

# SERVICE BULLETIN

**AA-SB-71-004**

## Engine Mount Inspection and Repair

### 1. PLANNING INFORMATION

#### 1.1. EFFECTIVITY

R2000 Series aircraft.

#### 1.2. CONCURRENT REQUIREMENTS

Nil

#### 1.3. REASON

Cases have been reported of cracked engine mount frames. Both occurred in Alpha manufactured R2160 aircraft. The repair scheme is applicable to all models in the R2000 range, if similar cracks are found in other models.

As a safety precaution it is recommended to carry out the checks and inspection detailed in 1.5 below within 10 hours on Alpha manufactured 160A and 160Ai aircraft, and at the next scheduled service for the rest of the R2000 fleet.

#### 1.4. DESCRIPTION

Cracks have been reported in the tubes near the RH upper engine mount bobbin. (See Figure 1).

#### 1.5. COMPLIANCE

Within the next 10 flying hours, carry out a thorough visual inspection of the engine mount frame tubes near the welds. In the reported cases cracks were found in the tubes near the RH upper Dynafocal mount.

- If no cracks are detected the aircraft can remain in service but carry out the inspection in section 2 **Accomplishment Instructions** at every 100 hour routine inspection.
- If a crack is detected: carry out the repair in section 2 **Accomplishment Instructions** before further flight.

Make a log book entry stating compliance with this Service Bulletin. The entry shall identify the action taken to satisfy this Service Bulletin.

#### 1.6. APPROVAL

By delegated authority (Alpha Aviation Concept Ltd, CAANZ DO75992) COA AA 60 1145

#### 1.7. WEIGHT AND BALANCE

Nil affect on weight or balance

#### 1.8. REFERENCES

R2000 Service Manual.

Drawing 97-71-041 Issue 1. (Reference to this drawing is essential.)

#### 1.9. OTHER PUBLICATIONS AFFECTED

Nil

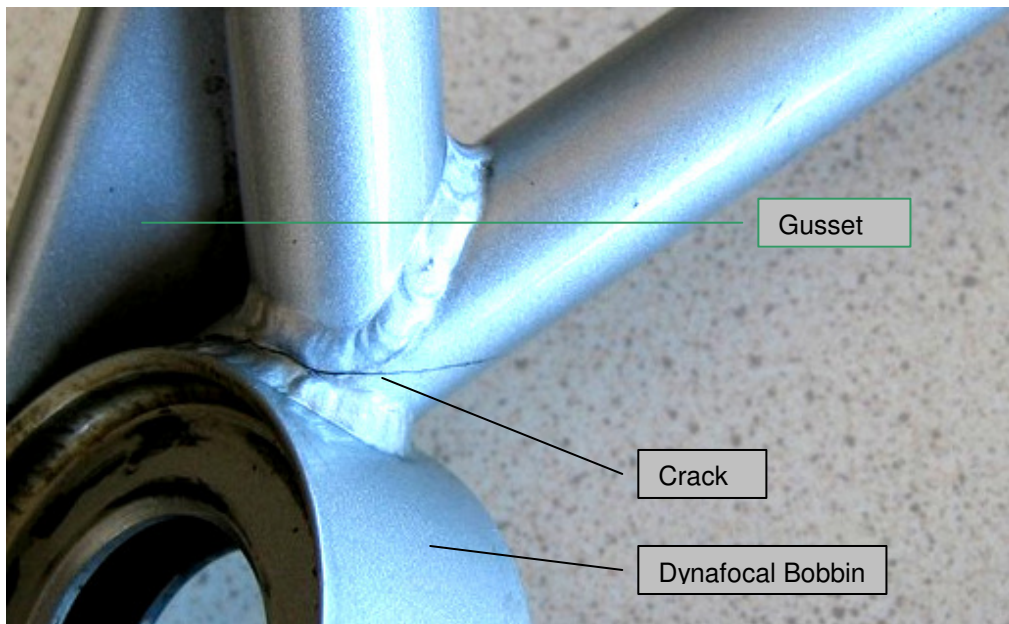
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### 2. ACCOMPLISHMENT INSTRUCTIONS

Inspection: Remove engine cowl in accordance with maintenance manual. Use bright lighting and a mirror to carry out a close visual inspection of the engine mount frame. After an initial inspection, wipe the frame clean to remove any dirt build-up and re-inspect weld areas closely. Use of dye penetrant to aid inspection of suspect areas is recommended.



**Figure 1: Cracked engine Mount Tube**

Repair: (The weld repair must be carried out by a certified weld repair organisation, authorised to carry out weld repairs).

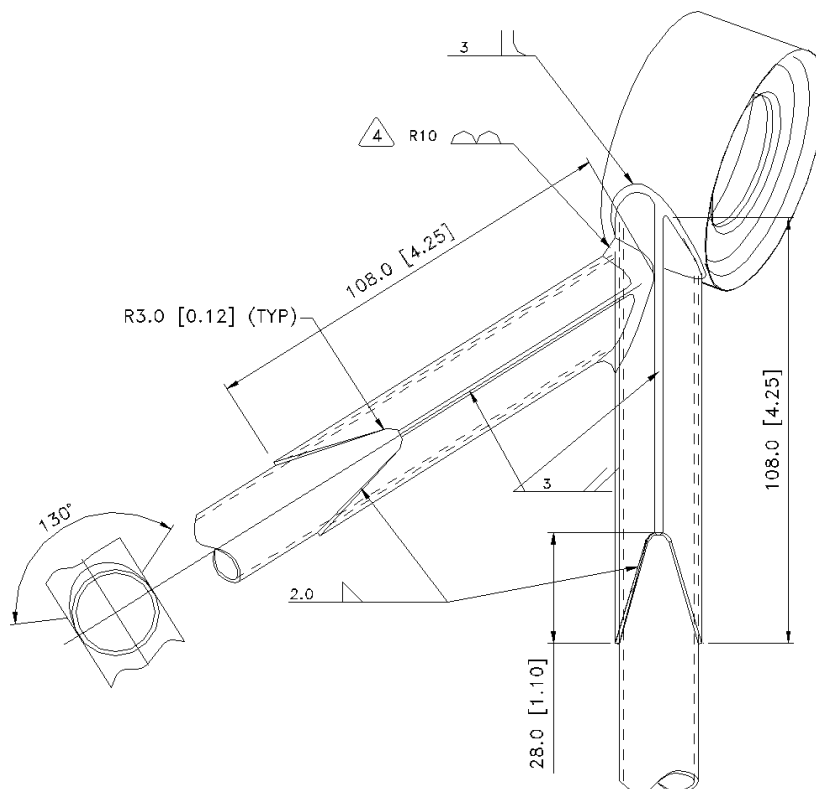
- Remove the engine mount frame in accordance with maintenance manual.
- Remove paint and linseed oil residue from the areas to be welded. Remove rivets from vent holes prior to welding. At least one vent hole must remain open during welding per tube. Bolt or clamp firewall ends of frame to a rigid flat surface during welding to limit distortion.
- Prepare any cracked area by filing a V-groove along the crack and weld-repair crack using AMS6458 filler wire. (Weld Filler Wire can be obtained from Alpha Aviation.) Remove the gusset to obtain access to the crack if required.
- Magnetic Particle Crack Check Repaired Crack Area to ASTM E 1444-05.
- Fabricate reinforcing split sleeve doublers from 25CD4S OR AISI 4130 steel tube with Internal Diameter of 20mm, and 1mm (0.040") to 1.6mm (0.063") thick, for each of the four Dynafocal bobbin positions. Fabricate the doubler shapes to coordinate with mating tubes and bobbins. Weld the reinforcing doublers in place over any repaired cracks as shown in figure 2.1, figure 2.2 and drawing 97-71-041 making use of AMS6457 of AMS6458 filler wire.

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- Form R10 fillets over the 130° nearest to the bobbin, by means of multiple weld runs. See note 4 in figure 2.1 below or note 5 on drawing 97-71-041. Blend out any irregularities and pitting to a smooth finish. All welds near the bobbin must be blended and free from pitting.
- Re-weld the gusset in place. Fabricate a new gusset to replace the original removed gusset from AISI 4130 Steel Sheet, 1.6mm (0.063") thick if the original gusset is not re-usable.
- Flame Normalise the weld heat affected area in accordance with drawing note 8.
- Magnetic Particle Crack Check Assembly to ASTM E 1444-05.
- Repaint the engine frame, using a good quality 2K paint to match the existing paint on the engine frame.
- Treat tubes internally using boiled linseed oil and plug holes with AD42 rivets.
- Re-install in accordance with the Alpha R2000 series or applicable Service Manual.

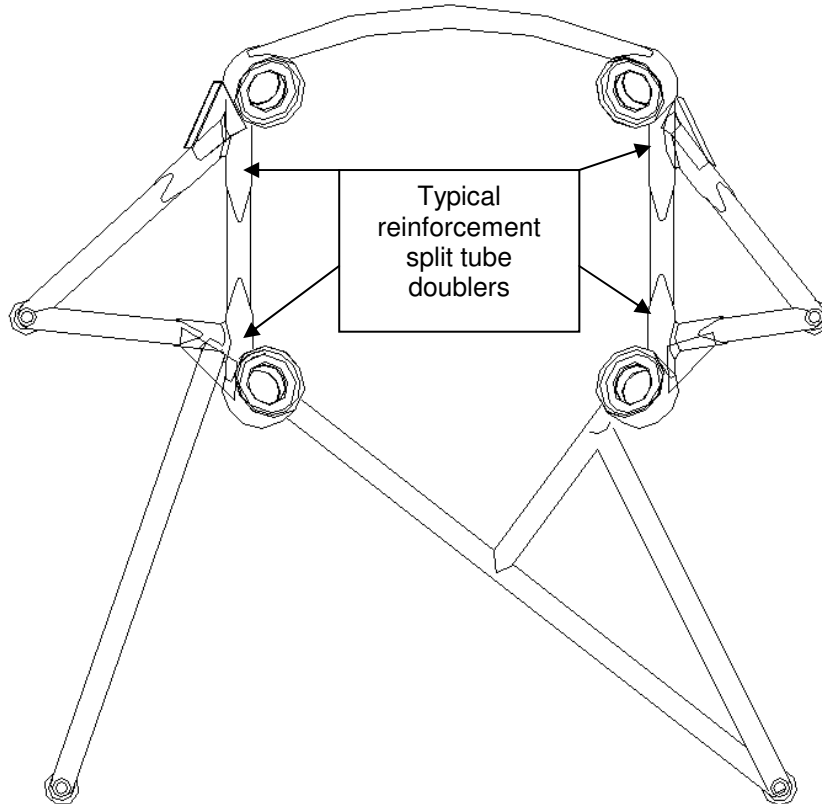


**Figure 2.1: Outer Split Sleeve Repair welded over cracked area.**

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**Figure 2.2: Typical reinforcement locations. Note that any straight tube to bobbin joints may be repaired in accordance with this service bulletin and drawing 97-71-041.**

### 3. FEED BACK

Maintenance organisations are requested to provide feedback on the results of the inspection. Please use Alpha form DES 22 (Design Feedback Form) for this purpose. A copy of the form and mailing details can be found in the Service Manual or on the Alpha Aviation Web Site.

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