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WELDING

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## 1. Introduction

The welds in aircraft structure are often both highly stressed and safety-critical. Weld quality cannot normally be determined solely by external inspection or non-destructive testing. Producing satisfactory welds consistently is a highly skilled task.

This document describes the qualifications and skills required of a welder for welding tasks on aircraft administered by the BMAA. Note that, in general, modifications and repairs require explicit, prior approval from the BMAA; this document does **not** confer approval for any particular task.

## 2. Welding of primary and secondary structure

### 2.1. BMAA modifications and repairs

By default all welding must be performed by a CAA approved welder: a welder with a current approval to BCAR Section A8-10. The approval must be appropriate for the task: correct welding technique (e.g. GTAW/TIG), correct material group (e.g. carbon steels) and correct joint type (e.g. tube to tube).

Where it is considered appropriate to do so, and with the **prior** agreement of the BMAA:

- A non-CAA approved welder may be used if he has an alternative approval that is considered to offer an equivalent level of safety to CAA approval for the task in hand.
- A welder without appropriate approval may be used subject to either the weld being satisfactorily inspected and proof load tested, or test pieces being fabricated (alongside the production item) and satisfactorily inspected and load tested. Normally the use of an unapproved welder will only be considered acceptable where failure of the weld would not have catastrophic results or where the weld is suitably over-engineered.

### 2.2. Aircraft kits

For the series production of aircraft kits for amateur construction, welding must be performed by appropriately skilled welders<sup>1</sup>. The kit manufacturer must have appropriate quality assurance and control procedures in place to ensure satisfactory weld quality.

### 2.3. Type-approved aircraft

Welding procedures for the production and repair of type-approved (factory-built) aircraft by the type-approval holder are agreed between the type-approval holder and the CAA. A type-approval holder's welding approval does not necessarily permit them to weld aircraft for which they do not hold the type-approval.

## 3. Welding of tertiary structure

Welding of tertiary structure must be performed by an appropriately skilled welder subject to the weld being satisfactorily inspected and, where appropriate, proof load tested.

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<sup>1</sup>At the time of writing the UK CAA's policy on the welding of kits manufactured in the UK is unclear. If a UK kit manufacturer wishes to use a welder without appropriate, current BCAR Section A8-10 approval the BMAA must be consulted first.