Gulfstream American GA-7 Cougar, G-BOXR

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

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 returnedto the circuit for a normal approach, followed by a 'touch-and-go'. During the subsequent climb out, a simulated engine failure drillwas carried out and the aircraft then positioned downwind fora flapless touch-and-go landing. After the landing gear had beenselected down, it became apparent that only the left main andnose gear green 'down-and-locked' lights had illuminated, andthat the yellow gear 'in transit' warning was not lit. Afterchecking that none of the relevant circuit breakers had trippedand that the right main gear green light bulb was serviceable,the instructor informed ATC and took control of the aircraft fromhis student, before selecting 10° of flap. The aircraftwas then flown past the control tower where the condition of thelanding gear was visually assessed. As far as could be seen,all three landing gears appeared to be fully down. Not wishingto exacerbate the problem, the instructor decided not to recyclethe gear or to try the associated emergency 'free-fall' system. He briefed his student on emergency landing procedures, followingwhich a twin engine, full flap, approach was made to land on Runway22. The aircraft was landed so as to minimise the load on theright gear for as long as possible during the rollout, but asthe aircraft slowed down the pilot was unable to prevent the aircraftfrom veering gently to the right as the right gear gradually retracted. Both

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

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