



AIRCRAFT INCIDENT REPORT

(Ref. Law on Aircraft Accident Investigation, No. 59/1996)

Aircraft :

- **Manufacturer, Model and Registration:** Gates Learjet Corp. 35A, N18LH.
- **Year of Manufacture:** 1981.
- **Manuf. Serial No:** 379.
- **No / Type of Engines:** Two Garrett TFE 731-2-2B. 3,500 lbs. thrust each.
- **Total time / landings:** 20,005.1 hours / 13,514 landings.

Registered owner:

American Jet International Corporation,
8501 Telephone Road, Houston, Texas 77061-4331,
USA.

Operator/User:

Same. The aircraft had a valid C of A. It had been maintained by Woolsey Aviation Inc., Million Air, Houston, Texas, USA.

Date / Time:

3 March 2001, 03:53 hrs UTC.

Location:

Keflavik Airport, Iceland (63°59'06''N 022°36'20''W).
Runway 20.

Type of Occurrence:

Tire burst during take-off roll.

Type of Flight:

Ambulance.

Meteorol. Conditions:

Wind was variable/2 kts, visibility +10 km, few at 3000 feet, overcast at 10000 feet, temperature -4°C, dewpoint -8°C. QNH 996 hPa.

Flight Conditions:

Visual Meteorological Conditions (VMC).

Type of Flight Plan:

IFR.

Persons on Board:

Crew - 2. **Passengers** - 6.

Injuries:

Crew - None. **Passengers** - None.

Nature of Damage:

Damage limited to R/H landing gear, brakes, wheels and tires.

The Pilot-in Command:

- **Licence:**

FAA ATPL issued June 2000. Ratings: Airplane MEL/SEL, LR-JET. Medical Certificate First-Class, dated 21.11.2000.

- **Flying Experience:**

4500 hrs, 1000 on type.

Information Source:

The incident was reported to the AAIB by the Keflavik Airport Air Traffic Control Tower personnel.

1. FACTUAL INFORMATION:

1.1 The flight:

This was an ambulance flight from Nairobi, Kenya to Washington DC, USA, via intermediate stops en-route. The aircraft landed at Keflavik Airport Iceland at 02:52 hrs after a flight from Milan, Italy and after a ground stop and refuelling a flight plan was filed for the next leg from Keflavik to St Johns, New Foundland, Canada.

The aircraft taxied out from Keflavik Airport Terminal, the wind was variable/2 kts and runway 20 was in use. The runway was dry and there was no precipitation. Ice spots were on the runway edges.

The take-off was initiated at 03:50 hrs. and according to the pilots everything was normal and the aircraft accelerated without any abnormalities. As the aircraft had travelled approximately 2800 feet of the runway and reached the speed of approximately 125 kts, it started to vibrate and then it swerved to the right, as one of the right hand main gear tires blew. The aircraft was below V1 (Take-off decision speed) and the Captain aborted the take-off, brought the thrust levers to idle, began braking and extended the spoilers. Shortly after the other right hand main gear tire blew and the aircraft skidded along the runway on the wheel rims, causing a large spray of fire sparks.

The aircraft decelerated down the runway and stayed close to the centreline. At the end of the ground run it veered to the right edge of the runway and hit an icy spot, turned about 30° to the right and stopped close to the right edge of the runway. The distance between the point where the first tire blew to the spot the aircraft came to a complete stop was approximately 6000 feet.

The airport fire truck that was standing by at the active runway, responded immediately and was at the site within moments.

The aircraft passengers and crew evacuated the patient quickly and safely and there were no injuries and there was no fire.

1.2 Damage to the aircraft:

There was substantial damage to the right hand main landing gear. Both tires were completely gone and the wheel rims and brake assemblies were severely eroded. A piece of the gear strut cylinder had broken off at the torque link attachment point due to twisting of the landing gear. The anti-skid wiring and the anti-skid transducers were also damaged as well as the landing gear door and the associated linkages.

2. ADDITIONAL INFORMATION:

2.1 Keflavik Airport. Military/civil airport. Runway 20 is 3054 meter long, 60 meter wide. Take-off run available (TORA) is 3048 meters, take-off distance available (TODA) is 3198 meters and the accelerate-stop distance (ASDA) is 3048 meters. There is 60-meter clearway on runway 20 but no stopway. The runway threshold elevation is 163 feet.

The Airfield Operation Services Department is responsible for foreign object (FOD) control of runways. The Runways at Keflavik Airport are frequently inspected for foreign objects. Scheduled inspections are carried out three times every 24-hour period at 05:00 hrs, 16:00 hrs and at 20:00 hrs. Additional inspections are carried out if considered necessary. The last runway inspection before the incident was a scheduled inspection carried out 20:00 hrs. The runway was inspected following the incident. No foreign objects were found on the runway other than pieces of the right hand main landing gear tires.

2.2 Investigation of the aircraft tires. The investigation revealed that the outboard right hand main gear tire had blown at the point the aircraft started to vibrate during the take-off run. There were indications that this scenario started as the tire thread separated and then the tire blew. Large parts of the thread were found on the runway and the rubber marks on the runway indicated that the inboard tire blew some seconds later as the brakes were applied.

The outboard main landing gear tire was manufactured by Goodyear Tire & Rubber Co., Danville, USA. The type was a Goodyear Flight Eagle. It was a bias ply tire, size 17.5x5.75-8, P/N 178K23-5 and S/N 00030735. Goodyear Tire & Rubber Co. manufactured this particular tire on January 3, 2000. It was installed on N18LH January 1st 2001. At that time the total flying time of the aircraft was 19902.7 hours and total landings of the aircraft were 13442.

2.3 The Anti-Skid System. According to the flight crew the anti-skid system was tested before take-off and functioned normally.

The sensors were inspected after the incident and found to be functioning normally.

2.4 Information from Goodyear Tire and Rubber Co. The manufacturer issued a Service Bulletin No. 2001-32-001, dated February 2 2001, due to “thrown thread” and possible “thread separation” on P/N 178K23-5 tires. The bulletin was applicable to tires bearing serial numbers from 0148xxxx to 0152xxxx. According to this it did not apply to S/N 00030735.

The initial cause of the tire failure is not known.

The AAIB contacted National Transport Safety Board (NTSB) and suggested that a research would be performed to determine if operators have reported thrown treads or tread separation of Goodyear P/N 178K23-5 tires with S/N outside SB 2001-32-001 range.

3. SYNOPSIS:

The runway was inspected immediately after the incident and there were no foreign objects found. The Captain described the take-off roll as normal and after the aircraft had accelerated for approximately 2800 feet one of the right hand gear tires blew and he aborted the take-off.

There were marks on the runway indicating that the scenario started with a separation of part of the thread of the outboard right hand main landing gear tire that subsequently blew. Furthermore there were marks on the runway indication that shortly after the brakes were applied the inboard tire blew also. The wind was light and the runway was dry. The Captain managed to maintain the aircraft on the runway as it was decelerating and sliding down the runway on the right hand landing gear rims and the remaining landing gears.

At the point the aircraft finally came to a halt the rims were almost eroded up to the hub.

4. SAFETY RECOMMENDATIONS:

None.

Reykjavik May 8th 2001

**Aircraft Accident Investigation Board
ICELAND**