

# National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ERA17FA248	07/19/2017 1130 EDT	Regis# N601PH	Towanda, PA	Apt: Bradford County N27
Acft Mk/Mdl AIRCRAFT MFG & DVLPM T CO CH601XLI	Acft SN 601-040S	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim	Prob Caus: Pending
Eng Mk/Mdl CONT MOTOR O-200	Acft TT 265	Fatal 1	Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: WILCOX SCOTT LEE DBA	Opr dba:		Aircraft Fire: GRD	AW Cert: SPX

## Events

2. Emergency descent - Aerodynamic stall/spin

## Narrative

On July 19, 2017, at 1130 eastern daylight time, an Aircraft Manufacturing & Design (AMD) CH601XLI, special light sport airplane (S-LSA), N601PH, was substantially damaged when it collided with terrain shortly after takeoff from Bradford County Airport (N27), Towanda, Pennsylvania. The student pilot, who was also the owner of the airplane was fatally injured. The airplane was operated 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 for the local flight.

Several witnesses at N27 reported that the pilot departed the traffic pattern for a local flight of about 15 minutes before returning to the airport to perform touch-and-go landings on runway 23. After the second touch-and-go landing and during initial climb, the engine appeared to be producing partial power; one witness stated, "It was clearly behind the power curve." The airplane climbed and seemed to "mush" through the air and the nose dipped three times. The airplane made a shallow turn to the right, then approximately 2 miles southwest of the airport, it made a left turn crosswind. Shortly afterwards, the pilot made a radio call and declared an emergency, stating that he was attempting to make it back to the airport. The airplane made a second left turn towards the airport, then the left wing quickly dropped and the airplane descended at a steep angle and struck trees and steep terrain. Witnesses saw the ballistic parachute rocket deploy as the airplane descended behind the trees, followed shortly by black smoke.

Two days before the accident flight, the pilot/owner fueled the airplane with 18.79 gallons of 100 LL aviation fuel. The airplane held a total of 30 gallons of fuel between two wing tanks; 28 gallons of which are usable. The pilot then departed N27 for a 20-minute local solo flight, then returned for landing. The airplane was not flown again until the day of the accident.

The pilot held a student pilot certificate. His pilot logbook was not initially recovered, however, between September 20, 2016 and April 14, 2017, his flight instructor's records showed the pilot received 21.2 hours of dual instruction and an additional .3 hours of solo flight including a 90-day solo endorsement which was accomplished on April 14, 2017.

According to Federal Aviation Administration records, the airplane was issued a special airworthiness certificate on July 18, 2007. The airplane was an all-metal, side-by-side, two-seat, fixed landing gear airplane, with a Continental O-200, 100-horsepower engine and a Sensenich two blade wood propeller. It was produced by AMD as a S-LSA airplane per ASTM standards. According to the airframe maintenance logbook, the most recent condition inspection was performed on September 16, 2016 at 264.7 total airframe hours.

At 1553, the weather conditions reported at Elmira/Corning Regional Airport (ELM), which was located at 954 ft elevation, 32 miles northwest N27, included clear sky, wind from 230° at 7 knots, visibility 10 statute miles, temperature 28°C, dew point 19°C, and an altimeter setting was 30.07 inches of mercury.

The wreckage was examined at the accident site, and all major components were accounted for at the scene. The wreckage revealed that the airplane struck steep wooded terrain at an inverted position about 1 1/2 miles from the departure end of runway 23.

The forward fuselage, cockpit and instrumentation were consumed by postimpact fire. Both wings were separated from the fuselage, but found in the immediate vicinity of the accident site. The empennage was wrapped around a tree. The ballistic parachute system was partially deployed, and the parachute was found midway up a 75-ft. tall tree about 50 ft from the wreckage.

Control continuity was established from the cockpit to the flight control surfaces through several breaks and cuts that were consistent with impact and overload separations in addition to rescue personnel cutting tools.

Continuity of the fuel system could not be confirmed. Both fuel tanks were breeched; the right fuel tank exhibited thermal damage, and the left fuel tank was heavily impact damaged. The fuel selector valve and fuel lines were damaged by impact forces and the postimpact fire; the setting could not be determined.

The engine was attached to all its mounts and found in an upside-down position. It exhibited postimpact fire and impact damage, but remained largely intact. All cylinders remained attached to the crankcase. The rocker box covers were removed and no anomalies were noted with the valve springs and rocker arms. The engine could not be rotated by hand by the propeller hub or through the accessory section. The accessories were removed and the engine crankcase was opened to expose the crankshaft, camshaft and valvetrain. One of the camshaft lobes was impinged against the crankshaft, preventing full rotation. All the pistons showed normal wear. During examination of the engine, several ounces of oil drained from the engine and all internal engine components appeared lubricated.

The left and right magnetos were fire damaged and did not produce sparks at the leads, when rotated. The left magneto showed signs of internal damage, and was retained for further examination. The top spark plugs and all associated leads and connections were found in place. The top spark plugs were covered in oil but showed signs of normal wear. The bottom spark plugs showed signs of normal wear.

The carburetor was removed for examination. It was thermally damaged and displayed no signs of mechanical damage; all parts were intact and moved freely. The fuel pump was damaged and significantly deformed.

The oil filter was opened. The internal paper filter was damaged by heat and was heavily carbonized. No metal or ferrous material was found internally. The oil filter screen was clear and free from obstructions.

One of the two wooden propeller blades was found 25 ft from the main wreckage. The other blade was not recovered. The central blade hub was exposed to significant heat and was heavily charred.

The airplane was recovered to a secure facility and retained.

# National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ERA17LA246	07/15/2017 1615 EDT	Regis# N561TU	Stevensville, MD	Apt: Bay Bridge Airport W29
Acft Mk/Mdl COSTRUZIONI AERONAUTICHE TECNA	Acft SN 1561	Acft Dmg: UNK	Rpt Status: Prelim	Prob Caus: Pending
Eng Mk/Mdl ROTAX 912 ULS2-01	Acft TT 13	Fatal 0	Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: CHESAPEAKE SPORT PILOT	Opr dba:	Aircraft Fire: NONE	AW Cert: LTSP	

## Events

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

## Narrative

On July 15, 2017, about 1615 eastern daylight time, a Costruzioni Aeronautiche Tecna P92 Special Light Sport Airplane, N561TU, was substantially damaged during a forced landing following a loss of engine power during approach to Bay Bridge Airport (W29), Stevensville, Maryland. The two private pilots were uninjured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight, which departed from Shoestring Aviation Airfield (0P2), Stewartstown, Pennsylvania, and was conducted under the provisions of 14 Code of Federal Regulations Part 91.

The airplane had recently been purchased by the owner and placed on a lease-back operation with the operator. On July 13, 2017, the owner along with the pilot who was in the right seat on the accident flight, took delivery of the airplane in Apopka, Florida and flew it to W29.

On the day of the accident, the airplane was fueled to approximately 16 gallons (8 gallons per side). The flight instructor believed that the planned round-trip flight from W29 to 0P2 was the airplane's first since the delivery flight. The purpose of the trip was twofold; the pilot in the right seat (who was also a flight instructor) and the pilot in the left seat were flying to 0P2 for personal business. Additionally, the right seat pilot wanted to provide operational exposure to the left seat pilot in the operation of Garmin G3X avionics, with which the plane was equipped, and on which, she (in her role as an advanced ground instructor) was scheduled to provide a future training seminar. The flight from W29 to 0P2 was uneventful.

Immediately prior to the accident flight, the left seat pilot checked the fuel, oil, and engine coolant. The oil and coolant levels were normal; fuel was approximately 12 gallons. The route of flight after departing from 0P2 included a transition at 2,000 ft. above mean sea level over the Class D airspace around Martin State Airport (MTN), Baltimore, Maryland, and then direct to W29. Upon arrival in the area of W29, they obtained the field conditions from the automated weather observation station at W29, and decided to enter the traffic pattern for runway 29 on the crosswind leg. No other traffic was observed in the traffic pattern at the time, and due to noise-abatement rules, the runway 29 downwind leg was conducted about 2 miles south of the airport.

With the left seat pilot flying the airplane, power reduction and configuration for landing was started abeam "the 29 numbers." Several seconds after power reduction, the engine abruptly started to run rough. At this time, the control of the airplane was relinquished to the right seat pilot. Both pilots scanned the engine indications but did not observe any anomalous readings. The right seat pilot turned a somewhat close base leg, but did not turn direct to the runway out of concern for arriving too high at the threshold, and a flight path that would have taken the flight over a densely populated townhouse community. Flaps were then increased to correct for the high glide path. About 20 seconds later, the engine abruptly stopped.

The right seat pilot turned directly toward the runway threshold; both pilots assessed the possibility of making the runway and decided it would be impossible. At this point the right seat pilot noted that the glide could be improved by reducing the wing flaps to 15° (but the right seat pilot was not sure if they did this). The right seat pilot then steered the airplane towards an open area that was 20° off his left side, and decided on a range of landing options while the left seat pilot went through an engine restart attempt. This attempt was unsuccessful as the engine would not "turn over." They then assessed a mature cornfield but decided to continue their glide as it appeared rough and they could nose over due to the corn.

After the turn, the right seat pilot's first touchdown choice, was a road that was 30° to the right of their flightpath in an uncompleted section of a neighborhood. The right seat pilot decided that it was unsuitable for landing due to numerous obstacles. Their remaining option, which they chose, was a cleared but rough area of open ground approximately 45° to the left of their flight path. They turned towards it, and completed the turn about 5 ft. above ground level. The airplane then "firmly" glanced off the top of an earthen berm at landing speed and settled onto the rough ground beyond it. During the landing roll, about 150 ft. from the touchdown point there was a second earthen berm that was obscured by vegetation and the natural lighting. The airplane then struck the second berm, the right main gear and nose gear separated from their mounting points, and the airplane both rolled and pitched, damaging both wings. The airplane then came to rest approximately 20 to 30 ft. beyond the second berm. The pilots then shut off both fuel valves, and the master switch, and then egressed.

Once it was determined there was no risk of fire, the right seat pilot returned to the cockpit and disabled the emergency locator transmitter which had activated

during the impact sequence.

According to Federal Aviation Administration (FAA) airman records, and pilot records, the left seat pilot held a private pilot certificate with a rating for airplane single engine land. Her most recent FAA third-class medical certificate was issued on November 21, 2016. She reported that she had accrued 330 total hours of flight experience, 5 of which were in the accident airplane make and model.

According to FAA airman records, and pilot records, the right seat pilot held a private pilot certificate with ratings for airplane single-engine land, and airplane single-engine sea. He also possessed a flight instructor certificate with a sport rating. His most recent FAA second-class medical certificate was issued on June 28, 2017. He reported that he had accrued 4,625 total hours of flight experience, 594 of which were in the accident airplane make and model.

According to FAA airworthiness records and airplane maintenance records, the airplane was manufactured in 2017. At the time of the accident, the airplane had accrued approximately 13.2 total hours of operation.

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Accident Rpt# GAA17CA465 08/03/2017 800 EDT Regis# N777NG Salisbury, NC Apt: Rowan County RUQ  
Acft Mk/Mdl CZECH AIRCRAFT WORKS SPOL SRO Acft SN 07SC059 Acft Dmg: SUBSTANTIAL Rpt Status: Prelim Prob Caus: Pending  
Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091  
Opr Name: N M G AVIATION LLC Opr dba: Aircraft Fire: NONE

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Accident Rpt# WPR16FA036 12/10/2015 1347 MST Regis# N307AB Hurricane, UT Apt: N/a  
Acft Mk/Mdl BARNETT ALLEN S RV7-UNDESIGNAT Acft SN 73395 Acft Dmg: SUBSTANTIAL Rpt Status: Factual Prob Caus: Pending  
Eng Mk/Mdl ECI/TITAN IO-360-A4H9N Acft TT 259 Fatal 2 Ser Inj 0 Flt Conducted Under: FAR 091  
Opr Name: ACKERMAN SHAWN Opr dba: Aircraft Fire: NONE  
AW Cert: SPE

## Summary

The airline transport pilot was conducting a local personal flight in the experimental amateur built airplane, with one passenger on board. Several witnesses located near the accident site reported that they heard the airplane's engine and that it sounded like it was making power changes. The witnesses added that they then saw airplane debris floating in the air. One witness stated that the engine was running during the entire descent and that he saw the airplane spiraling and descending in a cork-screw type maneuver. Another witness reported seeing the airplane inverted at a low altitude just before impact.

Postaccident examination of the airplane revealed damage to the horizontal stabilizers and elevators that was consistent with a downward failure in positive overload. The loads required to fail the horizontal stabilizers and elevators cannot be generated from normal flight or control movements. Such failures would have required an abrupt pull back on the stick and corresponding movement of the elevator to a trailing-edge-up position, at speeds greater than the airplane's maneuvering speed. Failure of the horizontal tail first would have caused the airplane to pitch down rapidly, producing air loads on the upper surface of the wing that were sufficient to fail them in negative overload. The damage observed on the wings was consistent with a downward failure in negative overload. Additionally, there were no indications of any pre-existing cracks or anomalies with the horizontal stabilizers, elevators, or wing structures, and no pre-accident anomalies were observed that would have precluded normal control of the airplane.

A review of the weather information indicated that there were likely low-level winds gusting from 26 to 46 knots at the time of the accident and that moderate-to-severe turbulence likely existed at the accident site. The weather conditions likely contributed to the in-flight breakup by either aggravating a flight maneuver or preventing a recovery from a loss of airplane control.

Although doxylamine was detected in the pilot's liver it was not detected in the blood; therefore, it is unlikely that it was causing any performance decrements that would have affected the pilot at the time of the accident.

## Cause Narrative

THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE CAUSE OF THIS OCCURRENCE WAS: The pilot's abrupt flight control inputs, likely above the maneuvering speed, in severe winds and turbulence conditions, which resulted in an in-flight breakup.

## Events

1. Enroute - Aircraft structural failure
2. Uncontrolled descent - Part(s) separation from AC

## Findings - Cause/Factor

1. Personnel issues-Task performance-Use of equip/info-Use of equip/system-Pilot - C
2. Aircraft-Aircraft oper/perf/capability-Performance/control parameters-(general)-Not attained/maintained - C
3. Environmental issues-Conditions/weather/phenomena-Turbulence-(general)-Effect on operation - C
4. Environmental issues-Conditions/weather/phenomena-Turbulence-(general)-Effect on equipment - C
5. Environmental issues-Conditions/weather/phenomena-Wind-Gusts-Effect on operation - C

## Narrative

\*\*\*\*This report was modified on August 9, 2017. Please see the docket for this accident to view the original report.\*\*\*\*

## HISTORY OF FLIGHT

On December 10, 2015, about 1347 mountain standard time, an experimental amateur built, RV-7 airplane, N307AB, experienced an in-flight break up and then impacted terrain about 3 miles west of General Dick Stout Field Airport, Hurricane, Utah. The airline transport pilot and passenger were fatally injured, and the airplane sustained substantial damage. The airplane was registered to and was being operated by the pilot as a Title 14 Code of Federal Regulations Part 91 personal flight. Visual meteorological conditions existed near the accident site about the time of the accident, and no flight plan had been filed. The local flight departed from an unknown airport at an undetermined time.

Several witnesses located near the accident site stated that they heard the airplane's engine and that it sounded like it was making power changes. The

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witnesses added that they saw airplane debris floating in the air. One witness stated that the engine was running during the entire descent and that he also observed the airplane spiraling and descending in a cork-screw type maneuver. Another witness reported seeing the airplane inverted at a low altitude just before impact.

## PERSONNEL INFORMATION

The pilot, held an airline transport pilot certificate with airplane multi-engine land, single-engine land, instrument, and instructor single-engine land ratings. The pilot was issued a first-class Federal Aviation Administration airman medical certificate on October 22, 2015, with the limitation that he must have glasses available for near vision. The pilot reported on his most recent medical certificate application that he had accumulated 17,359 total flight hours, 403 flight hours of which were accumulated in the previous 180 days.

## AIRCRAFT INFORMATION

The two-seat, low-wing, fixed-gear airplane, was assembled in 2011, and it was issued an airworthiness certificate certified for aerobatic maneuvers in March 2011. It was powered by an experimental 180-horsepower ECI/Titan IO-360 reciprocating engine. The engine was equipped with a Whirlwind 200RV propeller. The last documented inspection was a conditional inspection that was completed on May 15, 2015, at an airframe time of 258.9 hours.

The airplane's manufacturer website listed the maximum load factor as positive +6 g and a minimum load factor as -3 g. Additionally, the Pilot's Operating Handbook lists the maneuvering speed (Va) as 142 mph. In the remarks, it stated, "do not make full control movements above this speed. Full elevator deflection will result in a 6g load at this speed." Any speed greater than Va with full control application could result in g-loads that exceeded the design limits.

## METEOROLOGICAL INFORMATION

The 1355 recorded weather observation at Saint George Regional Airport, Saint George, Utah, located about 12 miles west-southwest from the accident site, reported calm wind, visibility 10 statute miles, clear skies, temperature 12 $\emptyset$  C, dew point -2 $\emptyset$  C, and an altimeter setting of 29.87 inches of mercury.

The accident site was located between a cold front to the northwest and a high-pressure area to the southwest, in an area of strong-pressure gradient. A model sounding, which included a wind profile, for the area over the accident site about the time of the accident, estimated that the surface horizontal wind speed was estimated to be 220 $\emptyset$  at 8 knots, with winds increasing in speed with height and veering to the west. The mean 0-to-18,000 ft mean sea level (msl) winds were from 250 $\emptyset$  at 52 knots. The model supported light-to-moderate clear air turbulence from 6,400 through 8,000 ft msl, and mountain wave development from 10,000 to 12,000 ft msl.

Pilot reports noted evidence of mountain wave activity in the region but with moderate-to-severe turbulence near the accident site; at 6,500 ft msl, consistent with the model sounding. An AIRMET for moderate turbulence below 18,000 ft, was active over the accident site at the accident time. No SIGMET was active for the accident site at the accident time.

## WRECKAGE AND IMPACT INFORMATION

The airplane wreckage was located about 4.2 miles southwest of Hurricane, Utah, on flat sagebrush-covered terrain on top of a mesa. The debris path was about 1,460 ft long and 450 ft wide. All major components of the airplane were located in the debris path.

The main airplane wreckage was located almost at the northern extent of the debris field and included the fuselage, engine, right wing, half of the left wing, a majority of the left and right elevators, and the lower half of the rudder. The vertical stabilizer with the upper half of the rudder attached was located at the southern extent of the debris field, located about 1,420 ft south-southwest of the main wreckage. The left and right horizontal stabilizers were located about 850 ft and 790 ft, respectively, south of the main wreckage. The left aileron was located about 430 ft south-southwest of the main wreckage, and the left outboard wing was located about 320 ft south-southwest of the main wreckage.

The main wreckage was found inverted. There were no noticeable ground scars leading up to the wreckage. The fuselage was intact, but the upper half was crushed. The canopy frame was separated from the airframe and located about 55 ft northeast of the main wreckage. Most of the acrylic canopy was fractured from the frame and found in many pieces in the debris field. The engine remained attached to the fuselage. One of the composite propeller blades was

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fractured from the hub and the other blade was missing the tip portion. Debris consistent with propeller material was found around the main wreckage. The examination of the engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. The main landing gear remained attached to the lower fuselage, and there was some deformation at the attachment points.

The entire right wing remained attached to the fuselage with the flap and aileron attached. The right flap was in the "up" position. The outboard half of the right wing was deformed downward about 15° to 20° at the flap/aileron junction, located about 57 inches outboard of the wing attachment point. The upper and lower wing skins were buckled around the area where the wing was deformed downward. The right fiberglass wingtip remained attached to the wing but was splayed open at the trailing edge.

The inboard half of the left wing remained attached to the fuselage with the flap attached. The left flap was in the "up" position. The outboard half of the left wing had separated at the flap/aileron junction located about 57 inches outboard of the wing attachment point. The main spar fractured at the location where the upper and lower spar caps undergo a net section decrease from inboard to outboard. The outboard half of the left wing was mostly intact with minimal damage noted.

## MEDICAL AND PATHOLOGICAL INFORMATION

The Utah Department of Health, Office of the Medical Examiner, conducted an autopsy on the pilot. The medical examiner determined that the cause of death was "blunt force trauma."

The FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing specimens from the pilot. Testing results were negative for carbon monoxide, cyanide, and volatiles. The testing detected doxylamine in the liver but not in the blood and ibuprofen in the blood.

Doxylamine is an over-the-counter antihistamine medication that can be used in combination with decongestants and other medications to relieve sneezing, runny nose, and nasal congestion caused by the common cold and can be sedating. Ibuprofen is used to reduce fever and to relieve minor aches and pains from headaches, muscle aches, arthritis, the common cold etc.

## TESTS AND RESEARCH

### Structures Examination

A postaccident examination of the inboard and outboard wing sections at the fracture location revealed that the fracture exhibited damage and deformation consistent with the separation of the outboard portion of the wing in a downward direction. The horizontal stabilizer forward spar fractured about 2 inches outboard of the side of the fuselage on both sides. Both of the horizontal stabilizer spar caps were deformed down and aft at the fracture location. The elevators were deformed down and aft matching the spar deformation.

The left and right horizontal stabilizers were found in the debris field. The outboard elevator hinges remained attached to both stabilizers and the hinges were pulled from the elevators. About 18 inches of the outboard portion of horizontal stabilizer rear spar on each side remained installed in the horizontal stabilizers. The upper and lower skins separated from the remainder of the rear spar along the rivet lines. There was buckling damage on the lower skin of both horizontal stabilizers consistent with the stabilizers separating downward.

Control continuity was established from the cockpit controls to the elevators and the right aileron. The left aileron control rod aft rod end was fractured from the control rod. The rod end remained attached to the aileron control horn at the inboard aileron hinge. Control continuity was established from the control stick in the cockpit to the left aileron bell crank and aft to the fracture point on the left aileron control rod. The rudder cables were jammed somewhere in the fuselage, and control continuity could not be established, but the cables remained attached at the rudder and the pedals.

All the fractures exhibited a dull, grainy appearance consistent with overstress separation. There was no evidence of progressive or pre-existing fractures on any of the parts.

### Electronic Devices

No flight data for the accident flight could be recovered from the electronic devices found in the wreckage. However, a GoPro Hero 4 camera, which had sustained significant impact damage, revealed two files recorded on previous flights in which the accident airplane performed an aileron roll to the right.

## Radar Data:

A review of the radar track from commercially available sources revealed two tracks that were consistent with the accident airplane. The first track was 17 minutes long and ended at 1332 when the airplane was at 6,150 ft. Altitudes throughout the track varied from 6,150 to 9,350 ft, and the groundspeed varied between 24 and 168 knots. Most of the first half of the track show the airplane climbing, and the second half of the track shows the airplane descending. The track shows the airplane flying west and then performing a couple of circling maneuvers and in slow flight. The airplane then turned south and shortly thereafter, it makes a right northerly turn.

The second track, which may be associated with the accident airplane, started at 1336 when the airplane was at 6,625 ft. The data only shows 1 minute of flight. The heading is nearly south, and the groundspeed range is between 127 and 133 knots.

## Weight and Balance

The distribution of the airplane contents throughout the debris field prevented an accurate weight and balance assessment and the airplane's most recent weight and balance records were not located. Therefore, an estimated weight and balance calculation was conducted. According to the airplane's kit manufacturer, the airplane had a maximum factory basic weight of 1,114 lbs and a useful load of 686 lbs. The medical examiner reported that the total weight of the occupants was 306 lbs. Assuming a total fuel load of 42 gallons, the airplane would have been about 128 lbs below its maximum gross weight of 1,800 lbs at the time of the accident.

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Accident Rpt# GAA17CA484 08/10/2017 0 EDT Regis# N211BP Ocean City, NJ  
Acft Mk/Mdl CONSTRUCCIONES AERONAUTICAS SA Acft SN E-3B-172 Acft Dmg: SUBSTANTIAL Rpt Status: Prelim Prob Caus: Pending  
Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091  
Opr Name: DAVID R. PFAFF Opr dba: Aircraft Fire: NONE

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# National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ERA15LA133	02/19/2015 1835 AST	Regis# N5196W	Rincon, PR	Apt: N/a
Acft Mk/Mdl JOHNSON JOEL H RANS S-6ES COYOTE	Acft SN 0492295	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual	Prob Caus: Pending
Eng Mk/Mdl ROTAX 582	Acft TT 882	Fatal 1 Ser Inj 0	Flt Conducted Under: FAR 091	
Opr Name: ANTONIO ZAPATA	Opr dba:		Aircraft Fire: NONE	
			AW Cert: SPE	

## Events

1. Maneuvering - Loss of engine power (partial)
3. Maneuvering - Loss of engine power (partial)

## Narrative

### HISTORY OF FLIGHT

On February 19, 2015, about 1835 Atlantic standard time, an experimental, amateur-built Rans S-6ES Coyote II, N5196W, ditched in the waters of the Mona Passage after a partial loss of engine power near Rincon, Puerto Rico. The private pilot sustained minor injuries, and the passenger was fatally injured. The airplane sustained substantial damage. Visual meteorological conditions prevailed, and no flight plan was filed for the local personal flight operated under the provisions of 14 Code of Federal Regulations Part 91, which departed Eugenio Maria de Hostos Airport (TJMZ), Mayaguez, Puerto Rico, about 1815.

According to the pilot, he arrived at TJMZ on the day of the accident about 1600 to purchase the airplane. After a short test flight of about 15 to 20 minutes, he paid the owner for the airplane. He then received a telephone call from his brother-in-law and invited him to come out to the airport for a short flight to show him the airplane he had just purchased. The pilot left the airport about 1802, purchased premium automobile gasoline for the airplane at a local gas station, and refueled the airplane. After the refueling process was complete, about 1815, he and his brother-in-law (the passenger) boarded the airplane and taxied out for takeoff. The pilot verified that the gasoline valve was on and conducted a magneto check. After takeoff, they climbed to about 1,000 ft above sea level.

About 20 minutes into the flight, the pilot noticed that the engine was not producing enough power to sustain flight. The engine never lost power completely, but it would not produce full power, so he began to troubleshoot while he flew a course that would place the airplane parallel to the shoreline over shallow water near Rincon. He saw that there were people and sharp rocks along the shoreline, so he decided not to land on the beach but to ditch the airplane in the water. He maneuvered the airplane until it was 4 to 6 ft above the water, set the wing flaps to 20°, stalled the airplane, and touched down on the surface of the water. Upon touchdown, the airplane decelerated and sank but did not nose over. The pilot released his seatbelt and, about 5 seconds later, was able to egress and swim to the surface.

When the pilot reached the surface, he did not see his passenger. He swam back down to the wreckage, released the passenger's seatbelt and swam him up to the surface, but the passenger was not breathing. By this time, a person on a boogie board had reached them. They placed the passenger on the boogie board and paddled him to the beach. Cardio pulmonary resuscitation was performed but was unsuccessful.

### PERSONNEL INFORMATION

The pilot held a Federal Aviation Administration (FAA) private pilot certificate with a rating for airplane single-engine land. His most recent FAA third-class medical certificate was issued on September 8, 2014. He reported that he had accrued about 609 total flight hours.

### AIRCRAFT INFORMATION

The airplane was a kit-built, two-seat, high-wing, airplane. The cockpit was constructed of welded 4130 steel tubing, and the rear fuselage was constructed of bolted aluminum tubing. The wings and tail surfaces were covered in presewn Dacron envelopes. The airplane was equipped with tricycle-type landing gear.

The airplane was assembled from a kit by the original owner and issued an FAA special airworthiness certificate on April 18, 1994. At the time of issuance, the airplane was powered by a Volkswagen air-cooled engine, driving a composite, ground-adjustable IVO propeller. Shortly thereafter, the Volkswagen engine was replaced with a Rotax 582 engine that had been manufactured in November 1990.

On March 5, 2006, in Cartersville, Georgia, the airplane was involved in an accident (NTSB Case No. ATL06LA048) during an instructional flight. The NTSB determined that the probable cause of the accident was: "The loss of engine power during cruise flight for undetermined reasons, which resulted in a forced

landing, on ground collision with a ditch, and nose over."

On March 7, 2006, the airplane was sold by the original owner, and over the next 2 years, the airplane was owned by a succession of individuals in the continental US. On March 8, 2008, the engine was replaced with another Rotax 582 engine. Later that year, the airplane was shipped to Puerto Rico.

On April 20, 2009, a liquid-cooled, 64-horsepower, Rotax 582 Mod 99 engine, with dual carburetors and dual ignition, driving a three-blade, Warp Drive, ground-adjustable propeller was installed. Over the next 5 years, the airplane was once again owned by a succession of owners, until March 5, 2014, when it was sold to the previous owner, who operated it for about 11 months and sold it to the pilot on the day of the accident.

The airplane's most recent condition inspection was completed on November 26, 2014. At the time of the inspection, the airplane had accrued 881.5 total hours of operation, and the engine had accrued 191.5 total hours of operation.

## METEOROLOGICAL INFORMATION

At 1750, the reported weather at Rafael Hernandez Airport (TJBQ), Aguadilla, Puerto Rico, located 11 nautical miles northeast of the accident site, included: wind 310Ø at 9 knots, 7 miles visibility in light rain, scattered clouds at 1,000 ft, broken clouds at 2,100 ft, overcast clouds at 5,000 ft, temperature 23ØC, dew point 22C, and an altimeter setting of 29.99 inches of mercury.

## WRECKAGE AND IMPACT INFORMATION

On February 21, 2015, the wreckage of the airplane was recovered from about 20 ft of water about 200 ft off the beach near Rincon and transported to the Port of Mayaguez.

Examination of the airplane and engine revealed that the firewall and engine mounts were bent and broken, and the engine had been removed during the recovery. Both carburetors were displaced from their mounting positions, the coolant lines had been cut, and all spark plugs had sustained impact damage. The propeller was still attached to the engine gearbox, and all three propeller blades remained attached to the propeller hub. Surface corrosion could be seen on all exposed aluminum parts of the airplane, which was consistent with the airplane's submergence in sea water.

### Engine

Examination of the intake system revealed that the air filters were the proper type but had suffered damage from impact or recovery of the wreckage from the ocean, and the element pleats were packed with dirt and sand.

Examination of the exhaust system revealed that a large section of the exhaust system was missing. Only the exhaust "Y" pipe, the first portion of exhaust system which connected both cylinders to a single section of exhaust pipe and held the two exhaust gas metering probes, was still attached to the engine.

Examination of the spark plugs and dual capacity discharge ignition system revealed that the spark plugs were impact damaged, had non-conforming removable resistor caps, and had rust-colored water droplets on them, which was indicative of sea water being present in the combustion chambers. The ignition modules were of the proper type and in good physical condition. The ignition wires also of the proper type and had incurred impact damage.

Examination of the coolant system revealed that the overflow bottle was missing; all the coolant hoses were breached; the water pump was intact; and the coolant radiator was still attached to the firewall but was heavily damaged. There was no evidence of coolant remaining in the system.

Examination of the injection oil lubrication system revealed that it had been disconnected and was no longer operational. This required the pilot to premix the fuel with oil at a 50:1 ratio before pouring it into the airplane's fuel tanks.

Examination of the rotary lubrication system revealed that the system and the oil tank were contaminated with sea water, and the perpendicular shaft and rotary valve plate were corroded due to submersion.

An attempt to rotate the crankshaft by turning the propeller shaft by hand to establish thumb compression and drivetrain continuity was unsuccessful. The

propeller shaft would not rotate indicating that something internally was preventing this action. The propeller was removed, and the engine was placed on a work bench for further inspection and disassembly.

Examination of the reduction gearbox revealed that lubrication gear oil was still contained within the gearbox, and the gear-set and bearings appeared to be in good condition.

Examination of the combustion chamber revealed that the cylinder heads were in good physical condition. Examination of the power takeoff side (PTO) cylinder and the magneto side (MAG) cylinder revealed that the cylinder heads were in good physical condition. Both displayed a reddish coating of iron oxide (rust) on the barrel surface. No seizure marks or mechanical anomalies could be seen on either the PTO or MAG cylinders. Due to the stuck position of the crankshaft, the MAG piston could not be removed from its connecting rod, and the crankcase could not be spilled open. Inspection of the crankshaft and connecting rods was done through the connecting rod holes in the crank case. Corrosion from submergence in sea water was found on the connecting rods and crankshaft, and this was determined to be the reason the crankshaft could not be rotated. Other than the surface corrosion from the salt water submersion, no anomalies were found with the crankshaft, connecting rods, or bearings.

Examination of the PTO piston through the exhaust port revealed severe corrosion and salt deposits. The piston was stuck in the top dead center position; it could not be rotated to reveal the condition of the piston rings or cylinder bore; and it displayed a reddish colored coating of iron oxide (rust). There were no signs of vertical scoring, metal transfer, or excessive heat signatures seen on the exhaust side of the PTO piston. There were no indications of piston seizure, detonation, or mechanical anomalies.

Examination of the MAG piston through the exhaust port also revealed severe corrosion and salt deposits. The piston was stuck in the bottom dead center position and could not be rotated to reveal the condition of the side of the piston. The cylinder bore, top of the piston, and piston rings were exposed and could be examined for anomalies. Severe corrosion and salt deposits could be seen on all the metal surfaces, and the piston rings were stuck in their respective ring groove lands. As with the PTO piston, the MAG piston also had a reddish coating of iron oxide (rust) on its surface, and no indication of a piston seizure, detonation, or mechanical anomalies was discovered.

## Fuel System

The fuel system included a primer plunger, an electric fuel pump, a pneumatic engine driven fuel pump, a fuel filter, and two carburetors. Breaches in the fuel system were found in the lines between the pneumatic fuel pump and the carburetors and between the fuel tank and the electric fuel pump. No preimpact anomalies were found with the fuel lines.

Both fuel tanks displayed internal dark stains and damage from impact or recovery of the airplane from the ocean.

No anomalies were found with the electric fuel pump, the primer plunger, or the pneumatic fuel pump.

The fuel filter was located between the electric fuel pump and the primer plunger. The fuel filter was examined for obstruction and blockage, and it was found full of sand and debris that appeared to be obstructing the mesh filter screen. The fuel filter had a transparent housing for easy inspection, and it was located on the left side of the fuselage next to where the pilot's left leg would be positioned. The fuel filter's location allowed for easy access for daily inspection.

The engine was equipped with dual Bing 54, side-draft carburetors with no external manual mixture control. The carburetors were examined for condition, conformity, and proper components. Since the carburetors were found displaced from the engine due to impact, the carburetor position angle relative to the crankshaft could not be determined.

The PTO carburetor float bowl was removed to examine the internal condition and jet size. Severe contamination and corrosion was found inside the carburetor float bowl because of submersion of the engine in salt water. The main jet was removed and found to be completely blocked with corrosion and salt deposits. The sieve screen was found crushed around the main jet tower. This was indicative of poor installation as the sieve screen should be allowed to freely move up and down. The top of the carburetor was removed to inspect the jet needle, but the piston was stuck in its bore due to severe corrosion. Other than the crushed sieve screen, corrosion, and water contamination, no anomalies were found with the PTO carburetor.

The MAG carburetor float bowl was removed to examine the internal condition and jet size. Severe contamination and corrosion was found inside the carburetor float bowl because of submersion of the engine in salt water. The main jet was removed and found to be completely blocked with corrosion and salt

deposits. The sieve screen in this carburetor was also found crushed around the main jet tower. The top of the carburetor was removed to inspect the jet needle, but the piston was stuck in its bore due to severe corrosion. Other than the crushed sieve screen, corrosion, and water contamination, no anomalies were found with the MAG carburetor.

## MEDICAL AND PATHOLOGICAL INFORMATION

The Puerto Rico Institute of Forensic Sciences performed an autopsy on the passenger. The passenger's cause of death was asphyxiation by drowning. Toxicological testing of the passenger was conducted at the FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. The specimens from the passenger were negative for carbon monoxide. Loratadine, a non-sedating tricyclic antihistamine, was detected in blood. Ranitidine, an antihistamine used in the treatment of gastric acid secretion, was detected in blood and urine.

## TESTS AND RESEARCH

The Rans S-6ES Build Manual, under the "Fuel System" subsection of the "Inspection of Engine Systems" section called for a check for "fuel filter clogs."

The Rotax Operators Manual stated, "check engine suspension frequently as well as the drive components, fuel lines, wiring, and fuel and air filters." Under "Daily Checks," it stated, "inspect all fuel hose connections, filters, primer bulbs and taps for security, leakage, chafing and kinks."

The Rotax Installation Manual also stated, "check engine suspension frequently as well as the drive components, fuel lines, wiring, and fuel and air filters." It stated, "fuel contamination is a major cause of engine failures. The best place to avoid contamination is at the source. Once fuel is in your container, a very hazardous potential exists. Use a clean safety approved storage container. Filter all fuel entering and leaving this container." (It is unknown what method, if any, the previous owners used to filter fuel before filling the airplane's fuel tanks).

The Rotax Maintenance Manual also stated, "check engine suspension frequently as well as the drive components, fuel lines, wiring, and fuel and air filters." The maintenance schedule required that the fuel filter be checked every 25, 50, and 75 hours of operation and be replaced every 100 hours of operation. Section 11.8, "Check and Replacement of Fuel Filter" stated, "the flow through the filter may be restricted due to long term buildup of dirt. A more serious type of blockage, which can occur quite rapidly is caused by a reaction between detergents in certain two-stroke oils and water in the fuel. Both types of blockage may be difficult to detect visually. If blockage is suspected, renew fuel filter or filter element. Subsequently avoid water contamination of fuel." Examination of the airplane and engine maintenance records did not find any entries related to the fuel filter.

Based on the engine serial number, the engine was manufactured on April 17, 2008. The Rotax Maintenance Manual (Section 10.2 - Maintenance Schedule) stated that general overhaul of the engine should be carried out every 5 years, or every 300 hours, whichever comes first. Maintenance records did not indicate that the engine had been overhauled since its installation in 2009.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# ERA17CA129	03/12/2017 1358 EDT	Regis# N7195R	Mount Airy, SC	Apt: Mount Airy/surry County MWK
Acft Mk/Mdl KERNS KENNETH H KENS WINGLESS	Acft SN 290163188-1	Acft Dmg: SUBSTANTIAL	Fatal 0	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl SUBARU 2.5		Ser Inj 0	Flt Conducted Under: FAR 091	
Opr Name: JOSEPH JONES	Opr dba:	Aircraft Fire: NONE		AW Cert: LTSP

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## Events

2. Takeoff - Flight control sys malffail

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## Narrative

The pilot, who was also the owner of the of amateur-built gyroplane stated he adjusted the prerotator motor pressure plate prior to the flight by moving it closer to the clutch to improve rpm. During takeoff, the gyroplane rolled right and he was unable to maintain control. The gyroplane subsequently impacted the ground and cartwheeled, which resulted in substantial damage to the rotor, mast, and cabin. He further stated that due to his adjustment, it was likely that the prerotator did not disengage, resulting in increased right torque and the inability to control the gyroplane during takeoff.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# ERA15LA332	08/30/2015 1055 EDT	Regis# N864KM	Fort Lauderdale, FL	Apt: N/a
Acft Mk/Mdl LANCAIR IV-P		Acft SN LIV-166	Acft Dmg: DESTROYED	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl CONTINENTAL TSIO-550-E1B		Acft TT 1617	Fatal 0 Ser Inj 1	Flt Conducted Under: FAR 091
Opr Name: KENNETH MCKENZIE		Opr dba:		Aircraft Fire: GRD
				AW Cert: SPE

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## Events

1. Initial climb - Powerplant sys/comp malf/fail
2. Initial climb - Powerplant sys/comp malf/fail

## Narrative

On August 30, 2015, about 1055 eastern daylight time, an experimental amateur-built Lancair IV-P, N564KM, was destroyed by collision with terrain and a postcrash fire during a forced landing after takeoff from the Fort Lauderdale Executive Airport (FXE), Fort Lauderdale, Florida. The commercial pilot sustained serious injuries, and the passenger was not injured. The privately owned and operated airplane was operated under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual flight rules conditions were reported at the airport about the time of the accident, and an instrument flight rules flight plan had been filed for the flight destined for Lynchburg Regional Airport (LYH), Lynchburg, Virginia.

According to the pilot, during a climb to cruise he noticed that the engine's oil pressure dropped to 9 psi. He declared an emergency with air traffic control (ATC) due to the low oil pressure indication and requested to return to FXE. ATC provided radar vectors and cleared the airplane for the visual approach to runway 9. Shortly thereafter, the pilot contacted the FXE tower controller and reported an "engine failure." The pilot made a forced landing on a levee located 5 miles west of the approach end of runway 9. During the landing rollout, the airplane veered off the levee, collided with a ditch, and caught fire.

The airplane was recovered and the engine was retained for examination. During the examination of the engine puncture holes were discovered in both upper crankcase halves. Further examination revealed that no measurable amount oil could be drained from the engine. All of the spark plugs were removed and displayed a sooty appearance. The cylinders were removed and the cylinder attaching hardware torque and break away torque was checked and found within manufactures specifications; the No. 1, No. 2 and No. 3 pistons and cylinder skirts were damaged. The No. 1 piston exhibited signatures consistent with a valve strike on the dome. The oil sump was removed and contained pieces of connecting rod, rod bolts, rod bearing, and aluminum material in the bottom of the sump.

The crankcase was separated and the main bearings were not damaged. All of the bearing tabs were intact and no fretting was noted on the thru-bolt bosses. There was no evidence of bearing shift and the crankcase mating surfaces were machined. Puncture holes were also noted on bottom right crankcase half below the No. 1 cylinder. No obstructions were found in the crankcase oil galleries. Prior to removal, the camshaft was bent forward of the rear journal.

The crankshaft was removed and disassembled, the main journals had a normal operating appearance. The No. 1 connecting rod journal was found burnt and deformed. The No. 4 connecting rod journal was found burnt; the No. 2, No. 3, No. 5 and No. 6 connecting rod journals had a normal operating appearance. Examination of the connecting rod bearings revealed the No. 1 rod bearing was located in oil sump and found burnt and wiped. The No. 4 rod bearing was found burnt and wiped but was still contained within the rod and cap; No.2, No. 3, No. 5, and No.6 rod bearings indicated signs of lubrication distress.

The oil pump was disassembled and scoring was present in the internal oil pump housing and oil pump gear facing. Metal contamination was present in the oil relief valve. The oil filter was removed and opened for examination. The filter element exhibited metal contamination (aluminum & steel).

A visual examination of both turbochargers revealed one turbocharger had a normal grayish coloration on the internal turbine blades, while the other turbocharger was found blackend and oily on the turbine and compressor impeller blades.

The turbochargers were sent to Hartzell Engine Technologies for further examination and identified as turbo A (serial No. tKL01420), and turbo B (serial No. KFN00434). Examination of the turbo A revealed the turbocharger was overhauled by Main Turbo Systems. The turbocharger rotating assembly spun freely with no indication of compressor or turbine rub. Both the axial and radial end play was within specification. The turbocharger assembly was consistent with the design data and there was no evidence of mechanical malfunction. The internal lubrication passages were present with no indications of concern. The turbocharger was dry and displayed evidence of internal and external corrosion.

Examination of turbo B revealed that it was also overhauled by Main Turbo Systems. The turbocharger rotating assembly spun freely with no indication of

compressor or turbine rub. Both the axial and radial end play was within specification. The turbocharger assembly was consistent with the design data and there was no evidence of mechanical malfunction. The internal lubrication passages were present with no indications of concern. There was evidence of foreign material in the center housing, on the thrust bearing, and on the thrust collar. Evidence of "burnt" oil was discovered on the external surfaces of turbocharger. The turbo was disassembled and it was revealed that oil residue was evident on the backside of the compressor wheel. Further examination also revealed oil residue on the turbo backplate.

A review of the engine logbook entries revealed that both turbochargers were removed and replaced by the pilot/mechanic with overhauled units two days prior to the accident flight. The entry in the logbook noted, "three engine test runs/operational checks and conducted leak check in accordance with SB no. 23, dated Feb 8, 2006. No leak/discrepancies noted at this time."

An examination of the foreign material located in the center housing of the turbo was conducted. The unknown material was examined using a Fourier Transform Infrared (FTIR) spectrometer with a diamond attenuated total reflectance (ATR) accessory in accordance to ASTM E1252-98 (American Society for Testing Materials E1252- 98). The spectrum was consistent with a straight-chained aliphatic hydrocarbon. A spectral library search found a very strong spectral match to polyethylene.

During the shipment of the turbochargers, polyethylene protective caps and plugs were used to plug the oil line openings. These protective caps and plugs must be removed before installation. The turbocharger overhauler provided instruction and warning tags with the units, one of which stated, "Remove all protective caps and plugs BEFORE installing this turbocharger."

# National Transportation Safety Board - Aircraft Accident/Incident Database

Accident Rpt# ERA17FA265	08/06/2017 1025 EDT	Regis# N2854L	Green Township, NJ	Apt: Trinca 13N
Acft Mk/Mdl LESTER LYDZINSKI NW-FREEDOM	Acft SN	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim	Prob Caus: Pending
Eng Mk/Mdl BMW R1200	Acft TT 26	Fatal 1 Ser Inj 0	Flt Conducted Under: FAR 091	
Opr Name: LYDZINSKI LESTER	Opr dba:		Aircraft Fire: NONE	AW Cert: SPE

## Events

1. Initial climb - Miscellaneous/other

## Narrative

On August 6, 2017, about 1025 eastern daylight time, an experimental, amateur-built NW-Freedom, N2854L, was substantially damaged while attempting to depart from Trinca Airport (13N), Green Township, New Jersey. The non-certificated pilot was fatally injured. Day visual meteorological conditions prevailed at the time, and no flight plan was filed for the local, personal flight. The weight-shift-control aircraft was operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91.

According to the pilot's son, the pilot was the owner-builder of the aircraft, and he had custom-built the airframe himself. He purchased the wing separately from its manufacturer. On the day of the accident, the pilot and a friend transported the aircraft by trailer to 13N, where he planned to fly it for the first time. The pilot had previously received some flight instruction, and had conducted a solo flight in other similar aircraft. On the day of the accident, he initially performed two ground test runs on the turf runway, and then took off. After takeoff, the aircraft drifted slightly to the left, corrected toward the right "a little too much," then drifted left again. About 50 ft above the ground, the wing "collapsed" with its tips rotating aft. The aircraft then descended and impacted the runway. The engine ran continuously for the entire flight, which lasted about 30 seconds.

The pilot's son recalled that while preparing the aircraft for flight, the pilot had some difficulty with one of the cables that ran down the center of the wing (the "cross bar restraint cable" according to the manufacturer's instructions). He said that two people could pull the cable in place easily, but it was difficult for one person to pull. The pilot had used a "ratchet strap" to pull the cable into place.

The aircraft impacted the left edge of runway 24, about 500 ft before the departure end. All major components were accounted for at the scene. The wing, constructed of fabric and aluminum tube, was found partially folded toward its storage position, and separated from the fuselage at its mounting brackets. The right wing strut was fractured about 18 inches below its attachment point to the leading edge. Blue paint transfer, consistent with the color of the propeller, was present on both sides of the fracture. Both flight control frame down tubes were buckled about 12 inches from their upper end. The right washout strut was found out of its installation hole, connected to its bungee cord. The aft flying wires were severed, the left wire was found entangled with propeller leading edge strip material. Both arms of the mast, which connect the wing to the fuselage, were bent toward the left and contained several blue paint transfer marks consistent with the color of the propeller. The cross bar restraint cable remained intact and attached to its forward mounting location. The aft end of the cable was free, and not attached to the "baily block hook" located at the rear of the wing keel tube. The fabric webbing handle used to pull the cable into place was separated from one of its two mounting points, and a 2-inch-long tear was present in the center of the webbing, about « inch from its loose end. The other end of the webbing remained attached to its mounting point, with short tears in the center on either side of the mount.

The fuselage came to rest in a cornfield alongside the runway at the end of a wreckage path about 25 feet long and oriented on a heading about 170ø magnetic. It was located about 40 feet away from the wing. The forward frame was fractured and bent in several locations. The front (pilot's) seat was separated from the fuselage. The aft seat remained attached. The 12-gallon fuel tank was separated from the fuselage, and was about half full. The ballistic airframe parachute system was intact and was not activated. The four-stroke, two-cylinder engine was largely undamaged, and rotated smoothly. Two of the composite propeller blades were fractured and splintered along their span, the third blade was fractured at the hub and not found. An 8-inch section of flying cable sheathing was found embedded in one blade.

The aircraft maintenance records were not located. The Hobbs meter read 26.6 hours. The pilot's son recalled that the aircraft had been inspected at one time, but he did not recall any further maintenance details.

According to Federal Aviation Administration records, the pilot did not possess an airman or medical certificate.

# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# CEN17LA061	12/27/2016 1230 CST	Regis# N918KS	Farmington, MO	Apt: Farmington Rgnl FAM
Acft Mk/Mdl MEAD RV 8A		Acft SN 81947	Acft Dmg: SUBSTANTIAL	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl SUPERIOR XP-360-A1A2		Acft TT 393	Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: PILOT		Opr dba:		Aircraft Fire: NONE

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## Events

1. Takeoff - Collision during takeoff/land
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## Narrative

On December 27, 2016, about 1230 central standard time, a Mead RV 8A experimental amateur-built airplane, N918KS, impacted terrain during takeoff at the Farmington Regional Airport (FAM), near Farmington, Missouri. The pilot was uninjured and his passenger sustained minor injuries. The airplane sustained substantial wing damage. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Day visual meteorological conditions prevailed for the flight, which did not operate on a flight plan. The local flight was originating from FAM at the time of the accident.

The pilot reported that engine starting was normal and that he had checked the weather during the taxi to runway 2. Normal indications were observed during the engine runup. He performed "takeoff checks" and taxied onto the runway. After adding full power, the indications were all normal during the takeoff roll. The airplane accelerated normally, the pilot rotated the airplane at 65 mph, and the airplane lifted off. The left wing came up immediately after takeoff. The pilot "assumed" it was from wind and some gust. He applied a correction to the left. However, the correction was "steep" and he applied another correction to get the airplane's wings level. The airplane was off the prepared runway surface and the pilot stated that the airplane was too low to correct back to the runway. The pilot reduced power to land on airport property. However, the terrain was rough and sloped downward during the landing. The left wing sustained substantial damage during the landing. The pilot indicated that there were no mechanical malfunctions associated with the airplane.

At 1256, the recorded weather at FAM was: Wind 340 at 9 knots; visibility 10 statute miles; sky condition clear; temperature 9 degrees C; dew point -6; altimeter 30.27 inches of mercury.

A Federal Aviation Administration inspector examined the wreckage. No anomalies were detected that could not be attributed to impact damage.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# CEN17LA312	08/03/2017 1200 CDT	Regis# N165AB	Danville, AR	Apt: Danville Municipal Airport 32A
Acft Mk/Mdl RALPH MARINE DEVIL DOG		Acft SN USMC-DD1	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim Prob Caus: Pending
			Fatal 0 Ser Inj 0	Flt Conducted Under: FAR 091
Opr Name: PILOT		Opr dba:		Aircraft Fire: NONE
				AW Cert: SPX

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## Events

1. Landing-flare/touchdown - Part(s) separation from AC
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## Narrative

On August 3, 2017, at 1200 central daylight time, an experimental amateur-built Ralph Marine Devil Dog, N165AB, veered off the runway and impacted terrain during landing at Danville Municipal Airport (32A), Danville, Arkansas. The pilot was uninjured and the airplane sustained substantial damage. The airplane was operated by the pilot under 14 Code of Federal Regulations Part 91 as a personal flight that was not operating on a flight plan. The local flight originated from 32A.

During the landing, the left main wheel separated from its rim causing the airplane to veer off of the runway.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# CEN17LA304	08/06/2017 1551 CDT	Regis# N952RA	Hector, MN	Apt: Hector Muni 1D6
Acft Mk/Mdl ROGER M ALLEN RA2-NO SERIES		Acft SN 599	Acft Dmg: SUBSTANTIAL	Rpt Status: Prelim Prob Caus: Pending
Eng Mk/Mdl ROTAX 503			Fatal 0 Ser Inj 2	Flt Conducted Under: FAR 091
Opr Name: PRIVATE INDIVIDUAL		Opr dba:		Aircraft Fire: NONE

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## Events

1. Takeoff - Unknown or undetermined

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## Narrative

On August 6, 2017, at 1551 central daylight time, an amateur-built Roger M Allen RA2 airplane, N952RA, stalled and impacted terrain near Hector, Minnesota. The commercial pilot and passenger were seriously injured and the airplane was substantially damaged. The airplane was registered to and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which operated without a flight plan. The local flight was originating from the Hector Municipal Airport (1D6), at the time of the accident.

A witness reported that during the airplane's takeoff, the airplane appeared to stall, descend, and impact terrain.

The airplane was retained for further examination.

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# GAA17CA480 07/28/2017 1216 EDT Regis# N9214 Poughkeepsie, NY Apt: Hudson Valley Rgnl POU  
Acft Mk/Mdl THOMAS J HANKAMP VAN'S AIRCRAFT Acft SN 538 Acft Dmg: SUBSTANTIAL Rpt Status: Prelim Prob Caus: Pending  
Fatal 0 Ser Inj 0 Flt Conducted Under: FAR 091  
Opr Name: THOMAS J. HANKAMP Opr dba: Aircraft Fire: NONE

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# National Transportation Safety Board - Aircraft Accident/Incident Database

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Accident Rpt# ERA15LA373	09/24/2015 1050 EDT	Regis# N179V	Lake Wales, FL	Apt: Lake Wales X07
Acft Mk/Mdl VANEK JIM SPORT COPTER VORTEX-	Acft SN 007	Acft Dmg: SUBSTANTIAL	Fatal 0	Rpt Status: Factual Prob Caus: Pending
Eng Mk/Mdl ROTAX 582		Ser Inj 0	Fit Conducted Under: FAR 091	
Opr Name: LODGE JOHN M	Opr dba:		Aircraft Fire: NONE	
			AW Cert: SPE	

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## Events

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

## Narrative

On September 24, 2015, about 1050 eastern daylight time, an experimental amateur-built Sport Copter Vortex gyroplane, N179V, was substantially damaged following a collision with terrain during a forced landing near Lake Wales, Florida. The sport pilot sustained minor injuries. The gyroplane was privately owned and operated under the provisions of Title 14 Code of Federal Regulations Part 91. Visual meteorological conditions were reported at the airport about the time of the accident, and no flight plan was filed. The personal flight originated from the Lake Wales Municipal Airport (X07), Lake Wales, Florida, at 1045.

According to the pilot, he conducted an engine run-up prior to takeoff and all systems were normal. During the initial climb, he made a left crosswind turn and climbed to approximately 300 feet. He noticed that the engine began to lose power and made a left downwind turn in an attempt to return to the airport. The engine continued to lose power and the pilot attempted a forced landing in a field. During the landing sequence, the gyroplane rolled over and sustained damage to the airframe.

An examination of the gyroplane by a Federal Aviation Administration inspector revealed that the fuel line on the primer valve was brittle and disconnected. The primer was operated and fuel was noted to leak from the primer fitting. In a conversation with the pilot he said that all of the fuel lines had been previously replaced except the primer line. Correspondence with a representative of the engine manufacturer revealed that a breached primer line can create a lean air/fuel ratio, thus resulting in a loss of engine power.