AIRWORTHINESS ALERT

LAA/AWA/16/06
7th March 2016

De Havilland DH82a Tiger Moth

Australian Accident Report

In-flight break-up

On the 16th December 2013, at about 12.15 EST, a de Havilland Tiger Moth aircraft took off from an airfield in Queensland, Australia, with a pilot and passenger on board. The purpose of the flight was to conduct a commercial joy-flight around the Gold Coast area of Queensland.

As was normal during this type of flight, when appropriate, the pilot began an aerobatic demonstration. After approximately one minute, whilst pulling out of the bottom of a loop, the left wings failed and the aircraft descended steeply; impacting the water about 300 metres from the shoreline of South Stadbroke Island. The aircraft was destroyed and the two occupants were fatally injured.

The Australian Transport Safety Bureau has recently published a full report into this accident where a number of factors that may have contributed to this accident are fully discussed.

Early on in the investigation, it became clear that both the forward and aft. lateral tie rods had fractured through their threaded section at the left lower wing's attachment point. In the UK this failure generated the issue an Emergency CAA Airworthiness Directive (G-2014-0001-E) prohibiting aerobatics of all 'Moth' type aircraft until the provenance of their lateral tie rods had been established and found to be satisfactory both in terms of life left and correct part number.

In March 2014 the LAA issued a Safety Alert (LAA/AWA/14/15) providing a link to the CAA Emergency AD. This Alert can be downloaded HERE.

All current Airworthiness Directives are available from the CAA's website, search for CAP 747 in the CAA Website: https://www.caa.co.uk

A copy of the full ATSB Report into this fatal accident can be downloaded HERE.

This accident, and its implications to the UK's fleet, was discussed in the March edition of Safety Spot, a copy of this discussion can be downloaded HERE.

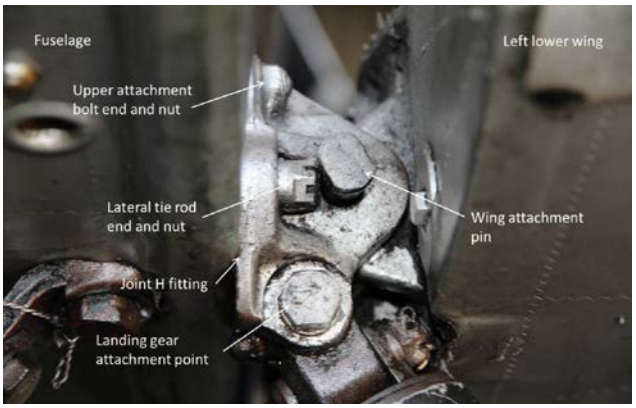

Fig. 1 This picture shows the complicated arrangement of the DH 82a lower wing attachment, known as the Joint H fitting. A key element of the failure of the lateral tie rods may have been that the Joint H upper attachment fitting bolts were found to have been incorrect parts.

Thanks to ATSB

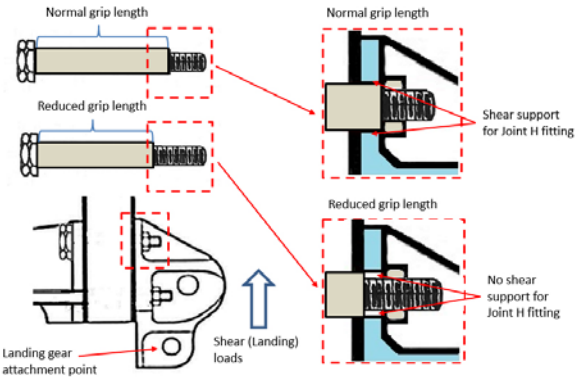

Fig. 2 This graphic, taken from the ATSB report, shows the importance of using the correct parts in critical assemblies. In the accident aircraft, it was found that the grip length in the incorrect bolt used was not sufficient to transfer shear forces correctly into the Joint H fitting.

Thanks to DHSL & ATSB