



# Aviation Investigation Final Report

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<b>Location:</b>	ORLANDO, Florida	<b>Accident Number:</b>	ATL01LA022
<b>Date &amp; Time:</b>	January 16, 2001, 09:15 Local	<b>Registration:</b>	N12E
<b>Aircraft:</b>	Lake LA-4-200	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The pilot was attempting to start the engine when an explosion occurred. He stated that he did not detect any fumes prior to engine start. A crack was found on a fuel block drain assembly fitting and corrosion of the battery grounding strap was also discovered. Maintenance inspection procedures for the airplane requires a 30 day inspection of both the battery grounding strap for corrosion and the fuel lines for damage.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE OTHER MAINTENANCE PERSONNEL'S FAILURE TO COMPLETE PRESCRIBED INSPECTIONS THAT RESULTED IN THE FAILURE OF A FUEL BLOCK DRAIN ASSEMBLY FITTING , CORROSION OF THE BATTERY GROUNDING STRAP AND THE SUBSEQUENT FLASH EXPLOSION.

## Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: STANDING - STARTING ENGINE(S)

### Findings

1. (C) ELECTRICAL SYSTEM,BATTERY - CORRODED
2. (C) MAINTENANCE,INSPECTION - NOT FOLLOWED - PILOT IN COMMAND
3. (C) FUEL SYSTEM,LINE FITTING - CRACKED

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Occurrence #2: EXPLOSION  
Phase of Operation: STANDING - STARTING ENGINE(S)

## Factual Information

On January 16, 2001, at 0915 eastern standard time, a Lake LA-4-200, N12E, experienced a flash explosion while the pilot attempted to start the engine at the Orlando Executive Airport in Orlando, Florida. The personal flight was operated by the pilot under the provisions of Title 14 CFR Part 91 with no flight plan filed. Visual weather conditions prevailed at the time of the explosion. The airplane sustained substantial structural damage. The private pilot and his passenger were not injured. The explosion occurred during the first engine start of the day at 0915.

The pilot stated he did not detect any fumes prior to engine start. He reported draining the hull as recommended to remove any accumulated water and fuel vapor after the previous flight. The engine turned over twice before the explosion occurred.

The examination of the airplane revealed the explosion occurred in the rear cabin area of the airframe. Blue fuel stains were found on fuel lines and fittings inside the enclosed fuel system compartments. A crack was found on a fuel block fitting of the fuel drain assembly. The main fuel tank and associated fuel components are in close proximity to the battery installation. During the post-accident examination of the airplane, corrosion was discovered on the battery grounding strap.

The annual inspection was completed on October 20, 2000, about three months before the accident. Section D, item 2, of the Lake-4-200 Maintenance Inspection Procedures states "Check battery , box and cable (check at least every 30 days). Section D, item 7, states, "check fuel lines, valves and gauges for damage and operation" of the airplane includes checking the battery and ground strap for corrosion and the fuel system and fittings for leaks. No record of the ground strap inspection was discovered.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	61, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical-w/ waivers/lim	<b>Last FAA Medical Exam:</b>	March 18, 1999
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	May 11, 2001
<b>Flight Time:</b>	2478 hours (Total, all aircraft), 643 hours (Total, this make and model), 2284 hours (Pilot In Command, all aircraft), 41 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Lake	<b>Registration:</b>	N12E
<b>Model/Series:</b>	LA-4-200	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	932
<b>Landing Gear Type:</b>	Retractable - Tricycle; Amphibian	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	October 20, 2000 Annual	<b>Certified Max Gross Wt.:</b>	
<b>Time Since Last Inspection:</b>	30 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2160 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	IO360 A1B6
<b>Registered Owner:</b>	LAKE 12E INC.	<b>Rated Power:</b>	200 Horsepower
<b>Operator:</b>	GEORGE KIRBY	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	ORL,113 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	08:50 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Few / 100 ft AGL	<b>Visibility</b>	3 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>	90°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.15 inches Hg	<b>Temperature/Dew Point:</b>	17°C / 1°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	ORLANDO, FL (ORL )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	ORLANDO, FL (ORL )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	09:15 Local	<b>Type of Airspace:</b>	Unknown

## Airport Information

<b>Airport:</b>	ORLANDO EXECUTIVE ORL	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	113 ft msl	<b>Runway Surface Condition:</b>	Unknown
<b>Runway Used:</b>		<b>IFR Approach:</b>	Unknown
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Unknown

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 Minor	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	On-ground
<b>Total Injuries:</b>	2 Minor	<b>Latitude, Longitude:</b>	28.4892,-81.290931(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Powell, Phillip
<b>Additional Participating Persons:</b>	REGIS E LAUER; ORLANDO FSDO; ORLANDO, FL
<b>Original Publish Date:</b>	August 21, 2001
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=53232">https://data.nts.gov/Docket?ProjectID=53232</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).