Aviation Safety Investigation Report 199906059

Piper Aircraft Corp
Archer

16 December 1999

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Occurrence Number: 199906059 **Occurrence Type:** Accident
Location: Bathurst, Aerodrome
State: NSW **Inv Category:** 4
Date: Thursday 16 December 1999
Time: 1130 hours **Time Zone** ESuT
Highest Injury Level: None

Aircraft Manufacturer: Piper Aircraft Corp
Aircraft Model: PA-28-181
Aircraft Registration: VH-XKX **Serial Number:** 28-7790082
Type of Operation: Instructional Solo
Damage to Aircraft: Substantial
Departure Point: Bankstown NSW
Departure Time: 0925 ESuT
Destination: Bathurst NSW

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	ATPL		2800

Approved for Release: Friday, July 28, 2000

The pilot of a Piper Archer aircraft was conducting circuit work at Bathurst. While making a glide approach to runway 35, he applied engine power to adjust the approach, but was only able to obtain sufficient power to continue with the landing. On touch-down, with the intention of conducting a touch-and-go landing if the engine responded normally, the pilot advanced the throttle but received little response. He abandoned the take-off and cleared the runway.

The pilot reported that he conducted a complete engine power check, during which engine power and response appeared to be normal, with no indications of carburettor icing.

The pilot then taxied the aircraft to the runway 35 threshold where he conducted further engine checks. All indications were normal. When the engine power was reduced below 1,000 RPM as he lined up for takeoff on runway 35, the engine stopped and would not restart. Observing two individuals running towards the aircraft, the pilot shutdown the aircraft systems, and on leaving the aircraft noticed smoke emanating from the right side of the engine cowling. Soon after, flames were clearly visible. The fire was extinguished using a portable extinguisher. Approximately 30% of the engine bay had sustained damage.

Inspection of the engine found that the carburettor needle and seat assembly was not functioning correctly. Fuel leaked from the carburettor, both into the engine induction and into the engine bay. This condition was consistent with the circumstances of the power loss and the fire in the engine bay. When a company LAME initially inspected the engine at Bathurst, he activated the aircraft's fuel boost pump and fuel poured from the carburettor.

Detailed inspections of the carburettor were conducted by the operator and an independent engineering facility, but the carburettor defect and the fuel leakage could not be fully replicated. However, the independent examination of the carburettor found some indications of chemical residue or other agents that could have interfered with the functioning of the carburettor. The possibility of fuel contamination was supported by indications of a black deposit on the brass chains retaining the fuel tank caps. The black deposits on the chains and the fuel filter were later examined by a specialist facility and were found to be consistent with Ethylene Diamine.