No: 10/85 Ref: EW/C923/01

Aircraft type

and registration: Piper PA 24—250 G-ARLL (light single engined fixed wing aircraft)

Year of Manufacture: 1961

Date and time (GMT): 20 July 1985 at 1450 hrs

Location: Hastings, Sussex

Type of flight: Private (pleasure)

**Persons on board:** Crew -1 Passengers -1

Injuries: Crew — None Passengers — Minor

Nature of damage: Substantial, aircraft immersed in sea water

Commander's Licence: Private Pilot's Licence

Commander's Age: 46 years

Commander's Total

Flying Experience: 162 hours (of which 8 hours were on type)

**Information Source:** AIB Field Investigation.

The aircraft had departed from Southend and had had an uneventful flight to Compton Abbas, where a stop of 20 to 30 minutes was made prior to taking off for the return flight to Southend via the south coast. Shortly after passing Seaford, whilst in level flight at 1500 feet, the pilot became aware that the engine was losing power. He applied carburettor heat, switched the electric boost pumps on and pumped the throttle, but the engine failed to respond. The aircraft was turned to an open area north of Hastings, but when it became apparent that this could not be reached the pilot had no option but to land in the sea. The aircraft landed on the surf line parallel to the shore with a 15-20 knot tail wind, and cartwheeled to the right before coming to rest in 4 to 5 feet of water. The cockpit filled with water almost immediately but the occupants were able to evacuate without difficulty although the passenger suffered a minor injury to his hand.

Bystanders assisted in pulling the aircraft up on to the beach. Later the aircraft was dismantled and taken to Lydd Airport where it was subjected to an AIB examination.

The carburettor float chamber was found to be full of sea water and contained no trace of fuel. It was reasoned that had fuel been present before the accident, it is unlikely that all of it would have been displaced by sea water entering via the spray nozzle in the venturi. No other engine defects were observed.

The aircraft was equipped with tip tanks, each of 15 gallons capacity, in addition to the normal main and auxiliary tanks in each wing. The fuel selector allows for one tank on each side of the aircraft to be selected. The pilot recalled that he selected the left tip tank some 20 minutes before the engine failure, having observed that the tip tank gauge was indicating just over half full. After the accident, with electrical power removed, the gauge was indicating below half full. All the fuel gauges, together with the fuel contents transmitters, were subsequently bench checked and the main and auxiliary tank gauges were found to be correctly calibrated.

However, the tip tank (which gives the contents of either tip tank depending on the position of a toggle switch) was found to indicate over only ½ to ½ scale for the full range of movement of transmitter float arm. The needle tended to remain close to the ½ scale indication with electrical power removed. The reason appeared to be due to "striction" in the gauge mechanism.

The right main tank was found to be selected at the time of the accident, although its contents were not known. However, refuelling records produced by the pilot showed that total fuel contents at the time of the accident should have been sufficient for 2 to 3 hours flying.