**AAIB Bulletin No: 8/94** **Ref: EW/G94/06/10** **Category: 1.3**

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| **Aircraft Type and Registration:** | Gulfstream AA-5A Cheetah, G-BHKV |
| **No & Type of Engines:** | 1 Lycoming O-320-E2G piston engine |
| **Year of Manufacture:** | 1979 |
| **Date & Time (UTC):** | 11 June 1994 at 1340 hrs |
| **Location:** | Deanland Airfield, Sussex |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 Passengers - 1 |
| **Injuries:** | Crew - Minor Passengers - Minor |
| **Nature of Damage:** | Extensive, beyond economic repair |
| **Commander's Licence:** | Private Pilot's Licence with Night Rating |
| **Commander's Age:** | 56 years |
| **Commander's Flying Experience:** | 179 hours (of which 48 were on type)<br>Last 90 days - 0 hours<br>Last 28 days - 0 hours |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot, and further enquiries by the AAIB |

The pilot's previous flight was in the accident aircraft on 5 December 1993. He had arranged to fly the aircraft on the day of the accident, taking along a safety pilot who also held a Private Pilot's Licence with some 2,300 hours experience, including 350 hours on type. The plan was to fly from Biggin Hill to Deanland, then on to Headcorn Airfield. The pilot reported that he obtained a telephone briefing from Deanland, giving the Runway in use as 06; wind light and variable, and good weather. The aircraft was given a pre-flight check and refuelled before departure. There was some concern over possible water, sediment or foreign matter in the fuel tanks, but the fuel drains were checked and it was deemed acceptable to operate the aircraft. The pilot reported that the takeoff and climb out from Biggin Hill was normal.

Deanland Radio operates as an Air-Ground Station rather than an Air Traffic Control service. The pilot reported that he was given permission to land on Runway 06 by radio prior to arrival, that the wind was southerly light and variable, and the temperature +15°C. The first touchdown was too fast, and the pilot elected to go around. The second attempt at landing was successful. Other aircraft were also operating from Runway 06.

Prior to the subsequent departure, the pilot reported that he had not been happy with the sound of the engine during the pre-takeoff engine run-up, but that the magneto drop was within the specified limits. The right fuel tank was selected and a further satisfactory engine run-up carried out. The take-off technique was discussed between the two occupants, and the merits of either a rolling start or full power run-up against the brakes were evaluated. The pilot elected to run-up to full power against the brakes. Runway 06 was used, which has a short grass surface of 457 metres in length, and a width of 27 metres. There is a wire fence close to the northern boundary of the runway. One third flap was selected, and the engine run-up to full power before the brakes were released.

The pilot reported that the aircraft used a lot of runway before the airspeed began to rise, but the aircraft did become airborne, the passenger noting the airspeed to be around 55 kt. However, the aircraft sank back onto the ground, lifted off again about 100 metres from the end of the runway, and the wind caused the aircraft to drift to the left. The left wingtip collided with a fence post, and the aircraft continued through the fence at the end of the strip into a ploughed field. It then somersaulted and came to rest inverted. There was no fire, and the two occupants vacated the aircraft through the left side canopy. Only minor injuries were sustained, lap and diagonal harnesses being in use at the time. The pilot considered that the accident was caused by a lack of power from the engine.

The Club Chief Flying Instructor estimated that, at the time of the accident, the aircraft loading was some 200 lb below the maximum allowable take-off weight, and that under these conditions the expected ground roll was some 300 metres.

The airfield operator noted that the wind conditions at the time were very variable, with a predominantly southerly wind of 5 to 10 kt, and that subsequently aircraft operated from Runway 24.