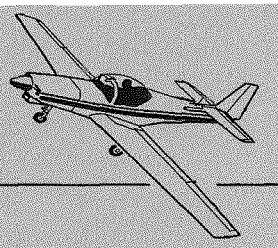
SLINGSBY
Advanced Composites Ltd



Service Bulletin

S.B. No: **187**

Title: **INSPECTION FOR CLEARANCE BETWEEN RUDDER PEDAL AND MIXTURE/PROP. SPEED BRACKET. ALSO INCLUDES GENERAL RUDDER PEDAL CLEARANCES.**

Compliance:

a) Paragraphs 1, 2.1, 3, to 8, compliance to be prior to next flight.

b) Paragraphs 1, 2.2, 3 to 23 compliance to be within 50 flying hours from receipt of this Service Bulletin and every subsequent 300 flying hours or Annual, whichever is soonest.

Applicability: T67M200 (Works No. 2264 & 2265 only) and T67M260

This Service Bulletin is the subject of an Airworthiness Directive.

INTRODUCTION:

A case has been reported of the No. 3 Rudder Pedal fouling the Mixture/Prop. Speed Operating Cable Bracket during spin recovery. This foul may occur when the pedal is adjusted fully forward and with full left rudder applied. Upon further inspection it was observed that the floor was damaged allowing the rudder bar support bracket to distort and the bar and its pedal to float to the left greater than the limit allowable for safe operation.

This Service Bulletin is issued to address the incident related above and to reinforce the importance of ensuring correct clearances and maintenance of the rudder operating mechanism, mountings and stops to ensure the required clearances for safe operation.

This Service Bulletin addresses issues raised in previous Service Bulletins, see below, and draws notice to the relevant maintenance manual requirements. The information contained within this Service Bulletin supersedes the Service Bulletins listed below and Maintenance Manual instruction regarding clearances where applicable.

SB 049 Rudder Mechanism to Fuel Pipe Clearance Check.

SB 051 Inspection of Rudder Cable to Link Plate Socket Head Cap Screw.

SB 071 Inspection of Rudder Pedal Lay shaft Mounting Brackets.

SB 075 Inspection of Rudder Pedal Slider/Heater Distribution Box Clearance.

SB 083 Inspection for Foul Between no.2 Rudder Pedal Pad Pivot and Nose wheel Steering Rod Arm.

SB 088 Rudder Pedal to Mixture Lever Potential Foul.

SB 168 Inspection of Cockpit Floor Beneath Port Rudder Bar Support Bracket.

Signature ... Compiled	Signature ... Design CVE	Signature ... Slingsby Approval
Print Name M.J. RUTTER	Print Name N. THORP.	Print Name D.W. GODDARD
Date 9TH MARCH 2007	Date 9-3-07	Date 9-3-07

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ISSUED
- 9 MAR 2007
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ACTION:

Prior to starting inspections it is recommended that this Service Bulletin is read in its entirety and understood. If in doubt, contact Slingsby Advanced Composites Ltd, (SACL).

1. With Right Hand pilots left pedal (Pedal No. 3) adjusted fully forward, with left rudder applied, apply brake together with a left hand side force on the pedal. Check for clearance on mixture/propeller speed cable support bracket. Refer Figure 1.

2. Clearance should be a minimum of 3mm. Figure 1 refers.

   2.1 If the clearance is less than 3mm, the following inspection and corrective actions, paragraphs 3 to 22, shall be carried out in order to increase the clearance up to the required minimum of 3mm.

   2.2 If the clearance is 3mm or greater when first measured, the following inspections, paragraphs 3 to 22, must still be carried out to ensure the whole rudder pedal system is within required tolerances and free from defects.

3. Check forward, aft and lateral play in pedal pads and their sliders; ensure play is no greater than 4.8mm when pedals locked in any of the adjustment positions. If greater than 4.8mm then refurbish pedal assemblies, refer T67M260 Maintenance Manual Paragraph 5.6.5.1 (3). Consult SACL if required.

4. Check rudder pedal bar end float is no greater than 0.8mm. If it is greater than 0.8mm then rectify end float IAW paragraph 9. Refer Figure 2.

5. Check that the Rudder Pedal bar port outboard support bracket, ref. Figure 4, is square to floor and not "lozenged" and there is no deformation to its base. Check floor panel under area of bracket, inspect for cracking which could allow the bracket to lean. If necessary remove floor panel and check for signs of cracking in the floor around the anchor nuts on Pre Mod M919 aircraft or the anchor nut mounting plate Post Mod M919 aircraft, refer Figure 3. Any GRP damage will be shown as a white shadow on the GRP, with cracking felt as a rough edge. A light shining up through the floor will show a shadow.

6. If floor is found to be cracked or broken then repair IAW DOI T67C-149 incorporating Mod M919. If Mod M919 has been previously incorporated and floor is damaged, inform SACL.

7. Should Rudder bar support bracket be damaged, replace with a new item. Ensure brackets are secured with a torque of 58lbf in (6.5Nm). Ensure spring washers are fitted; Mod M720 "Introduction of Spring Washers to Rudder Pedal Lay-shaft Mounting Bracket Screws" refers. See Figure 2.

8. Check the remaining rudder bar support brackets, ref. Figure 4, are square to floor and not "lozenged" and there is no deformation to their bases. If any bracket is found to be suspect replace with new item. Inform SACL of any damaged bracket. Assemble item as per paragraph 7 and ensure end float is as stated in paragraph 9. Ensure bonding leads are correctly fitted, carry out bonding check refer relevant aircraft's Maintenance Manual.

9. Referring to Figure 2 ensure at each rudder bar pivot position that there is one spacer T67M-45-507 OR one off washer 126-23-748 and up to a maximum of two off washers 126-23-749, i.e. 3 washers maximum.

   If end float greater than 0.8mm, then 1 off packing washer may be added at each pivot position as required, i.e. 126-23-105 washer or 126-23-748 washer or 126-23-749 washer.

   If packing washers are required on the right hand rudder bar (T67M-45-259), then the packing washer, (or the thicker washer if a thick and thin washer are required) should be placed at the outboard pivot. When end float of 0.8mm maximum is achieved, ensure that the brake cylinders are not subject to undue side load. If in doubt, contact SACL.

   Note; it is imperative that the combination of packing washers is adhered to as any more than the stated amount may allow the rudder bar mounting bracket pivots to become out of safety.

10. Prior to checking rudder movements, inspect that the rudder bar stops are 40mm long under their heads and that the stop mountings in the floor pedestal are structurally sound.

11. Check the Rudder movements ensuring that the rudder set-up procedure in the T67M260 Maintenance Manual is adhered to.

12. Ensure Trim Panel Modification M992 "Introduction of Fasteners to Front of Frame 2 to 3 Trim Panel for Added Security" has been incorporated.

13. Upon completion of rudder movement set-up ref. Paragraph 11 above, ensure minimum clearances of trim panel to pedal side plates and rudder cable to pedal side plates are met Refer Figure 4. Refer paragraph 9 for packing washers.

14. Ensure clearance of the no. 2 pedal slider to heater box clearance, is greater than 1mm, Figure 5 refers. Inform SACL if clearance is not achievable.

15. Ensure correct clearance of No 3 pedal to Mixture/Prop. Speed bracket; refer Paragraph 2 above.

16. Ensure fuel pipe to rudder pedal slider clearance is met; refer T67M260 Maintenance Manual Paragraph, 5.6.5.1. Not applicable to aircraft with Post Mod M945 "Introduction of ISA +35°C Fuel System Improvements" incorporated.

17. Ensure head orientation of rudder cable link low pan head bolt T67M-45-570 is outboard. T67M260 Maintenance Manual Figure 5-7 refers.

18. Ensure Pedal no 2 Pedal pad pivot bolt head height is less than 5mm and orientated, as shown in Figure 6. A minimum of 1mm clearance is required, if not, fit part no 126-21-210 or T67B-08-981, this invokes Mod M671 "Introduction of Low Head Rudder Pedal Pad Pivot Bolts – Pedal No. 2".

19. Ensure that the requirements of SB 99, "Inspection and Rectification of Rudder Pedal Sliders", has been achieved.

20. Ensure, that a minimum clearance of 3mm is achieved between Pedal No 3 and Mixture Lever operating arm, refer Figure 7. Refer paragraph 9 for packing washers.

21. Ensure on the Annual inspection or during any maintenance in the area of the rudder pedal mechanism - e.g. trim panels removed - or upon removal of any of the rudder pedal operating mechanism, that clearances are achieved, especially in the areas noted in paragraphs 2 to 20 above.

    21.1 It must be noted that during the clearance checks that the pedals do not necessarily have a direct fore and aft load applied, there will be side loads on the pedal pads deflecting the pedal pad laterally or pivoting it about its slider.

    21.2 Ensure that the rudder pedal operating mechanism is checked for full and free movement in all aspects of normal operation and abnormal operation, e.g. application of toe brakes during extreme pedal deflections during spin recovery.

    21.3 Ensure any wire locking employed, e.g. on cable turn buckles, will not foul or snag either adjacent parts or pilots clothing.

    21.4 Ensure fastenings have the correct torque applied IAW T67M200 and T67M260 Maintenance Manuals as applicable.

    21.5 Always check the structural integrity of the rudder operating mechanism, inform SACL of any abnormality or if clearances cannot be met. Send components to SACL for replacement or repair, there may be a charge for this service.

    21.6 Ensure all clearance checks are undertaken at all rudder pedal adjustment positions.

21.7 On the completion of this Service Bulletin's inspection and rectification procedure, ensure that each rudder pedal mechanism clearance is still as stated and has not been affected by any subsequent adjustment/s or rectification/s.

21.8 Clearances, quoted in this Service Bulletin over-ride any clearances, quoted in the relevant aircraft Maintenance Manual.

22. If correct rudder movement and rudder operating mechanism clearances are met, annotate Logbook with, "SB 187 incorporated", at each inspection.

23. At each subsequent 300 flying hours* or Annual, whichever is soonest, inspect IAW this Service Bulletin until such time that the T67M200 and T67M260 Maintenance Manuals and Schedules are amended. Additionally, Maintenance Organisations are to ensure that the inspections contained in this Service Bulletin are added to their specific Maintenance Schedules where applicable.

*The subsequent 300 flying hours inspection will be reviewed upon customer feedback.

For further information, existing repair schemes or Mod/Service Bulletins please contact SACL Customer Support. Please note these services may be subject to a charge, unless an individual or company has a Support Agreement or Subscription Service in place. For parts and non-existing repairs a charge may be made.

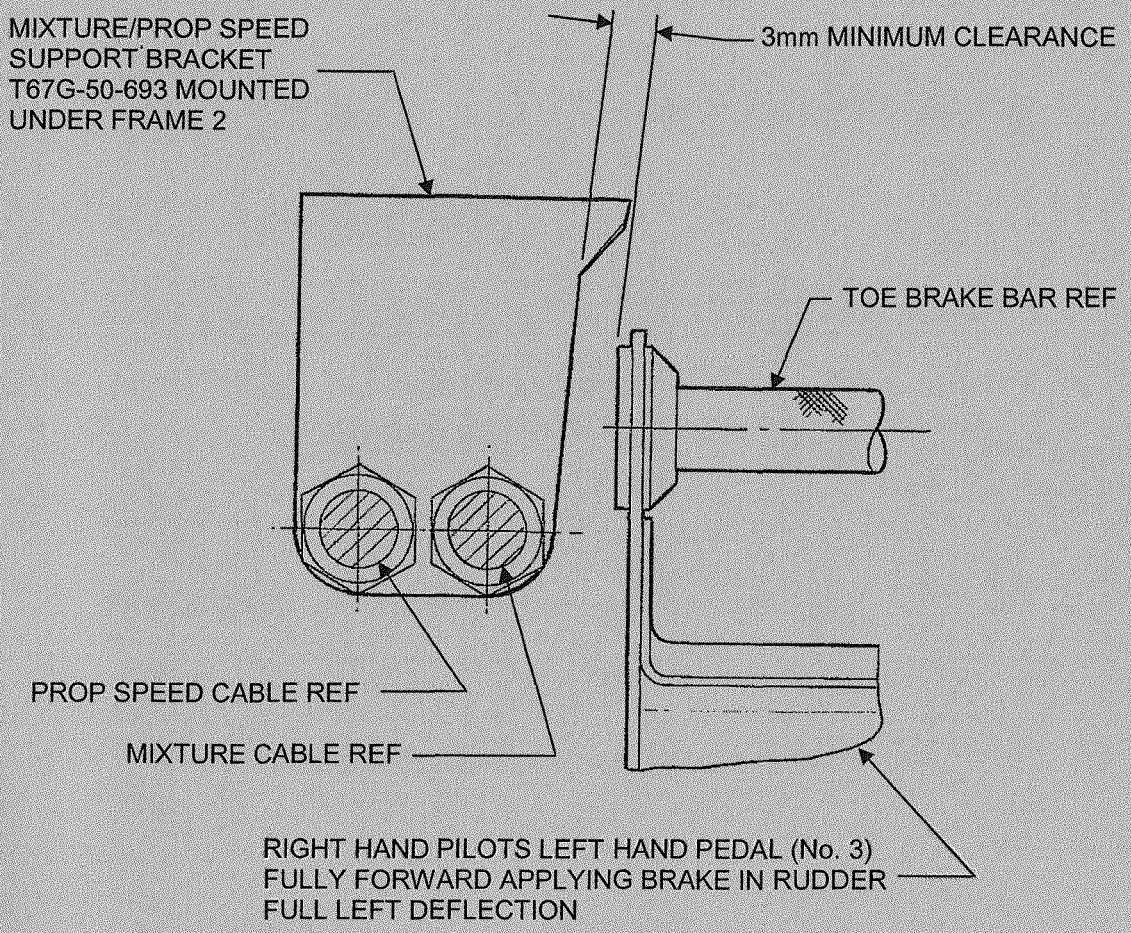


FIGURE 1
SHOWING CLEARANCE MIXTURE/PROP SPEED BRACKET TO No. 3 PEDAL

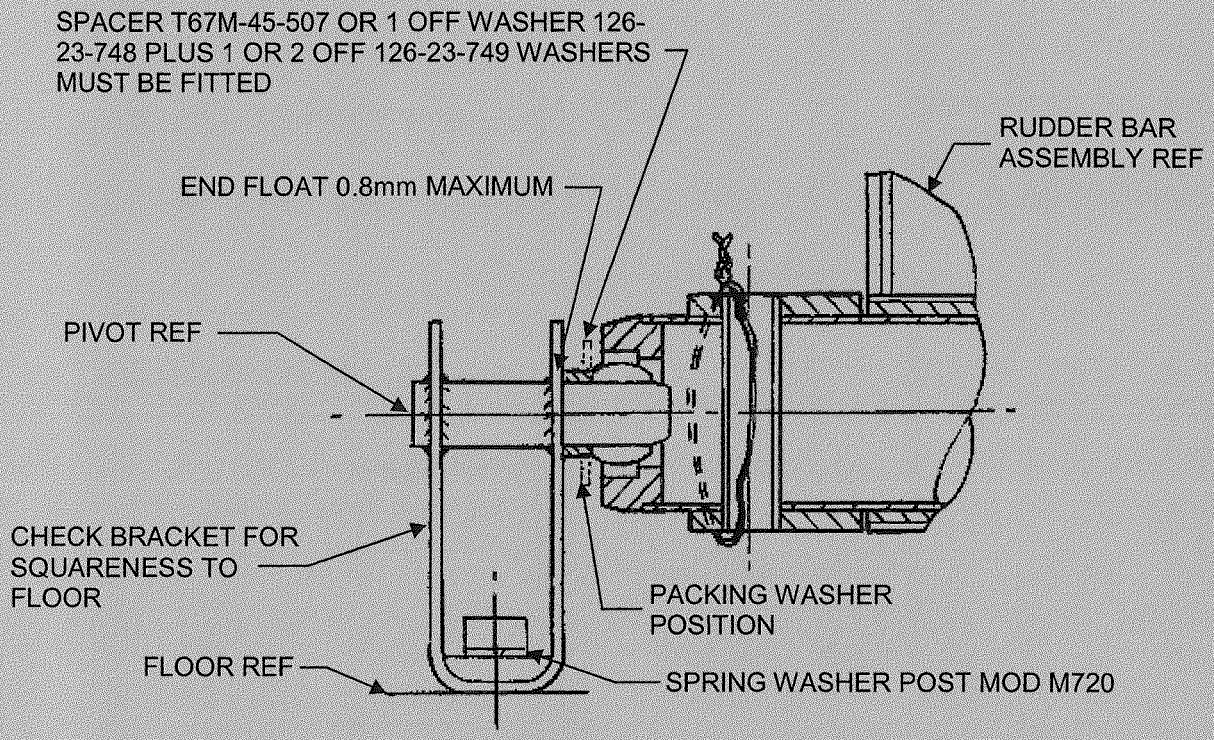


FIGURE 2

RUDDER BAR END FLOAT AND ITS SUPPORT BRACKET

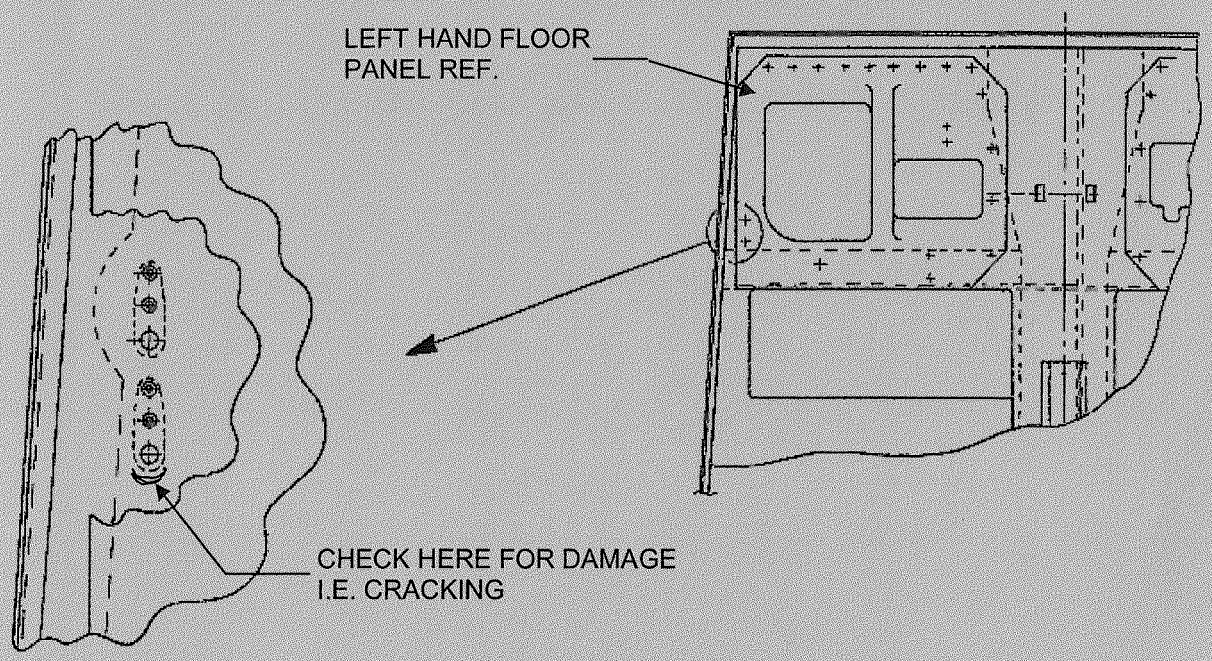


FIGURE 3

AREA OF FLOOR REQUIRING INSPECTION (PRE MOD M919 DRAWN)

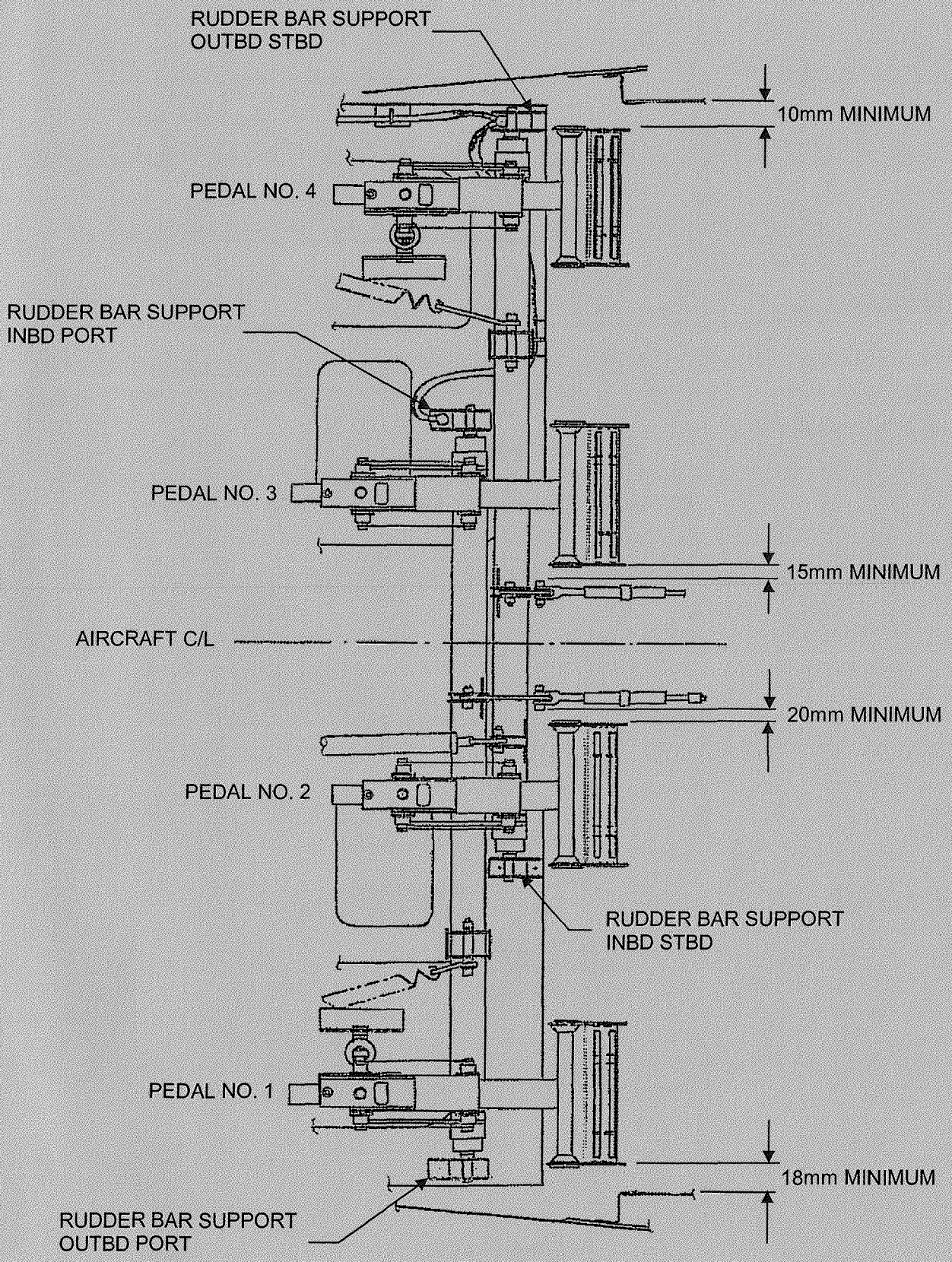


FIGURE 4

RUDDER PEDAL CLEARANCES TO SIDE PANEL AND RUDDER CABLES

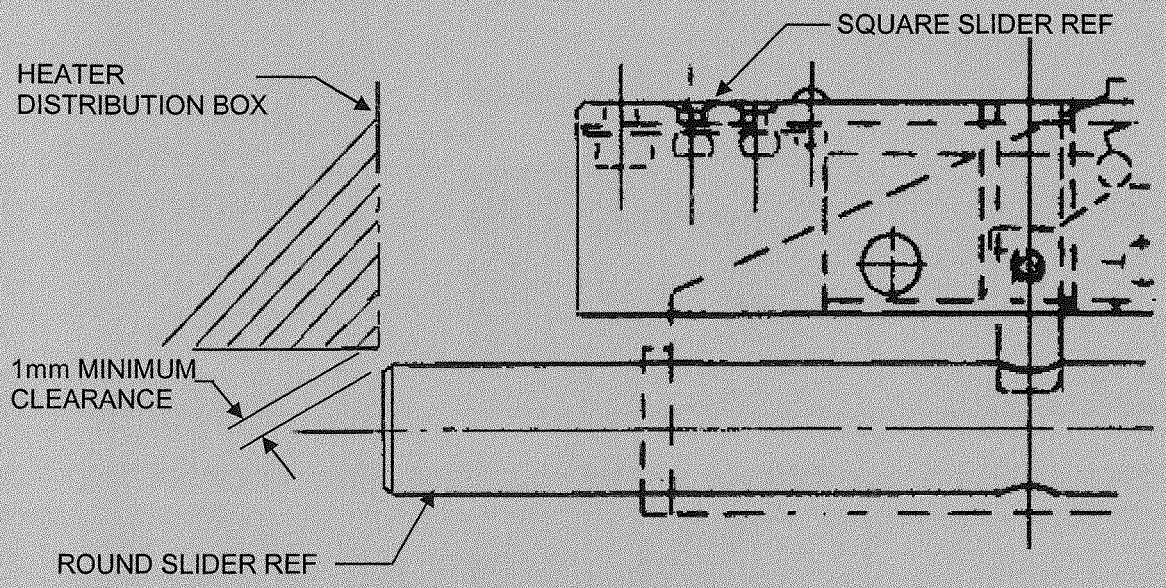
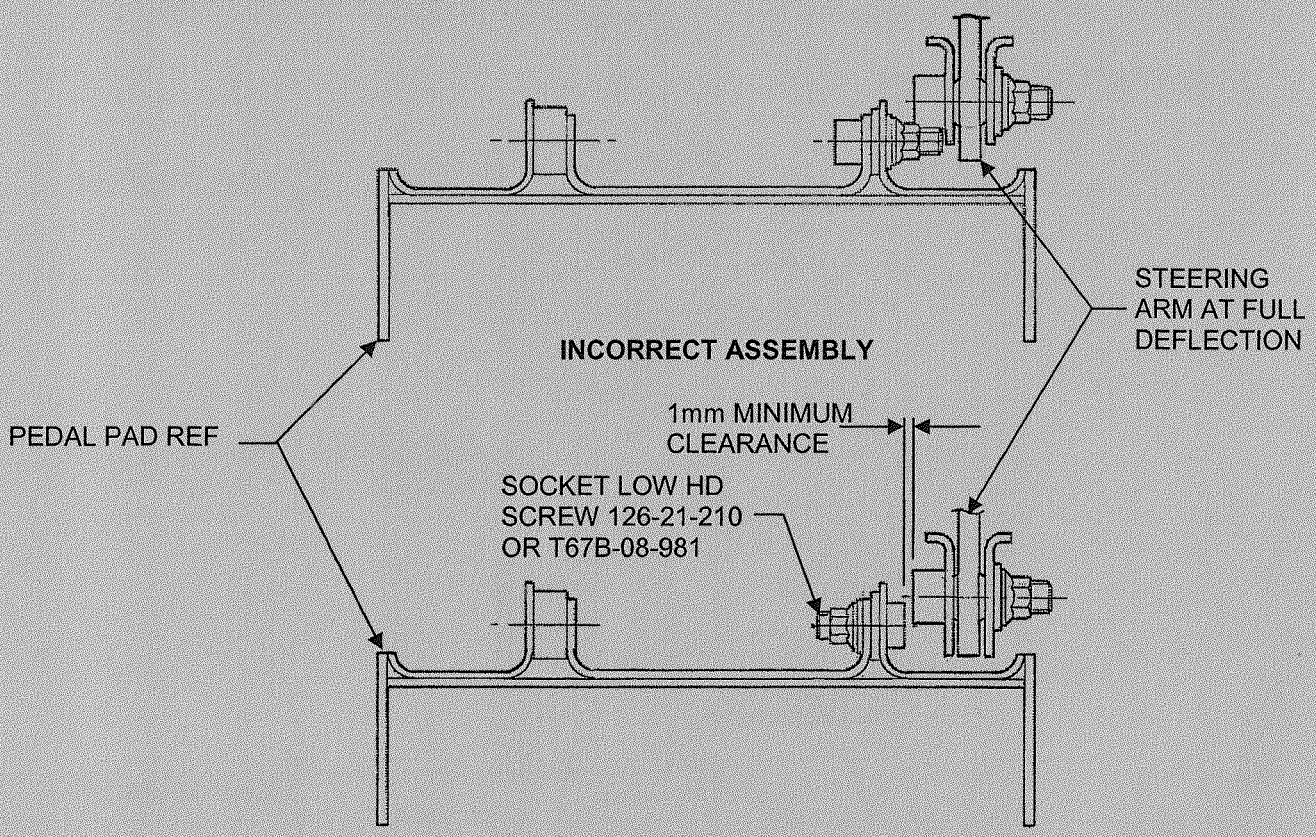


FIGURE 5

PEDAL NO. 2 TO HEATER BOX CLEARANCE



CORRECT ASSEMBLY

FIGURE 6

PEDAL NO. 2 TO STEERING ARM INTERFACE

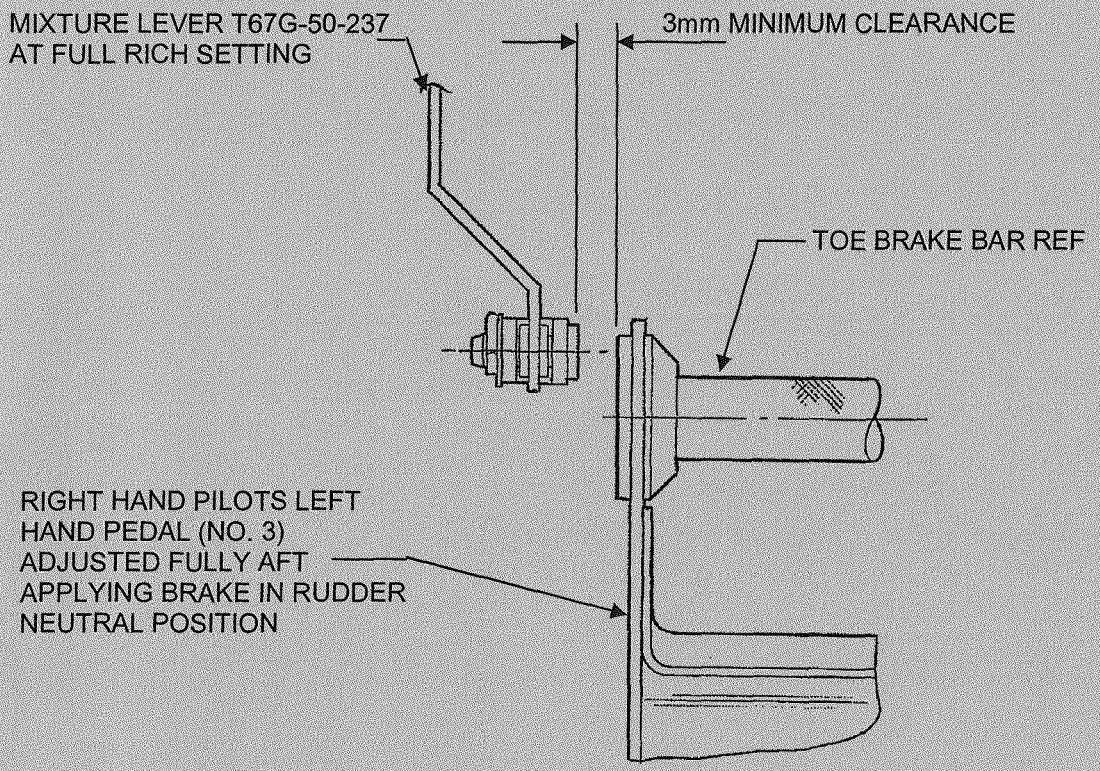


FIGURE 7

VIEW LOOKING FORWARD ONTO NO.3 RUDDER PEDAL