Aviation Safety Investigation Report 199200750

Israel Aircraft Industries Ltd Westwind

21 March 1992

Readers are advised that the Australian Transport Safety Bureau investigates for the sole purpose of enhancing transport safety. Consequently, Bureau reports are confined to matters of safety significance and may be misleading if used for any other purposes.

Investigations commenced on or before 30 June 2003, including the publication of reports as a result of those investigations, are authorised by the Executive Director of the Bureau in accordance with Part 2A of the Air Navigation Act 1920.

Investigations commenced after 1 July 2003, including the publication of reports as a result of those investigations, are authorised by the Executive Director of the Bureau in accordance with the Transport Safety Investigation Act 2003 (TSI Act). Reports released under the TSI Act are not admissible as evidence in any civil or criminal proceedings.

NOTE: All air safety occurrences reported to the ATSB are categorised and recorded. For a detailed explanation on Category definitions please refer to the ATSB website at www.atsb.gov.au.

Aviation Safety Investigation Report

199200750

The Bureau did not conduct an on scene investigation of this occurrence. The information presented below was obtained from information supplied to the Bureau.

Occurrence Number: 199200750 **Occurrence Type:** Accident
Location: DARWIN NT
State: NT **Inv Category:** 4
Date: Saturday 21 March 1992
Time: 0909 hours **Time Zone** CST
Highest Injury Level: None

Aircraft Manufacturer: Israel Aircraft Industries Ltd
Aircraft Model: 1124
Aircraft Registration: VH-LLY **Serial Number:**
Type of Operation: Commercial Coastal Surveillance
Damage to Aircraft: Substantial
Departure Point: DARWIN NT
Departure Time: 0909 CST
Destination: DARWIN NT

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	ATPL	358.0	6454

Approved for Release: Friday, August 23, 1996

The aircraft, a Seascan version of the Westwind 1124, was departing for a normal coast watch operational flight. The outside air temperature (OAT) was 30 degrees C, with a north westerly wind at 5 kt. It was loaded to its maximum all up weight (MAUW), and configured for a flapless takeoff. This being normal requirements for the aircraft operating at MAUW with an OAT greater than 28 degrees C. The calculated V1 speed was 140 kt, and the VR speed 148 kt.

With the co-pilot at the controls the aircraft taxied the 4 km to the threshold of runway 29 for departure. The takeoff run was normal until the aircraft had travelled approximately 2,000 m and accelerated to 128 kt. At this point the left main wheel tyre suffered a blow out causing the aircraft to veer left.

The captain took control and rejected the takeoff. Whilst he was attempting to maintain directional control, using brakes and nose wheel steering, the right main wheel tyre also blew out and the aircraft swung to the right, departing the runway and coming to a stop on the flight strip in the reciprocal direction to the takeoff.

The left main gear leg collapsed, and the aircraft suffered damage to the left gear attachment structure, left fuel tank cell, and the infra-red dome mounted to the lower fuselage surface. All occupants evacuated safely.

The left main wheel and tyre remains were examined at the CAA Materials Evaluation Facility. The examination revealed that all three fusible plugs in the wheel hub were loose. Although it could not be established if the fusible plugs were tight before the accident, enquires indicated that they had not been touched by any other party prior to the wheel coming into BASI's possession.

The valve, and gasket between the wheel hub halves, were in good condition, and no flaws or defects were found in the tyre material, or its manufacturing process. An uneven wear pattern across the tread was noted, being more advanced on the middle tread and shoulders than on the intervening sections of tread.

The wear along the tyre shoulders is consistent with under-inflation, but as there was also some wear on the middle tread it was apparent that the tyre had been correctly, or possibly over inflated at some time. Over a period of time an undetected slow leak had probably occurred, with the wear pattern indicating that the tyre had been under-inflated for a number of takeoffs and landings. In this condition the sidewalls would have been subjected to increased flexing, resulting in excessive heat generation and delamination between the fabric layers. Eventually the tyre would have been unable to sustain these flexing loads, resulting in rapid deflation and shredding of the tyre from the wheel. The aircraft operating at MAUW, the hot tarmac, and long taxiing distance would have exacerbated the situation.

The reason why the fusible plugs were loose could not be determined, but this was considered as the most probable source of the slow leak.