



# Aviation Investigation Final Report

<b>Location:</b>	Newport News, Virginia	<b>Accident Number:</b>	ERA23LA075
<b>Date &amp; Time:</b>	November 30, 2022, 07:35 Local	<b>Registration:</b>	N12FN
<b>Aircraft:</b>	GATES LEAR JET CORP. 36	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Sys/Comp malf/fail (non-power)	<b>Injuries:</b>	3 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Public aircraft - federal		

## Analysis

The pilot-in-command (PIC) reported hearing a “boom” during the takeoff just before reaching V1 and a second “boom” just as he called out V1. The second-in-command (SIC), who was the pilot flying, called to abort the takeoff. Both suspected they had blown tires. They attempted to slow the airplane, but there was no braking action. The drag chute was deployed but the airplane continued off the end of the runway, traveled through the runway end lights, and into the grass. During the accident sequence, the drag chute separated from the airplane and was located on the runway. Examination of the airplane after the accident revealed that the left main landing gear tire had ruptured and pieces of the tire and the left brake system assembly were found along the runway. The airplane sustained substantial damage to the left wing during the accident.

According to the operator’s operations manager, the airplane’s tire pressures should have been checked at least every 7 days. When the tire pressures were checked about 2 weeks before the accident, the left inboard tire pressure was low. Air was added to the tire and the airplane was returned to service. The tire pressures were not documented since that entry. A mechanic from the operator stated the tire pressures were checked the day before the accident, and “the pressure was within limits set forth” by the manufacturer. In addition, the mechanic stated that no maintenance entry was made since no corrective action was needed. Although the mechanic stated he checked the tire pressure the day before the accident, the tire pressure was not checked on the day of the accident, as recommended by the airframe manufacturer. Given this information, it could not be determined whether or not the tires were appropriately inflated at the time of the accident.

It is likely, that when the left main landing gear tire ruptured, the tire tread damaged the left main landing gear brake assembly as well as the hydraulic line in the left wing that was ruptured. Subsequently, the hydraulic fluid drained from the system, and the brake system was

ineffective due to a lack of hydraulic fluid, and resulted in the flight crew's inability to stop the airplane on the runway.

## Probable Cause and Findings

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

A left main landing gear tire rupture during takeoff, which resulted in a runway overrun.

### Findings

Aircraft	Tire casing - Failure
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# Factual Information

## History of Flight

Takeoff	Sys/Comp malf/fail (non-power) (Defining event)
Takeoff	Runway excursion

On November 30, 2022, about 0735 eastern standard time, a Lear Jet 36, N12FN, was substantially damaged when it was involved in an accident at Newport News/Williamsburg International Airport (PHF), Newport News, Virginia. The PIC, SIC, and another flight crew member were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 public use flight.

According to the PIC, the preflight inspection, engine start-up, and taxi were “normal.” During the takeoff roll, he heard “one boom” and one second later called V1, which is the maximum speed at which a rejected takeoff could be initiated in the event of an emergency. At the same time he called “V1,” the PIC heard a second “boom” and the SIC, who was the pilot flying, called to abort the takeoff. The PIC reported to air traffic control that they were aborting the takeoff with a suspected blown tire. They attempted to slow the airplane, but there was no braking action. The crew elected to deploy the drag parachute, but the airplane continued off the end of the runway, traveling through the runway end lights, and into the grass. After the airplane came to rest, about 300 ft off the departure end of the runway, the crew egressed without injury.

A postaccident examination of the airplane revealed that the left wing sustained substantial damage in the accident sequence. In addition, the drag parachute had separated from the airplane and was located on the runway. Pieces of the left main landing gear brake assembly were located along the runway and embedded in the left wing. Sections of the left main landing gear tires were also located along the runway. Examination of the hydraulic reservoir revealed that the reservoir was empty and a section of the hydraulic line in the left wing was ruptured.

A review of the Learjet 36A Airplane Flight Manual, “Aborted Takeoff” checklist read as follows:

- 1. Thrust Levers – IDLE
- 2. Wheel Brakes - Apply
- 3. Spoilers - EXT
- 4. Drag Chute or Thrust Reversers (if installed) - Deploy, if necessary

The airplane maintenance manual stated a special inspection of the drag chute needed to be performed after certain conditions. “A special inspection also is required if deployment was made above 150 KIAS, or if jettison or failure occurred above 100 KIAS.”

Furthermore, the drag chute should be functionally tested every 6 months to check the release

mechanism, then inspected and repacked. In addition, there was a required 12,000-hour inspection to “inspect the drag chute mechanism for proper operation, security, and general condition.” According to the operator, the most recent 6-month inspection was complied with on October 26, 2022, and the 12,000 hour requirement was complied with March 20, 2012.

According to the operator’s operations manager, the airplane’s tire pressures should have been checked at least every 7 days. Review of the airplane’s maintenance records revealed that the tire pressures were last checked on November 8, 2022, and at that time the tires were at the proper pressure. When the tire pressures were checked on November 15, 2022, the left inboard tire was low (90 PSI). Air was added to the tire and the airplane was returned to service. The tire pressures were not documented between November 15, 2022, and the accident flight.

The operator provided a statement from a mechanic that the tire pressures were checked on November 29, 2022, and “the pressure was within limits set forth” by the manufacturer. In addition, no maintenance entry was made since no corrective action was needed.

The airplane’s maintenance manual recommended that the tire pressures be checked before the first flight of every day. The tire pressure for the main landing gear tires should be between 157 psig (pounds per square inch gauge) and 167 psig when the airplane is not jacked. Furthermore, it stated that “Tire pressures are affected by temperature. Tire pressures must be measured when the tires are at ambient temperature. An ambient temperature change of 5°F will change the tire pressure by 1%. Temperature/pressure changes must be kept in mind particularly when the aircraft is parked in a hot hangar and is rolled onto a cold runway.”

## Pilot Information

<b>Certificate:</b>	Airline transport	<b>Age:</b>	67,Male
<b>Airplane Rating(s):</b>	Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 1 With waivers/limitations	<b>Last FAA Medical Exam:</b>	October 20, 2022
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	November 9, 2022
<b>Flight Time:</b>	22700 hours (Total, all aircraft), 438 hours (Total, this make and model), 15000 hours (Pilot In Command, all aircraft), 76 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft)		

## Pilot Information

<b>Certificate:</b>	Airline transport	<b>Age:</b>	63,Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane; Helicopter	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 1 With waivers/limitations	<b>Last FAA Medical Exam:</b>	June 27, 2022
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	July 1, 2022
<b>Flight Time:</b>	8873 hours (Total, all aircraft), 1303 hours (Total, this make and model), 4421 hours (Pilot In Command, all aircraft), 64 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	GATES LEAR JET CORP.	<b>Registration:</b>	N12FN
<b>Model/Series:</b>	36 NO SERIES	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1975	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Transport; Restricted (Special)	<b>Serial Number:</b>	016
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	10
<b>Date/Type of Last Inspection:</b>	April 30, 2022 AAIP	<b>Certified Max Gross Wt.:</b>	19600 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Turbo jet
<b>Airframe Total Time:</b>	20693 Hrs at time of accident	<b>Engine Manufacturer:</b>	Garret
<b>ELT:</b>	C126 installed, not activated	<b>Engine Model/Series:</b>	TFE731-2-2B
<b>Registered Owner:</b>	GH EQUIPMENT LLC	<b>Rated Power:</b>	3500 Lbs thrust
<b>Operator:</b>	AERY AVIATION	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>	AERY AVIATION	<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	PHF,36 ft msl	<b>Distance from Accident Site:</b>	1 Nautical Miles
<b>Observation Time:</b>	07:54 Local	<b>Direction from Accident Site:</b>	246°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 3500 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots / None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	180°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.04 inches Hg	<b>Temperature/Dew Point:</b>	13°C / 12°C
<b>Precipitation and Obscuration:</b>	Light - None - Rain		
<b>Departure Point:</b>	Newport News, VA	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Newport News, VA	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class D

## Airport Information

<b>Airport:</b>	NEWPORT NEWS/WILLIAMSBURG INTL PHF	<b>Runway Surface Type:</b>	Asphalt,Concrete
<b>Airport Elevation:</b>	42 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	25	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	8003 ft / 150 ft	<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	3 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	3 None	<b>Latitude, Longitude:</b>	37.137876,-76.47719

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Kemner, Heidi
<b>Additional Participating Persons:</b>	Darrin American; FAA/FSDO; Richmond, VA
<b>Original Publish Date:</b>	May 2, 2024
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 3</a>
<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=106398">https://data.nts.gov/Docket?ProjectID=106398</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](#).