would not extend and lock, and the locked gear-down position would not illuminate. The pilot attempted to manually extend the gear and get it to lock without success. The pilot then conducted a normal landing, and during the rollout, the right MLG collapsed.

Examination of the airplane revealed that the two landing gear cables were rigged slightly differently and that the right bracket that connected the landing gear transmission to the airframe was broken off. Examination of the break with a magnifying glass revealed that it likely had not occurred recently. With the airplane on jacks and the landing gear cables disconnected, the MLG successfully locked down, and the MLG could be manually returned to the "up" position with no restrictions.

The airplane experienced a gear-up landing 13 years before the accident, and it is likely that the differential rigging of the two gear cables had existed since that time and led to the MLG being just on the edge of locking. The broken bracket that connected the MLG transmission to the airframe likely fractured some time before the accident and eventually separated from the airframe. The separation of the right MLG transmission bracket coupled with the differential rigging of the two landing gear cables likely prevented the right MLG from moving over center to the "locked" position and resulted in the gear-up landing.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The failure of the right main landing gear (MLG) transmission mounting bracket coupled with the differential rigging of the two landing gear cables, which prevented the right MLG from moving to the down-and-locked position before landing.

Events

1. Landing-landing roll - Landing gear collapse

Findings - Cause/Factor

1. Aircraft-Aircraft systems-Landing gear system-Main landing gear-Damaged/degraded - C
2. Aircraft-Aircraft systems-Landing gear system-Main landing gear-Failure - C
3. Aircraft-Aircraft systems-Landing gear system-Main landing gear-Not specified - C

Narrative

HISTORY OF FLIGHT

On September 6, 2014, at 1226 mountain standard time, a Piper PA24-250, N5966P, had the right main landing gear collapse during the landing roll at Falcon Field Airport, Mesa, Arizona. The airline transport pilot and one passenger were uninjured; the airplane sustained substantial damage to the right wing. The owner/pilot was operating the airplane under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The cross-country flight departed Nephi, Utah, about 0930 with a planned destination of Mesa. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot reported that on approach to land the right main landing gear would not extend and indicate a locked gear down position. After a low fly by, the pilot attempted to manually extend the gear but was unable to get a safe gear indication.

The pilot made a normal landing and during the roll out the right main landing gear collapsed.

The pilot stated that the airplane and engine had no mechanical failures or malfunctions during the flight.

National Transportation Safety Board - Aircraft Accident/Incident Database

PERSONNEL INFORMATION

AIRCRAFT INFORMATION

METEOROLOGICAL CONDITIONS

AIRPORT INFORMATION

TESTS AND RESEARCH

A Federal Aviation Administration inspector examined the wreckage. He discovered that the rigging of the two landing gear cables was slightly off. The bracket that connected the landing gear transmission to the airframe was broken off; when examined with a magnifying glass, the break did not appear to have occurred recently. With the airplane on jacks and the landing gear cables disconnected, the gear successfully locked down, and the gear could be manually returned to the up position with no restrictions. He determined that the airplane had a gear up landing in 2001.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA336	06/08/2017 1300 CDT	Regis# N4543R	Auburn, IN	Apt: Mooney Field 22IN
Acft Mk/Mdl PIPER PA 28-140		Acft SN 28-21248	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-320-E2A		Acft TT 2872	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: MOONEY, MICHAEL E.		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

The pilot reported that he attempted to take off in the airplane from his turf airstrip. He attempted to force the airplane into the air, and after a brief ascent, the airplane descended to the ground and touched down hard. The pilot continued the sequence of lifting off and then touching down again until he determined that he would not be able to clear the trees at the end of the runway. He made a left turn, and the airplane traveled through two fields, hit a ditch, and collided with a barn. The airplane sustained substantial damage to both wings.

Per the National Transportation Safety Board Pilot Aircraft Accident Report, the pilot reported that the accident could have been prevented if he had aborted the takeoff after the first bounce.

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 decision to continue to attempt to take off despite the airplane's inability to attain a positive climb rate, which resulted in little runway remaining, and his subsequent decision to turn off the runway, which resulted in a collision with a barn.

Events

1. Takeoff - Aerodynamic stall/spin
2. Takeoff - Abnormal runway contact
3. Takeoff - Runway excursion
4. Takeoff-rejected takeoff - Collision with terr/obj (non-CFIT)

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-Climb rate-Not attained/maintained - C
3. Environmental issues-Physical environment-Object/animal/substance-Residence/building-Effect on operation - C

Narrative

The pilot in the airplane reported that he attempted to take off from his turf airstrip. He attempted to force the airplane into the air and after a brief ascent the airplane descended to the ground and touched down hard. The pilot continued to the previous sequence until he determined that he would not be able to clear the trees at the end of the runway. He made a left turn, and the airplane traveled through a bean field, a hay field, and hit a ditch and collided with a barn. The airplane sustained substantial damage to both wings. Per the National Transportation Safety Board Pilot Aircraft Accident Report, the pilot reported that the accident could have been prevented, if he had aborted the takeoff after the first bounce the accident never would have happened.

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

Accident Rpt# CEN16LA382	09/21/2016 1236 EDT	Regis# N4470X	Wooster, OH	Apt: N/a
Acft Mk/Mdl PIPER PA 28-140		Acft SN 28-7625040	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-320-E3D		Acft TT 3744	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: CHARLES MARCUM		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Summary

The private pilot stated that, about 30-40 minutes into the cross-country flight, at an altitude of 3,500 ft, the engine suddenly experienced a total loss of power. The pilot turned on the fuel boost pump, adjusted the mixture, and switched fuel tanks to restart the engine. The propeller rotated, but the engine did not start. The pilot subsequently landed the airplane in a soybean field. Upon touching down, the nose gear dug into the dirt and the airplane nosed over. A postaccident examination of the engine did not reveal any preexisting mechanical malfunctions or anomalies that would have resulted in the loss of engine power.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: A total loss of engine power for reasons that could not be determined because postaccident examination of the engine revealed no mechanical malfunctions or failures that would have precluded normal operation.

Events

1. Enroute - Loss of engine power (total)
2. Landing-landing roll - Nose over/nose down

Findings - Cause/Factor

1. Not determined-Not determined-(general)-(general)-Unknown/Not determined - C

Narrative

On September 21, 2016 at 1236 eastern daylight time, a Piper PA-28-140, N4470X, nosed over during an off-airport landing in near Wooster, Ohio, following a loss of engine power. The private pilot received a minor injury and the passenger was not injured. The airplane was substantially damaged. The aircraft was registered to and operated by a private individual 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 operating on a flight plan. The flight originated from the Norwalk-Huron County Airport (5A1), Norwalk, Ohio, with an intended destination of the Carrol County-Tolson Airport (TSO), Carrollton, Ohio.

The pilot reported the airplane operated normally during the first part of the flight. About 30 to 40 minutes into the flight, at an altitude of 3,500 ft, the engine suddenly lost all power. The pilot turned on the fuel boost pump, adjusted the mixture, and switched fuel tank to restart the engine. The propeller rotated, but the engine did not start. The pilot subsequently landed the airplane in a soybean field. Upon touching down, the nose gear dug into the dirt and the airplane nosed over. The pilot and passenger kicked out the windscreen and exited the airplane.

A postaccident examination of the airplane was conducted by a Federal Aviation Administration inspector. The inspector reported he verified there was fuel going to the engine, the magnetos sparked, compression on all cylinders, and continuity throughout the engine. The inspector reported the air intake duct was crushed, which most likely occurred during the accident sequence. The examination did not reveal any preimpact anomalies that would have resulted in the loss of engine power. The temperature and dewpoint were not conducive to carburetor icing at cruise power.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ERA16FA005 10/08/2015 1830 EDT Regis# N4313E Jasper, GA Apt: Pickens County Airport JZP
Acft Mk/Mdl PIPER PA 38-112 Acft SN 38-78A0546 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-235-L2C Acft TT 3147 Fatal 1 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: ASTERIX AVIATION LLC Opr dba: Aircraft Fire: NONE
AW Cert: STN

Summary

The student pilot was on his second supervised solo flight. According to the flight instructor, before the airplane departed, he observed the student pilot's preflight inspection of the airplane, and the student reported to him that the airplane had 14 gallons of fuel onboard. The flight instructor could not recall if he visually checked the fuel quantity himself or if the student used a fuel quantity measuring stick when checking the quantity. Further, the flight school's manager stated that he saw the instructor speaking on his phone while the student was performing the preflight.

After takeoff, the student pilot flew to the practice area and came back to the airport about 1 hour later. The student pilot then performed a touch-and-go landing. During the climb after the touch-and-go, the flight instructor heard the engine suddenly stop running. The instructor saw the airplane turn to the left like the student pilot was going to return to the airport. The airplane entered an aerodynamic stall and then a spin to the left. It descended rapidly while in the spin until the instructor lost sight of the airplane behind trees; he then heard the impact.

Examination of the accident site and wreckage revealed that the airplane impacted the ground about 1,700 ft from the departure end of the runway. Ground scarring and the lack of damage to the propeller indicated that the engine was not producing power during the impact sequence. The examination found no evidence of preimpact mechanical failures that would have precluded normal operation of the airplane. However, the examination revealed that the fuel system was devoid of usable fuel. A broken fuel quantity measuring stick made from a wooden dowel was discovered in the wreckage.

Review of the flight log recovered from the wreckage indicated that the airplane had been operated about 4.9 hours since the last refueling. According to the airplane manufacturer's pilot operating handbook, the airplane's endurance was about 4.5 hours when fueled to its maximum capacity of 32 total gallons, of which 30 gallons were usable. Although the student reported to the instructor that 14 gallons of fuel, or about half of its total capacity, were onboard, given the airplane's fuel consumption rate, it is unlikely that the airplane would have been devoid of fuel after 1 hour of flight had this assertion been accurate. Therefore, it is likely that the student erred in measuring the fuel onboard during his preflight inspection. Had the flight instructor personally observed the airplane's fuel state prior to the flight, he might have noticed the discrepancy and corrected the problem. Additionally, the flight school had no written policies or procedures regarding fueling. If a policy had been in place that prescribed a minimum fuel level prior to departure, or required the flight instructor to personally verify the fuel quantity on board before a student departed on a solo flight, the accident may have been prevented.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The student pilot's failure to accurately determine the airplane's fuel state, subsequent fuel exhaustion, and a total loss of engine power during initial climb. Contributing to the accident was the flight instructor's inadequate oversight of the student pilot's preflight inspection, the flight school's lack of fueling procedures, and the student pilot's exceedance of the airplane's critical angle-of-attack, which resulted in an aerodynamic stall.

Events

1. Prior to flight - Preflight or dispatch event
2. Initial climb - Fuel exhaustion
3. Initial climb - Loss of engine power (total)
4. Emergency descent - Abrupt maneuver
5. Emergency descent - Aerodynamic stall/spin
6. Uncontrolled descent - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Personnel issues-Psychological-Attention/monitoring-(general)-Instructor/check pilot - C
2. Aircraft-Fluids/misc hardware-Fluids-Fuel-Inadequate inspection - C
3. Aircraft-Fluids/misc hardware-Fluids-Fuel-Fluid level - C
4. Organizational issues-Support/oversight/monitoring-Oversight-Oversight of operation-Training organization - F
5. Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - F
6. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Airspeed-Not attained/maintained - F
7. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Angle of attack-Not attained/maintained - F

National Transportation Safety Board - Aircraft Accident/Incident Database

Narrative

HISTORY OF FLIGHT

On October 8, 2015, about 1830 eastern daylight time, a Piper PA-38-112, N4313E, operated by Asterix Aviation LLC, was substantially damaged when it impacted terrain after a loss of engine power in Jasper, Georgia. The student pilot was fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the local solo instructional flight conducted under the provisions of 14 Code of Federal Regulations (CFR) Part 91, which departed from Pickens County Airport (JZP), Jasper, Georgia, about 1720.

According to the student pilot's flight instructor, the student pilot was on his second supervised solo flight. The instructor reported that he saw the student pilot perform the preflight inspection of the airplane and that the student pilot "reported to him" that 14 gallons of fuel were in the airplane. The flight instructor could not recall if he backed the student up by visually checking the fuel quantity himself and could not recall if the student used a fuel stick when checking the quantity.

The flight school's general manager, who was leaving the airport at the time, saw the flight instructor on the ramp using his mobile phone while the student was performing the preflight inspection.

The flight instructor reported that, after takeoff from JZP, the student flew to the practice area and returned to the airport about an hour later. The student then performed a touch-and-go landing on runway 16. During climb after the touch-and-go, the flight instructor heard the engine suddenly stop running. The airplane then "sunk down," and he saw the airplane turn to the left like the student pilot was going to return to the airport. The airplane then appeared to enter an aerodynamic stall and then spin to the left. It descended rapidly while still in the spin until it was lost from view behind trees, and the flight instructor heard the sound of impact.

PERSONNEL INFORMATION

Student Pilot

According to Federal Aviation Administration (FAA) airman records and pilot records, the student pilot, age 21, held a third-class medical with a student pilot certificate issued on August 24, 2015.

Review of pilot records indicated that he had taken his pre-solo written exam on September 11, 2015. Before the accident flight, he had accumulated 13.5 total hours of flight experience, 1.3 hours of which were in solo flight. His previous supervised solo flight had occurred on September 21, 2015 (17 days before the accident flight). No dual instruction was logged after that date.

Flight Instructor

The flight instructor, age 31, held a commercial pilot certificate with ratings for airplane single-engine land, airplane multi-engine land, and instrument airplane. He also possessed a flight instructor certificate with ratings for airplane single-engine and instrument airplane. He reported that, during the previous year, he had soloed 10 students, and, at the time of the accident, he had accumulated about 3,400 hours of flight experience, 2,900 of which were as flight instructor.

AIRCRAFT INFORMATION

The airplane was a 2-seat, single engine, low-wing, fixed-gear monoplane of conventional metal construction. It was equipped with a 4-cylinder, air-cooled, horizontally opposed, normally aspirated, 112-horsepower Lycoming O-235-L2C engine, driving a metal, two-blade Sensenich 72CK-0-56, fixed pitch propeller.

According to FAA airworthiness records and airplane maintenance records, the airplane was manufactured in 1978. The airplane's most recent annual inspection was completed on October 3, 2015. At the time of the inspection, the airplane had accrued about 3,147 total hours of operation.

Review of the airplane's fuel system indicated that fuel was stored in two 16-gallon (15 gallons usable) fuel tanks, giving the airplane a total capacity of 32 gallons (30 gallons usable). The fuel tank selector control was in the center of the engine control quadrant; the selector had three positions: right, left, and off. A fuel quantity gauge for the left fuel tank was located adjacent to the left side of the fuel selector, and a fuel quantity gauge for the right fuel tank was located adjacent to the right side of the fuel selector.

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According to the Piper PA-38-112 Pilot's Operating Handbook (POH), during the preflight inspection, the fuel quantity gauges were to be checked, the fuel tank sumps and fuel strainer were to be drained, and the fuel quantity and color were to be visually checked by opening the fuel tank caps and looking inside each of the fuel tanks.

Review of the POH also indicated that:

- At a power setting of 75%, the engine would consume fuel at a rate of 6.5 gallons per hour (gph).
- At a power setting of 65%, the engine would consume fuel at a rate of 5.75 gph.
- At a power setting of 55%, the engine would consume fuel at a rate of 5.0 gph.

Further review of the POH indicated that, at a 65% power setting, endurance would be about 4.5 hours.

Examination of fuel receipts revealed that the airplane had last been refueled on October 5, 2015. Examination of the "Time Sheet" (aircraft flight log) that was recovered from the wreckage indicated that the airplane's recording hour meter read 1,533.0 at the time of the last refueling. The sheet further indicated that the airplane had been flown on four other flights before the accident flight and that, when the accident occurred at an hour meter reading of 1,537.9, the airplane had been operated about 4.9 hours since the last refueling.

METEOROLOGICAL INFORMATION

The recorded weather at JZP, at 1835, about 5 minutes after the accident, included: calm winds, 10 miles visibility, clear skies, temperature 24°C, dew point 12°C, and an altimeter setting of 30.15 inches of mercury.

AIRPORT INFORMATION

JZP was a publicly owned airport, located 2 miles southwest of the central business district of Jasper, Georgia. The field elevation was 1,535 ft, and the airport had one runway oriented in a 16/34 configuration. Runway 16 was asphalt, in good condition, and had a left traffic pattern. The runway was 5,000 ft long and 100 ft wide. It was marked with nonprecision markings in good condition, and the runway gradient was 0.7% uphill. It was equipped with medium intensity runway lights and a 2-light precision approach path indicator, which provided a 3.00° glide path to touchdown.

WRECKAGE AND IMPACT INFORMATION

The airplane came to rest in a small, grass-covered, automobile parking area located about 1,687 ft from the departure end of runway 16. All major components of the airplane were identified on site. The initial impact point was located 36 ft on a 252° magnetic heading from where the airplane had come to rest. There was no discernable wreckage path, and numerous components were spread throughout the area of the accident site.

Examination of the wreckage revealed that the aft fuselage was almost completely separated from the cabin. The engine was separated from the firewall; the propeller was separated from the engine; and the wings remained attached to their fittings.

Examination of the flight control system revealed no evidence of any preimpact failures or malfunctions, and control continuity was established from the rudder, elevator, and ailerons to the cockpit controls. The wing flaps were in the 34° (fully extended) position.

Examination of the cabin revealed that the master switch was in the "ON" position, and the magneto switch was in the "BOTH" position. The throttle was full forward; the mixture was full rich; and the primer was in and locked. The electric fuel pump was in the "OFF" position. The recording hour meter indicated 1,537.9 operating hours. A broken fuel stick made from a wooden dowel was found in the cabin. The dowel had the airplane registration number hand-written on it in ink, as well as a hand-drawn graduated scale. It also contained the hand-written words: "BOTTOM OF TANK IS 4 GAL."

Examination of the propeller revealed that damage to the nose spinner was concentrated on one side where it displayed crush and compression damage. Both propeller blades displayed minimal aft bending, minimal rotational scoring, and no evidence of leading edge gouging.

Examination of the engine revealed that oil was present in the rocker boxes and the galleries of the engine. Drivetrain continuity was established, and the intake valves and exhaust valves on all four cylinders were functional. Thumb compression was present on all four cylinders, and internal examination using a

borescope revealed no anomalies. The spark plugs electrodes appeared normal and were light grey in color. Both magnetos were functional and produced spark from all towers.

Examination of the fuel system revealed that the engine-driven fuel pump was functional, but internal examination revealed that it was devoid of fuel. The carburetor was impact damaged; the float bowl had separated from the carburetor body; and the floats had been ejected from the float bowl. No evidence of fuel staining in the float bowl was present. The fuel strainer bowl was devoid of fuel. The fuel selector valve was in the right fuel tank position.

When the fuel tank caps were opened with the airplane in the position it came to rest (the left wing parallel to the ground and the right wingtip about 6 ft above the ground with the right wing at an angle of about 29° to the ground), a small amount of fuel about 1/4-inch-deep was observed in the bottom of the left tank. No fuel could be observed in the right tank. After suspending the attached cabin section from a crane in a wings level position, the fuel system was drained, which revealed that a negligible amount of fuel was present in the left fuel tank, and about 1/2 cup of fuel was present in the right tank.

MEDICAL AND PATHOLOGICAL INFORMATION

The Georgia Bureau of Investigation, Division of Forensic Sciences, performed an autopsy on the student pilot. The student's cause of death was blunt trauma of the head and neck.

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing of the student pilot. The specimens from the student pilot were negative for carbon monoxide, basic, acidic, and neutral drugs.

TESTS AND RESEARCH

Examination of the fuel provider's records did not reveal any evidence of contamination. The certificate of analysis indicated that the fuel met the standard specification for aviation gasoline (ASTM D910), and the fuel facility checks indicated that all the fuel samples were clear and bright. The fueling facility had provided fuel to 13 other aircraft after the accident airplane had been fueled, dispensing a total of 330.78 gallons without any fuel-related problems being reported.

ORGANIZATIONAL AND MANAGEMENT INFORMATION

Asterix Aviation LLC, was organized on January 7, 2014 by Phobio LLC, a personal electronic device trade-in company located in Kennesaw, Georgia. Asterix Aviation operated out of two airports, JZP and Cobb County International Airport, Kennesaw, Georgia. At the time of the accident, they employed four flight instructors (this included the general manager who also instructed) and had about 44 students. The flight school had no written policies or procedures regarding fueling.

ADDITIONAL INFORMATION

Aviation Instructor's Handbook (FAA-H-8083-9A)

According to Chapter 7, "Instructor Responsibilities and Professionalism," under the section titled "Aviation Instructor Responsibilities," lists five main responsibilities of aviation instructors. Those responsibilities are: "Helping Students learn. Providing adequate instruction. Demanding adequate standards of performance. Emphasizing the positive. Ensuring aviation safety." The chapter further explains that there are at least eight "Additional Responsibilities of Flight Instructors." One of those additional responsibilities is "Pilot supervision."

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA18CA038 11/05/2017 1000 EDT Regis# N98299 Batavia, OH Apt: Clermont County I69
Acft Mk/Mdl PIPER PA28-140 Acft SN 28-26156 Acft Dmg: SUBSTANTIAL Rpt Status: Prelim Prob Caus: Pending
Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: SCHAAF, ALLEN F. Opr dba: Aircraft Fire: NONE

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ERA16FA169 04/25/2016 1300 EDT Regis# N43576 Boone, NC Apt: Boone Inc Airport NC14
Acft Mk/Mdl PIPER PA32-300 Acft SN 32-7440135 Acft Dmg: DESTROYED Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-540K1A5 Acft TT 7832 Fatal 1 Ser Inj 2 Flt Conducted Under: FAR 091
Opr Name: WORSLEY JOHN F II Opr dba: Aircraft Fire: GRD
AW Cert: STN

Summary

The private pilot and two passengers were conducting a local flight from the pilot's home airport. One witness stated that his attention was drawn to the airplane due to its "very fast" landing approach. The airplane then disappeared from his view; shortly thereafter, he saw a plume of smoke in the area of a golf course on the northwest side of the airport. Several witnesses on the golf course stated that the airplane appeared to be taking off, and noted that it was "struggling," that it was "too low," and was "bobbing up and down." The airplane impacted a stand of 75-ft-tall pine trees and came to rest on the golf course, where it was consumed by a post-crash fire. The rear seat passenger was fatally injured; the pilot and front seat passenger received serious injuries. Neither the pilot nor the passenger could recall the events of the accident flight.

Postaccident examination of the airframe and engine revealed no anomalies that would have precluded normal operation. The landing runway measured 2,700 ft long by 40 ft wide. Given the witness observation of the airplane's fast approach speed, it is likely that the pilot initiated a go-around due to excessive airspeed and/or a lack of runway remaining on which to stop; however, it could not be determined when the pilot began the go-around maneuver. The airplane's low altitude as it climbed away from the runway suggests that the pilot may have initiated the go-around near touchdown or possibly even after touching down. Had the pilot started the go-around earlier, after recognizing the airplane's unstabilized approach due to excessive airspeed, he would have allowed more time to re-configure the airplane, establish a positive rate of climb, and clear the trees near the end of the runway. However, the late go-around placed the airplane in close proximity to the trees, from which the pilot subsequently failed to maintain lateral clearance.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's delayed decision to conduct a go-around following an unstabilized landing approach and his subsequent failure to maintain clearance from trees near the end of the runway.

Events

1. Initial climb - Collision with terr/obj (non-CFIT)
2. Initial climb - 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-Action/decision-Action-Delayed action-Pilot - C
3. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
4. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Altitude-Not specified - C

Narrative

HISTORY OF FLIGHT

On April 25, 2016, about 1300 eastern daylight time, a Piper PA-32-300, N43576, was destroyed after a collision with trees and terrain while conducting a go-around at Boone Inc. Airport (NC14), Boone, North Carolina. The private pilot and pilot-rated passenger were seriously injured. The rear seat passenger was fatally injured. The airplane was privately owned, and the personal flight was operated under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed at the time, and no flight plan was filed for the local flight, which originated from NC14 about 1255.

According to a witness at the approach end of runway 31, his attention was drawn to the airplane because it was "very fast" as it approached the airport for landing. The airplane disappeared from his view and shortly after, he saw a plume of smoke on the adjacent golf course. Another witness, who was in a house on a hill on the right side of the departure end of runway 31, stated that the airplane was climbing out and the left wing was low when it collided with a pine tree. She said that the airplane seemed as if it was attempting to gain altitude but collided with another pine tree before impacting the golf course. Witnesses on the golf course reported that they watched the airplane climb and stated that it was "bobbling" up and down before hitting the top of a stand of pine trees. The airplane nosed down and impacted the golf course; a postimpact fire ensued. The witnesses on the golf course saw two occupants exit the airplane and assisted them before the local authorities arrived. Neither the pilot or the surviving passenger could recall the events of the accident flight.

PERSONNEL INFORMATION

The pilot, age 68, held a private pilot certificate with a rating for airplane single-engine land, and a Federal Aviation Administration (FAA) third-class medical certificate issued July 2, 2015, with a limitation for corrective lenses. On the pilot's application for that medical certificate, he reported 604 total hours of flight experience. The pilot could not recall his flight experience and his logbook was not recovered; therefore, his total flight experience at the time of the accident and his experience in the accident airplane make and model could not be determined.

The pilot-rated passenger, age 44, held a commercial pilot certificate with ratings for single-engine land and instrument airplane. He also held a private pilot certificate with ratings for multi-engine land, and an FAA second-class medical certificate with no noted limitations. On the pilot-rated passenger's most recent application for a FAA medical certificate, he reported a total flight experience of 2,600 hours. The pilot-rated passenger succumbed to his injuries 34 days after the accident, and his logbook was not recovered; therefore, his total flight experience at the time of the accident could not be determined.

AIRCRAFT INFORMATION

The single-engine airplane was manufactured in 1974 and was powered by a Lycoming IO-540-K1A5 engine equipped with a Hartzell HC-C2YK-1, controllable-pitch propeller. A review of maintenance logbook records showed an annual inspection was completed on June 16, 2015, at a recorded airframe total time of 7,718.5 hours and an engine total time of 4,073 hours. Further review of the airplane records revealed that the engine was overhauled on August 27, 1992. The last maintenance was performed on January 31, 2016, at which time the engine had accumulated about 2,255 hours since overhaul.

The airplane was owned by the pilot and based at NC14.

METEOROLOGICAL INFORMATION

At 1255, the recorded weather at Watauga County Hospital Heliport (TNB), Boone, North Carolina, about 1 mile north of the accident site, included wind from 330° at 4 knots, 10 statute miles visibility, scattered clouds at 6,000 ft above ground level, temperature 21°C, dew point 6°C, and an altimeter setting of 30.11 inches of mercury.

AIRPORT INFORMATION

The airport's runway was oriented on 130/310 and measured 2,700 ft in length and 40 ft in width. The runway surface was asphalt and there were 25 ft trees about 150 ft from the runway 31 departure end.

WRECKAGE AND IMPACT INFORMATION

Examination of the accident site revealed that the airplane initially impacted a stand of 75-ft-tall pine trees. Parts of the left wing and freshly cut branches were observed throughout the stand of pine trees. A wreckage path extended from the trees, continued on a magnetic heading about 310° and extended about 126 ft to the main wreckage, which came to rest on a golf course. The main wreckage consisted of the fuselage, the rudder and vertical stabilizer, and the left and right stabilizers. The outboard section of the left wing was fragmented along the wreckage path. The right wing was located with the main fuselage and it was consumed by fire. A post-impact fire consumed the cockpit, cabin, and baggage area. The instrument panel and avionics were destroyed by fire. No useful information was obtained from the instrumentation or avionics equipment. The engine control levers were not attached to the quadrant and were impact and fire damaged.

Both control yokes were impact separated, broken and fire damaged. The T-bar with aileron sprocket and chain were examined. The aileron and stabilator cables were attached. The rudder pedals were pushed forward against the forward bulkhead. The firewall was severely impact damaged. The engine mount was attached to the firewall, and the engine was attached to the mount. The nose landing gear was attached to the mount. The nose gear steering rods were bent and impact separated from the steering horn.

The flap control handle and bracket were attached to the fuselage floor and exhibited a flaps-retracted position. The flap operating torque tube was attached to its location in the fuselage and was also in the retracted position. The fuel selector valve was located and the selector valve arm was positioned in the right tip tank detent position. The fuel selector displayed impact and fire damage and the internal fuel filter was melted. All switches and circuit breakers were impact and fire damaged.

Examination of the empennage revealed that the vertical fin with left and right stabilator sections was attached by the floor pan of the fuselage and impact and fire damaged. The rudder was attached to the vertical stabilizer at its hinge points. The rudder sector control cables were attached. Movement was noted going forward to the cabin area. The rudder trim position could not be determined. The stabilator control cables and trim control cables were attached and traced forward to the cabin area. Control cable continuity was traced forward to the flight control "T"-bar assembly. All cables exhibited postimpact fire damage.

The left wing was separated from the fuselage. Both fuel tanks were breached and destroyed. All lower wing skins were destroyed by ground fire. The flap was attached at the inboard end. The outboard section was impact and fire damaged. The aileron was destroyed. The aileron control sector was bent and twisted. Both aileron cables were attached. Cable continuity was traced to the control chains in the forward cabin area. The left main landing gear assembly was attached to the main wing spar and fire damaged. The stall warning vane was destroyed.

The right main landing gear was destroyed by postimpact fire. The right flap and aileron were destroyed by impact and fire. The primary and balance cables were attached. Control cable continuity was traced through all cable breaks from tension overload to the forward cabin area. Both cables were found attached to the aileron control chain.

The engine remained attached to the firewall by the upper engine mount tubes. The upper mount tubes were impact damaged and the lower tubes were separated.

The engine was removed, suspended from a lift, and partially disassembled to facilitate the examination. The propeller was removed and the engine was rotated using a tool inserted in the vacuum pump drive pad. Continuity of the crankshaft to the rear gears and to the valve train was confirmed. Compression and suction were confirmed at all six cylinders. The interiors of the cylinders were examined using a lighted borescope and no anomalies were noted.

The fuel injector servo was impact separated from the engine and was fire and impact damaged. The fuel inlet screen was removed; it was fire damaged and a small amount of debris was observed inside. The fuel regulator section was disassembled and the rubber diaphragms were fire damaged.

The flow divider remained attached to the engine. The unit was partially disassembled and no debris was observed in the interior. The engine-driven fuel pump remained attached to the engine and was fire damaged. Both magnetos remained attached to the engine and were heavily fire damaged. The upper spark plugs exhibited light gray coloration and undamaged electrodes. The lower spark plugs were a combination of Champion REM38E and REM40E. The lower spark plugs exhibited undamaged electrodes. The Nos. 3, 5 and 6 spark plug electrodes exhibited gray coloration.

The Nos. 1, 2 and 4 electrodes were oil contaminated. The ignition harness was destroyed by fire. The starter and alternator remained attached to the engine and were impact damaged. The vacuum pump remained attached to the engine and was fire damaged. The drive coupling was partially melted and the pump could not be rotated by hand. The pump was partially disassembled and the carbon rotor and vanes were intact.

Oil was observed in the engine. The oil dipstick indicated about 9 quarts. The engine oil filter media was charred. No debris was observed between the folds of the filter media. The oil coolers remained attached to the engine cooling baffles. The left oil cooler was fire and impact damaged. The right oil cooler was undamaged. The oil cooler hoses were destroyed by fire.

ADDITIONAL INFORMATION

The FAA Airplane Flying Handbook, Chapter 8, "Approaches and Landings," states, "To land within a short-field or a confined area, the pilot must have precise, positive control of the rate of descent and airspeed to produce an approach that clears any obstacles, result in little or no floating during the round out, and permit the airplane to be stopped in the shortest possible distance."

The handbook defines a stabilized approach as one that "permits the airplane to reach the desired touchdown point at an airspeed that results in minimum floating just before touchdown; in essence, a semi-stalled condition. To accomplish this, it is essential that both the descent angle and the airspeed be accurately controlled."

The handbook further describes the characteristics of a stabilized short field landing approach, stating:

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[Short-field landing] procedures generally involve the use of full flaps and the final approach started from an altitude of at least 500 feet higher than the touchdown area.

An excessive amount of airspeed could result in touchdown too far down the runway threshold or an after-landing roll that exceeds the available landing area.

The handbook further states that go-arounds, or rejected landings, should be performed whenever landing conditions are not satisfactory. It also states,

The go-around maneuver is not inherently dangerous in itself. It becomes dangerous only when delayed unduly or executed improperly. Delay in initiating the go-around normally stems from two sources:

1. Landing expectancy or set - the anticipatory belief that conditions are not as threatening as they are and that the approach is surely terminated with a safe landing,
2. Pride - the mistaken belief that the act of going around is an admission of failure - failure to execute the approach properly. The improper execution of the go-around maneuver stems from a lack of familiarity with the three cardinal principles of the procedure: power, attitude, and configuration.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA453 07/29/2017 1415 CDT Regis# N132VA Mccook, NE Apt: N/a
Acraft Mk/Mdl PIPER PA36-285 Acft SN 36-7660013 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-720-AIR Acft TT 6662 Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 137
Opr Name: RED WILLOW AVIATION Opr dba: Aircraft Fire: NONE
AW Cert: SPR

Summary

The pilot reported that, while maneuvering at low altitude during agricultural spraying, he noticed "some shuddering (stalling)" on multiple downwind low passes. He added that, on the fourth attempt to spray on a downwind line, he experienced "severe shuddering and loss of altitude," so he applied full power and dumped the entirety of the aerial application product. He further added that, after dumping the load, the airplane was about 10 to 15 ft above ground level and still would not climb. The pilot reported that he continued to "pull back on the stick," entered a right turn to avoid obstacles ahead, and the airplane "continued to [aerodynamically] stall until impact."

The fuselage and both wings 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 18 nautical miles south from the accident site reported, about the time of the accident, wind from 140ø at 12 knots.

The pilot reported that the wind had "picked up to 20-25 mph" and that the flightpath was "nearly directly downwind at the time of impact."

The pilot reported that the airplane was not equipped with a stall warning device.

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 maneuvering downwind during an agricultural application flight, which resulted in an aerodynamic stall at low altitude.

Events

1. Maneuvering-low-alt flying - Other weather encounter
2. Maneuvering-low-alt flying - Aerodynamic stall/spin
3. Maneuvering-low-alt flying - Attempted remediation/recovery
4. Maneuvering-low-alt flying - Loss of control in flight
5. Maneuvering-low-alt flying - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

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

Narrative

The pilot reported that, while maneuvering at low altitude during agricultural spraying, he noticed "some shuddering (stalling)" on multiple downwind low passes. He added that, on the 4th attempt to spray on a downwind line, he experienced "severe shuddering and loss of altitude," so he applied full power and dumped the entirety of the aerial application product. He further added that, after dumping the load, the airplane was about 10-15 ft. above ground and still would not climb. The pilot reported that, he continued to "pull back on the stick," entered a right turn to avoid obstacles ahead, and the airplane "continued to [aerodynamically] stall until impact."

The fuselage and both wings 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, about the time of the accident, 18 nautical miles south from the accident site, reported wind from 140ø at 12 knots.

The pilot reported that the wind had "picked up to 20-25mph" and the flight path was "nearly directly downwind at the time of impact."

The pilot reported that the airplane was not equipped with a stall warning device.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ANC17LA011 12/02/2016 1200 AKS Regis# N7085K Unalaska, AK Apt: N/a
Acft Mk/Mdl ROBINSON HELICOPTER R22-BETA Acft SN 2923 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-360-J2A Acft TT 3727 Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: BERING PACIFIC RANCHES LTD. Opr dba: Aircraft Fire: NONE
AW Cert: STN

Summary

The commercial pilot of the helicopter stated that the purpose of the flight was to transport a telecommunications technician to a cattle ranch on an island. After departing from the airport, while flying overwater, the pilot observed a snow squall with near-zero visibility and decided to return to the airport. On the return trip, while flying in a mountainous valley, another snow squall moved into the area. He stated that due to the deteriorating flight conditions, he conducted a precautionary landing to remote, snow-covered terrain to wait for improved flight conditions. Once the squall passed, he continued to the airport. Several minutes later, another snow squall arrived, and the pilot decided to conduct another precautionary landing. During the landing sequence, the main rotor system downwash resulted in whiteout conditions, and the pilot was unable to recognize any topographical features. The main rotor blades impacted terrain and the helicopter rolled onto its left side. The pilot reported that there were no preimpact mechanical failures or malfunctions with the airframe or engine 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 maintain adequate clearance from terrain during a precautionary landing in whiteout conditions, which resulted in an in-flight collision with terrain.

Events

1. Landing - Loss of visual reference
2. Landing - Collision during takeoff/land
3. Post-impact - Roll over

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-Altitude-Not attained/maintained - C
3. Environmental issues-Physical environment-Terrain-Snowy/icy terrain-Effect on operation - C
4. Environmental issues-Conditions/weather/phenomena-Ceiling/visibility/precip-Whiteout-Effect on personnel - C

Narrative

On December 2, 2016, about 1200 Alaska standard time, a Robinson R-22 Beta helicopter, N7085K, collided with remote snow-covered terrain while landing, about 10 miles southwest of Unalaska, Alaska. The commercial pilot sustained no injury, the passenger sustained minor injuries, and the helicopter sustained substantial damage. The helicopter was registered to, and operated by, Bering Pacific Ranches Ltd., Calgary, Alberta, Canada, as a visual flight rules (VFR) flight under the provisions of 14 Code of Federal Regulations Part 91. Deteriorating visual meteorological conditions prevailed at the time of the accident, and no flight plan was filed. The flight originated from the Unalaska Airport, Unalaska, about 1100.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), on December 7, the pilot stated that the purpose of the flight was to transport a telecommunications technician to the Fort Glenn cattle ranch on Umnak Island. After departing from the Unalaska Airport, while flying overwater past Makushin Bay near Cape Starichkof, he observed a snow squall with near zero visibility. The pilot decided to return to Unalaska. On the return trip, while flying in a mountainous valley, a snow squall moved into the area. He stated that due to the deteriorating flight conditions, he conducted a precautionary landing to remote snow-covered terrain to wait for improved flight conditions. Once the snow squall passed, he departed to head back to Unalaska. Several minutes later, he encountered a second snow squall and decided to conduct another precautionary landing. During the precautionary landing sequence, whiteout conditions were present from the main rotor system downwash from the previous snow squall, and the pilot was unable to recognize any topographical features. The main rotor blades impacted terrain and the helicopter rolled onto its left side. Both occupants egressed from the wreckage, a personal locator beacon was activated, and the occupants were extracted from the accident site via a U.S. Coast Guard MH-65D helicopter.

The helicopter sustained substantial damage to the fuselage, main rotor system, tail boom, and tail rotor system.

The pilot reported that there were no preimpact mechanical failures or malfunctions with the airframe or engine that would have precluded normal operation.

PERSONNEL INFORMATION

National Transportation Safety Board - Aircraft Accident/Incident Database

In the NTSB Accident/Incident Reporting Form 6120.1, the pilot reported that he held a helicopter instrument rating in addition to instructor ratings for helicopter and instrument helicopter. He additionally reported 70 hours of simulated instrument flight time and no hours were reported for actual instrument flight time.

AIRCRAFT INFORMATION

The helicopter had no onboard weather capability and it was not instrument flight rules-equipped and certified. The helicopter had a standard skid configuration with no emergency floatation system installed.

METEOROLOGICAL INFORMATION

The closest official weather observation station is located at the Unalaska Airport, about 10 miles northeast of the accident site. At 1200, an Aviation Routine Weather Report (METAR) was reporting, in part: wind 220ø (true) at 18 knots, gusting 25 knots; visibility 10 statute miles; clouds and sky condition, broken clouds at 1,600 feet; temperature 37ø F; dew point 27ø F; altimeter 30.19 inHg.

SURVIVAL ASPECTS

The accident helicopter was not equipped, nor was it required to be equipped with an emergency locator transmitter. The pilot and passenger were not wearing flight helmets for the flight. The helicopter was equipped with 3-point restraint systems for the two seats.

ADDITIONAL INFORMATION

The Naval Research Laboratory has published the Forecaster's Handbook for the Bering Sea, Aleutian Islands, and Gulf of Alaska (1993). This document discusses snowfall and snow cover on the Aleutian Islands and states in part:

During winter, snow frequently covers the ground but the depth of coverage rarely exceeds 1 foot (30 centimeters). High winds, however, cause snow to drift so that depth at an individual location is highly dependent on topography. Some depressions may fill to depths exceeding 6 feet (1.8 meters), and other areas remain relatively free of snow. Because of the relatively mild temperatures, the snow is frequently of the wet, heavy type. Annual rainfall for the islands averages 40 to 50 inches (102 to 152 centimeters), and, again is heavily influenced by topography so that individual locations may have quite different rainfall amounts even though they are separated by only a short distance.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA406	07/10/2017 1245 UTC	Regis# N2336J	Wilkes-barre, PA	Apt: Wilkes-barre Wyoming Valley WBW
Acft Mk/Mdl ROBINSON HELICOPTER R22-BETA	Acft SN 2168	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual	Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-320-J2A	Acft TT 6973	Fatal 0	Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: VALLEY AVIATION INC	Opr dba: VALLEY AVIATION	Aircraft Fire: NONE	AW Cert: STN	

Events

1. Maneuvering-hover - Loss of control in flight

Narrative

The helicopter flight instructor reported that he was teaching his student to hover.

The helicopter was at a 2-foot hover and began drifting to the left. The left rear skid contacted the ground and a left roll ensued. The student pilot pulled up on the collective, and the instructor attempted to push the collective down. A dynamic rollover occurred, and the helicopter rolled onto its left side.

The flight instructor reported that wind gusts may have been a factor in the accident.

According to the METAR that was being monitored by the flight instructor about the time of the accident, the wind was from 210ø at 8 knots. No wind gusts and no convective activity was reported via METAR that day.

The helicopter sustained substantial damage to the tailboom and the main rotor system.

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

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN18LA025	11/06/2017 1310 CST	Regis# N7085M	Larchwood, IA	Apt: N/a
Acft Mk/Mdl ROBINSON HELICOPTER R44		Acft SN 0430	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-540 SERIES			Fatal 0 Ser Inj 2	Flt Conducted Under: FAR 091
Opr Name: RIDE THE SKY HELICOPTERS		Opr dba:		Aircraft Fire: NONE
				AW Cert: STN

Events

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

Narrative

On November 6, 2017, about 1310 central standard time, a Robinson Helicopter R44 helicopter, N7085M, was substantially damaged when it impacted a powerline and then terrain 4.5 miles south of Larchwood, Iowa. The commercial pilot and passenger sustained serious injuries. The aerial observation flight was conducted under the provisions of 14 Code of Federal Regulations Part 91. Marginal visual meteorological conditions prevailed and no Federal Aviation Administration (FAA) flight plan had been filed for the flight. The local flight departed about 1300.

According to law enforcement officers, the helicopter was assisting in locating 300 cattle that were loose in the area. Witness on the ground observed the helicopter hovering and as it started to turn the "tail" of the helicopter hit the power lines. The helicopter descended to the ground and came to rest on its right side in a corn field. The tailboom separated from the fuselage and both main rotors were substantially damaged.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN17CA346 07/20/2017 1000 CDT Regis# N192E Logan, IA Apt: N/a
Acft Mk/Mdl ROBINSON HELICOPTER COMPANY R44 Acft SN 10989 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-540 Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 137
Opr Name: AIRBOURN AVIATION LLC Opr dba: Aircraft Fire: NONE
AW Cert: SPR

Summary

The commercial pilot was performing an agricultural application flight and completed two reconnaissance passes and orbits of the field he was about to spray. The pilot reported that he did not see any power lines that posed a danger for the flight. While maneuvering at a low altitude during a pass turn, the helicopter struck a wire that the pilot did not see. After the helicopter struck the wire, the helicopter windscreen failed, and the helicopter violently shook. The pilot entered an autorotation to the field, and the helicopter impacted terrain and came to rest on its right side. The helicopter sustained substantial damage to the fuselage, tailboom, and main rotor blades. The pilot reported no mechanical failures or malfunctions of the helicopter.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to maintain clearance from a wire during an agricultural application flight.

Events

1. Maneuvering-low-alt flying - Low altitude operation/event
2. Maneuvering-low-alt flying - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Altitude-Not attained/maintained - C
2. Personnel issues-Psychological-Attention/monitoring-Monitoring environment-Pilot - C
3. Environmental issues-Physical environment-Object/animal/substance-Wire-Effect on equipment
4. Environmental issues-Physical environment-Object/animal/substance-Wire-Awareness of condition

Narrative

The commercial pilot was performing an agricultural application flight, and completed two reconnaissance passes and orbit of the field he was about to spray. The pilot did not note any power lines that posed a danger for the flight. While maneuvering at a low altitude during a pass turn, the helicopter struck a wire that he did not see. After the helicopter struck the wire, the helicopter windscreen failed and the helicopter violently shook. The pilot entered an autorotation to the field, and the helicopter impacted terrain and came to rest on its right side. The helicopter sustained substantial damage to the fuselage, tail boom, and main rotor blades. The pilot reported no mechanical failures or malfunctions of the helicopter. The accident was reported to the National Transportation Safety Board on September 11, 2017.