

# SERVICE BULLETIN

**AA-SB-27-003**

## Rudder Bar – Inspection & Replacement

### **1. Planning Information**

#### **1.1 EFFECTIVITY**

All HR200 and R2000 series, s/n 001 to 378.

#### **1.2 CONCURRENT REQUIREMENTS**

Nil

#### **1.3 REASON**

APEX Service Bulletins 109 & 143 highlighted a problem with early versions of the rudder bars which was attributable to distortion caused by loads applied to the rudder bars during acrobatics. SB 109 was issued in August 1986 to incorporate reinforcement of P/N 27.23.05.010 & 020 rudder bars. In October 1995, SB 143 was issued to require inspection and replacement of the above part number rudder bars. SB 143 effectively negated SB 109 but this was never withdrawn.

It is necessary to issue a new bulletin to combine the information of the previous bulletins and to include all serial numbers of aircraft manufactured by APEX as Alpha Aviation is unable to determine when the new part number rudder bar was introduced by APEX.

In addition to the acrobatic loads, it has been determined that loads felt through the nose steering mechanism when the aircraft is on the ground are equally high. Therefore, replacement of early rudder bars is required for acrobatic R2000 aircraft, and recommended for R2120U and HR200.

#### **1.4 DESCRIPTION**

Replace rudder bars P/N 27.23.05.010 and 27.23.05.020 (LH & RH) with rudder bars P/N 27.40.31.010 & 27.40.31.020 (LH & RH) in accordance with the compliance instructions in 1.5. To aid identification of the different part number rudder bars refer to Fig 1.

#### **1.5 COMPLIANCE**

On receipt of this SB inspect aircraft for compliance within 10 hours of operation.

Model R2100, R2100A, R2112, R2160, R2160D and R2160i aircraft: Replacement is required.  
Model R2120U and HR200 Series: Replacement is recommended. Measure the rudder bars for distortion in accordance with Fig 2. If distortion is equal to or greater than 10mm then replace both rudder bars.

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

No action is required if rudder bars have been replaced in accordance with Avions Pierre Robin SB 143.

This SB is the subject of a New Zealand CAA AD.

#### **1.6 APPROVAL**

Alpha Aviation Design Organisation DO65180

#### **1.7 WEIGHT AND BALANCE**

Nil affect on weight or balance

# SERVICE BULLETIN

**AA-SB-27-003**

## Rudder Bar – Inspection & Replacement

### 1.8 REFERENCES

R2000 and HR200 Service Manuals.

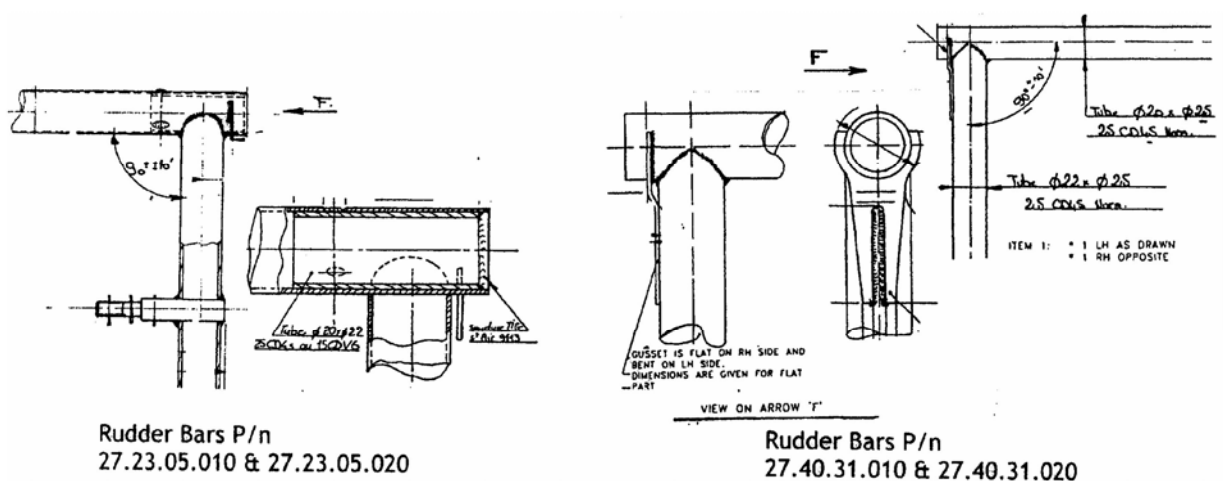
### 1.9 OTHER PUBLICATIONS AFFECTED

This Service Bulletin supersedes Avions Pierre Robin Service Bulletins 109 and 143.

## **2. Accomplishment Instructions**

Removal and replacement of the rudder bars shall be done in accordance with instructions found in the Service Manual for particular aircraft model.

## **3. Figure 1**



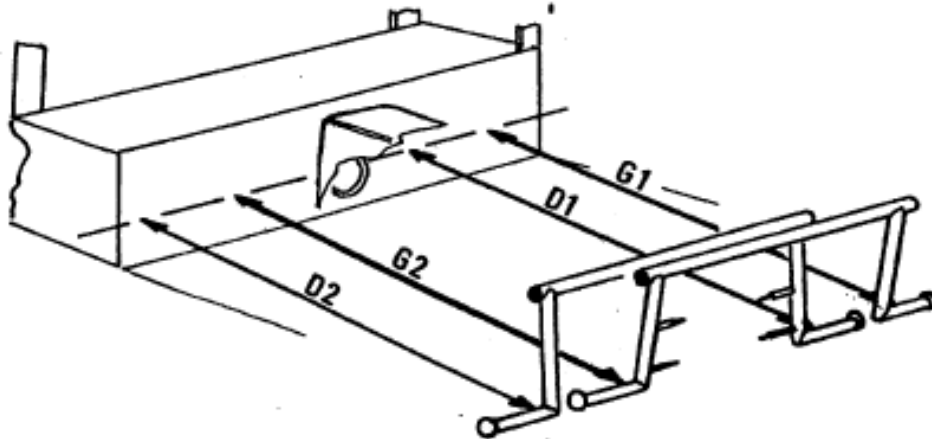
**Figure 1**

# SERVICE BULLETIN

**AA-SB-27-003**

## Rudder Bar – Inspection & Replacement

### **4. Figure 2**



**Figure 2**

Maintain the rudder bars in the neutral position and measure distances G1, G2 and D1, D2. The difference between G1 and G2, or D1 and D2 is the distortion.

1. If  $D1 = D2$  and  $G1 = G2$  ( $\pm 5$  mm), there is no significant distortion and no action is required, re-inspect at intervals not to exceed 500 hrs TIS.
2. If the distortion is between 5 and 10 mm re-inspect at intervals not exceeding 100 hrs, until replaced by P/N 27.40.31.010 and P/N 27.40.31.020.
3. If the distortion is equal to or greater than 10 mm, replace both rudder bars

### **Contact Information:**



Ingram Road  
Hamilton Airport  
RD 2  
Hamilton 2021  
NEW ZEALAND

**Phone: + 64 7 843 7070    Fax: + 64 7 843 8040**  
**Web: [www.alphaaviation.co.nz](http://www.alphaaviation.co.nz)**