



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Marathon, Texas	Accident Number:	CEN18LA157
Date & Time:	May 2, 2018, 11:00 Local	Registration:	N73BH
Aircraft:	HARTLINE J BON HARTLINE KITFOX III	Aircraft Damage:	Substantial
Defining Event:	Flight control sys malf/fail	Injuries:	2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot and the passenger were departing on a local personal flight in the experimental amateur-built airplane. The pilot indicated that, during the takeoff climb, about 15 ft above the ground, the airplane violently rolled to the right. He applied full aileron and rudder opposite the direction of the roll, but the airplane continued to roll to the right, struck the ground with the right wing, and then impacted a tree. Postaccident examination of the airplane revealed that three of the four hinges connecting the right flaperon hanger rib were loose. The wooden material of the flaperon was found dry rotted where the hinges connected. The airplane had been flown about 3 hours in the 11 months before the accident. The airplane kit manufacturer had issued a service bulletin in 1991 that identified flaperon hanger rib failures on the model of the accident airplane. The service bulletin recommended the addition of an aluminum reinforcement on each flaperon hanger rib end. The accident airplane did not have the reinforcement installed and thus did not have the benefit of additional reinforcement in the attachment point area of the hinges.

Probable Cause and Findings

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

The failure of the flaperon hinge attachment point during takeoff, which resulted in a loss of airplane control. Contributing to the accident was the lack of reinforcement of the hinge attachment point in accordance with the manufacturer's service bulletin.

Findings

Aircraft	(general) - Failure
Personnel issues	Installation - Owner/builder
Environmental issues	Tree(s) - Contributed to outcome

Factual Information

History of Flight

Takeoff	Flight control sys malf/fail (Defining event)
Takeoff	Collision with terr/obj (non-CFIT)

On May 2, 2018, about 1100 central daylight time, an experimental, amateur-built Kitfox III airplane, N73BH, was substantially damaged during a forced landing after takeoff from the Stovall Ranch Airport (6TX9), Marathon, Texas. The airline transport pilot and one passenger sustained minor injuries. The airplane was privately owned and operated by the pilot as a Title 14 *Code of Federal Regulations Part 91* personal flight. Visual meteorological conditions prevailed throughout the area and no flight plan was filed for the flight. The local flight was originating at the time of the accident.

The pilot reported that during takeoff, about 15 ft above the ground, the airplane rolled violently to the right. He applied full aileron and rudder opposite the direction of the roll, but the airplane continued to roll to the right. The airplane struck the ground with the right wing and then impacted a mesquite tree.

Examination of the wreckage after the accident revealed that 3 of the 4 hinges connecting the right flaperon hangar rib were loose. The wooden (spruce) material of the flaperon appeared to be dry rotted where the hinges attached. According to records provided by the owner, the airplane had last flown about 6 months prior to the accident flight. Records showed that the airplane had about 3 hours of flight time since its most recent conditional airworthiness inspection which was performed on May 23, 2017.

Denny Aircraft Company Service Bulletin #9, dated September 12, 1991, had identified flaperon hangar rib failures on Kitfox models I, II, and III. The service bulletin recommended the addition of an aluminum reinforcement on each flaperon hangar rib end. The accident airplane did not have the reinforcement installed.

Pilot Information

Certificate:	Airline transport	Age:	74,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land; Multi-engine sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Sport pilot None	Last FAA Medical Exam:	March 15, 2018
Occupational Pilot:	No	Last Flight Review or Equivalent:	May 5, 2017
Flight Time:	20000 hours (Total, all aircraft), 130 hours (Total, this make and model), 35 hours (Last 90 days, all aircraft), 29 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	HARTLINE J BON	Registration:	N73BH
Model/Series:	HARTLINE KITFOX III III	Aircraft Category:	Airplane
Year of Manufacture:	1991	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	1000
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	May 23, 2017 Condition	Certified Max Gross Wt.:	
Time Since Last Inspection:	3 Hrs	Engines:	Reciprocating
Airframe Total Time:	1184.6 Hrs at time of accident	Engine Manufacturer:	Rotax
ELT:	Not installed	Engine Model/Series:	912
Registered Owner:		Rated Power:	65 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:	KE38	Distance from Accident Site:	100 Nautical Miles
Observation Time:	10:55 Local	Direction from Accident Site:	180°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	21 knots / 34 knots	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	230°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.04 inches Hg	Temperature/Dew Point:	27°C / -1°C
Precipitation and Obscuration:			
Departure Point:	Marathon, TX (6TX9)	Type of Flight Plan Filed:	None
Destination:	Marathon, TX (6TX9)	Type of Clearance:	None
Departure Time:	11:00 Local	Type of Airspace:	Class E

Airport Information

Airport:	Stovall Ranch Airport 6TX9	Runway Surface Type:	
Airport Elevation:	3010 ft msl	Runway Surface Condition:	Vegetation
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Minor	Latitude, Longitude:	33.229591,-97.589981(est)

Administrative Information

Investigator In Charge (IIC):	Lemishko, Alexander
Additional Participating Persons:	Steven R White; FAA FSDO; Lubbock, TX
Original Publish Date:	June 3, 2020
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=97161

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).