

**Aviation Safety Investigation Report
199500818**

**Piper Aircraft Corp
Chieftain**

21 March 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.

Occurrence Number: 199500818 **Occurrence Type:** Accident
Location: Carnarvon Airport
State: WA **Inv Category:** 4
Date: Tuesday 21 March 1995
Time: 1100 hours **Time Zone** WST
Highest Injury Level: None

Aircraft Manufacturer: Piper Aircraft Corp
Aircraft Model: PA-31-350
Aircraft Registration: VH-RKD **Serial Number:** 31-8152048
Type of Operation: Charter Passenger
Damage to Aircraft: Substantial
Departure Point: Carnarvon WA
Departure Time: 0829 WST
Destination: Minilya WA

Crew Details:

Role	Class of Licence	Hours on	
		Type	Hours Total
Pilot-In-Command	Commercial	200.0	2500

Approved for Release: Wednesday, May 31, 1995

The pilot initiated normal gear selection after arriving in the circuit area at Manilya. The gear extension process stopped after the nosewheel and right main gear had extended. The pilot checked the circuit breakers and recycled the gear twice more with the same result.

The pilot decided to return to Carnarvon where the gear could be inspected visually. Observations by a pilot and engineer confirmed that the left main gear was up. Use of the manual extension system and the introduction of 'g' forces were unsuccessful in causing the left main gear to extend.

After discussion with engineers in Carnarvon and Perth the pilot elected to carry out a wheels up landing on the grass flight strip beside sealed runway 18. The landing was successful.

An inspection of the landing gear systems disclosed that the hinge bolt, from the front hinge of the left landing gear door, was missing. The missing bolt allowed the landing gear door to twist, in the airflow, jamming the door closed and preventing the left gear from extending.

The missing bolt was not recovered. A number of landing gear hinge bolt nuts, including one that was adjacent to the hole left by the missing bolt, were recovered from the channel surrounding the landing gear bays on both sides of the aircraft. It was not possible to determine if any of the nuts came from the missing bolt. There was no evidence of stress, in the area of the missing hinge bolt, to indicate that the bolt had been working prior to its loss.



The landing gear doors had been removed, inspected for cracking, and replaced eight flying hours prior to the accident. The gear had been extended and retracted a number of times, without apparent problems, after the replacement and prior to the final flight. The failure sequence indicates that the bolt was probably in place for a period following the maintenance and fell out on the accident flight. No history of problems with the hinge bolts was disclosed during the investigation.

It was not possible to determine whether the bolt failed and fell out, as a result of fatigue or overload, or if it was incorrectly fitted following the maintenance conducted shortly before the accident flight. There was some evidence that the engineer responsible for re-fitting the suspect bolt was distracted by a personal problem during that process however he did not recall any specific event that may have contributed to the loss of the bolt.

