# Aviation Investigation Final Report

| | | | |
|---|---|---|---|
| **Location:** | Salem, Oregon | **Accident Number:** | ANC18FA041 |
| **Date & Time:** | June 3, 2018, 18:15 Local | **Registration:** | N375KF |
| **Aircraft:** | MASON HAL J KITFOX MODEL 1 | **Aircraft Damage:** | Substantial |
| **Defining Event:** | Loss of control in flight | **Injuries:** | 1 Fatal |
| **Flight Conducted Under:** | Part 91: General aviation - Personal | | |

## Analysis

The student pilot had just completed maintenance on his newly purchased experimental, amateur-built light sport airplane and told a witness that he was going to conduct taxi tests. A few hours after observing the airplane taxi along the runway multiple times, he noticed that the student's vehicle and trailer were still parked at the airport but that the airplane was not there. The airplane wreckage was subsequently located near the edge of a wooded area about 100 yards from the runway.

The student's flight instructor estimated that the he had accumulated about 35 total hours of flight experience, almost all of which was in another make and model airplane. He stated that he did not think the student had not previously flown the accident airplane make and model.

The fuselage exhibited accordion-style crushing damage, consistent with a near-vertical impact indicative of a loss of airplane control. Postaccident examination of the airplane revealed no evidence of any preimpact mechanical failures or malfunctions that would have precluded normal operation.

Although toxicological testing detected one potentially sedating antihistamine in the student's urine, it was not detected in blood. Therefore, the use of the medication likely did not contribute to the accident.

Based on the available evidence, it is likely that the student decided to take off in the airplane and, shortly after takeoff, lost airplane control. The student had not been endorsed by an instructor to fly the accident airplane solo and likely didn't not have the experience to maintain control after takeoff.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The student pilot's improper decision to operate an airplane for which he was not endorsed to fly solo and in which he had limited experience or training, and his subsequent loss of airplane control after takeoff.

## Findings

| | |
|---|---|
| **Personnel issues** | Qualification/certification - Student/instructed pilot |
| **Personnel issues** | Total instruct/training recvd - Student/instructed pilot |
| **Personnel issues** | Decision making/judgment - Student/instructed pilot |
| **Personnel issues** | Aircraft control - Student/instructed pilot |

# Factual Information

## History of Flight

| | |
|---|---|
| **Initial climb** | Loss of control in flight (Defining event) |
| **Uncontrolled descent** | Collision with terr/obj (non-CFIT) |

On June 3, 2018, about 1815 Pacific daylight time, an experimental amateur-built, Kitfox Model 1, light sport airplane, N375KF, sustained substantial damage when it impacted trees and terrain near Blue Skies Airport (OR87), Salem, Oregon. The student pilot was fatally injured. The airplane was registered to the student who was operating the airplane as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Visual meteorological conditions prevailed near the accident site, and no flight plan had been filed. The last time the airplane had been seen was about 1800 when taxi operations were being conducted.

According to a witness, he saw the student on June 1 at OR87 with the accident airplane. The student had recently installed new suspension on the airplane and he completed one to two taxi tests before loading the airplane on his trailer to adjust the pressure in the struts. The student returned two days later and conducted numerous taxi tests. A few hours later, the witness noticed that the student's vehicle and trailer were still parked at the airport but that the airplane was not there.

A friend of the student reported that, when he had not heard from the student the next day and found out his vehicle was still at the airport, he became concerned because he knew the student was not certificated or authorized to fly the accident airplane solo. Subsequently, he conducted an aerial search in his aircraft and located the airplane's wreckage about 100 yards west of the OR87 runway, with a portion of the airplane submerged in a small creek.

## Pilot Information

| | | | |
|---|---|---|---|
| **Certificate:** | Student | **Age:** | 40,Male |
| **Airplane Rating(s):** | None | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | Unknown |
| **Instrument Rating(s):** | None | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | Yes |
| **Medical Certification:** | Class 3 Without waivers/limitations | **Last FAA Medical Exam:** | March 22, 2018 |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | (Estimated) 32 hours (Total, all aircraft) | | |

The student held a student pilot certificate. The student's most recent Federal Aviation Administration (FAA) third-class airman medical certificate was issued on March 22, 2018, with no limitations. At that

time, he reported that he had accumulated 4 total hours of flight experience.

The student's flight instructor estimated that the student had accumulated about 35 total hours of flight experience, almost all of which was in a Piper Cherokee 140 airplane. He reported that he did not think that the student had previously flown a Kitfox airplane and that the student did not have tailwheel or solo endorsements for that airplane.

## Aircraft and Owner/Operator Information

| | | | |
|---|---|---|---|
| **Aircraft Make:** | MASON HAL J | **Registration:** | N375KF |
| **Model/Series:** | KITFOX MODEL 1 | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | 2011 | **Amateur Built:** | Yes |
| **Airworthiness Certificate:** | Experimental light sport (Special) | **Serial Number:** | 88 |
| **Landing Gear Type:** | Tailwheel | **Seats:** | 2 |
| **Date/Type of Last Inspection:** | | **Certified Max Gross Wt.:** | |
| **Time Since Last Inspection:** | | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | | **Engine Manufacturer:** | HKS |
| **ELT:** | C91A installed, activated, did not aid in locating accident | **Engine Model/Series:** | 700E |
| **Registered Owner:** | On file | **Rated Power:** | 60 Horsepower |
| **Operator:** | On file | **Operating Certificate(s) Held:** | None |

The two-seat, amateur built high-wing, tailwheel-equipped airplane was manufactured in 2011. It was powered by an HKS 700E series engine. No airplane maintenance records were located during the investigation.

## Meteorological Information and Flight Plan

| | | | |
|---|---|---|---|
| **Conditions at Accident Site:** | Visual (VMC) | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | KSLE,201 ft msl | **Distance from Accident Site:** | 5 Nautical Miles |
| **Observation Time:** | 00:56 Local | **Direction from Accident Site:** | 222° |
| **Lowest Cloud Condition:** | Few / 5000 ft AGL | **Visibility** | 10 miles |
| **Lowest Ceiling:** | Broken / 10000 ft AGL | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 9 knots / | **Turbulence Type Forecast/Actual:** | / None |
| **Wind Direction:** | 280° | **Turbulence Severity Forecast/Actual:** | / N/A |
| **Altimeter Setting:** | 30.02 inches Hg | **Temperature/Dew Point:** | 18°C / 8°C |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | Salem, OR (OR87) | **Type of Flight Plan Filed:** | None |
| **Destination:** | | **Type of Clearance:** | None |
| **Departure Time:** | | **Type of Airspace:** | Class G |

The closest weather reporting facility was at Salem Airport, Salem, Oregon, about 5 miles southwest of the accident site. At 1756, a METAR was reporting, in part, wind 280° at 5 knots; visibility, 10 statute miles; few clouds at 5,000 ft, 7,000 ft scattered, 10,000 ft broken; temperature 64°F; dew point 46°F; and an altimeter setting of 30.02 inches of mercury.

## Airport Information

| | | | |
|---|---|---|---|
| **Airport:** | BLUE SKIES FARM OR87 | **Runway Surface Type:** | Grass/turf |
| **Airport Elevation:** | 200 ft msl | **Runway Surface Condition:** | Dry |
| **Runway Used:** | 19 | **IFR Approach:** | None |
| **Runway Length/Width:** | 1345 ft / 45 ft | **VFR Approach/Landing:** | Unknown |

## Wreckage and Impact Information

| | | | |
|---|---|---|---|
| **Crew Injuries:** | 1 Fatal | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 1 Fatal | **Latitude, Longitude:** | 44.966667,-122.923332 |

Broken limbs about 30 ft below the top of a 100-ft-tall tree were indicative of the airplane's initial impact; The tree was on the edge of a wooded area about 100 yards west of the OR87 runway. The right wing and propeller were submerged in a creek. The fuselage exhibited accordion-style crushing damage, consistent with a near-vertical impact.

The left wing fractured near the rear spar attachment point with the inboard section rotated aft. The wing was also fractured about midspan, and the outboard portion and wingtip were rotated about another 180° forward such that the tip was in line with the longitudinal axis of the airplane. The right wing fractured about 3 ft outboard of the fuselage attachment point and was rotated about 30° forward. Due to impact damage, control continuity could not be established to the ailerons.

The left and right horizontal stabilizers, elevators, vertical stabilizer, and rudder remained attached to their respective attachment points and were relatively undamaged. Control continuity was established from the elevator to the control stick and from the rudder to the control pedals in the cockpit.

The two spark plugs were removed from the engine and no anomalies were noted. The engine was rotated by hand and turned freely with no binding or abnormal noise. Thumb compression was achieved on both cylinders.

Postaccident examination of the airplane revealed no evidence of any preimpact mechanical failures or malfunctions that would have precluded normal operation.

## Medical and Pathological Information

An autopsy of the student was performed by the Marion County Medical Examiner's Office, Salem, Oregon. The cause of death was determined to be "blunt force trauma."

Toxicology testing performed by the FAA Forensic Sciences Laboratory of specimens from the student detected salicylate (a metabolite of aspirin), ibuprofen, pheniramine, and fexofenadine in urine but not in blood.

Ibuprofen is an over-the-counter analgesic. Neither it nor aspirin are considered impairing. Pheniramine is an antihistamine with much less sedative effects than other antihistamines and is most commonly found in over-the-counter eyedrops used to treat allergic conjunctivitis. Fexofenadine is a nonsedating, over-the-counter antihistamine.

## Administrative Information

| | |
|---|---|
| **Investigator In Charge (IIC):** | Williams, David |
| **Additional Participating Persons:** | Eugene Hahn; FAA; Hillsboro, OR |
| **Original Publish Date:** | September 10, 2019 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | The NTSB traveled to the scene of this accident. |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=97399 |