

PRELIMINARY REPORT ON AIRCRAFT ACCIDENT

(Law on Aircraft Accident Investigation no. 35/2004)

This report contains facts which have been determined up to the time of issue. This information is published to inform the aviation industry and the public of the general circumstances of accidents and must necessarily be regarded as tentative and subject to alteration or correction if additional evidence becomes available.

M-01508/AIG-04

**TF-ARS
BOEING 747-300
Zia Airport Dhaka Bangladesh**



The aim of the aircraft accident investigation board is solely to identify mistakes and/or deficiencies capable of undermining flight safety, whether contributing factors or not to the accident in question, and to prevent further occurrences of similar cause(s). It is not up to the investigation authority to determine or divide blame or responsibility. This report shall not be used for purposes other than preventive ones.

(Law on Aircraft Accident Investigation, No. 35/2004)

Location: Zia Airport, (Runway 14) Dhaka, Bangladesh.

Date and time (UTC) March 25th 2008 at 08:27.

Aircraft:

- **Type** Boeing 747-357.
- **Registration** TF-ARS.
- **Year built** 1983.
- **Serial number** 22996.

No & Type of Engines: 4 Pratt & Whitney JT9D-7R4G2 turbofan engines

Type of flight: Commercial Air transport (Passenger).

Persons on board: Passengers: 307 Crew: 19

Injuries: Minor during evacuation (both crew and passengers).

Damage: Aircraft damaged beyond economic repair.

Incident description: Fire at front spar of engine no. 3 after landing.

Owner: Air Atlanta Icelandic.

Operator: Air Atlanta (wet leased to Saudi Arabian Airlines)

Weather: 220°/03 kt, visibility 5.000 meters, QNH 1007,2.

Pilot:

- **age, sex** 55 year old male
- **experience** Total flight hours, 18.700
Total flight hours on type, 6.600

The Investigation

The Aircraft Accident Investigation Board in Iceland (AAIB) was informed of the accident by the owner of the aircraft (Air Atlanta) on 25 March, first by e-mail at 09:13 UTC and then by phone call at 10:05 UTC. Further information on the accident were provided by e-mail on the same day at 20:34 UTC.

The Civil Aviation Authority of Bangladesh (CAAB) immediately conducted a preliminary investigation into the circumstances. On 27 March, the CAAB delegated further investigation to Icelandic Authorities as the State of Registry where AAIB started its on-site investigation on the 29 March.

The National Transportation Safety Board (NTSB) of the USA, representing the state of Design and Manufacture of the aircraft, has appointed an accredited representative to participate in the investigation. The NTSB accredited representative is supported by a team which includes additional investigators from Federal Aviation Administration (FAA), the aircraft manufacturer (Boeing) and the engine manufacturer (Pratt & Whitney). The operator (Air Atlanta), the lessee (Saudi Arabian Airlines) and the maintenance centre (Malaysia Airlines) are providing operational expertise. EASA, CAA-UK, CAA-Iceland is also being kept informed as well as the CAA of Saudi Arabia.

History of the flight

The aircraft was on a flight from Madinah, Saudi Arabia to Dhaka, Bangladesh. The flight and landing was uneventful and according to procedure. The fuel consumption during the flight was a little more than calculated in the flight plan but not unusual as determined by the captain. During the landing roll the crew received a question from the tower controller asking if operation was normal. As there was no indication in the cockpit the crew responded by confirming that the aircraft was operating normally and asked for the reason for the question. The tower controller explained that he saw some fire at the right wing of the aircraft and he had activated the fire department that already was in alert status. At the time when the aircraft was exiting runway 14 the crew received fire indication for engine no. 3. The crew activated fire extinguishing for engine no. 3 (without success) and shut down all engines. The fire department arrived at the aircraft and started to extinguish the fire. Meanwhile the crew evacuated the aircraft using one escape slide on the right hand (R1) and two escape slides on the left hand (L1 and L2). The right hand slide was used only at the start of the evacuation process and later blocked. Some passengers and crew members evacuated with minor injuries. The fire department extinguished the fire successfully. The aircraft was damaged due to the fire at the spar for engine no. 3 as well as sections of the right hand wing. Figure 1 demonstrates the damages on the aircraft (engine #3).



Figure 1: Fire damage to right hand wing, engine and spar no. 3

On-site investigation

During on-site investigation, a fuel leak was discovered on one of the main fuel line couplings. The leak was found where the fuel line enters the front spar for engine no. 3 (see attachment A). By wiggle the fuel line a little by hand, a fuel leak was observed (See figure 2). The coupling was safety wired but after cutting the safety wire the coupling-nut was found to be loose.

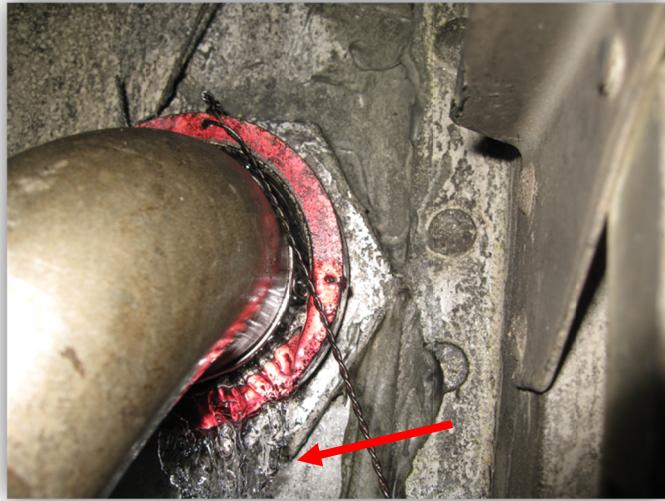


Figure 2: Fuel leak through coupling

After opening the coupling it was discovered that one out of two retaining rings was missing (See figure 3) and the O-ring was in wrong position (not on the fuel line). Therefore it is considered that the O-ring was not working to seal as it should.

Figure 4, shows a comparable coupling in the front spar for engine no. 2. On figure 4 you can see that O-ring is on the fuel line between two retaining rings.



Figure 3: Coupling where fuel leak was detected showing only one retainer ring and position of the O-ring



Figure 4: Comparable coupling for engine no. 2 showing two retaining rings and position of the O-ring

The maintenance data shows that the fuel coupling was opened and the O-rings replaced during C Check on 27 August 2007.

Following the accident a Fleet Team Digest (FTD) was prepared by Boeing and sent out where Boeing recommends that operators review list of SB's and SL's to ensure proper maintenance actions to prevent any further strut fire events.

Continuing Investigation

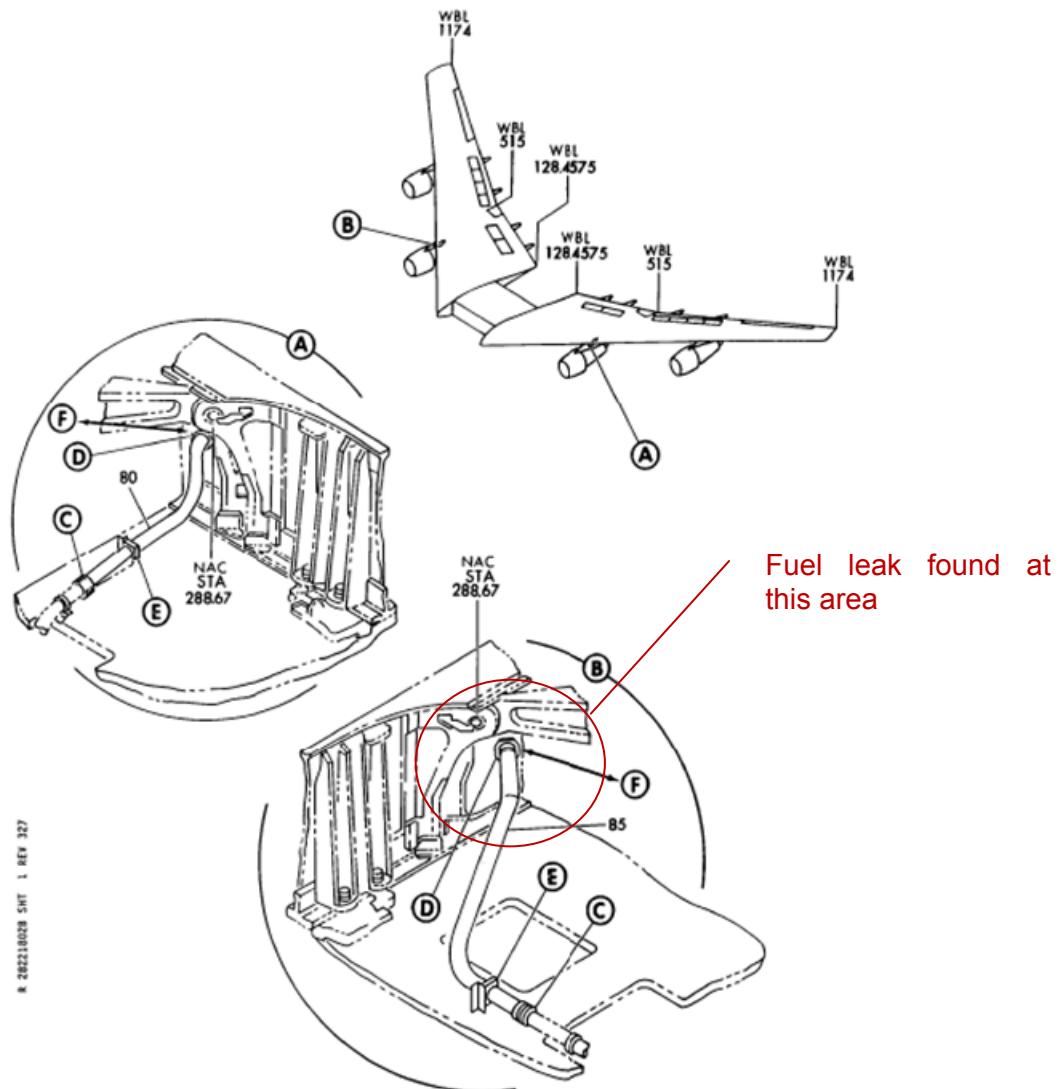
The investigation is focusing on maintenance issues and procedures for the replacement of O-rings on the aircraft fuel system. The investigation is also focusing on the evacuation process.

Reykjavik 30 April 2008

Aircraft Accident Investigation Board - Iceland

Attachment A

 **BOEING**
747-100/200/300/SP
PARTS CATALOG (MAINTENANCE)



SYSTEM INSTL-WING TO NAC STRUT FUEL (INBD) (ADDED BY SB 54A2159/JT9D-3, -7)
FIGURE 2B (SHEET 1)

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