# Evans VP-2, G-BUGI

## AAIB Bulletin No: 2/2001

## Ref: EW/C2000/06/13 - Category: 1.3

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| **Aircraft Type and Registration:** | Evans VP-2, G-BUGI |
| **No & Type of Engines:** | 1 Continental A65-8 piston engine |
| **Year of Manufacture:** | 1998 |
| **Date & Time (UTC):** | 25 June 2000 at 1400 hrs |
| **Location:** | Cardiff Airport, Wales |
| **Type of Flight:** | Private |
| **Persons on Board:** | Crew - 1 - Passengers - None |
| **Injuries:** | Crew - None - Passengers - N/A |
| **Nature of Damage:** | Right main landing gear and light damage to underside |
| **Commander's Licence:** | Private Pilot's Licence |
| **Commander's Age:** | 43 years |
| **Commander's Flying Experience:** | 78 hours (of which 20 were on type)<br>Last 90 days - 3 hours<br>Last 28 days - 1 hour |
| **Information Source:** | Aircraft Accident Report Form submitted by the pilot and metallurgical inspection carried out by the AAIB/DERA |

### History of the flight

The pilot was conducting his first flight of the season in G-BUGI. He had completed an hour's instructional and some solo flying in a Tomahawk approximately a month earlier but the demands of his employment and bad weather had prevented him from flying G-BUGI. The flight was normal and he approached to land on Runway 30 with a very light wind from the north. Touchdown was on the mainwheels first rather than being fully three-point and as the aircraft slowed down it began to swing to the left. The pilot estimated that it had turned through about 30 or 40 degrees off runway heading before he managed to correct the swing and bring it back in line with the runway. At this point the right wing started to drop and the aircraft came to rest with the right wing tip in contact with the runway. The engine was still operating at idle but the propeller did not touch the ground. The pilot informed the tower that he had a problem and the airport emergency services attended the aircraft to assist.

## Main landing gear

It was found that the right landing gear leg had folded under the aircraft so that the wheel was almost horizontal. To assist the recovery of the aircraft it was decided to attempt to straighten the leg and it was found that this could be done with minimal effort, raising suspicions that the material was below the required strength. It was also seen that there was severe corrosion present on the surface of the leg and this was flaking off as a result of the distortion.

The landing gear was made of a single, formed, thick sheet, aluminium alloy member with diagonal bracing wires to react the vertical landing loads. The bracing wires reduce bending loads in the aluminium legs but would induce compressive loads in them. The legs were unbraced for any side loading case such as landing with uncorrected drift or ground looping. The pilot sent the AAIB a material sample cut from the leg. The sample had severe exfoliation corrosion on the top surface of the leg; the underside was unaffected. The corrosion represented only a small percentage of the cross-section of the leg and it was not thought that this would have markedly affected its bulk strength. Hardness checks on the sample provided results (average of 153 Vickers) which were normal for heat treated aluminium alloy. The aircraft had been completed in 1998. The landing gear had been originally purchased from a supplier in the USA 10 years previously and was stored until it was used on G-BUGI.

## Summary

The flight, the pilot's first of the season in G-BUGI, was normal until the landing, when, as the aircraft slowed down, it began to swing to the left. He managed to correct the swing but the right wing started to drop as the right main landing gear folded and the aircraft came to rest with the right wing tip in contact with the runway. The pilot attributed the accident to his slow response in correcting the swing, which developed after touchdown. However, he also found that the left brake had a tendency to bind and this may have contributed to the development of the swing.