Aviation Investigation Final Report

Location:	HAVERHILL, New Hampshire	**Accident Number:**	ERA18LA204
Date & Time:	July 29, 2018, 12:05 Local	**Registration:**	N221EZ
Aircraft:	Progressive Aerodyne Searey	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot took off in the experimental, amateur-built amphibious airplane from a river, which was about 100 ft wide and lined with trees on both sides, and initiated a right 180° turn. He then made a left teardrop turn about 50 ft above ground level over a flat cornfield to make a 45° re-entry to land back on the river. When the airplane crossed over the river's shoreline, the pilot attempted to turn left and line up with the river; however, according to the pilot, the control stick would not move past the vertical position. He added power, but the airplane was unable to climb above trees on the opposite side of the river. The airplane collided with the trees and descended into the water. Postaccident examination of the airplane revealed both wings had been removed during recovery, but the flight controls moved freely when manually manipulated. The pilot said the airplane's automatic dependent surveillance-broadcast (ADS-B) component, which was attached to the control panel via a suction cup, may have come loose during the flight and become caught under the flight control assembly, thus jamming the flight controls. He demonstrated how an object could get caught under the controls; however, neither he nor the passenger could confirm that this happened on the accident flight, and examination of the ADS-B component did not reveal any physical damage. The pilot said that he would normally climb above the surrounding terrain before coming back to land; however, during this flight, he did not give himself an "out" in case of an emergency. His decision to maneuver the airplane below surrounding terrain in a confined area left insufficient altitude to troubleshoot a perceived flight control issue, and he was unable to remain clear of trees.

Probable Cause and Findings

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

The pilot's failure to maintain clearance from trees while maneuvering the airplane at a very low altitude in a confined area while attempting to land on a river.

Findings

Personnel issues	Decision making/judgment - Pilot
Personnel issues	Monitoring environment - Pilot
Aircraft	Altitude - Not attained/maintained
Environmental issues	Tree(s) - Decision related to condition
Environmental issues	Tree(s) - Effect on operation

Factual Information

History of Flight

Maneuvering-low-alt flying	Collision with terr/obj (non-CFIT)
Maneuvering-low-alt flying	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On July 29, 2018, at 1205 eastern daylight time, an experimental amateur-built SeaRey amphibious airplane, N221EZ, sustained substantial damage when it collided with trees then water while attempting to land on the Connecticut River, near Haverhill, New Hampshire. The private pilot/registered owner and the passenger were seriously injured. Visual meteorological conditions prevailed, and no flight plan was filed for the flight conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. The flight originated from the river about 1200.

The pilot stated that he had made two successful water landings on the Connecticut River and was preparing to make a third landing up-river to join a friend who had already landed and beached his SeaRey. After takeoff, he initiated a right 180° turn before making a left "teardrop" (beyond 180°) turn over a flat cornfield to make a 45° re-entry to the river at an altitude of 50 ft above ground level. When the airplane crossed over the shoreline, the pilot attempted to turn left and line up with the river, but the control stick would not move past the vertical position. The airplane would not turn and was approaching 60-ft-tall trees on the opposite side of the river. The pilot added power, but the airplane was unable to out climb the trees and collided with them at a speed of about 70 knots. The airplane then descended in a nose down left-wing low attitude, into the river. The pilot said that he would normally climb above the surrounding terrain before coming back into land; however, during this flight, he did not give himself an "out" in case of an emergency.

The passenger stated they had made a left hand turn over the corn field at "tree top height" when the pilot attempted to make another left hand turn to line up with the "very winding" river. As the pilot initiated the turn, the passenger saw trees ahead of them and told the pilot to, "pull up, pull up!" The pilot was "struggling" with the control stick and was unable to pull up and clear the trees. The airplane clipped the tops of the trees and impacted the river in a left nose down attitude.

The airplane came to rest upright and partially submerged in shallow water in the Connecticut River. The width of the river was about 100 ft wide and lined with trees on both sides.

Postaccident examination of the airplane revealed both wings had been removed during recovery, but the flight controls moved freely when manually manipulated. The pilot said that he thought his ADS-B component, which was attached to the control panel via a suction cup, may have come loose during the flight and got caught under the flight control assembly, thus jamming the controls. He demonstrated how it was possible for this to occur; however, neither he nor the passenger could confirm this actually happened. Examination of the ADS-B component did not reveal any physical damage.

The pilot held a private pilot certificate with a rating for airplane single-engine land. He also held a sport pilot certificate; however, a review of his logbook by a Federal Aviation Administration (FAA) operations inspector revealed that he was not endorsed for Light Sport single-engine sea airplanes. The pilot's last FAA third-class medical certificate was issued on December 20, 2017. He reported a total of 760 flight hours; of which, 498 hours were in the accident airplane.

At 1100, weather at LCI was reported as wind from 290° at 6 knots, visibility 10 statute miles, scattered clouds at 4,000 ft, temperature 81° F, dew point 75° F, and an altimeter setting of 30.04 inches of mercury.

Pilot Information

Certificate:	Private; Sport Pilot	**Age:**	61,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	December 20, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	December 23, 2017
Flight Time:	760 hours (Total, all aircraft), 498 hours (Total, this make and model), 700 hours (Pilot In Command, all aircraft), 20.8 hours (Last 90 days, all aircraft), 13.5 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Progressive Aerodyne	**Registration:**	N221EZ
Model/Series:	Searey No Series	**Aircraft Category:**	Airplane
Year of Manufacture:	2006	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	ID403C
Landing Gear Type:	Tailwheel; Amphibian	**Seats:**	2
Date/Type of Last Inspection:	August 15, 2017 Condition	**Certified Max Gross Wt.:**	1430 lbs
Time Since Last Inspection:	83 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	735.5 Hrs at time of accident	**Engine Manufacturer:**	Rotax
ELT:	Installed, not activated	**Engine Model/Series:**	914ULS
Registered Owner:		**Rated Power:**	115 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	LCI,545 ft msl	**Distance from Accident Site:**	40 Nautical Miles
Observation Time:	11:00 Local	**Direction from Accident Site:**	150°
Lowest Cloud Condition:	Scattered / 4000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	290°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	27°C / 24°C
Precipitation and Obscuration:	N/A - None - Unknown obscuration		
Departure Point:	HAVERHILL, NH	**Type of Flight Plan Filed:**	None
Destination:	HAVERHILL, NH	**Type of Clearance:**	None
Departure Time:	12:00 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	43.452571,-71.563301(est)

Preventing Similar Accidents

Manage Risk: Good Decision-making and Risk Management Practices are Critical

Although few pilots knowingly accept severe risks, accidents can also result when several risks of marginal severity are not identified or are ineffectively managed by the pilot and compound into a dangerous situation. Accidents also result when the pilot does not accurately perceive situations that involve high levels of risk. Ineffective risk management or poor aeronautical decision-making can be associated with almost any type of fatal general aviation accident.

By identifying personal attitudes that are hazardous to safe flying, applying behavior modification techniques, recognizing and coping with stress, and effectively using all resources, pilots can substantially improve the safety of each flight. Remember that effective risk management takes practice. It is a decision-making process by which pilots can systematically identify hazards, assess the degree of risk, and determine the best course of action. Pilots should plan ahead with flight diversion or cancellation alternatives and not be afraid to change their plans; it can sometimes be the difference between arriving safely late or not arriving at all.

See http://www.ntsb.gov/safety/safety-alerts/documents/SA_023.pdf for additional resources.

The NTSB presents this information to prevent recurrence of similar accidents. Note that this should not be considered guidance from the regulator, nor does this supersede existing FAA Regulations (FARs).

Administrative Information

Investigator In Charge (IIC):	Read, Leah
Additional Participating Persons:	Daniel Kelman; FAA/FSDO; Portland, ME
Original Publish Date:	April 13, 2020
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97911