
National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ERA17CA157	04/15/2017 1050 EDT	Regis# N340TP	Kingsland, GA	Apt: Oakwell R/c Airfield N/A
Acft Mk/Mdl AEROPRO CZ EUROFOX LSA-NO SERIE	Acft SN 20206	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim	Prob Caus: Pending
Opr Name: PISCITELLO THOMAS J	Acft TT 401	Fatal 0	Ser Inj 0	Flt Conducted Under: FAR 091
	Opr dba:			Aircraft Fire: NONE

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN16FA094 02/01/2016 1015 CST Regis# N323BR Arcola, TX Apt: Houston Southwest KAXH
Acft Mk/Mdl COSTRUZIONI AERONAUTICHE TECNA Acft SN 986 Acft Dmg: DESTROYED Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl ROTAX 912 Acft TT 2386 Fatal 1 Ser Inj 1 Flt Conducted Under: FAR 091
Opr Name: HOUSTON LIGHTSPORT AVIATION, LLC Opr dba: Aircraft Fire: GRD
AW Cert: LTSP

Summary

The flight instructor and a student pilot, who had flown about 5 flight hours with the instructor, were conducting an instructional flight in the light sport airplane. The student pilot reported that he was conducting the takeoff with the instructor assisting, and about 200 ft. above ground level, the airplane began to drift off the runway centerline. The student said that he attempted to correct, but it felt like the airplane was losing engine power and the nose was dropping. He added that he was pulling back on the controls and that the instructor was also pulling back, in an attempt to recover. A witness reported seeing the airplane climbing after takeoff in a nose high attitude when the left wing dropped, and the airplane entered a descending left turn. The airplane then impacted two parked airplanes on a ramp adjacent to a parallel taxiway. A postcrash fire consumed the majority of the airplane. Due to the fire damage, only a limited examination could be conducted; however, no preimpact abnormalities were noted with the engine and airframe. The circumstances of the accident are consistent with a power-on departure stall.

Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The student pilot's loss of control after exceeding the airplane's critical angle-of-attack, which lead to a power-on, aerodynamic departure stall. Contributing to the accident was the flight instructor's inadequate oversight of the student pilot.

Events

1. Takeoff - Aerodynamic stall/spin
2. Takeoff - Loss of control in flight

Findings - Cause/Factor

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

Narrative

HISTORY OF FLIGHT

On February 1, 2016, about 1015 central standard time, a Tecnam P92 light sport airplane, N323BR, impacted terrain near Arcola, Texas. The flight instructor was fatally injured; the student pilot was seriously injured; and the airplane was destroyed. The airplane was registered to and operated by Houston Light Sport Aviation, LLC, under the provisions of 14 Code of Federal Regulations Part 91 as an instructional flight. Visual meteorological conditions prevailed, and the airplane was not on a flight plan. The local flight was originating from the Houston Southwest Airport (AXH), Houston, Texas, at the time of the accident.

A witness reported that the airplane departed on runway 9, and when it was about midfield, the airplane was in a nose-high attitude. The airplane's left wing dropped, and the airplane entered a descending left turn.

The airplane then collided with two airplanes that were parked by a hangar adjacent to a parallel taxiway. The accident airplane came to rest on one of the parked airplanes, and a post-crash fire consumed the majority of the accident airplane and one of the parked airplanes.

The student pilot was interviewed while he was recovering in the hospital. He stated that he and the instructor completed some ground school training. The plan was then to conduct traffic pattern work including downwind and base legs. Before taxiing out, they saw an airplane depart from runway 27; however, they noted that, based on the current wind condition, the runway in use should have been runway 9. The student pilot added that he was conducting the takeoff with the instructor assisting. He applied full power, and, about 200 ft above ground level, the airplane started to drift left. He attempted to correct the drift to stay on the runway centerline. According to the student pilot, it felt like the engine was losing power, and the nose was dropping. He stated that he was pulling back on the controls and that the instructor was also pulling back. At that point, he knew they were going to crash, and there was nothing they could do to prevent it.

PILOT INFORMATION

The flight instructor held a commercial pilot certificate with ratings for airplane single-engine land, airplane multi-engine land, and instrument airplane. Additionally, he held a ground instructor certificate and a flight instructor certificate with airplane single- and multi-engine and instrument airplane ratings. The flight instructor was issued a special issuance first class medical certificate on July 27, 2015. At the time of the exam, the instructor reported he had 6,161.1 total flight hours and 30.5 hours in the previous six months. A review of flight club records revealed that he had 6 flight hours in the Tecnam P92.

The student pilot had four previous flights with the flight instructor and did not hold a student pilot certificate. A review of club records revealed that the student had approximately 5.1 total flight hours.

AIRCRAFT INFORMATION

The accident airplane was a Tecnam P92, a high-wing, single-engine, light sport airplane, with fixed landing gear. It was powered by a 100-horsepower, 4-cylinder, reciprocating Rotax 912 engine, and a fixed pitch propeller. The airplane's airworthiness certificate is in the Special, Light Sport (S-LSA) category. The fuselage was a semi-monocoque construction with a mixture of thin aluminum covered tube structure. A review of the airplane's maintenance records revealed that the last condition inspection was completed October 22, 2015, at an airplane and engine total time of 2,385.57 hours.

METEOROLOGICAL INFORMATION

At 1015, the automated weather observation facility (AWOS) located at AXH recorded, wind 120 at 6 knots, 7 miles visibility, scattered clouds at 1,500 ft with a ceiling at 2,000 ft, temperature of 68 F, dew point 64 F, and an altimeter setting of 29.88 inches of mercury.

AIRPORT INFORMATION

The Houston Southwest Airport (AXH) is a public-use, non-towered airport, located 15 miles southwest of Houston, Texas. Pilots use common traffic advisory frequency (CTAF) for communications. The airport has a single asphalt runway; runway 9/27, measuring 5,002 ft. long by 100 ft. wide. The airport is at an elevation of 68.9 ft mean sea level and has an AWOS station located on the field.

WRECKAGE AND IMPACT INFORMATION

The on-site examination of the wreckage revealed the airplane impacted a parked Cessna 172, and came to rest on a Gulfstream American AA5A airplane. A survey of the area did not reveal any ground scars between the runway and the ramp area where the airplane impacted the Cessna. A postcrash fire consumed much of the AA5A, the accident airplane, and limited the examination of the accident airplane.

The wreckage came to rest facing the runway. The right wing had extensive thermal damage with the inboard section of the wing and flap consumed by the fire. The left wing was consumed by the fire and its remnants were indistinguishable from the remnants of the AA5A. The main cabin was consumed by fire with only a tubular type frame remaining; the empennage had thermal damage but was largely intact. The engine compartment and forward fuselage were mostly consumed by fire. The propeller and nose cone were thermally damaged, and only a piece of the two-bladed propeller was located outside the fire damage area.

Aileron continuity was established at each of the wing bellcranks; however, sections of the push-pull tubing were consumed by the fire. Additionally, the control cable connection points were separated; each fastener was either consumed or melted by the fire. The elevator push-pull tube was consumed forward of the empennage. Rudder control continuity was established to the cockpit rudder pedals. The flap actuator position was compared to an exemplar actuator on a

similar airplane; the actuator position corresponded to a flap retracted position.

The firewall and part of the instrument panel were consumed by the fire. The engine also received extensive fire damage. The engine intake/carburetors and fuel pump were in place but were partly consumed by the fire. Fire damage prevented the engine from being rotated by hand. The engine's propeller speed reduction unit (PSRU) was disassembled; a visual inspection revealed no discrepancies with the internal gears. The top sparkplugs were removed and exhibited light colored combustion deposits and the electrodes exhibited normal signatures.

No preimpact abnormalities were noted during the airframe or engine examinations.

MEDICAL AND PATHOLOGICAL INFORMATION

The Galveston County Medical Examiner's Office, Texas City, Texas, conducted an autopsy on the flight instructor. The cause of death was determined to be "blunt force trauma and thermal injury".

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, conducted toxicological testing on the flight instructor. The specimens were not tested for cyanide. The tests were negative for ethanol and carbon monoxide. The tests were positive for lipizide in urine and blood, and alicylate in urine.

Glipizide is a prescription medication typically used to treat type 2 diabetes.

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Accident Rpt# WPR17LA087	04/13/2017 945 PDT	Regis# N5131H	Spanaway, WA	Apt: Spanaway S44
Acft Mk/Mdl TITAN TORNADO I-NO SERIES		Acft SN	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim Prob Caus: Pending
Eng Mk/Mdl ROTAX 503			Fatal 0 Ser Inj 1	Flt Conducted Under: FAR 091
Opr Name: DANIEL DOLAN		Opr dba:		Aircraft Fire: NONE
				AW Cert: LTSP

Events

1. Takeoff - Flight control sys malffail
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Narrative

On April 13, 2017, about 0945 Pacific daylight time, a Titan Tomado I, N5131H, experienced an in flight loss of control and impacted terrain during departure from the Spanaway Airport, Spanaway, Washington. The certified flight instructor (CFI), the sole pilot, was seriously 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. The personal flight departed from Spanaway about 0940 with an intended destination of Auburn, Washington. Visual meteorological conditions prevailed and no flight plan was filed for the flight.

Witnesses stated that they observed the airplane climb out and turn. The ballistic recovery parachute (BRS) was activated while the airplane was at a low altitude. The accident site was located about 450 feet from the runway surface.

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Accident Rpt# CEN14FA266	06/01/2014 1222 CDT	Regis# N176FD	Stevens Point, WI	Apt: Stevens Point Municipal STE
Acft Mk/Mdl YAKOVLEV YAK-55M		Acft SN 930810	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl VEDENEYEV M14P		Acft TT 215	Fatal 1 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: WILLIAM M. COWDEN		Opr dba:		Aircraft Fire: NONE
				AW Cert: SPE

Events

1. Maneuvering-aerobatics - Loss of control in flight

Narrative

HISTORY OF FLIGHT

On June 1, 2014, about 1222 central daylight time, a Yakovlev YAK-55M airplane, N176FD, was substantially damaged when it impacted terrain during an aerobatic flight over the Stevens Point Municipal Airport (STE), Stevens Point, Wisconsin. The airline transport pilot was fatally injured. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations (CFR) Part 91 without a flight plan. Day visual meteorological conditions prevailed for the local airshow demonstration flight that departed about 1220.

The flight team manager, who provided the public announcement during the aerobatic flight, reported that the flight began with the airplane rolling inverted shortly after liftoff on runway 21 and making a shallow inverted climb past show center. The airplane then rolled upright before entering a 90° turn away from show center and the crowd. The airplane continued to climb as it turned to a heading opposite that of the takeoff runway, turned back to the runway heading, and reentered the aerobatic box. The airplane rolled inverted before it entered a 45° dive toward show center. The airplane then completed several descending aileron rolls before it rolled wings level and entered a near vertical climb. At the apex of the climb/loop, the airplane entered an inverted flat spin. The flight team manager stated that the pilot normally entered the inverted flat spin at 3,000 ft above ground level (agl) and completed three rotations before recovering in a vertical dive with a 4-5 g pullup at show center; however, on the accident flight, the pilot appeared to enter the inverted spin about 500 ft lower than normal and complete more than 3 rotations before recovering into a dive. According to the flight team manager, the airplane then pitched up and entered an "aggressive" left turn that resulted in an accelerated aerodynamic stall.

A review of ground-based video footage showed that the airplane had completed 3-1/2 rotations in the inverted flat spin before it entered a near-vertical dive. The airplane pitched up momentarily before it developed a rapid left roll. The airplane subsequently entered a nose-low, descending left spiral that continued to ground impact.

PERSONNEL INFORMATION

According to Federal Aviation Administration (FAA) records, the 47-year-old pilot held an airline transport pilot certificate with single engine land and sea, multiengine land, and instrument airplane ratings. The pilot was type-rated for the Airbus A320, Boeing 757, Boeing 767, McDonnell Douglas DC-9, and Douglas DC-3 transport category airplanes. He also held a glider rating. The single engine land and sea airplane ratings were limited to commercial privileges. The glider rating was limited to private privileges. The pilot's last aviation medical examination was completed on March 24, 2014, when he was issued a first-class medical certificate with no restrictions or limitations. On September 16, 2013, the pilot completed an evaluation flight and was issued a Statement of Aerobatic Competency. A search of FAA records showed no previous accidents, incidents, or enforcement proceedings. His last flight review, as required by 14 CFR Part 61.56, was completed on May 12, 2014.

The pilot's flight history was established using his pilot logbook. His most recent logbook entry was completed on May 28, 2014, at which time he had accumulated 8,266.1 hours total flight time, of which 3,628.5 hours were listed as pilot-in-command. According to the logbook, the pilot had accumulated 3,608.8 hours in single-engine airplanes, 4,649.7 hours in multi-engine airplanes, and 4.7 hours in gliders. The pilot had flown 184.2 hours during the 90 days before the accident, 36 hours in the month before the accident, and 0.8 hours during the 24-hour period before the accident. The pilot had accumulated 107.6 hours in the accident airplane make/model. According to available documentation, the pilot had completed one aerobatic training flight in his authorized aerobatic practice box during the 8-month period before the accident. The single aerobatic training flight was completed on May 28, 2014, in the accident airplane.

AIRCRAFT INFORMATION

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The airplane was a 1993 Yakovlev YAK-55M, serial number 930810. It was an aerobatic single-place, single-engine airplane with a fixed conventional landing gear. The airplane was powered by a 360-horsepower, 9-cylinder Vendeneyev M14P radial engine, serial number KR0312035. The engine provided thrust through a constant-speed, three-blade, MT-Propeller MTV-9-B-C propeller, serial number 110600. The airplane had a maximum allowable takeoff weight of 2,150 pounds. The pilot purchased the airplane on October 17, 2010. The airplane was issued an FAA experimental category airworthiness certificate for the purpose of exhibition and associated operating limitations on December 7, 2010.

According to the airplane maintenance records, the most recent condition inspection was completed on September 29, 2013. At the time of that inspection, the airframe and engine had accumulated 214.5 hours total time. The propeller had accumulated 51.4 hours total time. The last recorded maintenance was an engine oil change that was completed on May 22, 2014. A postaccident review of the maintenance records found no history of unresolved airworthiness issues. The recording hour (Hobbs) meter was damaged during the accident, and a definitive reading could not be obtained.

METEOROLOGICAL INFORMATION

At 1215, an automated surface weather observation station located at STE reported: wind 200ø at 14 knots, gusting 21 knots; broken cloud ceilings at 2,900 ft agl and 3,600 ft agl; 10 miles surface visibility; temperature 26ø Celsius; dew point 19ø Celsius; and an altimeter setting of 29.90 inches of mercury.

AIRPORT INFORMATION

The Stevens Point Municipal Airport, located about 3 miles northeast of Stevens Point, Wisconsin, was served by two asphalt runways, runway 3/21 (6,028 ft by 120 ft) and runway 12/30 (3,635 ft by 75 ft). The airport elevation was 1,110 ft mean sea level.

WRECKAGE AND IMPACT INFORMATION

The accident site was located alongside a dirt road in a wooded area about 260 yards northeast of the runway 30 threshold. The elevation of the accident site was 1,095 ft. The main wreckage consisted of the entire airplane, which was orientated on a northwest heading. The wreckage was found in an upright position, and there was no appreciable wreckage debris path. The observed tree damage and the lack of a lateral debris path were consistent with a near vertical impact. All observed structural component failures were consistent with overstress separation, and there was no evidence of an inflight or postimpact fire. Flight control continuity was confirmed from all flight control surfaces to their respective cockpit controls. The engine was found in a 2.5 ft deep impact crater and remained partially attached to the firewall. Three engine cylinders had partially separated from the crankcase, which prevented the engine from being rotated. After removing several cylinders, an internal examination did not reveal any mechanical discontinuities within the engine drivetrain. The No. 1 magneto exhibited impact damage that prevented a functional test. The No. 2 magneto provided a spark on all leads when rotated. All three propeller blades were fragmented, consistent with the engine producing power at the time of impact. The postaccident examination of the airplane did not reveal any mechanical anomalies that would have precluded normal operation.

MEDICAL AND PATHOLOGICAL INFORMATION

At the request of the Portage County Coroner, an autopsy was performed on the pilot at the University of Wisconsin-Madison School of Medicine and Public Health, located in Madison, Wisconsin. The cause of death was attributed to multiple blunt-force injuries sustained during the accident. The FAA Bioaeronautical Sciences Research Laboratory located in Oklahoma City, Oklahoma, performed toxicology tests on samples obtained during the autopsy. The toxicological test results were negative for ethanol and all drugs and medications.

TESTS AND RESEARCH

A Garmin GPSMAP 396, serial number 67014609, was recovered from the wreckage and examined at the NTSB Vehicle Recorder Laboratory. The non-volatile data was recovered through a memory-chip recovery process. The final dataset was recorded on May 31, 2014, and was associated with a 0.8-hour flight from Menomonie Municipal Airport (LUM) to STE. The Garmin GPSMAP 396 device did not contain any data associated with the accident flight.

A GoPro Hero 3+ digital video camera, serial number 30C3CDE, was recovered from the wreckage and examined at the NTSB Vehicle Recorder Laboratory. A forensic recovery of the memory card revealed eight video files. Seven of the eight video files were not associated with the accident flight. The remaining video file contained 4 minutes 37 seconds of video footage from the accident flight.

A review of the available video footage established that the camera was mounted on the glare shield facing aft toward the pilot. The pilot's helmeted head, torso, hips, upper legs, and knees were in the field-of-view. Also visible were the pilot control stick, the inboard portions of both ailerons, the outboard portions of both horizontal stabilizers, and both elevator horns/counterbalances. The vertical stabilizer and rudder were obscured by the pilot's helmeted head. The video camera also recorded audio that detected changes in wind and engine noise during the accident flight.

A review of the video footage established that the flight controls were moving in conjunction with the pilot's control inputs and that he closed and locked the canopy before takeoff. The pilot initiated the takeoff by advancing the engine power lever gradually with his left hand. The airplane became airborne in a level attitude while over the runway 21 centerline. About 8 seconds after liftoff, the pilot activated the smoke system with his right thumb on the control stick, and the airplane briefly entered a slight climb before it rolled to the right into an inverted attitude. The inverted airplane was slightly left of the runway 21 centerline. The pilot then pushed the control stick forward to initiate an inverted climb. During the inverted climb, the pilot turned the airplane away from the showline and eventually rolled the airplane upright and continued in a climbing left turn onto a downwind for runway 21. While on the downwind, the pilot made a radio call and activated the airplane's smoke system several times. The airplane continued to climb on the left crosswind and eventually turned upwind for runway 21.

At 03:53 (mm:ss) into the recording, the pilot made a radio call, activated the smoke system, and rolled the airplane inverted. After rolling inverted, the airplane continued to fly level briefly before the pilot applied aft control stick with both hands to establish a descending flight path of about 45°. The airplane then completed 2-1/2 right aileron rolls while descending, and smoke was observed trailing the airplane's flight path. By 04:06, the airplane was upright and wings level. The airplane then entered an inside loop maneuver. While the airplane was ascending, the two intersecting runways were visible outside the airplane's canopy. The longitudinal axis of the airplane appeared to be about 20° offset to the runway 3/21 centerline. At 04:17, the pilot reduced engine throttle, and the recorded audio track was consistent with a partial reduction in engine power. About 1 second later, the unrestrained portion of the pilot's shoulder harness straps (strap ends) fell toward the top of the airplane's canopy indicating the airplane had entered a negative-g environment. The pilot applied slight forward control stick with his right hand. By 04:19, the pilot further reduced the engine throttle and applied additional forward control stick input. The airplane's heading remained offset about 20° from the runway 3/21 centerline. The elevator horns/counterbalances showed that the elevator was near maximum deflection as the control stick approached the full forward position. The pilot then applied a left rudder input while holding the control stick in the full forward position. The observed smoke trail was consistent with the airplane yawing. By 04:27, the airplane was established in an inverted spin and had completed one rotation. The pilot was still holding full forward stick with some right aileron input. The airplane completed several rotations while in the inverted spin before the pilot began to move the control stick forward and applied right rudder. The airplane's rotation rate began to slow, and by 04:31, the control stick was being held in a neutral pitch position. The elevator was observed in a neutral position when compared to the horizontal stabilizer. The pilot then moved the control stick to the right, and both ailerons were observed to move in conjunction with the control stick position. The shoulder harness straps were still floating, consistent with the airplane still in a negative-g environment. The pilot was holding the control stick with a clenched right hand. At 04:32, the pilot applied a rapid left aileron and left rudder control input. The ailerons were observed to respond to the control stick movement. The shoulder harness straps were no longer floating, consistent with the airplane in a positive-g environment. The airplane rotation stopped, and there was an increase in engine noise.

About a second after the rotation had stopped, the pilot quickly centered the control stick before moving the control stick aft. The elevator was observed to move in conjunction with the control stick movement. The ailerons appeared to be in a neutral position as the airplane pitched up from a nose-low descent toward level flight. Within the next 2 seconds, the horizon became visible behind the airplane. The upright airplane was banked slightly to the right as the airplane neared a level flight attitude. At 04:34, the pilot moved his head to look over his right shoulder. The airplane continued to pitch up and subsequently entered a level climb. The pilot then turned his head back toward the center of the cockpit, his right hand was still firmly gripping the control stick, and his left hand was on the engine throttle. Runway 3/21 was observed directly behind the airplane and perpendicular to the airplane's flight path. The airplane then entered an abrupt left roll with a positive pitch angle. The pilot had not commanded the left roll with aileron or rudder control input. The control stick position was consistent with an aft pitch and a neutral roll input. The observed positions of the ailerons and elevator were consistent with the control stick position.

The video footage was analyzed frame-by-frame, and the left roll rate appeared to increase rapidly between frames. The pilot was still gripping the control stick with his right hand while his left hand remained on the engine throttle. As the left roll developed, the pilot moved the control stick to the right and partially reduced the aft pitch. The airplane continued to roll left, and the runway 30 threshold markings became visible below the airplane. During the left roll, the pilot added additional right roll control and further reduced the aft pitch input. The ailerons and elevator responded to the control stick movement. Throughout the left roll, the pilot was looking forward, and his right hand remained on the control stick and his left hand on the engine throttle. At 04:37, the video footage ended with the airplane still airborne and rolling to the left. The airplane had rolled beyond 90° to the horizon and the runway 30 threshold markings were still visible under the airplane. The final impact sequence was not recorded by the video camera. However, during the final seconds of recorded video, the pilot's body positioning, active head movements, and flight control movements were consistent with him being conscious. Additionally, the review of the available video

footage confirmed that the pilot had remained conscious throughout the aerobatic flight.

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Accident Rpt# WPR17LA082	03/31/2017 1455 PDT	Regis# N610TT	The Dalles, OR	Apt: Columbia Gorge Regional/the Da DLS
Acft Mk/Mdl OTT 601XL-B		Acft SN 6-7884	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim Prob Caus: Pending
			Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: OTT LOUIS W		Opr dba:		Aircraft Fire: NONE
				AW Cert: SPE

Events

3. Landing - Landing area undershoot

Narrative

On March 31, 2017 about 1455 Pacific daylight time, an OTT 601XL-B airplane, N610TT, experienced a partial loss of engine power and the pilot subsequently made a precautionary landing about one mile southeast of the Columbia Gorge Regional/The Dalles Municipal Airport (DLS), The Dalles, Oregon. The commercial pilot and one passenger sustained minor injuries, and the airplane was substantially damaged throughout. The airplane was registered to, and operated by, the pilot as a 14 Code of Federal Regulations Part 91 personal, local flight. Visual meteorological conditions prevailed at the time of the accident and no flight plan was filed.

The pilot reported that the purpose of the flight was to verify the proper fuel mixture setting for the electronic mixture system. The airplane departed the airport to the northeast and when climbing through 3,500 feet the pilot heard the engine abruptly change. Concurrent with the change, he observed a loss of RPM and high exhaust gas temperature readings. The pilot returned towards the airport and attempted to troubleshoot the problem, however, the airplane was producing less power than expected. The pilot established a normal traffic pattern for runway 31. After turning final the airplane was low and, despite adding power, the airplane impacted terrain short of the runway surface.

The airplane has been recovered to a secure location for further examination.

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# GAA17CA240 04/21/2017 1610 PDT Regis# N661RP Wenatchee, WA Apt: Pangborn Memorial EAT
Acft Mk/Mdl PARLETTE ROBERT L GLASTAR-NO Acft SN 5620 Acft Dmg: SUBSTANTIAL Rpt Status: Prelim Prob Caus: Pending
Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: PARLETTE ROBERT L Opr dba: Aircraft Fire: NONE

National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# CEN16FA209	06/07/2016 1020 CDT	Regis# N921RP	De Smet, SD	Apt: N/a
Acft Mk/Mdl PRUSS RICHARD S KITFOX IV-IV		Acft SN 1589	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl ROTAX 582LC		Acft TT 443	Fatal 1 Ser Inj 1	Flt Conducted Under: FAR 091
Opr Name: ON FILE		Opr dba:		Aircraft Fire: NONE
				AW Cert: SPE

Summary

During a personal local flight, the private pilot and passenger, who held a student pilot certificate, were searching a lake for a submerged boat. The passenger stated that while maneuvering at a low altitude, the pilot banked the airplane about 45 to 60 degrees at an airspeed of about 50 miles per hour. During the turn, the airplane stalled, entered a spin, and impacted the water. A postaccident examination of the airframe and engine did not reveal any evidence of a mechanical malfunction or failure that would have precluded normal operation. Data from a GPS unit recovered from the airplane indicated that the airplane was about 250 ft above ground level at a ground speed of about 34 knots when it stalled. Based on the passenger's statements and the GPS data, it is likely that the pilot failed to maintain adequate airspeed and exceeded the airplane's critical angle-of-attack while maneuvering, which resulted in an aerodynamic stall/spin from which he had insufficient altitude to recover.

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 during a steep turn at a low altitude, which resulted in an aerodynamic stall/spin at too low of an altitude to recover.

Events

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

Findings - Cause/Factor

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

Narrative

HISTORY OF FLIGHT

On June 7, 2016, about 1020 central daylight time, an amateur-built Kitfox IV single-engine airplane, N921RP, impacted a lake following a loss of control while maneuvering at a low altitude near De Smet, South Dakota. The private pilot sustained fatal injuries, the passenger sustained serious injuries, and the airplane sustained substantial damage. The airplane was registered to and operated by the pilot as a 14 Code of Federal Regulations Part 91 personal flight. Visual meteorological conditions prevailed at the time of the accident, and a flight plan was not filed. The local flight departed from Lake Preston Municipal Airport (Y34), Lake Preston, South Dakota, about 0929.

According to the passenger, who held a student pilot certificate and was interviewed by a Federal Aviation Administration (FAA) inspector, the pilot picked him up at Y34 to assist in a search for a boat that sank in Lake Thompson on June 3, 2016. The pilot and passenger spotted the boat and then flew a right "racetrack" pattern about 150 ft above ground level. While maneuvering, the airplane was banked about 45 to 60 degrees at an airspeed of about 50 miles per hour. During one of the turns, the airplane "snapped over" and the pilot told the passenger that the airplane stalled. The airplane spun about 1.5 to 2 rotations, impacted the lake, and sank. The passenger stated the engine operated normally until the impact with the water.

According to local authorities, the passenger was rescued by persons assisting in the boat recovery. Efforts to rescue the pilot were unsuccessful.

PERSONNEL INFORMATION

The pilot held a private pilot certificate with an airplane single-engine land rating. The pilot's most recent third class medical certificate was issued on January 26, 2015, with a limitation for corrective lenses.

A review of the pilot's logbook, noted as "Logbook Number 5", revealed that the first logbook entry was dated February 14, 2015, and the last logbook entry was dated June 5, 2016. According to the information contained in the logbook, at the time of the last logbook entry, the pilot had accumulated 1,179.2 total flight hours, of which 28.7 hours were in the accident airplane.

National Transportation Safety Board - Aircraft Accident/Incident Database

AIRCRAFT INFORMATION

The two-seat, high-wing, tail-wheel configured airplane, serial number 1589, was manufactured in 1991. The airplane was powered by a Rotax 582 LC 65-horsepower engine, and was equipped with a composite 3-blade ground-adjustable propeller. The airplane was purchased by the pilot on May 10, 2010.

The most recent condition inspection was completed on July 11, 2015, at a total airframe and engine time of 432.6 hours. The hour meter reading observed at the accident site was 442.5 hours.

METEOROLOGICAL INFORMATION

At 0956, the automated weather observing system at the Brookings Regional Airport (BKK), Brookings, South Dakota, located about 30 miles east of the accident site, recorded the following weather conditions: wind calm, sky clear, temperature 17 degrees Celsius, dew point 7 degrees Celsius, and an altimeter setting of 30.04 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The airplane was recovered from the lake and examined at a facility near Lake Thompson. Examination of the airplane showed that the fuselage was buckled near the aft cabin bulkhead. The forward fuselage was crushed up and aft. The left wing displayed compression bending aft near the wing root, and the forward wing attachment was fractured. The left flap remained attached and its control fitting was fractured. The fracture was consistent with impact damage. The right wing remained attached to the fuselage and sustained minor damage. The right flap remained attached.

The empennage was intact with the rudder and elevator attached and minor damage was noted to the bottom of the rudder. The tailwheel remained attached and both main landing gears were separated from the fuselage.

Flight control continuity was established from the cockpit controls to the respective flight control surfaces.

The seat restraints were attached to the fuselage and were found unbuckled. The flap handle was observed in the up or retracted position. The throttle was pulled out about 1.5 inches, and the fuel selector was on.

The engine remained attached to the engine mount and fuselage. The propeller remained attached to the engine, and the propeller was manually rotated. Manual rotation of the propeller revealed compression and mechanical continuity throughout the engine. Two propeller blades were fractured aft near the blade root.

MEDICAL AND PATHOLOGICAL INFORMATION

The autopsy of the pilot was performed at the Sanford Health Pathology Clinic, Sioux Falls, South Dakota. The cause of death was asphyxia due to drowning during an airplane accident. Toxicology testing by the FAA Civil Aerospace Medical Institute was negative for all substances tested.

TEST AND RESEARCH

The SD card from an iFly 700 Adventure Pilot GPS that was recovered from the airplane was submitted to the NTSB Vehicle Recorder Division for data recovery. The card was undamaged and data was recovered normally. The data extracted included 164 track logs from February 14, 2009, through June 7, 2016. The accident flight was recorded starting at 0929:12 and ending at 1019:51.

The GPS data parameters recorded were the following: date, time, latitude, longitude, GPS speed, true course, and GPS altitude.

According to the data, the flight departed Y34 at 0929, turned southwest, and climbed to about 2,300 feet GPS altitude. As the airplane approached Lake Thompson, it descended to between 2,000 and 2,100 feet mean sea level (msl); Lake Thompson is at 1,700 feet msl. The airplane began flying a north/south pattern with 3.5 to 4 nautical mile legs. At 1007, the airplane began circling a point towards the western side of the lake. The last recorded data point was at

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1019:51 at a GPS altitude of 1,955 feet and a ground speed of 34 knots. Due to data buffering on the GPS unit, the data recording may have ended before the airplane impacted the lake.

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Accident Rpt# CEN15FA141 02/11/2015 1433 MST Regis# N564ER Kersey, CO Apt: Greeley-weld County GXY
Acft Mk/Mdl RICHARD LACOURSE WHEELER Acft SN XP0123 Acft Dmg: DESTROYED Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl LYCOMING IO-540-S1A5 Acft TT 14 Fatal 2 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: LACOURSE RICHARD Opr dba: Aircraft Fire: GRD
AW Cert: SPE

Events

2. Uncontrolled descent - Unknown or undetermined
3. Emergency descent - Loss of engine power (total)

Narrative

HISTORY OF FLIGHT

On February 11, 2015, about 1433 mountain standard time, an experimental, amateur-built Wheeler Express, N564ER, impacted terrain while performing an off-airport forced landing near Kersey, Colorado. The private pilot and airline transport pilot-rated passenger were fatally injured, and the airplane was destroyed. The airplane was privately owned and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed and no flight plan was filed. The airplane departed from Greeley-Weld County Municipal Airport (GXY), Greeley, Colorado, and was en route to Front Range Airport (FTG), Watkins, Colorado.

An airframe and powerplant mechanic at GXY reported hearing the accident airplane's engine making odd noises as it taxied to the parking area. He stated that the engine was backfiring and sounded like one or more of the cylinders was misfiring. He went outside and saw the airplane taxi to the ramp in front of the airport terminal.

Later, the two pilots came into his shop and stated that they were experiencing difficulty with the airplane's engine. The mechanic stated that his boss would be more knowledgeable about the subject and that he would return in about 35 minutes. The pilots stated that they did not want to wait that long and planned to return to FTG. The mechanic offered to accompany them to the airplane and listen to the engine as they started it. The pilots proceeded to board the airplane without conducting a preflight inspection and attempted to start the engine; however, the engine would not start. The mechanic assisted the pilots in starting the engine with auxiliary power and found that the battery had a charge but that the starter solenoid "didn't click like it should" and was not engaging the starter. Both pilots disembarked the airplane, and the mechanic returned to his work.

About 10 minutes later, one of the pilots requested a "jumper wire" from the mechanic so that he could bypass the starter solenoid. A subsequent attempt to start the engine was successful. The mechanic stated that, as the airplane taxied out to the runway, the engine began to run rough; however, the pilots continued their taxi. The mechanic did not see the takeoff but was informed shortly thereafter that the airplane had crashed.

Another witness, who was standing outside his shop about 3/4 mile from the accident location, reported hearing an airplane's engine "sputtering." When the airplane flew over him about 200-300 ft. above ground level, the engine was running rough and occasionally "missing." The airplane proceeded southeast when he heard a backfire; he thought the engine stopped running. The airplane then descended and impacted the ground at high speed in an approximate 30° nose-down attitude. There was an immediate postimpact fire. The witness called 911, went to the accident location, and fought the fire with several handheld fire extinguishers until emergency responders arrived.

PERSONNEL INFORMATION

The 65-year-old pilot held a private pilot certificate with a single-engine land rating. He also held a repairman experimental amateur builder certificate. On February 25, 2013, he was issued a Federal Aviation Administration (FAA) third-class medical certificate with a limitation requiring corrective lenses. On the medical certificate application, the pilot reported 250 total hours of flight experience, and 20 hours in the preceding six months.

A review of the pilot's logbooks revealed that his most recent flight review was completed on September 22, 2007. Between the time of his flight review and the accident flight, the pilot's logbook showed two additional flights, one on February 15, 2013, where he performed takeoffs and landings, and the other on April 3, 2013, which was a high-speed taxi and flight test of the accident airplane. The two flights totaled 1.4 hours.

The passenger, age 79, held an airline transport pilot certificate with ratings for airplane single-engine land, single-engine sea, multi-engine land, and

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instrument. He was also type-rated in several commercial and business aircraft. Additionally, he held a flight engineer certificate for turbojet aircraft. On April 2, 2014, he was issued a third-class medical certificate with a limitation that he must have glasses available for near vision. On the medical certificate application, the pilot reported he had flown 22,750 total hours, with 23.7 hours in the preceding 6 months.

A review of the passenger's logbook revealed that he successfully completed a flight review on April 23, 2014.

AIRCRAFT INFORMATION

The composite construction airplane was a four-place, low-wing, tricycle landing gear monoplane. It was built from a kit by the pilot/owner and completed in 2013. It was equipped with two 46-gallon fuel tanks located in the wings and powered by a Lycoming IO-540-S1A5 engine, rated at 300 hp at 2,800 rpm, which drove a Hartzell HC-C2YR-1BF two-bladed constant-speed propeller.

A review of the airplane's maintenance logbooks revealed that the pilot completed a condition inspection on March 3, 2014. The recorded tachometer time at the annual inspection was 5.0 hours. The airframe hours (Hobbs) meter was recovered at the accident site. The time on the meter read 14.4 hours.

METEOROLOGICAL INFORMATION

The 1435 automated weather observation at GXY, about 6 statute miles northwest of the accident site, recorded wind from 190ø at 5 knots, visibility 10 statute miles, clear skies, temperature 52øF, dew point 27øF, and an altimeter setting of 30.34 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The accident site was located about 2 statute miles south of the town of Kersey in a field at the corner of two county roads. The main wreckage consisted of the airplane's separated propeller, separated engine, cabin area, baggage compartment, left and right wings, nose and main landing gear, aft fuselage, and the separated empennage.

The accident scene began with a 20-ft-long impact crater and ground scar that extended on a southeast heading. The impact crater at the northwest end of the ground scar was about 3 ft. wide and 12 inches deep. Impressions perpendicular to the left and right of the impact crater corresponded with the leading edges of the left and right wings and the left main landing gear. The propeller was embedded in the impact crater and broken torsionally at the phalange. The blades showed torsional bending, leading edge bends and gouges, and chordwise scratches. Along the ground scar and proceeding into the subsequent debris field were pieces of broken cowling, the nose gear, portions of the forward fuselage, and the fuel selector.

The debris field extended about 75 ft. southeast from the ground scar. Within the debris field were broken pieces from the wings, forward fuselage and windscreen, broken cabin interior and instrument panel pieces, avionics, radios, and navigation and flight instruments. The empennage came to rest inverted at the end of the debris field and was broken at the fuselage just forward of the leading edge of the vertical stabilizer. The vertical stabilizer and rudder were intact. The left horizontal stabilizer was broken aft at the outboard end and the left elevator was separated. The right horizontal stabilizer was crushed and broken aft along the leading edge. About 10 ft. beyond the empennage were broken parts of the aft fuselage and the left elevator.

About 30 ft. southeast of the empennage was a burned area of grass and dirt that ran along the north side of an east-west oriented dirt road. The burned area was about 50 ft. long and 10 ft. wide. The burned area contained the remainder of the airplane's cabin, the left and right wings, fuel tanks, and the main landing gear. These components were charred and consumed by the postimpact fire.

The intact engine, with the engine mounts and the airplane's firewall, came to rest upright on the road east of the burned area. The forward fuselage around the firewall was crushed inward and aft. The engine mounts were bent downward.

Flight control continuity to the elevator, rudder, and ailerons was established at the accident scene.

MEDICAL AND PATHOLOGICAL INFORMATION

Autopsies of both pilots were conducted by the Weld County, Colorado Coroner at Loveland, Colorado,. Both pilots' cause of death was attributed to multiple

force injuries suffered in an airplane crash.

Toxicology testing on the pilot, performed by the FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, identified 0.010 gm/dl of ethanol in muscle, but no ethanol in liver. In addition, losartan, a prescription blood pressure medication, was identified in the liver but not in blood. Ethanol is the alcohol found in beer, wine, and liquor and federal regulation limits pilots to no more than 0.04 gm/dl when flying. Ethanol may also be produced in body tissue after death.

Toxicology testing performed on the pilot-rated passenger identified diphenhydramine in liver and blood. The level of diphenhydramine in the blood was below the level of quantification.

TESTS AND RESEARCH

The airplane was examined in further detail at a salvage facility in Greeley, Colorado. The fuel selector was found to be on the left tank.

The engine was separated from the cowling and engine mounts, and the valve covers, accessories, and top spark plugs were removed; the engine was suspended from a forklift for the examination. The crankshaft was rotated by hand, and thumb compression was established on all cylinders. Engine drive train continuity was established throughout. Borescope examination of the cylinders revealed no anomalies. The right magneto was separated from the engine, and the left magneto remained partially attached. Both magnetos were impact-damaged and would not produce spark. The fuel servo was found attached to the sump. The brass plug was found tight and properly safetied. The fuel inlet screen and injectors were free of debris. The oil pick-up screen was also found free of debris. The examination showed no indication of any pre-impact anomalies.

Fuel receipts obtained from FTG showed that the pilot fueled the airplane with 20 gallons of 100 low lead aviation gasoline on February 6, 2015.

A review of the engine logbooks showed the engine was last overhauled on July 1, 1994.

According to Lycoming Service Instruction 100.9AW, engine overhauls should be performed every 12 years or 1,800 hours of operation, whichever occurs first.

The handheld GPS unit that was recovered with the airplane was examined at the NTSB Vehicle Performance Laboratory in Washington, DC, on October 6, 2015. The unit was powered up and data was extracted. The accident flight was not recorded.

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Accident Rpt# GAA17CA246 04/24/2017 1530 CDT Regis# N614WB Chesterfield, MO
Acft Mk/Mdl THOMAS B MCGRATH JA30 Acft SN JA422-11-14 Acft Dmg: SUBSTANTIAL Rpt Status: Prelim Prob Caus: Pending
Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091
Opr Name: THOMAS B. MCGRATH Opr dba: Aircraft Fire: NONE

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Accident Rpt# CEN16LA266	07/15/2016 1900 CDT	Regis# N556XT	Whitewater, KS	Apt: N/a
Acft Mk/Mdl TOEVS TITANIUM EXPLORER		Acft SN TX007	Acft Dmg: DESTROYED	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl ROTAX 914UL		Acft TT 176	Fatal 1 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: TOEVS		Opr dba:		Aircraft Fire: GRD
				AW Cert: SPE

Events

1. Maneuvering - Loss of control in flight

Narrative

HISTORY OF FLIGHT

"The following is an INTERIM FACTUAL SUMMARY of this accident investigation. A final report that includes all pertinent facts, conditions, and circumstances of the accident will be issued upon completion, along with the Safety Board's analysis and probable cause of the accident:"

On July 15, 2016, about 1900 central daylight time, an amateur-built Toeys Titanium Explorer rotorcraft gyroplane, N556XT, was destroyed when it impacted trees and terrain near Whitewater, Kansas. A post impact fire ensued. The sport pilot was fatally 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 local flight that originated from Newton City/County Airport (EWK), Newton, Kansas, about 1830.

According to a witnesses interviewed by the Kansas Highway Patrol and the Federal Aviation Administration (FAA), the gyroplane started a turn, the nose pitched up, and then it descended and impacted the ground. At least one witness described hearing engine noise.

PERSONNEL INFORMATION

The pilot, age 61, held a private pilot certificate with an airplane single-engine land rating and a sport pilot certificate with a rotorcraft gyroplane rating. He was issued his gyroplane rating, in the accident gyroplane, on June 17, 2016. He also held a repairman certificate with an "inspection light sport - rotorcraft gyroplane." rating issued on August 24, 2011.

The pilot's most recent third class airman medical certificate was issued on November 5, 2012, without limitations. At that time, the pilot reported no chronic medical conditions and no medications. The pilot reported 110 hours total flight time on his application.

Copies of the pilot's "Pilot Flight Record and Log Book" and "Ultralight/Recreational Sport Pilot Log Book" were provided for review. The Pilot Flight Record contained entries dated between January 20, 1973, and April 14, 1976. Logbook entries illustrated about 80 hours of flight time and experience in the Aeronca Champ 7AC and Cessna 150, 172, and 177. The Ultralight/Recreational logbook contained entries dated between November 20, 2010, and July 14, 2016. Logbook entries illustrated about 54 hours of flight time and experience in a "gyroglider" and the Titan Explorer.

AIRCRAFT INFORMATION

According to FAA records, the 2015 rotorcraft gyroplane, a Toeys Titanium Explorer (serial number TX007) had been manufactured by the pilot and his wife. It was registered with the FAA on an special airworthiness certificate for experimental operations. A 100-horsepower Rotax 914UL engine powered the gyroplane. The engine was equipped with a 2-blade, Bolly Optima composite propeller.

The gyroplane was registered to and operated by the pilot, and was maintained under a condition inspection program. A review of the maintenance records indicated that a condition inspection had been completed on May 31, 2016, at an airframe total time of 175.8 hours. The gyroplane had accumulated about 217 hours total time. The aircraft was flown about 40 hours since the condition inspection.

METEOROLOGICAL INFORMATION

The closest official weather observation station was Newton City/County Airport (EWK), Newton, Kansas, located about 10 nautical miles northwest of the accident site. The elevation of the weather observation station was 1,533 feet msl. The routine aviation weather report (METAR) for EWK issued at 1856, reported, wind 090 degrees at 7 knots, visibility 10 miles, sky condition, scattered clouds at 4,700 ft, broken clouds at 5,500 ft, temperature 28.0 Celsius (C),

dew point temperature 20ø C, altimeter 30.01 inches.

WRECKAGE AND IMPACT INFORMATION

An inspector from the FAA responded to the accident scene. The accident site was located in a vegetated field. The accident site was at an elevation of 1,385 ft msl. The gyroplane came to rest in a nose low attitude, on its left side. It was charred, melted, and partially consumed by fire. Several larger components separated during the impact and were located within a radius of 50 to 60 feet surrounding the main wreckage and impact point.

The fuselage, engine, main rotor, and empennage were all accounted for at the accident site. The cockpit instrumentation had separated from their cockpit locations, and did not convey reliable readings. Some were impact and fire damaged.

The wreckage was examined further, by an investigator from the National Transportation Safety Board, in a barn after it was removed from the accident site.

The rudder control cable was continuous from the aft pulley forward to the rear seat rudder pedals. Pushpull tubes were continuous from the aft pedals forward. Both tubes separated at the forward pedals. Signatures were consistent with impact damage and overload separation.

The instrument panels were impact and fire damaged. The gauges provided no reliable readings. The empennage was impact damaged and the rudder had separated from the vertical stabilizer. The fuselage was impact and fire damaged and fragmented into multiple pieces.

The main rotor consisted of two blades - the yellow spot blade and the non-spot blade. The yellow spot blade was broken into multiple pieces along the span consistent with impact damage. The outboard portion of the blade exhibited exposure to heat and fire. The non-spot blade was broken into two pieces. The outboard portion was the portion previously imbedded in the ground. The inboard portion of the hub was fire damaged.

The propeller and hub exhibited impact and separation damage at all three blade hubs. The propeller blades were charred, melted, and partially consumed by fire. The engine exhibited impact damage and exposure to heat and fire. No anomalies were noted that would have precluded normal operations.

The flight control tubes were continuous from the control stick aft to the mast and keel. The control tubes were continuous up to the control rod scissor arms. The two control arms between the scissor arms and mast head were separated with signatures consistent with impact damage and overload separation. No anomalies were noted that would have precluded normal operations.

The scope of the examination was limited by fragmentation due to impact damage and heat due to the post impact fire; however, no anomalies consistent with a preimpact failure or malfunction were observed.

MEDICAL AND PATHOLOGICAL INFORMATION

The Regional Forensic Science Center - Sedgwick County, Kansas, performed the autopsy on the pilot on July 16, 2016. The autopsy concluded that the cause of death was "multiple blunt force injuries. include[ing] thermal injuries" and the report listed the specific injuries.

The FAA's Civil Aerospace Medical Institute (CAMI), Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicological tests on specimens that were collected during the autopsy. Carbon monoxide and cyanide tests were not performed. Tests were negative for ethanol. Amlodipine and norfluoxetine were detected in the blood and kidney. Tests detected 0.019 ug/mL dihydrocodeine in the lung and 0.009 ug/mL in the cavity blood; 3.598 ug/mL Fluoxetine in the kidney and 0.313 ug/mL in the cavity blood; 0.138 ug/mL hydrocodone in the lungs and 0.04 ug/mL in the cavity blood.

Dihydrocodeine is a metabolite of hydrocodone and norfluoxetine is a metabolite of fluoxetine. Amlodipine is used to treat high blood pressure and is acceptable for use by pilots. Fluoxetine is used to treat a multitude of mood disorders and can be approved for use by pilots through a special issuance medical certificate. Hydrocodone is use for severe pain management.