No: 10/92 **Ref: EW/G92/07/21** **Category: 1c**

Aircraft Type and Registration:	Avid Speedwing, G-MOTT
No & Type of Engines:	1 Rotax 582 piston engine
Year of Manufacture:	1992
Date & Time (UTC):	26 July 1992 at 1535 hrs
Location:	Near Wisbech, Cambridgeshire
Type of Flight:	Private
Persons on Board:	Crew - 2 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Damage to left landing gear, flaperon, lift struts and fabric
Commander's Licence:	Private Pilot's Licence
Commander's Age:	62 years
Commander's Flying Experience:	2,927 hours (of which 27 were on type) Last 90 days - 20 hours Last 28 days - 13 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

The aircraft had completed a flight from Cambridge to Skegness and was undertaking the return journey. Prior to departure the pilot assessed that there was insufficient fuel (MOGAS) on board, including reserves, for the estimated flight time of 1 hour 10 minutes, and so loaded 4 gallons of AVGAS 80 through the left tank filler. Approximately 30 minutes after take-off the aircraft was in the cruise at 2000 feet when, shortly after passing Fenland airfield, the engine lost power. The pilot carried out the standard checks followed by the shutdown drills and had no option but to carry out a forced landing. A section of the path of the former Wisbech to Cambridge railway line was chosen as it was 'into-wind', although this path was relatively narrow and bounded by standing crop on the left side and a dyke on the right. After landing, the aircraft slewed to the left and contacted a concrete fence post at low speed. The two occupants were uninjured and were able to vacate the aircraft unaided. A short time later the Fire Service arrived on site and removed several 'bucketfuls' of fuel from the left wing tank, before filling both with foam.

The aircraft is a high winged, strutted, monoplane which (in its basic form) has one fuel tank in the right wing root. Fuel from this tank is fed to the engine through an on/off fuel cock. G-MOTT had

been modified by the addition of a second tank, located in the left wing root, and a 'header' tank to which both tanks fed. The single fuel cock was retained downstream of this header tank. Thus the tanks could not be individually selected.

The pilot, who is a PFA inspector, carried out an inspection of the aircraft several days after the accident and after it had been removed to Cambridge Airport. He concluded that the engine had failed due to fuel starvation, but that the fuel system was essentially serviceable. However, when the contents of the fuel balance tank/gascolator were examined, the fuel which separated out of the water/foam mixture had the appearance of MOGAS. This led him to the conclusion that none of the AVGAS from the left tank had flowed into the system, thereby suggesting that a blockage had occurred in the line from that tank. No evidence was found in the system of material that might have formed an obstruction but the pilot stated that the tank had been flushed-out by the Fire Service personnel. He also pointed out that both fuel replenishments on that day had been accomplished through the left tank.

The fuel tanks on this aircraft are made from glass reinforced plastic (GRP) and the aircraft had a total time of only some 35 hours. As a result of this accident the PFA have issued a letter, dated 16 September 1992, to all owners of completed Avid Flyer aircraft, a section of which is reproduced below:

"Examination of three other Avid aircraft showed that the fuel systems were contaminated by small black and white particles thought to be from the jointing compound used in manufacture of the GRP fuel tanks.

The following actions are therefore recommended:

(1) For aircraft fitted with GRP fuel tanks, tank filters should be removed and inspected before further flight.

(2) Where any significant contamination is found the tanks should be filled and then drained into a clear container via a chamois filter by removal of the filter and Curtis drain valve. Any contamination can then be examined and identified. If contamination is found, please report back to PFA Engineering with details.

(3) Repeat (1) and (2) at frequent intervals until all contamination is removed.

(4) Where aircraft are fitted with two tanks, the integrity of the cross-feed pipes can be checked by filling one tank only and allowing both tanks to level. Fill alternate tanks at subsequent fillings to establish satisfactory flow in either direction."