

**Aviation Safety Investigation Report  
199301361**

**Piper Aircraft Corp  
Chieftain**

**16 May 1993**

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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).**

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:** 199301361      **Occurrence Type:** Incident  
**Location:** 45km NE Wagga  
**State:** NSW      **Inv Category:** 4  
**Date:** Sunday 16 May 1993  
**Time:** 0919 hours      **Time Zone:** EST  
**Highest Injury Level:** None

**Aircraft Manufacturer:** Piper Aircraft Corp  
**Aircraft Model:** PA-31-350  
**Aircraft Registration:** VH-KGE

**Serial Number:** 31-7752114

**Type of Operation:** Air Transport Domestic Low Capacity Passenger  
Scheduled  
**Damage to Aircraft:** Nil  
**Departure Point:** Wagga Wagga NSW  
**Departure Time:** 1914 EST  
**Destination:** Bankstown NSW

**Crew Details:**

<b>Role</b>	<b>Class of Licence</b>	<b>Hours on Type</b>	<b>Hours Total</b>
Pilot-In-Command	ATPL 1st Class	180.0	1900

**Approved for Release:** Monday, March 28, 1994

As the aircraft was climbing through 7,700 feet, 25 miles from Wagga, the pilot gave a Mayday call, and reported returning to Wagga due to a fire in the left engine. Emergency services were alerted. Shortly after, the pilot reported the fire was extinguished and the engine had been shutdown. The aircraft returned for a safe landing.

An investigation revealed indications of heavy detonation in No 1 cylinder. The side of the piston was burnt, which had allowed the sump to pressurise and dislodge the dipstick. Engine oil was then pumped out of the open dipstick hole and streamed back to the turbo-charger, generating a large volume of smoke. There was no evidence of fire damage.

It was reported that the engine had suffered from an episode of rough running some 15 engine hours earlier. Rubber deposits had been found partially blocking the fuel injectors but the source was not determined. The injectors were cleaned and the aircraft returned to service. It is likely that the partially blocked injectors resulted in a lean fuel mixture being supplied to the No 1 cylinder, resulting in detonation. The detonation created localised hot spots, causing pre-ignition and the burning of the piston.