

FUJI FA-200-160, G-BAPM

AAIB Bulletin No: 11/98 **Ref:** EW/G98/08/05 **Category:** 1.3

Aircraft Type and Registration: FUJI FA-200-160, G-BAPM

No & Type of Engines: 1 Lycoming O-320-D2A piston engine

Year of Manufacture: 1973

Date & Time (UTC): 3 August 1998 at 1630 hrs

Location: Dean Street (field), E Farleigh, Maidstone, Kent

Type of Flight: Private

Persons on Board: Crew - 1 - Passengers - 3

Injuries: Crew - None - Passengers - 2 Minor
- 1 None

Nature of Damage: Substantial

Commander's Licence: Private Pilot's Licence with IMC, Night Rating and Multi Engine rating

Commander's Age: 44 years

Commander's Flying Experience: 548 hours (of which 24 were on type)
Last 90 days - 10 hours
Last 28 days - 3 hours

Information Source: Aircraft Accident Report Form submitted by the pilot

The pilot and his family had spent the weekend in Holland at an airshow. Before departure to the UK, he calculated that his total fuel endurance, after adding 50 litres of fuel, was 4 hours. He was unable to obtain a route wind forecast but from study of the meteorological actuals from the airfields on his route he noted that the wind would be similar to that which he had experienced on his outward journey which gave him a flight time of 3 hours 20 minutes, some 40 minutes longer than his outward journey. The first leg of the return flight was from Texel to Midden Zeeland which was completed in the estimated time and without incident. The pilot's planned flight time to Biggin Hill, his intended destination, was 1 hour 50 minutes and his estimated endurance 2 hours 30 minutes. The aircraft departed from Midden Zeeland at 1500 hrs UTC. On the next leg to Calais, the pilot noticed that his groundspeed was lower than expected and that the fuel in the left tank,

which he was using, had reduced to below 1/4 full. He therefore decided to use the fuel in the right tank for the remainder of the flight believing that it contained 1 hour 15 minutes of fuel, more than enough to reach his destination which he calculated was now 55 minutes distant. However, he noticed that his groundspeed, indicated on his DME, was now some 20 kt less than he had estimated. On arrival at Dover, the right fuel tank was indicating just above 1/4 full. The pilot was initially concerned but concluded that his fuel planning had been accurate and that the gauge must have been inaccurate.

At this point, the weather, which had enabled the pilot to cross the Channel at 2,500 feet, deteriorated and forced him to descend to 2,000 feet. Before departure, the pilot had obtained the 13.20 hrs actual for Biggin Hill which gave a cloud base at that time of scattered at 2,500 feet and broken at 4,000 feet. The aircraft's groundspeed remained lower than expected and when 20 nmls short of Biggin Hill, the pilot considered diverting as the weather had deteriorated further and both fuel gauges were by now reading just above empty. At this time, the aircraft was 25 minutes past its ETA, and the pilot calculated that it would take another 15 minutes to reach Biggin Hill. His ETA at Biggin Hill would, on the pilot's calculation, coincide with his estimated endurance. The pilot contacted Biggin Hill on the radio to request joining instructions and current weather. While he was still trying to decide whether or not to divert, the engine started to misfire. He switched on the fuel pump and changed to the left fuel tank. The engine recovered and the pilot informed Biggin Hill that he was diverting to Rochester some five minute flying time away. The pilot contacted Rochester and while he was giving them his details, the engine again began to misfire. He decided that he was now unlikely to reach Rochester and decided to make an emergency landing. After transmitting a Mayday call to Rochester, the pilot set up a forced landing into a small field. The landing was successful but there was insufficient ground distance available in which to stop the aircraft before it collided with a hedge bordering the field. The pilot and his passengers were able to exit the aircraft without difficulty, but two of the passengers had suffered minor injuries during the landing.

The aircraft had run out of fuel some 15 minutes before the time calculated by the pilot and he considered that the cause of the accident was a stronger than forecast wind and the fact that the fuel consumption had been some 2.7 litres per hour more than the figure quoted in the aircraft manual. He also considered that the deteriorating weather had led him to be distracted from his fuel management and his consideration of a diversion at an earlier stage.

The meteorological forecast issued at 1500 hrs UTC, indicated a warm front stretching from just north of the Wash to just west of the Isle of Wight moving southeast at 25 kt with an associated cloud base of 1,000 feet. The forecast wind at 2,000 feet ahead of the front was south-westerly at 40 to 45 kt. A meteorological aftercast indicated that the actual 2,000 foot wind at the time that the aircraft was crossing the Channel was 240°/27 kt gradually increasing to 47 kt.