

# AIB Bulletin

# 10/85

**No: 10/85**

**Ref: EW/C914**

**Aircraft type and registration:** Piper PA32RT Lance G-HUGH (light single engined fixed wing aircraft)

**Year of Manufacture:** 1978

**Date and time (GMT):** 25 April 1985 at about 1630 hrs

**Location:** Ottershaw, Nr Woking, Surrey

**Type of flight:** Private

**Persons on board:** Crew — 1                      Passengers — 3

**Injuries:** Crew — 1 (serious)              Passengers — 3 (2 fatal)

**Nature of damage:** Aircraft destroyed

**Commander's Licence:** Private Pilot's Licence

**Commander's Age:** 39 years

**Commander's total flying experience:** 84 hours (of which 8 hours were on type)

**Information Source:** AIB Field Investigation.

## HISTORY OF THE FLIGHT

The accident occurred whilst the aircraft, with the pilot and three passengers on board, was

This Bulletin contains facts relating to the accidents which have been determined up to the time of issue. This information is published to inform the public and the aviation industry of the general circumstances of the accidents at the preliminary/stage and must necessarily be regarded as tentative and subject to alteration or correction if additional evidence becomes available.

Short extracts can be published without specific permission providing that the source is duly acknowledged.

on a flight from Jersey Airport to Fairoaks aerodrome. On the previous day, 24 April 1985, the same aircraft with the same occupants had flown from Fairoaks to Jersey. On this flight the aircraft had departed Fairoaks with a total fuel load of 50 US gallons, divided equally at 25 US gallons per side in each wing tank. The outbound flight proceeded apparently without incident and the aircraft landed at Jersey Airport at 1052 hrs, after a flight lasting 57 minutes.

The following day, at about 1500 hrs, the pilot and his passengers arrived back at Jersey Airport in order to prepare for the return flight to Fairoaks. The pilot first went to Jersey Airport Air Traffic Control (ATC), where he filed a Visual Flight Rules (VFR) flight plan for the return flight to Fairoaks, and also obtained a weather forecast for the return route and destination and diversion aerodromes. Prior to leaving Jersey ATC, the pilot requested a re-fuelling vehicle to meet him at the aircraft. According to the re-fuelling vehicle operator, the pilot stated that the aircraft had 25 Imperial gallons (30 US gallons) of fuel on board and that he required a further 20 gallons (24 US gallons). The output of the re-fuelling vehicle was calibrated in metric units. Accordingly the pilot agreed that a total of 100 litres (26½ US gallons) should be uplifted, and said that he required 30 litres (7.95 US gallons) in the left wing tank and 70 litres (18.65 US gallons) in the right tank.

Jersey ATC cleared the aircraft to depart for a VFR flight to Fairoaks, and it took off at 1507 hrs. The weather was generally fine, with isolated light rain showers and the lowest reported cloud base 2700 feet. The aircraft cruised below cloud and the flight apparently proceeded without incident until, at about 1615 hrs, the aircraft was being positioned for an approach and landing on runway 06 at Fairoaks aerodrome. As it reached the downwind position the pilot informed the Fairoaks Flight Information Service radio operator that he was not getting the green lights which should indicate that the landing gear was locked down, and that he wished to fly past the radio tower for a visual check. The aircraft flew past the tower and the radio operator informed the pilot that the landing gear appeared to be down; at the same time he alerted the aerodrome fire and rescue crew. The pilot next reported that he wished to fly past the tower a second time and re-cycle the landing gear for a further visual check. This was done and the pilot was again informed that the landing gear appeared to be down. The aircraft was then observed to enter a shallow climb, which took it over woodland to the north-east of the aerodrome, when the pilot reported that his engine had failed, followed by the brief transmission "I'm going in". The aircraft crashed into the woods and, shortly after the initial impact, there was a fierce fire.

An eye-witness who was working close to the accident site had observed the aircraft on its first two circuits of the aerodrome and his attention was re-drawn to it when he heard the engine splutter and stop. Seeing that the aircraft was descending towards the trees, and realising that an accident was imminent, he ran towards the trees. He observed the aircraft strike the tops of the trees before falling almost vertically to the ground. He managed to assist one passenger from the wreckage before there was an explosion, followed immediately by a fierce fire. Returning to the wreckage he managed to release the pilot and drag him away from the fire. By this time the fire had become intense and he was unable to reach the remaining two occupants. The Fairoaks aerodrome fire crew arrived on the scene within 2 minutes of impact and extinguished the fire. The pilot had sustained severe burns and multiple injuries; the two remaining passengers died in the fire.

#### **WRECKAGE AND IMPACT INFORMATION**

Initial on site examination revealed that the aircraft first contacted the tops of the trees at a height of approximately 60 feet above ground level, whilst descending in a noseup/wings level attitude. It then struck a substantial tree trunk with sufficient force to detach both wings from the fuselage at their roots, the right wing falling to land inverted at the base of this tree, the left wing travelling forward and coming to rest on its leading edge adjacent to the fuselage some 24 metres from the first impact. The aircraft's configuration at this time was determined as structurally intact, landing gear down, flaps 25° and with the throttle closed. There was no indication from the damage to the propeller that the engine was developing power. There was copious evidence of a post accident fire throughout the accident site and wreckage, particularly around the right wing and in the forward cabin area. There was no evidence of fire in or immediately surrounding the left wing.

The aircraft wreckage was recovered to the AIB facility at Farnborough where a detailed investigation was carried out. Examination of the wreckage failed to reveal any pre-existing defect or failure in the engine, airframe, or flying control systems which might have contributed to the accident. Although it was established that the landing gear was in the down and locked position at ground impact, due to the severity of the post crash fire the reason for the apparent failure of the landing gear position indicator lights could not be established. The aircraft's documents indicated that it had been properly maintained in accordance with the approved Civil Aviation Authority maintenance schedule; and it possessed a valid Certificate of Airworthiness in the Passenger Transport Category.

### **THE AIRCRAFT'S FUEL SYSTEM**

The Piper PA 32RT—300T aircraft has a total fuel capacity of 98 US gallons, of which 94 US gallons are declared to be usable. The fuel is stored in two integral tanks, one in each wing, and is controlled by a selector which is located below a central instrument panel. The selector has three positions, one position corresponding to each wing tank plus an OFF position. There is no facility for supplying fuel from both tanks simultaneously. Instructions concerning the recommended procedures for operating the fuel system are contained in the aircraft Operating Handbook, a copy of which was carried in the aircraft. When using less than the standard 98 US gallons capacity of the tanks, fuel should be distributed equally between each side. In flight it is also recommended that, in order to keep the aircraft in best lateral trim, the fuel should be used alternatively from each tank. Should the engine stop due to one fuel tank being emptied, it can take as long as 10 seconds to re-start the engine after selecting the opposite tank. Fuel consumption in cruising flight depends very much upon the way that the engine and propeller power controls are set; it can vary from 14 to 24 US gallons per hour. Calculations regarding the accident flight suggest that the fuel consumption on that occasion would have averaged about 21 US gallons per hour.

When the aircraft landed at Jersey on the day before the accident, the total fuel remaining was calculated to have been about 30 US gallons. The fuel uplifted on the following day was  $26\frac{1}{2}$  US gallons, bringing the total contents before engine start to  $56\frac{1}{2}$  US gallons. If this quantity was evenly distributed this would have meant that each wing tank unit contained  $28\frac{1}{4}$  US gallons. The flight from Jersey until the engine stopped lasted for about 1 hour and 23 minutes. At an average fuel consumption of 21 US gallons per hour, the total fuel consumed in 1 hour and 23 minutes would have been approximately 29 US gallons.