

Airworthiness Bulletin

AWB 01-033 Issue 1 - 11 March 2021

DH82 Series Tiger Moth – Unapproved Joint H Structural Bolts

An Airworthiness Bulletin is an advisory document that alerts, educates and makes recommendations about airworthiness matters. Recommendations in this bulletin are not mandatory.

1. Effectivity

All de Havilland DH82 Series aircraft and “Moth” variants which have been designed to incorporate Special Bolt Part No.H37868.

2. Purpose

Advise operators, owners and maintainers of the potential installation of unapproved bolts which have been discovered installed at fuselage Joint H and which may cause an unsafe condition.

3. Background

During tie rod/bar replacement and annual inspection in accordance with CASA AD/DH 82/10 Amdt 1 mandating de Havilland Support Limited (DHSL) Technical News Sheet 29 four (4) unapproved bolts, two (2) above each tie rod at each lower wing attachment fitting at Joint H, had been installed, instead of the required ‘Special to Type’ Part No.H37868 bolts.

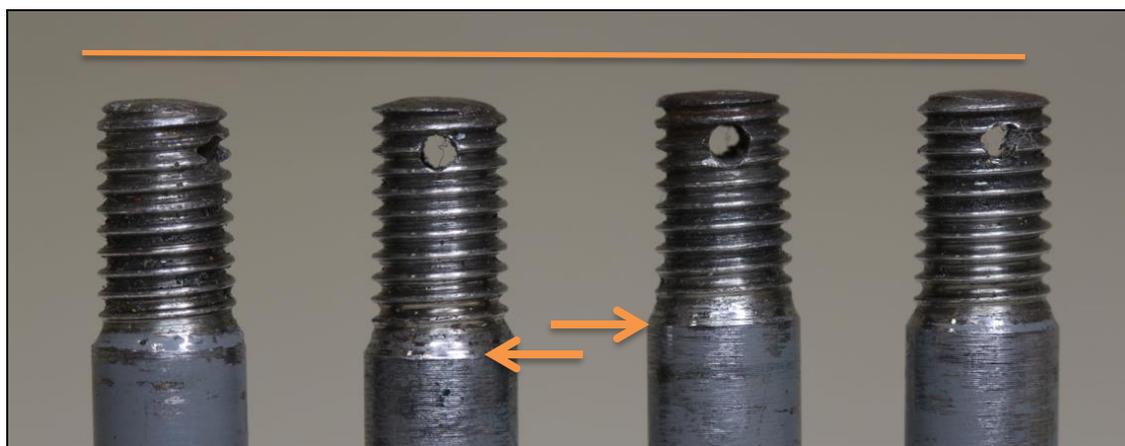


Figure 1. (Source: ATSB)

In more than one case, the unapproved bolts have been identified as having been machined from (British) Aircraft General Spares (AGS) “G” (5/16”) diameter bolts, and that

the grip length of the bolts varied, being all significantly shorter - between approximately 1.39" to 1.42"- when compared to the DH82A DHSL specification of 1.45". (Refer Figure 1, and also see Figure 6).



Figure 2. (Source: ATSB)

Also, one flat on the hexagonal head of each "G" bolt had been ground down to enable the larger diameter letter "G" bolt head to fit inside the flanged fitting of the main lateral compression tube. (Figure 2).

The H Joint upper attachment bolts are designed to work in conjunction with the lateral tie rods to transfer landing loads to the airframe. Unapproved, and typically short upper attachment bolts do not allow the shank of the bolt to properly engage with the fuselage structure and the Joint H fitting, and can allow the fitting to move up, and engage with the threads of the unapproved bolt, thereby subjecting the lateral tie rod to excessive shear loads, (Figure 3).

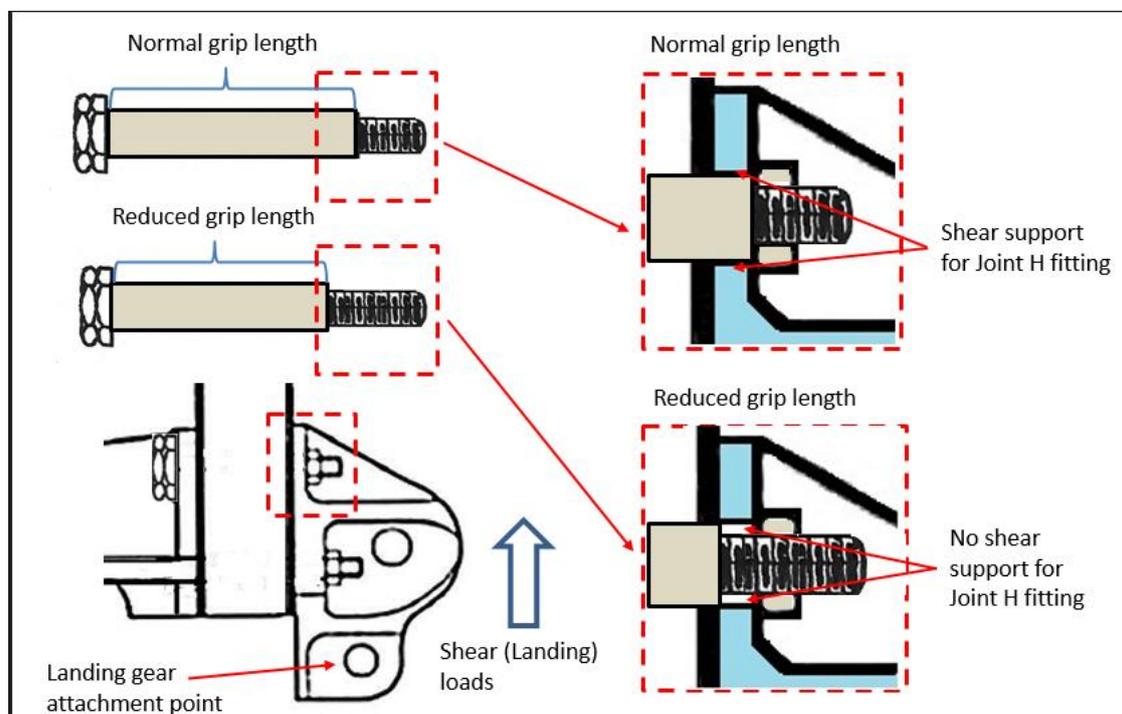
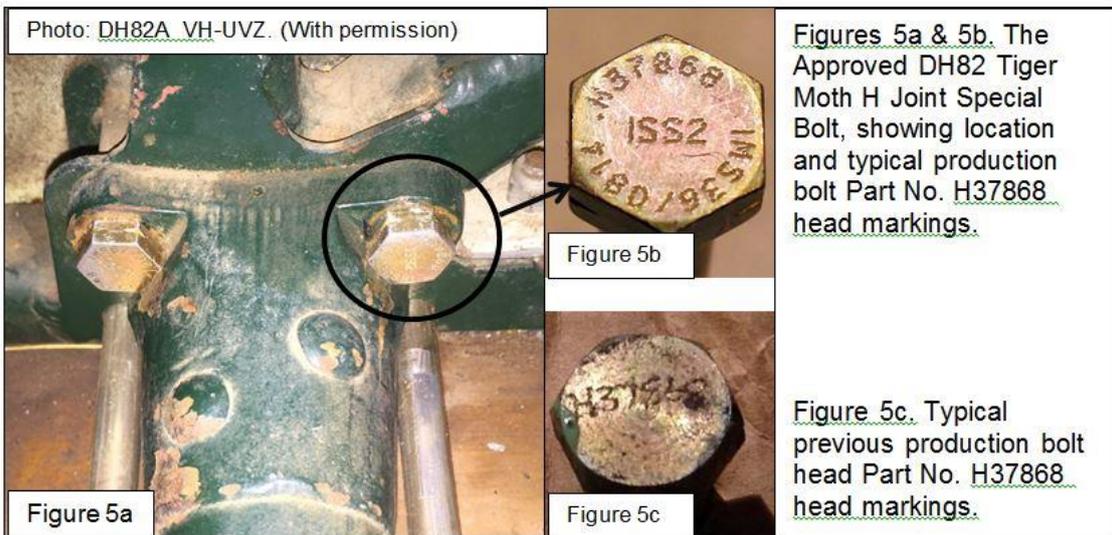


Figure 3. Correct and incorrect H Joint upper attachment bolt installation.
(Source: Adapted from ATSB Investigation AO-2013-226)



Figure 4.



Figures 5a through 5c.



Figure 6.



4. Recommendations

Refer to the Aircraft Log Book and determine if de Havilland Support Limited (DHSL) Special Bolts Part No. H37868 have been installed in all four H Joint locations.

Confirm that the correct bolts are installed by gaining access to, and checking all H Joint upper bolt head markings (Figure 5b and 5c) to determine if the correct bolts are installed in all locations. The letter “G” (Figure 2) on the bolt head may indicate unapproved bolts have been installed. Some unapproved bolts may have no head markings (Figure 5a, b & c.).

Remove all unapproved bolts. Inspect the bolt holes and take action as required in accordance with the current issue of DHSL CT Moth TNS data, including inspecting the inside of the H Joint fitting for thread marks and for gouging in compression tube end fitting caused by unapproved oversize bolt head fouling. H Joint bolt removal and installation should be accomplished with the aircraft on trestles.

5. Reporting

Report all instances of unapproved bolt installation to CASA via the defect reporting system upon discovery.

6. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link email address:

AirworthinessBulletin@casa.gov.au

or in writing, to:

Airworthiness and Engineering Standards Branch
Standards Division
Civil Aviation Safety Authority
GPO Box 2005, Canberra, ACT, 2601