

AAIB Bulletin No: 2/93

Ref: EW/G92/11/16

Category: 1c

Aircraft Type and Registration:	Reims Cessna F150M, G-BDSL	
No & Type of Engines:	1 Continental O-200-A piston engine	
Year of Manufacture:	1976	
Date & Time (UTC):	24 November 1992 at 1530 hrs	
Location:	Teesside International Airport	
Type of Flight:	Private (training)	
Persons on Board:	Crew - 2	Passengers - Nil
Injuries:	Crew - Nil	Passengers - N/A
Nature of Damage:	Air filter partially consumed by fire, minor damage to lower cowling	
Commander's Licence:	Basic Commercial Pilot's Licence with IMC and Night ratings	
Commander's Age:	43 years	
Commander's Flying Experience:	2,200 hours (of which 1,200 were on type) Last 90 days - 20 hours Last 28 days - 10 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional enquires by the AAIB	

The aircraft had been parked with an instructor and student on board, prior to embarking on a training detail, and the instructor had been demonstrating the use of the throttle control, with particular reference to the engine starting procedure. Just prior to starting the engine the student was reported to have 'pumped the throttle', since the engine was cold. Following the start, however, the occupants and ground crew became aware of a fire which had broken out in the area of the engine cowling. The airport fire service was quickly in attendance and the fire was extinguished, with minimal damage to the aircraft.

Subsequent examination of the aircraft by maintenance personnel revealed that the fire had been confined largely to the carburettor intake area, where some 75% of the air filter had been burnt away. No evidence of fuel system leakage was apparent. The affected parts were therefore replaced, the engine was test run satisfactorily and the aircraft returned to service. The weather at the time of the

incident was reported as wind 170°/20 kt, 10 km visibility, no significant weather and with a surface level temperature of +7°C.

The engine starting procedure recommended in the Reims/Cessna Flight Manual (Continental O-200A engine) contains the following information:-

"Ordinarily the engine starts with one or two strokes of primer in warm weather to six strokes in cold weather, with the throttle open approximately 1/2 inch. In extremely cold temperatures it may be necessary to continue priming while cranking. Weak intermittent firing followed by puffs of black smoke from the exhaust indicate overpriming or flooding. Excess fuel can be cleared from the combustion chambers by the following procedure: Set the mixture control to full lean position, throttle full open and crank the engine through several revolutions with the starter. Repeat the starting procedure without any additional priming.

If the engine is underprimed it will not fire at all, and additional priming will be necessary."

A warning note is included in the cold weather operation section, as follows:-

"Pumping the throttle may cause raw fuel to accumulate in the air intake duct, creating a fire hazard in the event of a backfire. If this occurs, maintain a cranking action to suck flames into the engine."

In the UK, since 1977, there have been some 21 recorded incidents of piston engine fires attributed to overpriming, some of which have led to the total loss of the aircraft.