

Gulfstream American GA-7 Cougar, G-BOXR

AAIB Bulletin No: 2/97 Ref: EW/G96/11/12 Category: 1.3

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| Aircraft Type and Registration: | Gulfstream American GA-7 Cougar, G-BOXR |
| No & Type of Engines: | 2 Lycoming O-320-D1D piston engines |
| Year of Manufacture: | 1978 |
| Date & Time (UTC): | 25 November 1996 at 1010 hrs |
| Location: | Cranfield Airfield, Bedford |
| Type of Flight: | Private |
| Persons on Board: | Crew - 2 - Passengers - None |
| Injuries: | Crew - None - Passengers - N/A |
| Nature of Damage: | Damage to right engine and propeller, right flap and aileron |
| Commander's Licence: | Airline Transport Pilot's Licence |
| Commander's Age: | 51 years |
| Commander's Flying Experience: | 8,515 hours (of which 300 were on type) Last 90 days - 121 hours Last 28 days - 41 hours |
| Information Source: | Aircraft Accident Report Form submitted by the pilot |

The aircraft was engaged on a training detail and had returned to the circuit for a normal approach, followed by a 'touch-and-go'. During the subsequent climb out, a simulated engine failure drill was carried out and the aircraft then positioned downwind for a flapless touch-and-go landing. After the landing gear had been selected down, it became apparent that only the left main and nose gear green 'down-and-locked' lights had illuminated, and that the yellow gear 'in transit' warning was not lit. After checking that none of the relevant circuit breakers had tripped and that the right main gear green light bulb was serviceable, the instructor informed ATC and took control of the aircraft from his student, before selecting 10° of flap. The aircraft was then flown past the control tower where the condition of the landing gear was visually assessed. As far as could be seen, all three landing gears appeared to be fully down. Not wishing to exacerbate the problem, the instructor decided not to recycle the gear or to try the associated emergency 'free-fall' system. He briefed his student on emergency landing procedures, following which a twin engine, full flap, approach was made to land on Runway 22. The aircraft was landed so as to minimise the load on the right gear for as long as possible during the rollout, but as the aircraft slowed down the pilot was unable to prevent the aircraft from veering gently to the right as the right gear gradually retracted. Both

engines were closed down before the aircraft left the paved surface and it came to rest a few feet to the side of the runway, some 1900 feet from the point of touchdown. The airfield fire service was quickly on the scene, but there was no fire and the two occupants were able to vacate the aircraft unaided.

After the aircraft had been lifted during the recovery, the right main gear was easily locked into the down position, but it was apparent that the hinge at the upper edge of the gear door, which attaches to a bracket in the wing structure, had become free. The link connecting the door to the leg was still intact. Maintenance personnel quickly confirmed that the bracket in the wing had failed and that upon gear deployment, the door could have adopted a position to restrict full downward travel of the gear. During repair of the aircraft, checks were carried out on the gear indication system, which operated correctly. No reason was found for the yellow gear 'in transit' light not remaining illuminated due to the right gear not having locked down. It was the absence of this indication, and the apparent full deployment of all three gears, which had led the instructor to believe that a failure had occurred in the indication system. The failed bracket was subsequently unavailable for metallurgical examination, having been discarded during repair of the aircraft.