

**Aviation Safety Investigation Report  
198802420**

**Piper PA-38 Tomahawk**

**31 December 1988**

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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](http://www.atsb.gov.au).**

**Occurrence Number:** 198802420  
**Location:** Bankstown NSW  
**Date:** 31 December 1988  
**Highest Injury Level:** Nil  
**Injuries:**

**Occurrence Type:** Accident

**Time:** 1334

	Fatal	Serious	Minor	None
Crew	0	0	2	2
Ground	0	0	0	-
Passenger	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>

**Aircraft Details:** Piper PA-38 Tomahawk  
**Registration:** VH-FTX  
**Serial Number:** 38-79A0268  
**Operation Type:** Aerial Work  
**Damage Level:** Substantial  
**Departure Point:** Bankstown NSW  
**Departure Time:** 1250 approx.  
**Destination:** Bankstown NSW

**Approved for Release:** 13 March 1990

#### **Circumstances:**

The aircraft returned to the Bankstown circuit after a period of dual instruction in the training area. The instructor, who was flying the aircraft, landed on runway 11 centre. After touchdown the right main gear leg separated from the wing; the aircraft swerved to the right and came to rest on the grassed area between runways centre and right. The investigation revealed the front attachment bolt of the right main gear leg had failed due to long term fatigue cracking. Corrosion of all attachment bolts was found which indicated moisture had entered the bolt holes. Degrading of bolt pre-load occurred as a result of corrosion beneath the bolt heads. The remaining two attachment bolts held the leg in place for approximately nine take-off and landing cycles before the final failure which led to the gear leg separating from the wing mounting. The organisation responsible for maintenance of the aircraft indicated periodic inspections were conducted in accordance with Civil Aviation Order 100.5.1. This order requires a visual inspection of the main landing gear components for condition and security. However, the aircraft manufacturer specifies in its periodic inspection schedule that main landing gear bolts are to be inspected for condition, torque and security, every 100 hours. Existing Civil Aviation Orders do not require maintenance organisations to comply with aircraft manufacturer's inspection schedules. Had the maintenance organisation complied with the manufacturer's inspection schedule, the failure of the front attachment bolt might have been prevented. This accident was not the subject of an on-scene investigation.

#### **Significant Factors:**

The following factors were considered relevant to the development of the accident

1. The front attachment bolt failed due to long term fatigue cracking.
2. The aircraft was not inspected in accordance with the aircraft manufacturer's period inspection schedule.

3. Civil Aviation Authority Orders do not require maintenance organizations to comply with aircraft manufacturer's schedules.

**Reccomendations:**

It is recommended that the Civil Aviation Authority consider amending the relevant Orders to ensure aircraft maintenance organisations comply with the recommended schedule of maintenance laid down by the aircraft manufacturer. -