

Piper PA-23-250, EI-BYK

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Aircraft Type and Registration:	Piper PA-23-250, EI-BYK
No & Type of Engines:	2 Lycoming IO-540-C4B5 piston engines
Year of Manufacture:	1973
Date & Time (UTC):	11 April 1998 at 1450 hrs
Location:	Rhossilli Beach, South Wales
Type of Flight:	Private
Persons on Board:	Crew - 1 - Passengers - None
Injuries:	Crew - None - Passengers - N/A
Nature of Damage:	None
Commander's Licence:	Basic Commercial Pilot's Licence with Instructor Rating
Commander's Age:	49 years
Commander's Flying Experience:	9,800 hours (of which 200 were on type) Last 90 days - 150 hours Last 28 days - 30 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

The aircraft was on a flight from Waterford (Ireland) to Exeter, where it was to undergo an annual inspection. An Irish Ferry Permit had been issued for this flight. A Cessna 182 was in formation with EI-BYK, and was making the relevant radio calls, due to an intermittent problem with the latter aircraft's 'press to transmit' switch.

Approximately 5 minutes after passing Strumble VOR at Flight Level 60, the right engine began to run roughly. The pilot trimmed the aircraft for single engine flight, and carried out the engine failure checks, which included selecting the right electric fuel pump to ON, changing fuel tanks, selecting alternate air and fuel mixture fully rich. However the rough running increased to the extent that the engine was developing no useful power. During further attempts to cure the problem, the pilot tried cross-feeding fuel, but achieved no improvement. A few minutes later the left engine started to misfire, by which time the aircraft was about 6 nm from Worms Head. The pilot turned the aircraft towards land in a shallow descent and transmitted a 'Mayday' call to

London Information, who had difficulty in receiving the transmission. After giving his position, the pilot was instructed to call on the emergency frequency of 121.5 MHz, following which the accompanying Cessna 182 took over the radio transmissions.

The fields in the area of the coast appeared too small and undulating for a forced landing, and so the pilot decided that the beach presented the best available area, as the tide was out. The aircraft subsequently landed successfully on firm sand at Rhossilli beach, and was attended by the local police and Coast Guard. A police officer later confirmed the fuel tank contents; the inner tanks were two-thirds full and the outboard tanks were low in contents.

The aircraft was pulled clear of the high water mark and was examined on the following day by maintenance engineers from Exeter Airport. The fuel drains and filters were checked, with a small amount of a grey, powdery material being found in the filter from the right engine. However, the flow of fuel to the right engine was found to be satisfactory, and the injector filter and injector lines were clear. No evidence of contamination was found in the left engine fuel system.

Engine runs were then carried out, during which the left engine ran normally but the right engine operated unevenly. Removal of the fuel injectors from the right engine revealed that three nozzles were completely blocked and one was partially blocked. These were cleaned as well as possible under the circumstances and a further engine run was carried out. However, the No 6 cylinder on the right engine still ran 'cold', and so the associated injector was again removed and cleaned. The next engine run was satisfactory, and so the pilot was asked to carry out a high speed run on the hard sand, with an engineer onboard. This was satisfactory, and so the engineer disembarked and the pilot flew the aircraft the short distance to Swansea Airport, where the fuel filters were re-checked before the aircraft later flew to Exeter Airport without further incident.

The aircraft is currently on an Annual 'Star' Inspection, during which it is intended to send the fuel injectors and manifold valve to an overhaul agent for strip examination. It is also intended to remove the fuel tanks for inspection and cleaning.

The aircraft had been idle for a considerable period at Waterford before being refuelled for the flight to Exeter. Any sediment in the fuel tanks would have been stirred up and held in suspension by the refuelling process and thus would not have been detected when the pilot checked the fuel drains before take off. The engineering examination confirmed that the right engine problem was caused by sediment blocking several injector nozzles. The cause of the misfiring on the left engine was not identified. Whilst it is possible that this may have been due to transient blockage of the fuel injector nozzles, the pilot considered that in his efforts to resolve the problems with both engines, he may have attempted every combination of engine/fuel tank selection, with the possibility that air was fed to the left engine from one of the low fuel-state outboard tanks.