# Piper PA-31-350, G-BRFA, 12 August 1996

## AAIB Bulletin No: 11/96 Ref: EW/C96/8/7 Category: 1.2

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| **Aircraft Type and Registration:** | Piper PA-31-350, G-BRFA |
| **No & Type of Engines:** | 2 Lycoming TIO-540-J2BD piston engines |
| **Year of Manufacture:** | 1978 |
| **Date & Time (UTC):** | 12 August 1996 at 1651 hrs |
| **Location:** | 10 nm East of Ronaldsway Airport, Isle of Man |
| **Type of Flight:** | Public Transport |
| **Persons on Board:** | Crew - 1 - Passengers - 4 |
| **Injuries:** | Crew - Nil - Passengers - Nil |
| **Nature of Damage:** | None |
| **Commander's Licence:** | Air Transport Pilot's Licence |
| **Commander's Age:** | 38 years |
| **Commander's Flying Experience:** | 1,150 hours (of which 53 were on type) |
| | Last 90 days - 140 hours |
| | Last 28 days - 53 hours |
| **Information Source:** | AAIB Field Investigation |

### History of the Flight

The aircraft was planned to fly a scheduled passenger servicefrom Blackpool Airport to Ronaldsway Airport, on the Isle of Man,which was a 25 minute flight. The weather for the flight wasexcellent with a visibility of 25 kilometres, a few clouds at2,500 feet, a surface wind of 360º/10 kt, temperature +17ºCand a QNH of 1015 mb. The pilot had flown the same schedule earlierin the day in similar weather conditions.

The aircraft was serviceable with the fuel distribution priorto the flight of 350 litres in the inboard tanks and 30 litresin the outboard tanks. This was in accordance with the normalcompany procedures whereby the total fuel required for the flightwas contained in the inboard tanks and a small amount of fuelwas retained in the outboard tanks. The pilot, having assuredhimself that the fuel quantity and distribution were correct,completed the pre-flight checks and took off at 1630 hrs.

The take off and initial transit were uneventful and, 10 minutesinto the flight the pilot completed a fuel check. He contactedRonaldsway ATC at 1644 hrs whilst at 2,000 feet and was clearedunder VFR to position for Runway 35. Shortly afterwards the rightengine began to misfire; the pilot selected both emergency pumps'ON' and the engine operation returned to normal. The pilot thennoticed that the right boost pump annunciator was illuminated;this illuminates when the fuel boost pressure is less than 3 psi. The right engine began to misfire again and the pilot checkedthe engine instruments but there were no indications to explainthe rough running; he disconnected the autopilot and consideredshutting down the engine.

The pilot had not increased power on the left engine and the aircraftwas now descending. At 1651 hrs he informed ATC that he had arough running engine which he was about to shut down and was offeredvectors to Runway 26 in order to reduce his ground track. At1654 hrs the pilot informed ATC that he was passing 400 feet amsland now had 'a real problem' because both engines were runningroughly. The ATC controller alerted the Airfield Rescue Serviceto launch the resident rescue boat and also informed HM CoastGuard. At 300 feet amsl the pilot noticed that both fuel pumpannunciators were illuminated. He checked the fuel selectorsand noted that both were selected to the outboard tanks, he repositionedthe selectors to the inboard tanks and both engines recoveredalmost immediately. He informed ATC who cancelled the launchof the rescue boat and the emergency with the Coast Guard. Theaircraft climbed back to 1,000 feet and completed a normal landingat 1658 hrs.

Both the pre-flight checks and the pre take-off checks requirethe fuel selectors to be positioned for the inboard tanks. Thepilot does not remember ever selecting the tanks to the outboardposition.