Aviation Investigation Final Report

Location:	Palmyra, Wisconsin	**Accident Number:**	CEN18LA038
Date & Time:	November 26, 2017, 14:30 Local	**Registration:**	N11188
Aircraft:	PIPER / LAUDEMAN J3C 65	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Two airline transport-rated pilots departed on a personal, local flight to practice maneuvers. While returning to the departure airport and on the downwind leg, the rear seat pilot inadvertently pulled the fuel shutoff valve, which resulted in a total loss of engine power. The front seat pilot attempted to push the fuel shutoff valve back in but was unable to do so. The rear seat pilot then conducted a forced landing, during which the airplane impacted a tree about 2,000 ft short of the runway threshold, which resulted in substantial damage to both wings.

Earlier in the year before the accident, both pilots frequently flew an airplane with a carburetor heat control that was in a similar position as the accident airplane's fuel shutoff valve. The rear pilot stated that he may have inadvertently pulled the fuel shutoff lever instead of the carburetor heat control. Therefore, it is likely that habit patterns developed from operating an airplane with different flight controls contributed to the rear seat pilot inadvertently pulling the fuel shutoff valve.

Probable Cause and Findings

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

The pilot's inadvertent pulling of the fuel shutoff valve, which resulted in a total loss of engine power and a subsequent forced landing into trees. Contributing to the pilot's inadvertent pulling of the fuel shutoff valve were habit patterns he had developed from operating an airplane with different flight controls.

Findings

Aircraft	(general) - Incorrect use/operation
Personnel issues	Incorrect action selection - Pilot
Personnel issues	(general) - Pilot
Environmental issues	Tree(s) - Contributed to outcome

Factual Information

History of Flight

Approach-VFR pattern downwind	Loss of engine power (total) (Defining event)
Approach-VFR pattern downwind	Attempted remediation/recovery
Approach-VFR pattern downwind	Miscellaneous/other
Landing	Collision with terr/obj (non-CFIT)

On November 26, 2017, about 1430 central standard time, a Piper J3C-65 airplane, N11188, was substantially damaged during a forced landing at Palmyra Municipal Airport (88C), Palmyra, Wisconsin. Both airline transport pilots were seriously injured. The airplane was registered to and operated by Flying Hawks Inc. under the provisions of *14 Code of Federal Regulations Part 91* as a personal flight. Day visual meteorological conditions prevailed for the local flight, which departed without a flight plan about 1400.

The rear seat pilot stated that he performed a normal takeoff from the rear seat and flew to a nearby area to practice maneuvers. After completing these maneuvers and returning to 88C, the pilots noticed a loss of engine power while on downwind to runway 27. The pilots attempted unsuccessfully to restore engine power and the rear seat pilot turned the airplane toward runway 27. During the forced landing, the airplane struck a tree about 2000 ft short of the runway threshold and nosed over, damaging both wings.

Examination of the airplane at the accident site by a Federal Aviation Administration (FAA) inspector revealed the fuel shut off valve was in the off position. The front seat pilot stated the fuel shut off valve had been inadvertently pulled off by the rear seat pilot. The front seat pilot attempted to push the fuel shut off valve back in but was unable to do so. The rear pilot stated he may have inadvertently pulled the fuel shut off lever instead of the carburetor heat control lever.

Earlier in the year, both pilots frequently flew an airplane with a carburetor heat control lever that was in a similar position as the accident airplane's fuel shutoff valve. According to an Aviation, Space, and Environmental Medicine article, *"Negative transfer is the transfer from one cockpit to another--of different design or configuration--of habits or responses which were appropriate in the former but are inappropriate in the latter, thereby posing a threat to flying safety. This danger has been demonstrated not only experimentally but also in a number of aircraft accident investigation reports."*

Pilot Information

Certificate:	Airline transport; Commercial; Sport Pilot	**Age:**	76,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Rear
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	BasicMed	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 16, 2015
Flight Time:	10000 hours (Total, all aircraft), 1 hours (Total, this make and model)		

Pilot Information

Certificate:	Airline transport; Commercial	**Age:**	75,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	BasicMed	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 20, 2017
Flight Time:	20000 hours (Total, all aircraft), 5 hours (Total, this make and model), 70 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	PIPER / LAUDEMAN	**Registration:**	N11188
Model/Series:	J3C 65	**Aircraft Category:**	Airplane
Year of Manufacture:	1945	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	9400L
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	July 10, 2017 Annual	**Certified Max Gross Wt.:**	1220 lbs
Time Since Last Inspection:	106 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1205 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:	C91A installed, activated, did not aid in locating accident	**Engine Model/Series:**	C-85-12
Registered Owner:	FLYING HAWKS INC	**Rated Power:**	65 Horsepower
Operator:	FLYING HAWKS INC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KBUU,779 ft msl	**Distance from Accident Site:**	17 Nautical Miles
Observation Time:	14:30 Local	**Direction from Accident Site:**	133°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	12°C / 2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Palmyra, WI (88C)	**Type of Flight Plan Filed:**	None
Destination:	Palmyra, WI (88C)	**Type of Clearance:**	None
Departure Time:	14:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	PALMYRA MUNI 88C	**Runway Surface Type:**	Grass/turf
Airport Elevation:	851 ft msl	**Runway Surface Condition:**	
Runway Used:	27	**IFR Approach:**	None
Runway Length/Width:	2800 ft / 200 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	2 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	42.883888,-88.584999(est)

Administrative Information

Investigator In Charge (IIC):	Folkerts, Michael
Additional Participating Persons:	Michael Pieczynski; Flight Standards DIstrict Office; Milwaukee, WI
Original Publish Date:	July 23, 2019
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=96366