

REPAIRS

1. Introduction

The approval of repairs is similar in principle to any other request to deviate from the approved design. In this case however, the change is only ever going to apply to a single aircraft. As a consequence, the requirement to detail the design extends only to that required to define the change without the need to necessarily detail how this is achieved.

2. Definition

Distinguishing a repair from a modification can sometimes be difficult. The following definition should be used where doubt arises:

A Repair is defined as:

“A deviation from the approved design which arises unintentionally during manufacture or in service”

3. The Process of Approving Repairs

The first step is to record the damage condition and proposed solution in words and pictures using the standard form (LAA/MOD 8). A suitably qualified inspector must either do this himself or verify that the record is correct. A decision then has to be made as to whether the defect is repairable or not. In many cases complete replacement rather than repair will be appropriate. The inspector then makes a judgement as to whether any repair would be classed as Major or Minor in accordance with TL 3.09. The following publications are available to provide guidance on formulating repair schemes:

Manual Title	Publisher	Contact
AC-43	Federal Aviation Administration	LAA Bookshop
Standard repairs to Gliders	British Gliding Association	0116 2531051
Glassfibre Repair Manual	Slingsby Aviation	01751 432474

Minor repairs which are compliant with schemes defined in these manuals may be authorised by a suitable qualified inspector. An over-arching criteria for repairs classed as minor is that the damage could be considered a “carried forward defect” which does not render the aircraft unflyable. An engineering substantiation is not mandatory for this type of repair but the inspector must verify that the repaired aircraft is in compliance with the approved scheme and record this assessment along with the repair in the aircraft log book.

NOTE: Major repairs must be authorised by LAA Engineering prior to the repair being commenced.

Any repair not performed in accordance with an approved manual or deemed to be Major must be submitted to LAA Engineering for assessment and approval. Repairs not made in accordance with an approved manual will need to be accompanied by an engineering substantiation. The acceptance criteria to be applied to any repair scheme are that it must have an equivalent strength, stiffness and functionality to the original design. Establishing these properties for the existing configuration and replicating them is usually the easiest approach to substantiating a repair scheme. Alternatively the scheme could be designed against the requirements of the appropriate design code, e.g. BCAR Section S (microlights), CS-VLA (aeroplanes) and BCAR Section T (gyroplanes). If there is any doubt regarding the classification or compliance with the above repair manuals, LAA Engineering should be contacted for advice.

REPAIRS

Where repair is effected by the replacement of damaged components with new items which are identical to those removed, then no approved scheme is required, although a worksheet will need to be included in the aircraft logbook. If a major component such as a flying surface is replaced in this way, LAA Engineering must be contacted for any flight test requirements.

Finally, the closing activity for all repairs is to ensure that the aircraft log book (or build book) includes an appropriate record.

4. Charges for Approval of Repairs

Where a repair needs to be submitted to the Engineering department for approval, a fee is chargeable since Engineering resources are deployed to support a specific LAA member. These are published on the website (www.laa.uk.com) and in each issue of *Light Aviation*.

In order to keep the running costs of the Engineering department to a minimum, members are requested to submit complete and well-presented applications giving full details and justifications. Remember that the engineers will be approaching the problem 'cold' without necessarily having the level of detailed knowledge of the type that you might have.