



# Aviation Investigation Final Report

|                                |                                      |                         |             |
|--------------------------------|--------------------------------------|-------------------------|-------------|
| <b>Location:</b>               | Jackson, California                  | <b>Accident Number:</b> | WPR18LA257  |
| <b>Date &amp; Time:</b>        | September 8, 2018, 08:16 Local       | <b>Registration:</b>    | N70192      |
| <b>Aircraft:</b>               | Piper J3C                            | <b>Aircraft Damage:</b> | Substantial |
| <b>Defining Event:</b>         | Loss of control in flight            | <b>Injuries:</b>        | 2 None      |
| <b>Flight Conducted Under:</b> | Part 91: General aviation - Personal |                         |             |

## Analysis

The pilot reported that all preflight inspections and control checks were normal; however, after liftoff, the left wing dipped, and the airplane pulled hard to the left. The pilot input corrective control actions, but the airplane continued to veer left. Realizing that the airplane would not be able to climb over approaching trees, the pilot reduced engine power and aimed the airplane between two trees in order to cushion the impact. The airplane came to rest upright about 450 ft east of the runway.

Examination of the airplane revealed no mechanical anomalies that would have precluded normal operation of the flight control system, although full aileron travel could not be confirmed due to impact damage. The cockpit/cabin floor was plywood and contained multiple cutouts for the control system, all of which were properly sized to permit full travel of the respective controls; however, none of the control openings were equipped with flexible boots or were otherwise shielded to prevent foreign objects from either falling under the floor or becoming caught between the control and the cutout perimeter and thereby restricting or preventing control travel. A screwdriver and a bungee cord were found on the cockpit floor after the accident, but whether they contributed to the accident could not be determined. The shape and location of the rear seat rudder pedals, in combination with the anchor attach point locations of the front seat lap belts, was such that when fastened, either of the front seat lap belt halves could inadvertently capture or trap a rudder pedal and thereby restrict its travel.

The reason for the pilot's inability to maintain directional control during the takeoff and initial climb could not be determined based on the available information.

## Probable Cause and Findings

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

A loss of directional control during takeoff and initial climb for reasons that could not be determined based on the available information.

## Findings

|                |                                    |
|----------------|------------------------------------|
| Not determined | (general) - Unknown/Not determined |
|----------------|------------------------------------|

## Factual Information

### History of Flight

|         |  |
|---------|--|
| Takeoff | Loss of control in flight (Defining event) |
| Takeoff | Collision with terr/obj (non-CFIT)         |

On September 8, 2018, about 0816 Pacific daylight time, a Piper J3C-65 airplane, N70192, was substantially damaged when it was involved in an accident near Jackson, California. The private pilot and pilot-rated passenger were uninjured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that his preflight inspection, engine run-up, and flight control travel and directional checks were normal.

The takeoff ground roll was normal, but just at or immediately after liftoff, "the left wing dipped and [the airplane] pulled hard to the left." The pilot "kicked the rudder," and noted that the control stick "responded" to his inputs, but the airplane continued to veer left. The pilot initially kept full engine power applied in an attempt to climb over the approaching trees but then recognized that the airplane would be unable to do so, and he reduced engine power at a maximum altitude of about 12 to 15 feet above the ground. The pilot aimed the airplane between two trees, and the airplane struck the trees a few feet above the ground, coming to rest upright about 450 ft east of the runway.

### Pilot Information

|                           |   |                                   |                   |
|---------------------------|---|-----------------------------------|-------------------|
| Certificate:              | Private   | Age:                              | 77,Male           |
| Airplane Rating(s):       | Single-engine land  | Seat Occupied:                    | Front             |
| Other Aircraft Rating(s): | None  | Restraint Used:                   | 4-point           |
| Instrument Rating(s):     | None  | Second Pilot Present:             | Yes               |
| Instructor Rating(s):     | None  | Toxicology Performed:             | No                |
| Medical Certification:    | Class 3 Without waivers/limitations   | Last FAA Medical Exam:            | February 2, 2018  |
| Occupational Pilot:       | No  | Last Flight Review or Equivalent: | September 5, 2018 |
| Flight Time:              | 2200 hours (Total, all aircraft), 666 hours (Total, this make and model), 2200 hours (Pilot In Command, all aircraft), 3 hours (Last 30 days, all aircraft) |                                   |                   |

## Pilot-rated passenger Information

|                                  |   |  |           |
|----------------------------------|---|--|-----------|
| <b>Certificate:</b>              |   | <b>Age:</b>                              | 72,Female |
| <b>Airplane Rating(s):</b>       |   | <b>Seat Occupied:</b>                    | Rear      |
| <b>Other Aircraft Rating(s):</b> |   | <b>Restraint Used:</b>                   | 4-point   |
| <b>Instrument Rating(s):</b>     |   | <b>Second Pilot Present:</b>             | Yes       |
| <b>Instructor Rating(s):</b>     |   | <b>Toxicology Performed:</b>             | No        |
| <b>Medical Certification:</b>    |   | <b>Last FAA Medical Exam:</b>            |           |
| <b>Occupational Pilot:</b>       | UNK   | <b>Last Flight Review or Equivalent:</b> |           |
| <b>Flight Time:</b>              | 9999 hours (Total, all aircraft), 9999 hours (Total, this make and model) |  |           |

The pilot held a private pilot certificate with an airplane single-engine land rating. He reported about 2,200 total hours of flight experience, including approximately 666 hours in the accident airplane make and model. His most recent flight review was completed in September 2018, and his most recent Federal Aviation Administration third-class medical certificate was issued in February 2018.

## Aircraft and Owner/Operator Information

|                                      |  |                                       |                 |
|--------------------------------------|--|---------------------------------------|-----------------|
| <b>Aircraft Make:</b>                | Piper  | <b>Registration:</b>                  | N70192          |
| <b>Model/Series:</b>                 | J3C 65   | <b>Aircraft Category:</b>             | Airplane        |
| <b>Year of Manufacture:</b>          | 1946   | <b>Amateur Built:</b>                 |                 |
| <b>Airworthiness Certificate:</b>    | Normal   | <b>Serial Number:</b>                 | 17120           |
| <b>Landing Gear Type:</b>            | Tailwheel  | <b>Seats:</b>                         | 2               |
| <b>Date/Type of Last Inspection:</b> | June 9, 2018 Annual  | <b>Certified Max Gross Wt.:</b>       |                 |
| <b>Time Since Last Inspection:</b>   | 1 Hrs  | <b>Engines:</b>                       | 1 Reciprocating |
| <b>Airframe Total Time:</b>          | 3915 Hrs as of last inspection                             | <b>Engine Manufacturer:</b>           | Continental     |
| <b>ELT:</b>                          | C91 installed, activated, did not aid in locating accident | <b>Engine Model/Series:</b>           | A75-8-F         |
| <b>Registered Owner:</b>             |  | <b>Rated Power:</b>                   | 75 Horsepower   |
| <b>Operator:</b>                     | On file  | <b>Operating Certificate(s) Held:</b> | None            |

The airplane was manufactured in 1946 and was equipped with a Continental Motors A75-8 series engine. The airplane was registered to the pilot in 1981. The most recent annual inspection was completed on June 9, 2018, at which time the airplane had a total time in service of about 3,915 hours.

In a telephone discussion shortly after the accident, the pilot stated that the accident flight was the airplane's first flight since its annual inspection. However, in a written statement 10 days after the accident, the pilot reported that he had flown three times between the annual inspection and the accident flight.

### Meteorological Information and Flight Plan

|   |                                  |   |                  |
|---|----------------------------------|---|------------------|
| <b>Conditions at Accident Site:</b>     | Visual (VMC)                     | <b>Condition of Light:</b>                  | Day              |
| <b>Observation Facility, Elevation:</b> | JAQ, 1694 ft msl                 | <b>Distance from Accident Site:</b>         | 0 Nautical Miles |
| <b>Observation Time:</b>                | 08:35 Local                      | <b>Direction from Accident Site:</b>        |                  |
| <b>Lowest Cloud Condition:</b>          | Clear                            | <b>Visibility</b>                           | 10 miles         |
| <b>Lowest Ceiling:</b>                  | None                             | <b>Visibility (RVR):</b>                    |                  |
| <b>Wind Speed/Gusts:</b>                | 3 knots /                        | <b>Turbulence Type Forecast/Actual:</b>     | /                |
| <b>Wind Direction:</b>                  | 150°                             | <b>Turbulence Severity Forecast/Actual:</b> | /                |
| <b>Altimeter Setting:</b>               | 29.98 inches Hg                  | <b>Temperature/Dew Point:</b>               | 24°C / 5°C       |
| <b>Precipitation and Obscuration:</b>   | No Obscuration; No Precipitation |   |                  |
| <b>Departure Point:</b>                 | Jackson, CA (JAQ )               | <b>Type of Flight Plan Filed:</b>           | None             |
| <b>Destination:</b>                     | Jackson, CA (JAQ )               | <b>Type of Clearance:</b>                   | None             |
| <b>Departure Time:</b>                  | 08:16 Local                      | <b>Type of Airspace:</b>                    |                  |

The 0835 JAQ automated weather observation included wind from 150° at 3 knots, visibility 10 miles, clear skies, temperature 24°C, dew point 5°C, and an altimeter setting of 29.99 inches of mercury.

### Airport Information

|                             |                                  |                                  |         |
|-----------------------------|----------------------------------|----------------------------------|---------|
| <b>Airport:</b>             | Westover Field/Amador County JAQ | <b>Runway Surface Type:</b>      | Asphalt |
| <b>Airport Elevation:</b>   | 1694 ft msl                      | <b>Runway Surface Condition:</b> | Dry     |
| <b>Runway Used:</b>         | 19                               | <b>IFR Approach:</b>             | None    |
| <b>Runway Length/Width:</b> | 3401 ft / 60 ft                  | <b>VFR Approach/Landing:</b>     | None    |

## Wreckage and Impact Information

|                            |        |                                 |                            |
|----------------------------|--------|---------------------------------|----------------------------|
| <b>Crew Injuries:</b>      | 1 None | <b>Aircraft Damage:</b>         | Substantial                |
| <b>Passenger Injuries:</b> | 1 None | <b>Aircraft Fire:</b>           | None                       |
| <b>Ground Injuries:</b>    | N/A    | <b>Aircraft Explosion:</b>      | None                       |
| <b>Total Injuries:</b>     | 2 None | <b>Latitude,<br/>Longitude:</b> | 38.376667,-120.793891(est) |

Post-accident examination of the airplane revealed that the wood propeller was shattered, both wings were partially crumpled and swept significantly aft, and the landing gear was almost completely separated from the fuselage.

The tailwheel and all relevant components remained attached and essentially intact. The aft end of the right tailwheel centering spring was partially deformed, consistent with an excessive tensile load, but the spring remained attached and functional. No other damage or abnormalities were noted. The tailwheel castered freely and centered normally.

Both seat stations were equipped with a full set of flight controls, including wheel brake pedals. Flight control system continuity and proper cable routing was able to be established for the elevator, ailerons, and rudder. The elevator remained securely attached to the airframe and its control cables and could be moved throughout its full travel range. Damage precluded determination of the pre-impact functionality of the elevator system.

Both ailerons remained securely attached to their respective wings, and their control cables were securely attached. Impact damage jammed the control components at multiple locations, and only very limited motion of the aileron and aileron controls could be accomplished. No non-impact related anomalies of the ailerons, aileron hinges, stops, or control links were observed. Damage precluded determination of the pre-impact functionality of the aileron system.

The rudder remained securely attached to the vertical stabilizer, and the control cables remained securely attached to the rudder. The rudder could be moved throughout its full travel range. The rudder and its control horns were impact damaged. No non-impact related anomalies of the rudder, rudder hinges, stops, or control links were observed. Rudder travel and functionality checks did not reveal any anomalies.

The rear seat rudder pedals were situated adjacent to the outboard sides of the front seat. The shape and location of those rear seat rudder pedals, in combination with the anchor attach point locations of the front seat lap belts was such that, when fastened, either of the front seat lap belt halves could inadvertently capture or trap a rudder pedal and thereby restrict its travel.

The cockpit/cabin floor was plywood, with cutouts for the rudder pedal, brake pedal, and control stick mechanical elements. All cutouts in the floor were sized to permit full travel of the respective controls.

None of the control penetrations had a flexible boot or were otherwise shielded to prevent foreign objects from either falling down under the floor or becoming caught between the control and the cutout perimeter. During the postaccident examination, a bungee cord and a screwdriver were found on the cockpit/cabin floor. Their origin and when they came to be on the floor could not be determined. Additionally, portions of the lower skin fabric were torn.

## Administrative Information

|  |   |                               |
|--|---|-------------------------------|
| <b>Investigator In Charge (IIC):</b>     | Huhn, Michael   |                               |
| <b>Additional Participating Persons:</b> | Craig Miller; FAA; Sacramento, CA   |                               |
| <b>Original Publish Date:</b>            | June 10, 2021   | <b>Investigation Class:</b> 2 |
| <b>Note:</b>                             | The NTSB did not travel to the scene of this accident.  |                               |
| <b>Investigation Docket:</b>             | <a href="https://data.nts.gov/Docket?ProjectID=98264">https://data.nts.gov/Docket?ProjectID=98264</a> |                               |

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).