

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ERA16FA194	05/24/2016 1625 EDT	Regis# N440JM	Rhoadesville, VA	Apt: N/a
Acft Mk/Mdl JIHLAVAN AIRPLANES SRO KP 5 ASA-NOAcft SN 5141163M			Acft Dmg: DESTROYED	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl ROTAX 914 UL		Acft TT 534	Fatal 2 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: CHARLES CALDWELL		Opr dba:		Aircraft Fire: NONE
				AW Cert: SPX

Events

1. Enroute - Loss of control in flight
2. Uncontrolled descent - Sys/Comp malf/fail (non-power)

Narrative

HISTORY OF FLIGHT

On May 24, 2016, about 1625 eastern daylight time, an experimental light sport Jihlavan KP 5 ASA (Skyleader 500), N440JM, was destroyed when it impacted terrain in Rhoadesville, Virginia. The sport pilot/owner and the flight instructor were fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the flight, which originated from Culpeper Regional Airport (CJR), Culpeper, Virginia, about 1530. The instructional flight was conducted under the provisions of 14 Code of Federal Regulations (CFR) Part 91.

The sport pilot had recently purchased the airplane and had another pilot ferry it from California to CJR. The airplane arrived at CJR on May 13, 2016. According to an insurance adjuster, the sport pilot had less than 5 hours of flight experience in the make and model airplane. Therefore, his insurance policy required that he receive a "checkout" flight by a certificated flight instructor. The flight was required to include a minimum of 2 hours dual instruction with 15 takeoffs and landings. When the sport pilot inquired about obtaining flight instruction, the airport manager at CJR referred him to the flight instructor.

According to Federal Aviation Administration (FAA) data, no air traffic control services were provided to the flight. Radar returns indicated that, after departing CJR, the airplane flew southwest to Orange County Airport (OMH), Orange, Virginia. There, radar indications disappeared and reappeared four times, consistent with approaches below radar coverage to runway 26. After the fourth approach, the airplane proceeded northeast and later turned east before disappearing from radar. There were no altitude readouts from the airplane during the entire flight. As the airplane traveled east toward the end of the data, the groundspeed slowed from 94 to 62 knots, consistent with slow flight and stall practice. The last target was recorded near the accident site at 1624:28.

According to several witnesses near the accident site, they heard what sounded like thunder or a "crack." They then saw a parachute deployment and the airplane's nose pointed straight down before impacting the ground. Witnesses could not determine the airplane's altitude at the time other than that it was low, nor could they report whether the engine was operating.

One witness provided a photograph of the airplane descending with the parachute still attached and partially inflated.

PERSONNEL INFORMATION

The pilot, age 57, held a sport pilot certificate with endorsements for airplane single-engine land and powered-parachute land. He did not possess an FAA medical certificate nor was he required to. Review of the pilot's logbook revealed that he had accumulated a total flight experience of about 121 hours, of which 2.5 hours were in the accident airplane. The pilot had flown 4.5 and 0 hours during the 90- and 30-day periods preceding the accident, respectively. Further review of his logbook revealed that the 2.5 hours of experience in the accident airplane consisted of two flights on March 20, 2016, and March 22, 2016, in California. The pilot recorded those flights in his logbook as prebuy flights. During the second prebuy flight, the pilot also recorded "Slowflight Stalls" in his logbook. Additionally, the pilot recorded those two flights as dual instruction received; however, there were no accompanying endorsements from a flight instructor. Other than the 2.5 hours in the accident airplane, the pilot did not have any prior experience in the accident airplane make and model.

The flight instructor, age 81, held an airline transport pilot certificate with a rating for airplane multiengine land. He also held a commercial pilot certificate with ratings for airplane single-engine land and airplane single-engine sea. Additionally, he held a flight instructor certificate with ratings for airplane single-engine and instrument airplane. His most recent FAA second-class medical certificate was issued on March 1, 2016. Review of the flight instructor's logbook revealed that he had accumulated a total flight experience of about 32,840 hours, of which 100 and 43 hours were flown during the 90- and 30-day periods preceding the accident, respectively. There was no record of the flight instructor having any prior experience in the accident airplane make and model.

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AIRCRAFT INFORMATION

The two-seat, low-wing, retractable tricycle landing gear-equipped airplane, serial number 5141163M, was manufactured in 2007. It was powered by a Rotax 914 UL, 115-horsepower engine, equipped with a DUC Swirl ground-adjustable three-blade propeller. The airplane was issued an FAA special light sport aircraft (S-LSA) airworthiness certificate in 2008, which was superseded by an FAA experimental light sport aircraft (E-LSA) airworthiness certificate in 2010. According to the previous owner of the airplane, he chose to have the airplane subsequently recertified as an E-LSA, rather than an S-LSA because he could perform more of the maintenance work himself under the E-LSA certification. The previous owner further stated that he had to be vigilant during stall practice because the airplane always seemed to yaw abruptly right and into a spin, more so than any other airplane he had ever flown. The airplane's maximum gross takeoff weight was 1,279 lbs.

Review of the airplane's logbook revealed that its most recent annual condition inspection was completed on May 6, 2016. At that time, the airframe and engine had accumulated 534 hours since new.

Review of the airplane's Pilot's Operating Handbook revealed, "Acrobatic, intentionally driven stalls and spins are prohibited!"

The airplane was equipped with a Galaxy Rescue Systems (GRS) ballistic parachute. According to the manufacturer label, the model parachute could be deployed at a maximum weight of 1,350 lbs and maximum speed of 138 mph. Review of the parachute manual revealed instructions for the engine to be turned off before activation. The parachute attached to the airframe via four risers (cables) and three anchors. Two of the risers shared an anchor (front) attached by eight bolts with nuts to the aluminum bulkhead behind the seats. The other two risers (rear) attached to an anchor located at each wing root near the trailing edge of the wing. According to a representative of the parachute manufacturer, the double-riser front anchor was designed to carry the majority load. The remaining two rear risers were designed to stabilize the airplane in an optimal descending attitude and could not carry the full load if the double-riser front anchor failed. Specifically, the double-riser front anchor could withstand a maximum shock/load of 40.1 kiloNewtons [kN] (9,015 pounds of force [lbf]), and the two rear risers could withstand a maximum shock/load of 13.3 kN (2,990 lbf) each. The representative added that the data were for the anchors and risers and that data for the actual anchor-to-airframe attachment would have to be provided by the airplane manufacturer.

The GRS also included a drogue parachute to assist in main parachute deployment. The parachute manufacturer representative further stated that, although the engine should be off during parachute deployment, it did not have a significant effect on the parachute deployment. Rather, airplane speed and weight had a greater effect on the parachute deployment and performance.

According to a representative of the airplane manufacturer, the first in-flight deployment of the parachute on the make and model airplane was on the accident airplane during the accident flight. During certification, one test deployment was performed on the ground. The representative further stated that they could not perform additional testing on the front anchor attachment because the design had been changed about 8 years before the accident. The current design (Skyleader 600) included two front anchors rather than one. The manufacturer no longer had any airplanes with a single front anchor to test.

METEOROLOGICAL INFORMATION

Orange County Airport (OMH), Orange, Virginia, was located about 9 miles west of the accident site. The 1635 recorded weather at OMH included calm wind, visibility 10 miles, and scattered clouds at 11,000 ft.

WRECKAGE INFORMATION

The wreckage was located in open terrain at an elevation of about 400 ft. The airplane was found upside down and complete with the exception of some smaller pieces that were found nearby. When the airplane was righted, significant fore-to-aft crushing damage was noted to the nose section and to both wings.

The airplane was subsequently moved to a temporary storage facility where it was laid out, and the presence of all flight control surfaces was confirmed, as was control continuity from each flight control surface to the cockpit controls.

At the accident scene, the drogue parachute was found in a nearby field, and the main parachute was found in trees about 100 yards east of the wreckage. At the temporary storage facility, the parachute's fabric canopy was spread out and observed to be undamaged. The two individual risers that had been attached to wing anchors were found separated near their respective anchors with the wire ends broomstrawed, consistent with overload separation. The other two risers

were found still attached to their shared single anchor; however, that anchor was itself separated from the airframe. The cockpit parachute activation handle, located on the pilot's side of the instrument panel, appeared to have been pulled (system was activated.)

An engine monitoring system (EMS), electronic flight information system (EFIS), and engine control unit (ECU) were retained and forwarded to the NTSB Vehicle Recorder Laboratory. Attempted data download from the units revealed that the EMS and EFIS did not record any data; however, data were successfully downloaded and plotted from the ECU. Review of the data revealed that the ECU recorded about the last 20 minutes of the accident flight. About 11 minutes before the end of the data, the engine rpm averaged about 2,000, consistent with the last approach and landing. Subsequently, the engine rpm averaged between 4,000 and 5,000 to the end of the data.

Metallurgical examination of the two separated risers revealed overstress features. Additionally, pull-testing of the separated risers revealed that they exceeded their design specification by about 1,000 lbf. Metallurgical examination of the separated anchor revealed that it had been bolted into aluminum bulkhead skin that was approximately 0.022-inch thick. Although the anchor and seven of its eight bolts remained intact, the surrounding aluminum skin of the airplane had separated, consistent with overstress. There were no longerons, stringers, or bathtub fittings to transfer the parachute deployment loads into the airframe. The airplane manufacturer was unable to provide any data or testing of the amount of shock force the surrounding aluminum skin could withstand (for more information, see the Materials Laboratory Factual Report and Structures Group Chairman's Factual Report in the public docket for this investigation).

MEDICAL AND PATHOLOGICAL INFORMATION

The State of Virginia Office of Chief Medical Examiner, Manassas, Virginia, conducted autopsies on the pilot and flight instructor. The autopsy reports noted the cause of death for both pilots as "blunt force trauma."

The FAA Bioaeronautical Science Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing of specimens from the pilot and flight instructor. The results for the flight instructor were negative for alcohol and drugs. The results for the pilot were as follows:

"Carvedilol detected in Liver
Carvedilol detected in Blood
Doxazosin detected in Liver
Doxazosin detected in Blood
2.099 (ug/mL, ug/g) Doxepin detected in Liver
0.451 (ug/mL, ug/g) Doxepin detected in Blood
Methadone detected in Liver
Nordoxepin detected in Liver
Nordoxepin detected in Blood
0.592 (ug/mL, ug/g) Quetiapine detected in Liver
Quetiapine NOT detected in Blood
Blood unsuitable for analysis of Methadone."

According to the pilot's personal medical records, his chronic medical conditions included obstructive sleep apnea, high blood pressure, elevated cholesterol, heart disease, chronic obstructive pulmonary disease, and benign prostatic hypertrophy; these were all reportedly controlled, and the treatments are generally considered not to be impairing. In addition, he had an unspecified clotting disorder treated and controlled with apixaban. Because of the clotting disorder and bleeding into his muscles, he had severe myositis ossificans (bone formation in the muscle tissue), which resulted in limited range of motion and chronic pain treated with the impairing opioid medications methadone and oxycodone. The pilot had a remote history of strokes and heart disease, but no abnormal findings were documented on recent neurological and cardiac examinations. Further, the autopsy did not identify any significant natural disease in the heart or brain. Finally, he had a history of insomnia and depression treated with the impairing medications seroquel and doxepin. Although there was no evidence of depression on recent examinations, both psychoactive medications had been prescribed specifically for their sedating effects.

Title 14 CFR Part 61.23(c)(1) allows sport pilots to use a valid and current U.S. driver's license in lieu of a medical certificate. However, further review of 61.23(c)(2)(iv) revealed that the sport pilot must "Not know or have reason to know of any medical condition that would make that person unable to operate a light-sport aircraft in a safe manner."

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ADDITIONAL INFORMATION

According to the manufacturer, the airplane's basic empty weight was 819.82 lbs. Review of fueling records revealed that on the day of the accident, 9.1 gallons of fuel were added to the airplane, and its total fuel capacity was 16.9 gallons (101.4 lbs). Review of autopsy reports revealed that the pilot weighed 270 lbs and that the flight instructor weighed 170 lbs, which resulted in a total airplane weight of 1,361.22 lbs, or 82.22 lbs above the airplane's maximum takeoff weight of 1,279 lbs. The airplane had flown about 1 hour before parachute deployment, and a fuel consumption rate of 5 gallons per hour corresponded to an airplane weight about 50 lbs above its maximum takeoff weight of 1,279 lbs at the time of parachute deployment.

The airplane manufacturer and FAA Office of Accident Investigation, Recommendation and Analysis Division were notified about the overstress failure of the airplane structure to which the front anchor attached. A search of FAA data revealed fifteen other U.S.-registered Skylender 500 airplanes.

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Accident Rpt# GAA17CA319	06/02/2017 1510 CDT	Regis# N600US	Chapman, KS	Apt: Prairie Cottage 8KS8
Acft Mk/Mdl MAGNAGHI AERONAUTICA SPA SKY	Acft SN LSA026	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual	Prob Caus: Pending
Eng Mk/Mdl ROTAX 912 ULS2-01	Acft TT 41	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091	
Opr Name: US AERO LLC.	Opr dba:	Aircraft Fire: NONE		AW Cert: LTSP

Summary

The pilot reported that, during takeoff from a private turf airstrip, about 50 ft above the ground, the airplane encountered a wind gust that "quickly" lifted the left wing and pushed the airplane to the right. He added that he attempted to level the wings, but he "did not have enough aileron." Subsequently, the airplane impacted terrain in a nose-low, right-wing-down attitude.

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.

The pilot reported that the temperature was 85ø, the sky was clear, and the wind was from 200ø at 5 knots and not gusting. He took off from runway 23.

An automated weather observation station, about 14 nautical miles from the accident airport, recorded wind from 170ø at 9 knots, gusting to 20 knots.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's failure to maintain lateral/bank control during the takeoff climb in gusting crosswind conditions.

Events

1. Initial climb - Other weather encounter
2. Initial climb - Loss of control in flight
3. Initial climb - 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-Lateral/bank control-Not attained/maintained - C
3. Environmental issues-Conditions/weather/phenomena-Wind-Crosswind-Effect on operation
4. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation

Narrative

The pilot reported that, during takeoff from a private turf airstrip, about 50 ft. above ground, the airplane encountered a gust of wind that "quickly" lifted the left wing and pushed the airplane to the right. He added that he attempted to level the wings, but he "did not have enough aileron." Subsequently, the airplane impacted terrain in a nose low, right wing down attitude.

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.

The pilot reported that the temperature was 85?, the sky was clear, and the wind was from 200ø at 5 knots, and not gusting. He took off on runway 23.

An automated weather observation station, about 14 nautical miles from the accident airport, recorded wind from 170ø at 9 knots, gusting to 20 knots.

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Accident Rpt# WPR16LA080 03/05/2016 1346 MST Regis# N242WT Queen Creek, AZ Apt: N/a
Acft Mk/Mdl NORTH WING APACHE-NO SERIES Acft SN 4488 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl ROTAX 582 CGI Fatal 0 Ser Inj 1 Flt Conducted Under: FAR 091
Opr Name: LOUIS HILTUNEN Opr dba: Aircraft Fire: NONE
AW Cert: NON

Summary

The noncertificated pilot reported that, after takeoff in the light sport trike, about 200 ft above ground level, he heard a popping sound and the aircraft yawed to the right. He heard the sound a second time, and the aircraft turned hard to the right. The pilot applied full engine power in an attempt to recover and gain lift in order to deploy the ballistic parachute; however, the aircraft did not recover and subsequently collided with the ground in a nose-down attitude.

Postaccident examination of the aircraft revealed no anomalies that would have precluded normal operation, and the investigation was unable to determine the cause of the yaw and subsequent loss of control. The pilot was not appropriately certificated, nor did he have any experience flying the accident aircraft make and model.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: A loss of control for reasons that could not be determined because postaccident examination did not reveal any anomalies that would have precluded normal operation. Contributing to the accident was the noncertificated pilot's lack of experience in the aircraft type.

Events

1. Initial climb - Loss of control in flight
2. Uncontrolled descent - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Not determined-Not determined-(general)-(general)-Unknown/Not determined - C
2. Personnel issues-Experience/knowledge-Experience/qualifications-Total experience w/ equipment-Pilot - F
3. Personnel issues-Experience/knowledge-Experience/qualifications-Qualification/certification-Pilot - F
4. Aircraft-Aircraft handling/service-Maintenance/inspections-Scheduled maint checks-Not inspected

Narrative

On March 5, 2016, about 1346 mountain standard time, an experimental, North Wing Apache, N242WT, weight-shift-control trike, was substantially damaged when it collided with terrain following takeoff from a field, southeast of Queen Creek, Arizona. The non-certified pilot, the sole occupant, sustained serious injuries. The aircraft, which was recently purchased, was not yet registered. The pilot was operating the aircraft under the provisions of Title 14 Code of Federal Regulations (CFR) Part 91 as a local personal flight. Visual meteorological conditions prevailed and no flight plan was filed.

The pilot reported that after the owner assembled the aircraft, he performed a pre-flight inspection and then accomplished a short test flight to, an altitude of about 10 ft above ground level (agl). Following the successful test flight, with no reported abnormalities, the pilot departed on a subsequent flight. During climb-out, about 200 ft agl, he heard a "popping" sound and the aircraft yawed to the right. The aircraft remained in level flight, but was crabbing with the nose pointed to the right. The aircraft "popped again" and turned hard right. The wing lost lift and the aircraft started to dive to the right. The pilot applied full power in an attempt to recover and gain lift, so he could deploy the ballistic parachute. However, the aircraft did not recover and collided with the ground in a nose down attitude.

One witness, stated he observed the aircraft about 200 ft agl, flying straight and level. The engine sounded normal. The aircraft then banked 20° right, and then continued to bank until it reached about 85°. During the turn, a witness heard something snap twice. Subsequently, the aircraft impacted the ground in a nose down attitude.

The postaccident examination of the aircraft did not reveal any anomalies that would preclude normal operation. Although a Federal Aviation Administration inspector, did notice a broken rod on the right wing's internal strut sprog assembly, which attached to the leading edge.

According to a design expert for the make and model aircraft involved in the accident, the sprog provides a positive twist to the leading edge during zero lift flight; and therefore, would not have been under load during the flight. Additionally, examination of the fracture surfaces of the sprog's assembly and support

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tubes by the National Transportation Safety Board material laboratory determined that the separation was a result of overload failure, as no corrosion or pre-existing cracks were observed. The investigation was unable to determine the source of the sounds heard during the accident sequence.

The owner had purchased the 2-seat aircraft about four days before the accident and had not registered it nor documented a current annual inspection.

The pilot was not a certified pilot, but reported 160 hours in single engine aircraft and several hours in single seat weight shift ultralight aircraft. No hours had been accumulated in the make and model aircraft involved in the accident.

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Accident Rpt# GAA17CA185	03/11/2017 810 CST	Regis# N345M	Okmulgee, OK	Apt: Okmulgee Rgnl OKM
Acft Mk/Mdl PIPISTREL DOO AJDOVSCINA VIRUS-SW	Acft SN 621 SW 100	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual	Prob Caus: Pending
Eng Mk/Mdl ROTAX 912 ULS	Acft TT 104	Fatal 0	Ser Inj 0	Fit Conducted Under: FAR 091
Opr Name: RAYLON R. ROGERS	Opr dba:	Aircraft Fire: NONE	AW Cert: SPE	

Events

2. Landing-landing roll - Miscellaneous/other

Narrative

The pilot reported that, he entered the traffic pattern for runway 4, about 800 ft above the ground. He added that, after touch down he did not see the fence that ran across the runway until the airplane was about 300 ft from it. Subsequently the airplane impacted the fence.

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

A review of the Okmulgee Regional Airport Federal Aviation Administration (FAA) chart supplement (02 MAR 2017 to 27 APR 2017) revealed that the runway the pilot landed on was depicted in the airport sketch with two "X" marks, which indicated the runway was closed. A review of the visual flight rules sectional chart in publication at the time of the accident revealed that the surface the pilot landed was depicted, along with the other runway surface at the airport.

The FAA Pilot's Handbook of Aeronautical Knowledge stated in part:

Marking and Lighting of Permanently Closed Runways and Taxiways

For runways and taxiways that are permanently closed, the lighting circuits are disconnected. The runway threshold, runway designation, and touchdown markings are obliterated and yellow "Xs" are placed at each end of the runway and at 1,000-foot intervals.

A review of photographs of the "X" markings on the surface the pilot landed on, showed that only fragments of faded yellow paint were visible, and what was visible did not resemble an "X".

The code of federal regulations within part 91.103 titled "Preflight Action" stated in part:

Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include- (a) For a flight under IFR or a flight not in the vicinity of an airport, weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which the pilot in command has been advised by ATC; (b) For any flight, runway lengths at airports of intended use, and the following takeoff and landing distance information: The pilot did not report that he consulted the FAA chart supplement prior to landing, which depicted the runway closed.

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Accident Rpt# GAA17CA370	06/26/2017 1600 MST	Regis# N473CQ	Cottonwood, AZ	Apt: Cottonwood P52
Acft Mk/Mdl AERO-ACE CE 1		Acft SN PARD-1	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONTINENTAL A65		Acft TT 782	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: MIGUEL A. GONZALEZ		Opr dba:		Aircraft Fire: NONE
				AW Cert: SPE

Events

1. Takeoff - Loss of control in flight
-

Narrative

The pilot reported that, immediately after takeoff, the airplane drifted hard to the right. He applied left aileron and left rudder with no avail. Subsequently, the right wing and landing gear impacted the ground, and the airplane came to rest nose down.

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

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

The automated weather observation system about 14 nautical miles from the accident site reported, about the time of the accident, the wind was from 200ø at 15 knots, gusting to 22 knots. The pilot was departing on runway 32.

As a recommendation, the pilot reported that a higher takeoff speed would have helped him better control the airplane.

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Accident Rpt# ERA17CA008 10/07/2016 1343 EDT Regis# N100UK Ashwood, VA Apt: Ingalls Field HSP
Acft Mk/Mdl ALGIMANTAS JONUSAS RV-10 Acft SN 41224 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-540-D4A5 Acft TT 199 Fatal 0 Ser Inj 2 Flt Conducted Under: FAR 091
Opr Name: PAUL FURLOW Opr dba: Aircraft Fire: NONE
AW Cert: SPE

Summary

The noninstrument-rated private pilot obtained weather information from an on-line flight planning website. Before departure, he also telephoned his destination airport and "determined the weather was all OK." He then took off and climbed to 5,500 ft mean sea level for the cruise portion of his flight. He advised that he also checked and monitored weather while en route but that the "fog and clouds came down really thick," so he decided to divert to the nearest airport. While flying toward his diversion airport, the visibility deteriorated and a "TERRAIN ALERT" warning illuminated on his GPS display. He attempted to pull up twice but impacted trees and terrain on the side of a mountain. The pilot and passenger were seriously injured during the impact, and the airplane was substantially damaged. The pilot reported that there were no preimpact mechanical failures or malfunctions of the airframe or engine that would have precluded normal operation. Review of weather observations indicated that an extensive area of low clouds and a large area of marginal visual flight rules (MVFR) conditions existed over the pilot's planned route. Low instrument flight rules (IFR) conditions prevailed at the diversion airport and near the accident site with visibility less than 1/4 mile in heavy rain and overcast ceilings at 100 ft. The MVFR-to-IFR weather conditions had been forecast, and AIRMETs warning of IFR and mountain obscuration conditions had been issued.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The noninstrument-rated pilot's inadequate preflight and in-flight weather planning and continued flight into instrument meteorological conditions, which resulted in impact with trees and terrain.

Events

1. Prior to flight - Preflight or dispatch event
2. Enroute - VFR encounter with IMC
3. Enroute - Terrain avoidance alert
4. Enroute - Controlled flight into terr/obj (CFIT)

Findings - Cause/Factor

1. Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Pilot - C
2. Environmental issues-Conditions/weather/phenomena-Ceiling/visibility/precip-Below VFR minima-Decision related to condition - C
3. Environmental issues-Conditions/weather/phenomena-Ceiling/visibility/precip-Below VFR minima-Effect on operation - C
4. Personnel issues-Task performance-Planning/preparation-Weather planning-Pilot - C
5. Environmental issues-Physical environment-Object/animal/substance-Tree(s)-Contributed to outcome

Narrative

The non-instrument rated private pilot obtained weather information from an online flight planning website. Prior to departure he also telephoned his destination airport and "determined the weather was all OK." He then took off and climbed to 5,500 feet above mean sea level for the cruise portion of his flight. He advised that he also checked and monitored weather while enroute, but the "fog and clouds came down really thick," so he decided to divert to the nearest airport. While flying towards his diversion airport, the visibility deteriorated and a "TERRAIN ALERT" warning illuminated on his GPS display. He attempted to pull up twice, but impacted trees and terrain on the side of a mountain. The pilot and passenger were seriously injured during the impact and the airplane was substantially damaged. The pilot reported that there were no preimpact mechanical failures or malfunctions of the airframe or engine that would have precluded normal operation. Review of weather observations indicated an extensive area of low clouds, and a large area of marginal visual flight rules (MVFR) conditions existed over the pilot's planned route. Low instrument flight rules (IFR) conditions prevailed at the diversion airport and in the vicinity of the accident site, with visibility less than 1/4-mile in heavy rain and overcast ceilings at 100 ft. The MVFR to IFR weather conditions had been forecast, and AIRMETs warning of IFR and mountain obscuration conditions had been issued.

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Accident Rpt# CEN15LA104 01/16/2015 1230 CST Regis# N416JB The Woodlands, TX Apt: N/a
Acft Mk/Mdl BAKER BOBBY J SAFARI-NO SERIES Acft SN CH2181 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl AEROSPORT O-360 Fatal 1 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: MICHAEL MIMMS Opr dba: Aircraft Fire: NONE
AW Cert: SPE

Events

1. Enroute - Aircraft structural failure

Narrative

HISTORY OF FLIGHT

On January 16, 2015, about 1230 central standard time, an experimental, amateur-built Safari 400 helicopter, N416JB, impacted terrain following a loss of control in The Woodlands, Texas. The commercial pilot was fatally injured, and the helicopter was destroyed. The helicopter was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, and no flight plan was filed.

Witnesses reported that the helicopter was flying in a south-west direction over the property of Woodland Church. The helicopter appeared normal as it neared the church, then the helicopter "turned sideways," banked to the left, and descended to the ground. One witness stated that he heard a breaking sound and saw the "back rotor" hanging.

PERSONNEL INFORMATION

The pilot, age 51, held a commercial pilot certificate with airplane single-engine land and instrument ratings. He held a second-class airman medical certificate that was issued on April 23, 2014, with the limitation that he must wear corrective lenses. On the application for this medical certification, the pilot reported that he had accumulated 2,300 total flight hours of which 150 hours were in the previous 6 months.

According to the pilot's logbook, he had accumulated a total of 48.5 hours total helicopter time at the time of the accident. The pilot began his helicopter training in a Schweizer 269C on September 28, 2014. He accumulated a total of 24.0 hours (including 2.5 hours of solo time) in the Schweizer before transitioning to the accident helicopter on December 18, 2014. He had accumulated 25.7 hours total time (including 11 hours of solo time) in the Safari at the time of the accident.

AIRCRAFT INFORMATION

The helicopter was constructed from a kit produced by Safari Helicopter. It was a two-seat, skid-equipped helicopter with two composite main rotor blades that rotated clockwise and a tail rotor for anti-torque control. The helicopter was equipped with an Aero Sport O-360 engine. Components such as the main rotor head and the tail rotor would typically be delivered to the customer fully assembled.

The accident helicopter, serial number CH2181, was built by the owner of Safari Helicopters on March 1, 2010. A special airworthiness certificate for the helicopter was issued by the FAA on March 6, 2010. The helicopter was sold about 5 days later to a private individual who owned the helicopter until the accident pilot purchased it on November 6, 2014.

METEOROLOGICAL INFORMATION

At 1153, the George Bush Intercontinental Airport (KIAH) automated surface reporting system, located 17 miles southeast of the accident site, reported the following weather conditions: calm winds, 10 miles visibility, ceiling broken at 2,500 ft, temperature 8°C, dew point 3°C, and altimeter 30.93 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The NTSB investigator-in-charge (IIC) did not travel to the accident scene. According to photographs taken by the FAA on-site, the main wreckage consisting of the fuselage, main rotor, tail and tail rotor came to rest at the fenceline of a treed area. The horizontal stabilizer had separated from the tail boom and was

found about 65 feet northeast of the fuselage. The right door frame was found about 85 feet northeast of the fuselage.

The helicopter wreckage was examined at the facilities of Air Salvage of Dallas on February 24-25, 2015, under the supervision of the NTSB IIC. The examination revealed that the horizontal stabilizer's spar (a steel tube) had separated at the weld area just outboard of a round steel plate (the stabilizer mounting flange) that was welded to the spar. The fracture exhibited signatures of corrosion and fatigue at the weld line. The inboard portion of the spar remained bolted to the tail boom at the mounting flange. Paint transfers were observed on one tail rotor blade. These transfers were located on the side of the blade where the horizontal stabilizer would be mounted. Additionally, both tail rotor blades exhibited impact damage on the leading and trailing edges of the blades.

Flight control continuity was established from the cockpit flight controls through the tail rotor system. The control pedal cable leading from the tail rotor assembly to the right control pedal was found in the full right control pedal position. (In this helicopter, the right pedal is used to counter the torque of the main rotor.) The stationary swash plate (controlling right/left, fore, and aft cyclic) was fractured and separated at all three push-pull tubes. The right door upper and lower hinges were intact, and the upper and lower latching points appeared normal.

The governor friction clutch was found loose. The friction clutch was found to rotate freely and was characterized by a Safari Helicopter representative as slightly loose. According to the Safari Helicopter representative, an excessively loose friction clutch could prevent effective throttle manipulation by the governor, and an overly tight friction clutch could prevent the pilot from over-riding the governor. An instructor pilot for Safari who had recently flown with the accident pilot in the accident helicopter stated that the governor appeared to operate properly.

Engine continuity was confirmed by turning the crankshaft to establish compression at all four cylinders. The four top and four bottom spark plugs were removed from the engine. All eight spark plugs appeared unremarkable. The magneto was turned by hand and sparked at all four connection wires.

The carburetor was in the full throttle position. Blue colored fuel (consistent in appearance with 100 low-lead aviation fuel) was found in the carburetor. The gascolator and carburetor fuel filter screens were void of contaminants. The air filter was examined and appeared unremarkable.

Main Rotor System

The main transmission pinion, tail rotor output shaft, and clutch assembly were separated from the main transmission and free of their mountings. The bottom of the clutch assembly showed evidence of a rotational impact of the clutch drive plate on one of the six clutch drum mount bolts consistent with rotation at the time of impact.

Both composite main rotor blades were deformed upward. One main rotor blade was broken through the laminate and spar about 2 feet outboard of the grip; however, the brass rod along the leading edge was intact but severely deformed. Both main rotor blades exhibited impact marks along the outboard 3 to 4 feet of the leading edges. The main rotor blades rotated normally about the feathering axis when rotated by hand at the grips.

The shear line from the transmission to the main rotor shaft was intact consistent with movement of the gears of the main shaft. The drive gear was still coupled to the shaft.

Tail Section

Impact marks on the tail structure and tail rotor drive shaft were observed. The damage was consistent with a right to left main rotor strike, when looking forward.

The tail rotor drive shaft was impacted at 14.5 inches aft of the forward edge of the fifth bearing frame. The fractured end of the tail was near the forward end of the tail boom. The sixth bearing, along with the tail rotor input coupling and the aft end of the drive shaft (about 24 inches) were missing.

The tail rotor output from the main transmission spun freely; however, the bearings did not rotate smoothly. The tail rotor pitch arms were fastened in their grips. The tail rotor pitch links were deformed and still attached.

Flight Deck Observations

The ignition switch was found in the right ("R") position. A test of the magneto switch and the ignition module pin (#1) indicted the electronic ignition was open, and the magneto was grounded. Only the electronic ignition would have been operating at this switch setting.

The helicopter had warning indicator bulbs for the main rotor, tail rotor, governor, fuel low, and low oil pressure; examination of all five bulbs revealed that none exhibited the typical filament stretching found when a bulb is lit at impact.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy of the pilot was conducted under the authority of Montgomery County Forensic Services, Conroe, Texas. The cause of death for the pilot was attributed to "multiple blunt injuries."

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicology testing for the pilot. The pilot's toxicology results were negative for carbon monoxide and alcohol. The medications colchicine, doxazosin, and valsartan were detected.

The pilot reported use of doxasozin and valsartan on his most recent FAA medical examination. Both of these prescription medications are used to treat high blood pressure and are not considered to pose a hazard to flight safety. The prescription medication colchicine, which is used to prevent and/or relieve the pain from gout attacks in adults, was not reported previously to the FAA. Some possible side effects of colchicine include nausea, diarrhea, stomach cramps, and weakness.

TESTS AND RESEARCH

Horizontal Stabilizer

The horizontal stabilizer and the tail rotor cross and sleeve assembly were sent to the NTSB Materials Laboratory in Washington, DC, for further examination. The phenolic sleeve on the tail rotor cross was fractured at the end flange. Examination of the flange fracture revealed a brittle overstress separation with no indications of discontinuities.

The spar tube of the horizontal stabilizer was fractured just outboard of the mounting flange and adjacent to the inboard edge of the airfoil section. The forward side of the end plate was bent slightly outboard but no impact damage was apparent on either the end plate or the airfoil skin of the stabilizer.

As manufactured, the mounting flange of the spar is welded (on the outboard side) to the spar tube and positioned immediately adjacent to the inboard edge of the airfoil skin. As assembled, the fracture location and weld are partially hidden by the airfoil skin and not directly visible.

Most of the fracture followed the outboard edge of the mounting flange weld. As initially received, large areas of both fracture faces were obscured by red and brown corrosion products. These surfaces were cleaned for a more detailed examination. Magnified optical examinations of the fracture surfaces identified features consistent with fatigue cracking. Three fatigue origins were found on the outer surface of the spar tube at the outboard toe (edge) of the assembly weld. The fatigue propagated generally radially through the wall thickness with some circumferential spreading. The fatigue cracking progressed through about half of the total spar cross section. The fatigue origins and propagation were all on the aft portion of the spar. No corrosion or other obvious damage was apparent at any of the origins.

Examinations also uncovered a rust-covered crack slightly inboard of and undercutting the main fracture plain. The undercutting crack intersected the outboard fatigue and formed part of the overall fracture. Magnified examinations of the crack faces without opening revealed fatigue features with at least one fatigue origin on the outer surface of the spar. The crack morphology was consistent with additional fatigue origins in the unopened portion of the crack.

The remaining fracture surface displayed separation features and deformation patterns consistent with overstress separation. The deformation pattern was consistent with forces associated with the stabilizer tip moving forward and outboard.

Visually, the weld exhibited good workmanship with no apparent undercutting, weld cracking, or surface discontinuities. A small pore and a single area of lack of fusion were uncovered by the weld fracturing in the overstress regions.

The inboard fracture face was viewed using a scanning electron microscope (SEM) after it was cleaned and the corrosion removed. The fracture area near one fatigue origin point displayed a corrosion-damaged surface, while fracture two other surfaces were much less damaged by corrosion and displayed features consistent with fatigue cracking in alloy steels.

Energy dispersive x-ray spectra of the spar material acquired during SEM examinations were typical of an AISI2 4100 series alloy steel as indicated on the stabilizer engineering drawing.

Ignition System

Examinations of the LSE Plasma III CD Ignition Module (S/N: 43546), the Hall Effect Module (S/N: 1440), and the ignition coils (P/N: 356120) were conducted on March 31, 2015, at the facilities of Light Speed Engineering in Santa Paula, California, with NTSB oversight. No evidence of preimpact mechanical malfunction was noted during the examinations.

Handheld GPS Device

A Garmin GPSMAP 296 hand-held GPS device was retrieved from the accident site and sent to the NTSB Recorders Laboratory for examination. No tracklog information was present on the device after download using the manufacturer procedures.

ADDITIONAL INFORMATION

As a result of the fatigue cracking of the horizontal stabilizer spar found during this investigation, Safari Helicopter issued a mandatory inspection and modification bulletin titled, "Horizontal Stabilizer Mandatory Inspection and Modification," on April 6, 2015. The bulletin specified a liquid penetrant inspection (LPI) of the horizontal stabilizer as follows:

"On helicopters in operation less than 24 months, this inspection should be accomplished at the next annual condition or 100-hour inspection. On helicopters older than 24 months, the inspection should be accomplished before next flight. This inspection should be added to the annual condition inspection for your particular aircraft."

The bulletin stated that, if cracking was found on the horizontal stabilizer spar, it must be replaced with a new spar. If no cracking was found during LPI inspection, Safari indicated that a steel tube insert must be installed into the end of the stabilizer to extend the "full length of the tail boom mount."

The bulletin also noted that the loss of the horizontal stabilizer "would change the attitude of the helicopter." Given that the stabilizer provides a downward-acting force on the tail section of the helicopter, this attitude change would be experienced by the pilot as an abrupt, uncommanded nose-down pitch.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN17LA313	07/20/2017	1515 CDT	Regis# N577M	Grady, AR	Apt: N/a
Acft Mk/Mdl CANION MICHAEL W ZODIAC 601XL-XL	Acft SN 6-4210	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim	Prob Caus: Pending	
Eng Mk/Mdl LYCOMING O-235-C2C		Fatal 0	Ser Inj 0	Flt Conducted Under: FAR 091	
Opr Name: JOHN D. TANGNEY	Opr dba:			Aircraft Fire: NONE	
				AW Cert: SPE	

Events

1. Enroute-cruise - Electrical system malffailure

Narrative

On July 20, 2017, about 1645 central daylight time,, an amateur-built Canon, Zodiac 601XL airplane, N577M, received substantial damage to the engine firewall during a forced landing to a field following a loss of engine power near Grady, Arkansas. The pilot was not injured. The aircraft was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which was not on a flight plan. The flight originated from the Center Texas Municipal Airport (F17) about 1330 and the intended destination was the Kirk Field Airport (PGR), near Paragould, Arkansas.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA488 08/12/2017 1200 EDT Regis# N8262
Acft Mk/Mdl CHARLES D WALKER WALKER CURTISS Acft SN WC001

Bowling Green, KY Apt: Bowling Green-warren County Rg BWG
Acft Dmg: SUBSTANTIAL Rpt Status: Prelim Prob Caus: Pending
Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091
Aircraft Fire: NONE

Opr Name: CHARLES D. WALKER

Opr dba:

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN17LA066	12/31/2016 740 CST	Regis# N120CG	Lee's Summit, MO	Apt: N/a
Acft Mk/Mdl GOSSELIN CHARLES GLASTAR		Acft SN 5681	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl SUBARU EJ-22		Acft TT 289	Fatal 0 Ser Inj 1	Flt Conducted Under: FAR 091
Opr Name: GOSSELIN CHARLES M		Opr dba:		Aircraft Fire: NONE

Summary

The private pilot reported that, shortly after takeoff in the experimental amateur-built airplane, the engine experienced a total loss of power. He was unable to restore power, and the airplane was substantially damaged during the subsequent forced landing. An examination of the engine and related systems revealed that one of two batteries required for operation of the electronic ignition system had a short and would not take a charge. When this battery was replaced with a known serviceable battery, the engine and systems functioned as designed. An examination of the remaining systems revealed no other anomalies.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: Partial failure of the electric system due to a battery short, which resulted in a total loss of engine power.

Events

1. Enroute-climb to cruise - Electrical system malf/failure
2. Enroute-climb to cruise - Loss of engine power (total)
3. Landing-flare/touchdown - Hard landing

Findings - Cause/Factor

1. Aircraft-Aircraft systems-Electrical power system-Battery/charger-Failure - C

Narrative

On December 31, 2016, about 0740 central standard time, an amateur-built Gosselin Glastar airplane, N120CG, was substantially damaged during a forced landing near Lee's Summit Municipal Airport (KLXT), Lee's Summit, Missouri. The private pilot sustained serious injury. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and no Federal Aviation Administration (FAA) flight plan had been filed for the flight. The flight had departed LXT about 0730 and was en route to Miami County Airport (K81), Paola, Kansas.

According to the written statement provided by the pilot, his preflight inspection did not identify any problems. While attempting to start the airplane engine with the "A ignition system" the engine would turn over but would not start. The pilot switched to the "B ignition system" and had the same result. The pilot used a portable battery to "jump start" the engine; the engine started and ran within normal parameters. During the engine run-up, prior to takeoff, the parameters continued to indicate normal and the voltage indicated 14.2 volts. Several minutes after departure, the engine lost power. The pilot vaguely recalled trying to restore engine power but did not recall any of the events that followed.

According to the FAA inspector who responded to the accident, during the forced landing the tailwheel struck the ground first followed by the main landing gear. The fuselage and both wings were substantially damaged during the impact.

The airframe, engine, and related systems were examined under the auspices of the responding FAA inspector. The airframe was equipped with an "A", "B", and "AB" battery system; however, the batteries were in series and not parallel. The operation of the engine, fuel system, and electronic fuel injection system was dependent on electrical power from both batteries. The examination revealed that one battery had a short and would not take a charge. When that battery was replaced with a known serviceable battery, the fuel boost pumps, and alternator functioned as designed.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ANC13LA089	07/22/2013	1948 AKD	Regis# N13NV	Hoonah, AK	Apt: N/a
Acft Mk/Mdl HOWARD M. SHEPHERD SUPERCUB	Acft SN AK18103	Acft Dmg: SUBSTANTIAL	Fatal 0	Ser Inj 0	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING O-360-C2A	Opr Name: HOWARD M SHEPHERD	Opr dba:	Fit Conducted Under: FAR 091	Aircraft Fire: NONE	AW Cert: SPE

Events

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

Narrative

On July 22, 2013, about 1948 Alaska daylight time, a tundra tire, tailwheel-equipped, Howard M. Shepherd Supercub experimental amateur-built airplane, N13NV, nosed over during landing on a remote tidal beach at Freshwater Bay, Chichagoff Island, about 15 miles east-southeast of Hoonah, Alaska. The commercial pilot was not injured, and the airplane sustained substantial damage. The personal flight was operated under the provisions of 14 Code of Federal Regulations Part 91 with no flight plan filed. The flight departed Juneau International Airport, Juneau, Alaska, at an undetermined time.

A Federal Aviation Administration (FAA) operations inspector assigned to the Juneau Flight Standards District Office examined the airplane after its recovery and reported that it sustained substantial damage to the rudder, left wing spar, and both wing lift struts. In addition, the FAA inspector reported that there were no preaccident mechanical anomalies with the airplane that would have precluded normal operation.

The FAA inspector also reported that friends of the pilot that were familiar with the circumstances of the accident said that while the accident pilot was landing at the remote beach site, he inadvertently touched down slightly faster than anticipated on the soft beach. During the landing roll the pilot applied heavy braking, and the airplane subsequently nosed over on the soft beach terrain.

The pilot did not respond to numerous telephone and mail requests, and no NTSB Form 6120 was received.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN17LA302	08/03/2017 1000 CDT	Regis# N571UJ	Mentone, IN	Apt: Mentone C92
Acft Mk/Mdl JAMES F HAKE MTO SPORT-NO SERIES	Acft SN M01269	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual	Prob Caus: Pending
Eng Mk/Mdl ROTAX 912 ULS	Acft TT 185	Fatal 0	Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: JAMES F. HAKE	Opr dba:			Aircraft Fire: NONE

Events

1. Landing-flare/touchdown - Roll over
-

Narrative

On August 3, 2017, about 0917 central daylight time, a Hake MTO Sport gyroplane, N571UJ, was substantially damaged when it tipped over on landing at Mentone Airport (C92), Mentone, Indiana. Visual meteorological conditions prevailed at the time of the accident. The personal flight was being conducted under the provisions of Title 14 Code of Federal Regulations Part 91 without a flight plan. The pilot sustained minor injuries. The local flight originated about 0930.

According to the pilot's accident report, when he touched down on the main landing gear, he applied "moderate" right rudder to maintain runway alignment and to avoid slipping. He stated he should have raised the nose to reduce airspeed, but instead he lowered the nose and struck the runway. The pilot explained that on this particular gyroplane, the nose wheel and rudder are interconnected; that is, the nose wheel does not pivot on a caster. When the gyroplane touched down, it "jerked" abruptly to the right and tipped over. The pilot concluded, "This accident was the result of pilot error. There was no malfunction [of the gyroplane, flight controls, or engine]."

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA316	06/02/2017 1400 EDT	Regis# N102CM	Canaan Valley, WV	Apt: Windwood Fly-in Resort WV62
Acft Mk/Mdl MALINOWSKI WALTER S RV8-A		Acft SN 81015	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-360-A1-B6		Acft TT 97	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: WALTER S. MALINOWSKI		Opr dba:		Aircraft Fire: NONE
				AW Cert: SPE

Summary

The pilot reported that, during the landing, as the main gear touched down, a wind gust "carried" the airplane off the right side of the runway. He added that, when the nose gear touched down, it sunk into the soft ground, and the airplane "flipped over on its back."

The airplane sustained substantial damage to its canopy and empennage.

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

The pilot reported that the weather at the accident site about the time of the accident was wind from 330° at 12 knots, gusting to about 20 knots. The pilot landed on runway 06.

An automated weather observation system about 14 nautical miles from the accident site reported that, about the time of the accident, the wind was from 310° at 8 knots, gusting to 16 knots.

Cause Narrative

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

Events

1. Landing - Loss of control on ground
2. Landing - Runway excursion
3. Landing - Collision with terr/obj (non-CFIT)
4. Landing - Nose over/nose down

Findings - Cause/Factor

1. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Directional control-Not attained/maintained - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C
3. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation
4. Environmental issues-Physical environment-Runway/land/takeoff/taxi surface-Soft surface-Contributed to outcome

Narrative

The pilot reported that during the landing, as the main gear touched down, a gust of wind "carried" the airplane off the right side of the runway. He added that when the nose gear touched down, it sunk into the soft ground and the airplane "flipped over on its back".

The airplane sustained substantial damage to its canopy and empennage.

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

The pilot reported the weather at the accident site, about the time of the accident as, wind from 330° at 12 knots, gusting to about 20 knots. The pilot landed on runway 06.

An automated weather observation system about 14 nautical miles from the accident site reported that, about the time of the accident, wind from 310° at 8 knots, gusting to 16 knots.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN15LA329 07/30/2015 1941 CDT Regis# N55J Sulphur Springs, TX Apt: Sulphur Springs Municipal Airp SLR
Acft Mk/Mdl O'DELL AEROMASTER Acft SN REO-2 Acft Dmg: DESTROYED Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONTINENTAL E185 Fatal 1 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: PILOT Opr dba: Aircraft Fire: GRD

Summary

The private pilot had purchased the experimental amateur-built airplane about 2 weeks before the accident. The previous owner had provided the pilot with a 1-hour familiarization flight, during which he repeatedly told the pilot not to lean the mixture control on takeoff. During takeoff on the familiarization flight, the pilot leaned the mixture, resulting in a total loss of engine power while still on the runway. After advancing the mixture control, the engine restarted and they continued the flight. The pilot again leaned the mixture control at altitude, which resulted in the engine running rough.

Following the familiarization flight, the pilot departed to an unknown destination, and, during that flight, he landed at an en route airport due to a rough-running engine. Maintenance personnel at the airport found that the airplane had 26 mechanical discrepancies and was unairworthy. Two mechanics and two experimental aircraft builders told the pilot that the airplane was unsafe and should be taken apart and "trailed" home. The mechanic repaired a leaking brake, replaced all of the spark plugs, serviced the oil, and ran the engine. During the postmaintenance engine run, the magnetos were checked and appeared to function properly, and the engine ran smoothly. The pilot then departed on the accident flight. The mechanic stated that the airplane experienced a total loss of engine power about 200 ft above ground level and the airplane entered a left turn, which subsequently developed into a stall/spin. The airplane completed about 1/4 turn in the spin before impacting terrain.

Postaccident examination was precluded by damage sustained in the postcrash fire. The investigation was unable to determine if the loss of engine power occurred due to the pilot's improper manipulation of the engine controls, or if there was a mechanical malfunction.

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 postimpact damage precluded a thorough examination of the airplane. Contributing to the accident was the pilot's failure to maintain control following the loss of engine power, which resulted in the airplane exceeding its critical angle of attack and experiencing an aerodynamic stall/spin.

Events

1. Prior to flight - Aircraft maintenance event
2. Initial climb - Loss of engine power (total)
3. Initial climb - Loss of control in flight
4. Uncontrolled descent - Collision with terr/obj (non-CFIT)

Findings - Cause/Factor

1. Not determined-Not determined-(general)-(general)-Unknown/Not determined - C
2. Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - F
3. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Pitch control-Not attained/maintained - F
4. Aircraft-Aircraft handling/service-Maintenance/inspections-(general)-Not inspected
5. Aircraft-Aircraft handling/service-Maintenance/inspections-(general)-Not serviced/maintained

Narrative

On July 30, 2015, at 1941 central daylight time, an experimental amateur-built O'Dell Aeromaster, N55J, experienced a total loss of engine power and impacted terrain during climb after takeoff from runway 1 (5,001 feet by 75, concrete) at Sulphur Springs Municipal Airport (SLR), Sulphur Springs, Texas. The airplane was destroyed by impact forces and post-crash fire. The private pilot sustained fatal injuries. The airplane was recently purchased by the pilot but was still registered to the previous airplane owner. The airplane was operated by the pilot under Title 14 Code of Federal Regulations Part 91 as a personal flight that was not operating on a flight plan. Visual meteorological conditions prevailed at the time of the accident. The flight was originating at the time of the accident and was en route to an unknown destination.

Witnesses observed the airplane taxi to the runway and take off, not performing any preflight or engine run-up. The engine ran smoothly until the aircraft was 200 feet above ground level, back-fired and experienced a total loss of engine power. The pilot maintained the same nose-up attitude and turned to the left, causing the left wing to stall. The airplane stalled entered a « turn stall-spin toward the left and impacted the ground, left wing and nose first.

A Federal Aviation Administration Aviation Safety Inspector stated that about two weeks prior to the accident the pilot purchased the accident airplane from the previous airplane owner in Lufkin, Texas, located about 150 miles south of SLR. The previous owner explained the very sensitive engine mixture controls and warned the pilot several times not to lean the engine on takeoff and never below 3,000 feet mean sea level (msl). The previous owner stated that the pilot did not seem to pay attention to his instructions and appeared distracted. The previous owner stated that the pilot mentioned that he could not understand why the engine should not be leaned on takeoff because the pilot said that he always had to lean the mixture on takeoff when he flew other airplane(s). The previous owner explained to the pilot that Lufkin, Texas, was only at 450 feet above msl, not the 4,500 feet msl the pilot was used to.

The previous owner stated that the pilot did not want any instruction in the airplane, but the previous owner insisted and took the pilot for a one-hour familiarization flight in the airplane. The previous owner stated that during the familiarization flight, the pilot leaned the mixture on takeoff, the engine quit. The previous owner pushed the mixture control back to full rich, the engine started, and the flight continued. The pilot leaned the mixture again during the flight, below 3,000 feet msl, causing the engine to run rough. The previous owner, again, returned to mixture control to full rich, and the engine smoothed out. The pilot, again, was told by the previous owner not to lean the mixture below 3,000 feet msl and never on takeoff.

The previous owner stated that the pilot was "uncy [sic] and in a hurry to leave". The previous owner stated that the pilot did not have any aviation navigation sectional charts in his possession. The pilot did not preflight the aircraft prior to the departing flight and did not check weather nor file a flight plan for his departure from Lufkin, Texas. The pilot then landed at SLR and reported the engine was running rough to maintenance personnel located at the airport.

On July 18, 2015, an aircraft mechanic at the SLR examined the airplane and engine and made the following observations:

1. Both airspeed indicators indicate 50 miles per hour while in the hangar.
2. Gascolator leaking fuel.
3. Exhaust leak at number 1 cylinder.
4. No emergency locator transmitter installed in the airplane.
5. No fuel shutoff on the top fuel tank.
6. No fuel quantity indicators.
7. No master switch or circuit breakers.
8. Brake fluid around the right tire. Found the brake piston installed backwards, causing the O-ring to leak.
9. All of the aileron trailing edges were broken away from the aileron ribs.
10. Flying wires and landing wires were too loose.

National Transportation Safety Board - Aircraft Accident/Incident Database

11. No javelins on wires.

12. No battery master switch installed. The electrical power was always "on".

13. A two sided switch was installed for the starter. One side was "momentary on" and the other switch was glued in place, not functioning.

14. The required "EXPERIMENTAL" placard was not installed as required by the Operating Limitations assigned at the time the Special (Experimental) Airworthiness Certificate was issued.

15. A bushing was made by tying a knot in clothes line rope on the throttle shaft in order to act as a travel stop.

16. All installed safety wire were too small and many times backwards.

17. All cotter keys too small for the fasteners.

18. Landing gear bungees too soft and worn out.

19. Right lower wing had a broken rib.

20. The engine had three different types of spark plugs installed, all worn beyond limits and oil fouled.

21. The number 5 cylinder, lower spark plug was found to be finger tight.

22. The engine was 5 quarts low on oil.

23. Various hardware missing from the engine cowling.

24. Fuel line fittings were aluminum, not steel.

25. Fuel lines were hydraulic hoses, not fuel lines.

26. The carburetor was installed backwards.

The mechanic was asked by the pilot to "annual" the aircraft. The mechanic refused, stating that the airplane was in too rough of condition and should be completely dismantled and rebuilt. The pilot was told by two certificated mechanics and two other experiential aircraft builders that the aircraft was unsafe and should be taken apart and "trailed" home.

The mechanic repaired the leaking brake and replaced all of the spark plugs, serviced the oil and ran the engine. The magnetos were checked and appeared to function properly. The engine started easily and appeared to run smoothly.

On July 30, 2015, the pilot pumped 19.7 gallons of fuel into the top fuel tank and asked the mechanic if he would fly with him. The mechanic refused and again told the pilot not to fly the aircraft.

The airplane was destroyed by a post-crash fire. Impact forces and post-crash fire precluded functional testing of the airplane, engine, and its accessories.

The pilot's last airman medical certificate was issued January 2000 and at that time the pilot reported a total of 151 flight hours.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA182	03/09/2017 1100 EST	Regis# N237PM	Robbinsville, NJ	Apt: Trenton-robbinsville N87
Acft Mk/Mdl PEDERSEN BJARNE MARTIN		Acft SN 7423	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONTINENTAL CD155			Fatal 0 Ser Inj 1	Flt Conducted Under: FAR 091
Opr Name: B. MARTIN PEDERSEN		Opr dba:		Aircraft Fire: NONE
				AW Cert: SPE

Events

1. Landing - Loss of control on ground
-

Narrative

The pilot of a tailwheel-equipped airplane reported that, during the landing roll, the airplane veered off the runway to the left. He added that he applied rudder inputs and full power to arrest the veer, but was unsuccessful. The airplane continued to veer off the runway and impacted a tree.

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

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 located about 10 miles north west of the accident airport reported that, about 7 minutes before the accident, the wind was from 280ø at 14 knots, gusting to 21 knots. The airplane was landing runway 29.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA171	03/01/2017 1130 PST	Regis# N801SX	Mercey Hot Spri, CA	Apt: Mercey Hot Springs CN22
Acft Mk/Mdl SMITH DOUGLAS J. SONEX-LTD.		Acft SN 0801	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl JABIRU 3300A		Acft TT 528	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: RENNIE, RODERICK M		Opr dba:		Aircraft Fire: NONE
				AW Cert: SPX

Events

1. Landing - Landing area undershoot
-

Narrative

The sport pilot reported that he was landing to an airfield and over flew the runway multiple times in search of a wind sock. He watched another airplane land to the south and he made his approach to the south also. He reported that his altitude was too high during his first approach and aborted the landing. He asserted that, "This should have alerted me that there was a tail wind." He flew one traffic pattern and made a second approach with the power at idle and full flaps. He established his approach but the airplane sank quickly and touched down short of the runway and nosed over. The airplane sustained substantial damage to the canopy, the vertical stabilizer and the rudder.

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

According to the Airport Facility Directory, the airfield is equipped with a wind indicator. However, no wind indicator could be located on or near the airfield by the NTSB investigator-in-charge.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA375	06/29/2017 1737 PDT	Regis# N385MU	Tehachapi, CA	Apt: Tehachapi Muni TSP
Acft Mk/Mdl URBANCZYK MIROSLAW RADIO		Acft SN 01	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
			Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: CSERFOI GYULA GEORGE		Opr dba:		Aircraft Fire: NONE
				AW Cert: SPE

Events

1. Initial climb - Loss of control in flight

Narrative

According to a local news report, after the accident the non-certificated pilot stated, "The wind got the better of me and the near death experience is pretty interesting." He further stated, "I tried to level out before the crash into the house and aimed for the tree. I thought we were dead and I pulled the yoke as far as I could to get the elevation leveled out, which saved our life. I hit the tree with the wing and we spun and landed." Subsequently, the airplane came to rest in the residential neighborhood.

The airplane sustained substantial damage to both wings.

After multiple requests, the non-certificated pilot failed to submit the National Transportation Safety Board (NTSB) Form 6120.1 Pilot/Operator Aircraft Accident/Incident Report, as required.

The automated weather observation system on the accident site airport reported, about the time of the accident, the wind from 320ø at 17 knots, gusting to 25 knots. The pilot departed on runway 29.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA358	06/19/2017 1823 PDT	Regis# N234VA	Eugene, OR	Apt: Mahlon Sweet Field EUG
Acft Mk/Mdl VANS AIRCRAFT INC RV-12-NO SERIES	Acft SN S12008	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual	Prob Caus: Pending
Eng Mk/Mdl ROTAX 912ULS	Acft TT 1051	Fatal 0	Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: LANE COMMUNITY COLLEGE	Opr dba:	Aircraft Fire: NONE		AW Cert: LTSP

Summary

According to the flight school director, the student pilot was conducting stop-and-go landings during a solo flight. He added that the student pilot reported that, during takeoff, the airplane began to "fishtail," the pilot reduced power, but the airplane continued to the left, exited the runway, and impacted a taxiway sign.

The airplane sustained substantial damage to the fuselage.

The flight school director reported that, according to the student pilot, there were no preaccident mechanical failures or malfunctions 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 student pilot's failure to maintain directional control during takeoff.

Events

1. Takeoff - Loss of control on ground
2. Takeoff - Attempted remediation/recovery
3. Takeoff - Runway excursion
4. Takeoff - 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-Student/instructed pilot - C
3. Environmental issues-Physical environment-Object/animal/substance-Sign/marker-Contributed to outcome

Narrative

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