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NOTE: SAS Position Test Set 76700-40012-042 must be used for this procedure.
TAS Avionics Dept. can assist.

Date: 26 January 2018
To: Thai Aviation Services Limited
Attention: Grant Robinson
Regarding: Request For Procedure-TR Aft Quadrant Ramp Install
Technical Case #: C0085093

Grant Robinson,

SAC Engineering recommends the following procedure to be used for setting up the location of and installing P/N 76403-05138-106 TR Aft Quadrant Ramp.
Note: Data taken from 76400-00003, sections 5.1 and 9.1 of the Flight Controls Rigging procedures.

SELF CENTERING QUADRANT POSITIONING

5.1 Ramp Positioning (Initial Instl. Only)

5.1.1 Fully extend SAS Actuators (dual SAS hardover). Insert a .050" feeler gauge on top of the right yaw system stop. Move pedals to full right position. Allow roller on RH quadrant lever 76403-05135-044 to rotate ramp 76403-05138 until the right yaw system stop bolt (on tail rotor gearbox support bracket) is contacted. Trace a circle on quadrant support 76403-05118 in the existing countersunk hole in ramp.

5.1.2 Fully retract SAS Actuators (dual SAS hardover). Insert a .050" feeler gauge on top of the left yaw system stop. Move pedals to full left position. Reposition ramp such that roller on LH quadrant lever 76403-05135-043 contacts ramp while left yaw system stop bolt contact is maintained. Trace a second circle on quadrant support 76403-05118 in the ramp fastener hole.

NOTE: For S-76D [15K] only, if LH quadrant lever adjustment bolt contacts ramp, adjust bolt out. Final adjustment is completed in Section 5.3.

5.1.3 Move servo back to right pedal position. Re-position the ramp so the fastener hole is centered about the intersection of the two circles. The ramp will be secured after Yaw Clearance Checks below. (ref: Section 9 below)

Yaw Checks

Condition 1

Operate both yaw AFCS actuators to full extend position. Pin the collective stick in mid position. Operate yaw pedals in full left position, and verify that the aft quadrant stop is contacted. Operate yaw pedals in full right position and verify that either the ramp or the stop is contacted.

Condition 2

Operate both yaw AFCS actuators to the full retract position. Verify that in full left pedal the ramp or the stop is contacted and in full right pedal position that the aft quadrant stop is contacted. Check for proper clearances (Detail A).

Remove rig pin from collective stick

5.2 Ramp Position Check

5.2.1 Fully extend SAS Actuators and move servo to right pedal position until roller contacts quadrant ramp. Gap between crank stop surface and right yaw system stop bolt head should not

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exceed 0.045 inches. Fully retract SAS Actuators and move servo to left pedal position until roller contacts quadrant ramp. Gap between crank stop surface and left stop bolt should not exceed 0.030 inches.

NOTE: If the system stop is contacted before the roller, the gap check must be performed between rollers and ramp. Average left and right gap measurements and set new ramp position at equal gap between left and right roller.

5.3 Self-Centering Quadrant Adjustment Procedure

CAUTION :

Tail rotor cables are spring-loaded. Have assistant hold and maintain quadrant levers in retracted position against quadrant stops before loosening tunbuckles.

5.3.1 Null SAS Actuators. Release tail rotor cable tension sufficiently to allow rollers to contact ramp surfaces. Screw in the LH quadrant lever (76403-05135-043) adjustment bolt until the bolt head contacts the stop surface. Adjust bolt further until blade angle meets the requirement below.

Model Blade Angle
S-76A, B, C, D [10K] -2.0° ± 0.2°
S-76D [15K] -0.9° ± 0.2°

5.3.2 Screw in RH quadrant lever (76403-05135-044) adjustment bolt until the bolt head contacts the stop surface. Both rollers must contact ramp and both adjustment bolts must contact stop surfaces so that a .001 inch feeler gage cannot pass under rollers or bolt heads.

5.3.3 Re-tension cables as (per Section A below Para. 4.1.1 thru 4.1.3) and verify rig block can still be inserted.

5.3.4 Remove pin J previously installed in (ref: Para 4.3.7 below). Adjust pedal damper rod end so that damper motion is equalized within the control system motion. Ensure that damper does not bottom out at extremes of travel.

5.3.5 Reconnect pedal damper or pedal damper/trim actuator.

9. RAMP INSTALLATION

9.1.1 Position ramp so existing countersunk hole is centered about the intersection of the two circles drawn in Section 5.1. Drill proper diameter hole in quadrant support 76403-05118 using existing countersunk hole in ramp as a guide. Secure ramp to quadrant support.

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Section A

4.1 Cable Tensioning

4.1.1 Disconnect pedal damper or pedal damper / trim actuator from the reversing link and check SAS actuators to ensure they are nulled.

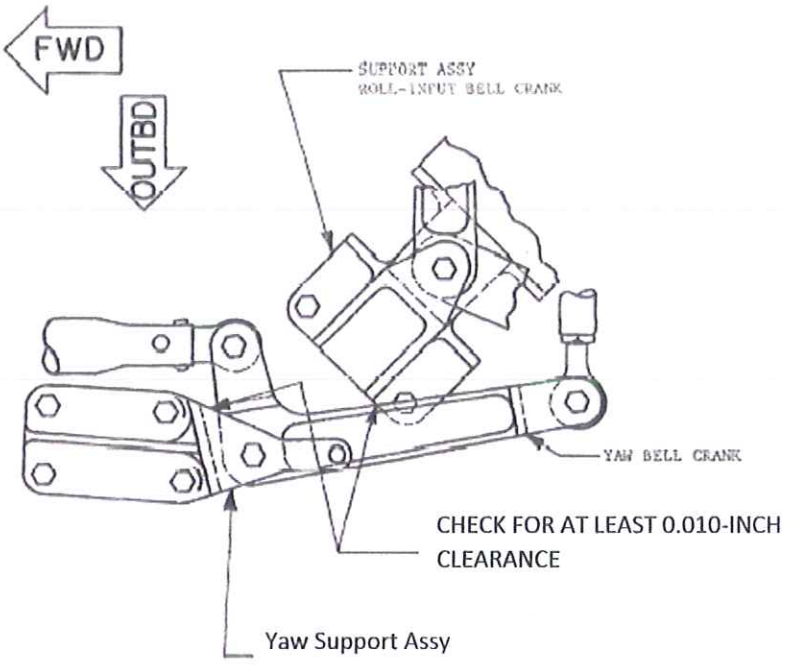
4.1.2 Install rig pins A, B, E, P, Q, J, K, and R. Disconnect 76400-00014 servo input rod.

4.1.3 Adjust cable tensions in accordance with Table 1. Pins Q & R must remain free fitting after cable tensioning.

Temperature/Cable Tension

Temperature Degrees "F"	Temperature Degrees "C"	Cable Tension Pounds
-25 to -16	-30.8 to -26.7	17 to 22
-15 to +4	-26.1 to -15.6	22 to 36
+5 to +24	-15.0 to -4.5	36 to 51
+25 to +44	-3.9 to +6.6	51 to 65
+45 to +64	+7.2 to +17.7	65 to 80
+65 to +84	+18.3 to +28.8	80 to 100
+85 to +104	+29.4 to +40.0	100 to 114
+105 to +124	+40.6 to +51.1	114 to 129
+125 to +144	+51.7 to +62.6	129 to 142
+145 to +160	+62.8 to +71.1	142 to 150

4.3.7 Install rig pins E, J, Q, and R. Measure red blade angle and record.



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Yaw Right Pedal Clearance Check (Condition 2)
1. Two SAS System AFCS Yaw Actuators Retracted
2. Right Yaw Pedal
3. Aft Quadrant Stop Contact

DETAIL A

Respectfully,

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