No: 5/83 Ref: EW/G83/04/09

Aircraft:	Piper PA 24 Comanche G-ARBO (light single engine fixed wing aircraft)
Year of manufacture:	1963
Date and time (GMT):	27 April 1983 at 0950 hrs
Location:	Morecambe Bay near Cark (disused airfield)
Type of flight:	Aerial survey
Persons on board:	Crew - 1 Passengers - Nil
Injuries:	Crew - Nil Passengers - Nil
Nature of damage:	None on landing
Commander's Licence:	Private Pilot's Licence
Commander's age:	44 years
Commander's total flying experience:	1023 hours total (52 hours were on type)

The aircraft was refuelled the previous morning to half tanks and a single sample drained from the fuel strainer. Two short flights were undertaken without incident.

The aircraft took off for flight to survey some quarries, without any recollection on the part of the pilot of a change to the fuel tank selection. During the flight the pilot selected the outer wing tank and very shortly afterwards the engine stopped. In spite of reselecting the original tank, the pilot was unable to restart the engine and elected to attempt a forced landing at the nearby disused airfield of Cark. During the approach it became apparent to the pilot that he had insufficient height to reach his objective and so he decided to land on a beach instead.

The forced landing was successfully executed with no damage to the aircraft, and the pilot immediately took a sample from the fuel drain which contained a considerable quantity of water. An attempt was made to tow the aircraft clear of the incoming tide, but the undercarriage retracted and the aircraft was subsequently engulfed by the sea.

It should be noted that on this type of aircraft there is only a single fuel sampling drain point which is downstream of the fuel selector, and consequently a sample can only be taken from the fuel tank selected. In order to take a sample from the other tank(s), a new fuel selection must be made in the cockpit and a sufficiently large sample taken to ensure that any contamination in the tank could flow the full length of the tank to selector fuel line. Once water contamination is established in the carburettor bowl it can take a very considerable time to clear this and any residual fuel line contamination at the engine speed achieved whilst windmilling or cranking.

The attention of the Civil Aviation Authority has been drawn to the features of the fuel system in this type of aircraft.