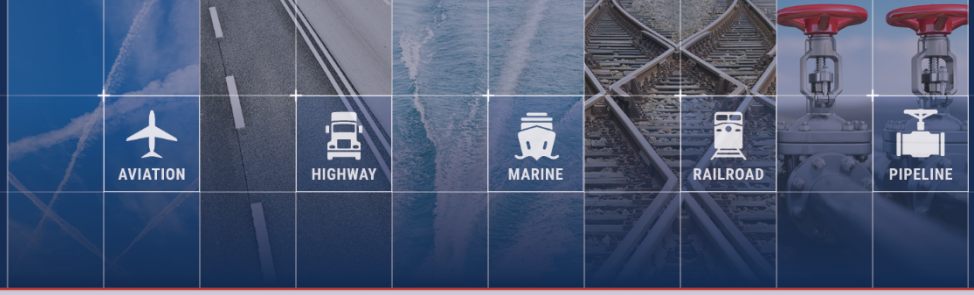


# Aviation Investigation Final Report

| | | | |
|---|---|---|---|
| **Location:** | Lakeland, Florida | **Accident Number:** | ERA23LA179 |
| **Date & Time:** | March 22, 2023, 16:48 Local | **Registration:** | N1907A |
| **Aircraft:** | Piper PA-18AS-125 | **Aircraft Damage:** | Substantial |
| **Defining Event:** | Landing gear not configured | **Injuries:** | 1 None |
| **Flight Conducted Under:** | Part 91: General aviation - Personal | | |

## Analysis

After obtaining fuel at a land-based airport, the pilot noted a small leak in the amphibious airplane's hydraulic landing gear extension/retraction system. He subsequently departed for the accident flight. While the pilot was landing the airplane on a lake, he noticed that the landing gear were still extended; the airplane flipped over immediately upon touchdown and the airplane's right wing was substantially damaged.

Examination of the hydraulic system after the accident confirmed the small leak, but otherwise did not reveal evidence of a failure of the system. Additionally, the airplane was equipped with landing gear position indicating lights that should have alerted the pilot that the landing gear were not fully retracted before touchdown. Had the pilot observed this indication prior to landing, he would likely have aborted the landing attempt and prevented the accident.

## Probable Cause and Findings

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

The pilot's failure to ensure that the landing gear was properly configured for a water landing.

## Findings

| | |
|---|---|
| **Aircraft** | Wheel/ski/float - Incorrect use/operation |
| **Personnel issues** | Lack of action - Pilot |

## Factual Information

### History of Flight

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|---|---|
| **Landing-flare/touchdown** | Landing gear not configured (Defining event) |
| **Landing** | Dragged wing/rotor/float/other |

On March 22, 2023, about 1648 eastern daylight time, a Piper PA-18AS, N1907A, was substantially damaged when it was involved in an accident on Crescent Lake in Umatilla, Florida. The pilot was not injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

According to the pilot, he departed from his home base on Crescent Lake to refuel. Upon landing at Umatilla Airport (X23), he observed a small hydraulic fluid leak on the hand pump of the main landing gear while taxiing for fuel. After refueling, he proceeded to depart back to Crescent Lake. However, during the landing on the lake, he noticed that the nose landing gear was not fully retracted. When the nose gear contacted the water, the airplane flipped over and inverted.

Following the accident, the pilot reported that the landing gear hand pump had failed to raise the landing gear as expected, and that an o-ring failure resulted in the pump leaking hydraulic fluid. An examination of the airplane by a Federal Aviation Administration (FAA) inspector revealed substantial damage to the right wing. Examination of the landing gear hydraulic system revealed a small amount of hydraulic fluid leaking from the landing gear hand pump, but that the leak was not significant enough to deplete the hydraulic system's fluid. The inspector also identified wear marks on the hand pump shaft, but none that would have resulted in a failure of the pump.

A review of the maintenance records indicated that an annual inspection had been conducted about five months before the accident, and no discrepancies were noted regarding the hydraulic system.

According to the float manufacturer, the airplane's gear selector was equipped with lights that indicated the landing gear position. Four blue lights illuminated when the gear was up, and four green lights illuminated when the gear was down. Additionally, a single red light indicated the operation of the hydraulic pump. Each gear position had its corresponding light. The hydraulic pump remained active until all landing gear components reached their intended positions. Although the floats did not have "locks," they did include an over-center main gear and a horizontally positioned nose gear system. Furthermore, the eight indicator lights operated independently of the gear hydraulic system and its functionality.

A review of the airplane's flight manual supplement, specifically on page 8, 9 and 13, stated: "Do not land on water unless the gear is fully retracted."

## Pilot Information

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|---|---|---|---|
| **Certificate:** | Private | **Age:** | 67,Male |
| **Airplane Rating(s):** | Single-engine land; Single-engine sea | **Seat Occupied:** | Center |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | 4-point |
| **Instrument Rating(s):** | None | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | |
| **Medical Certification:** | Class 3 With waivers/limitations | **Last FAA Medical Exam:** | September 10, 2021 |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 990 hours (Total, all aircraft), 2 hours (Total, this make and model) | | |

## Aircraft and Owner/Operator Information

| | | | |
|---|---|---|---|
| **Aircraft Make:** | Piper | **Registration:** | N1907A |
| **Model/Series:** | PA-18AS-125 | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | 1952 | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 18-1741 |
| **Landing Gear Type:** | Retractable - ; Amphibian | **Seats:** | 2 |
| **Date/Type of Last Inspection:** | November 24, 2022 Annual | **Certified Max Gross Wt.:** | 2000 lbs |
| **Time Since Last Inspection:** | 10 Hrs | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | 5743 Hrs at time of accident | **Engine Manufacturer:** | Lycoming |
| **ELT:** | Not installed | **Engine Model/Series:** | O-320 B2B |
| **Registered Owner:** | On file | **Rated Power:** | 160 Horsepower |
| **Operator:** | On file | **Operating Certificate(s) Held:** | None |

## Meteorological Information and Flight Plan

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|---|---|---|---|
| **Conditions at Accident Site:** | Visual (VMC) | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | LEE,76 ft msl | **Distance from Accident Site:** | 10 Nautical Miles |
| **Observation Time:** | 17:53 Local | **Direction from Accident Site:** | |
| **Lowest Cloud Condition:** | Few / 7000 ft AGL | **Visibility** | 10 miles |
| **Lowest Ceiling:** | | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 3 knots / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 110° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 30.22 inches Hg | **Temperature/Dew Point:** | 28°C / 14°C |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | Lakeland, FL | **Type of Flight Plan Filed:** | None |
| **Destination:** | Lakeland, FL | **Type of Clearance:** | None |
| **Departure Time:** | | **Type of Airspace:** | Class G |

## Airport Information

| | | | |
|---|---|---|---|
| **Airport:** | UMATILLA MUNI X23 | **Runway Surface Type:** | |
| **Airport Elevation:** | 107 ft msl | **Runway Surface Condition:** | Water-choppy |
| **Runway Used:** | | **IFR Approach:** | None |
| **Runway Length/Width:** | | **VFR Approach/Landing:** | Full stop;Straight-in |

## Wreckage and Impact Information

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|---|---|---|---|
| **Crew Injuries:** | 1 None | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | N/A | **Aircraft Fire:** | None |
| **Ground Injuries:** | | **Aircraft Explosion:** | None |
| **Total Injuries:** | 1 None | **Latitude, Longitude:** | 28.026371,-81.909767(est) |

## Administrative Information

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|---|---|
| **Investigator In Charge (IIC):** | Alleyne, Eric |
| **Additional Participating Persons:** | Cheryl King; FAA/FSDO; Orlando, FL |
| **Original Publish Date:** | June 12, 2024 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class 3 |
| **Note:** | The NTSB did not travel to the scene of this accident. |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=107013 |