

**Aviation Safety Investigation Report
199502026**

**Cessna Aircraft Company
Corsair**

01 July 1995

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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.

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: 199502026 **Occurrence Type:** Accident
Location: Darwin, Aerodrome
State: NT **Inv Category:** 4
Date: Saturday 01 July 1995
Time: 1907 hours **Time Zone:** CST
Highest Injury Level: None

Aircraft Manufacturer: Cessna Aircraft Company
Aircraft Model: 425
Aircraft Registration: VH-JER **Serial Number:** 4250184
Type of Operation: Non-commercial Pleasure/Travel
Damage to Aircraft: Substantial
Departure Point: Newcastle Waters NT
Departure Time:
Destination: Darwin NT

Crew Details:

Role	Class of Licence	Hours on	
		Type	Hours Total
Pilot-In-Command	Commercial	380.0	1800

Approved for Release: Wednesday, April 24, 1996

Factual Information

Following landing gear retraction after takeoff, the pressurization system failed to operate. The aircraft was flown to Darwin in an unpressurized mode, where a normal approach was made.

As the weight came on the wheels the right main gear collapsed. The wheel became jammed between the gear door and leg, which prevented it from rotating and caused the tyre to blow out. The aircraft then swung to the right through approximately 90 degrees, continued sideways off the bitumen runway edge and dropped 150 mm onto the flight strip, striking a runway light cement base with the main landing gear. It then turned through a further 90 degrees before coming to a stop, approximately 800 m from the threshold and 20 m to the right of the runway.

The right landing gear shock strut lower attachment cap had separated from the cylinder, probably just after takeoff. The trailing arm and wheel assembly could then pivot freely, allowing the metering pin, nitrogen charge and hydraulic oil to escape from the cylinder. When the gear was retracted, the wheel, which was now hanging down, possibly fouled the squat-switch preventing cabin pressurization. Without the shock strut support between the leg and the trailing arm the wheel collapsed upward at landing.

When the aircraft ran off the runway and dropped onto the flight strip, it was subjected to a severe vertical load which caused the right wingtip top attachment rivets to shear and the right engine mount to distort.

Analysis

The shock strut cylinder threaded section had belled, indicating that the shock strut had been subjected to a high compression force, possibly by a heavy landing on a previous flight, but this could not be confirmed. The extent of bellying was not ascertained due to grinding of the area to facilitate dismantling.

Partial stripping of the threads and separation of the now loosened cap from the cylinder occurred when a medium downward load was applied to the cap, such as when supporting the weight of the wheel assembly after takeoff.

A thread locking compound was found to have been correctly used in the assembly of the shock strut lower attachment cap to the cylinder, and impressions in the compound indicated that the cap had been tight before the bellying occurred.

The reason why the threaded section of the shock strut cylinder belled could not be positively established.

Safety Action

The Civil Aviation Safety Authority, Federal Airports Corporation and the Royal Australian Air Force recognised that a problem existed with the runway edges at Darwin Airport, and have undertaken work to remedy the situation.

This work was completed in mid November 1995, and it is reported that the runway edges and flight strip now meet the requirements of the rules and practices of aerodromes.

