Chapter 3 TAIL UNIT

(completely revised)

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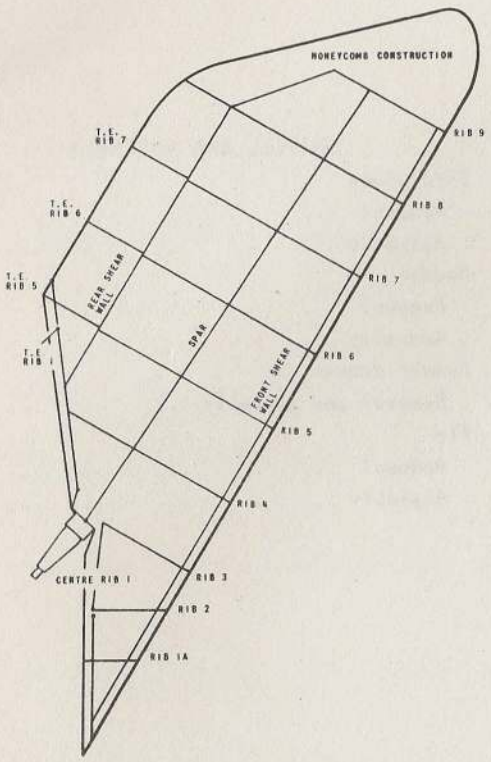

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Fig. 1. Tail-plane key diagram

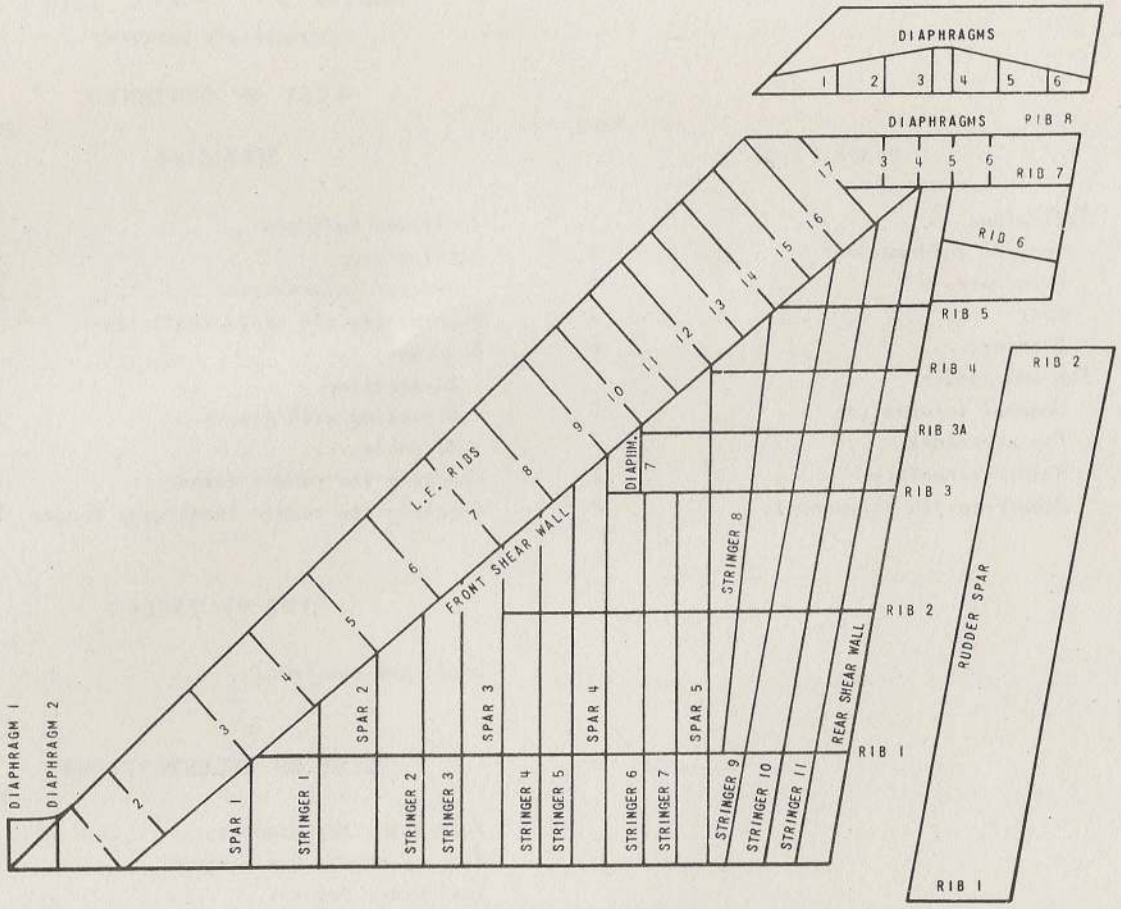

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Fig. 2. Fin and rudder key diagram

DESCRIPTION

Tail plane

General information

1. The slab tail plane consists of two separate, similar components, mounted one on each side of the rear fuselage in bearing housings attached to frame 57. The units pivot simultaneously in ball and roller bearings and are operated by a twin screwjack p.f.c.u. powered by the No. 1 and No. 2 controls hydraulic systems *(Chap. 4E and 6)*.

Structure (fig. 1)

2. The basic structure of each tail-plane unit is a torsion box in which a single, centrally-disposed, spar is connected to front and rear shear walls by transverse ribs. This structure is covered by light-alloy stressed skins, stiffened by stringers. The aerofoil section of the tail plane is completed by the addition of a leading-edge fairing, a conventional stressed-skin trailing-edge structure, and an aluminium-honeycomb tip-structure.

Spar

3. The spar is a composite structure comprising a built-up I-section beam and a steel forging connected by a tapered lap-joint. The forging is machined at its inboard end to form the tail plane hinge shaft, which has two bearing surfaces, of different diameters, for the ball and roller bearings in which the tail-plane shaft pivots.

Bearings

4. Each tail plane hinge shaft pivots in a double-row tapered roller bearing at its inner end and a double-row ball bearing at its outer end. The outer race of each bearing has a spherical profile which matches the split seating of the retaining nut and bearing housing. The inner bearing can be dismantled *(para.11)* for periodic lubrication *(para.12)*, using special-to-type tools *(Table 1)*.

Fin and rudder

General information

5. The fin is bolted to the fuselage frames and skins, and carries the rudder, supported on three hinges, in a cut-out in its trailing edge. The removable fin tip, separated from the main structure by a dielectric strip, forms the upper U.H.F. aerial *(Sect.8, Chap.1)*. An air intake at the bottom of the fin leading edge directs cooling air, via an internal duct, to the accessory drive unit *(Sect.4, Chap.1)*.

Fin structure (fig.2)

6. The basic structure of the fin comprises vertical spars and stringers, and horizontal ribs, contained by converging front and rear shear walls, the whole covered by light-alloy stressed skins. Two additional ribs, and an extension of rib 5, support the aluminium-honeycomb fin tip and the trailing-edge structure above the rudder cut-out. The leading-edge profile is a light-alloy fairing supported by seventeen ribs set at right angles to the front shear wall. The fin spars extend below the base of the fin and form lap or male/female joints with the corresponding fuselage frames.

Rudder structure (fig.2)

7. The structure consists mainly of an aluminium-honeycomb panel contained by a single spar at the leading edge, two ribs at top and bottom, and a light-alloy skin. A hydraulic flutter-damper unit is bolted to the structure in a cut-out at the top of the leading edge. Two rudder hinge brackets are attached to the spar at the bottom and centre hinge positions, and the third is clamped to a splined shaft protruding from the bottom of the damper.

Rudder-to-fin attachments (fig.5)

8. All attachments are made through the hinge brackets. The top one is made to a channel bracket, on the fin rear shear-wall, with a special-to-type bolt, bushes, tubular nut and split pin. The centre hinge is in the form of a hinged spigot on the fin. The bottom hinge bracket is clamped to the splined rudder-pintle which protrudes upwards through the fuselage skin. For removal and assembly purposes, the rudder is detached from the bottom hinge bracket and, to ensure correct location of the bracket during subsequent reassembly, the securing bolts for attaching the rudder to the bracket are inserted through detachable tapered shear bushes which are jig-fitted during manufacture. If a replacement rudder is being fitted, the bottom bracket of the new rudder must be detached from the rudder and assembled to the pintle.

SERVICING

WARNING

The relevant safety precautions detailed on the LETHAL WARNING marker card must always be observed before entering the cockpit or performing any operations upon the aircraft.

Tools and equipment

9. For tools and equipment used in servicing, and removal and assembly operations, refer to Table 1.

Lubrication

General information

10. Apart from the periodic lubrication of the tail plane hinge-shaft inner bearing *(para.11-13)* lubrication is carried out prior to assembly of components to the airframe. The rudder hinge cavities and tail-plane bearings ◀ are packed with grease XG-287 at this ▶ stage. Lubrication of the actuating linkages is described in Chap.4D and E.

Lubricating the hinge-shaft inner bearing

Note...

This is necessary only when an outer bearing is being renewed (A.P.101B- ◀ *1003-5). The tail plane must be* ▶

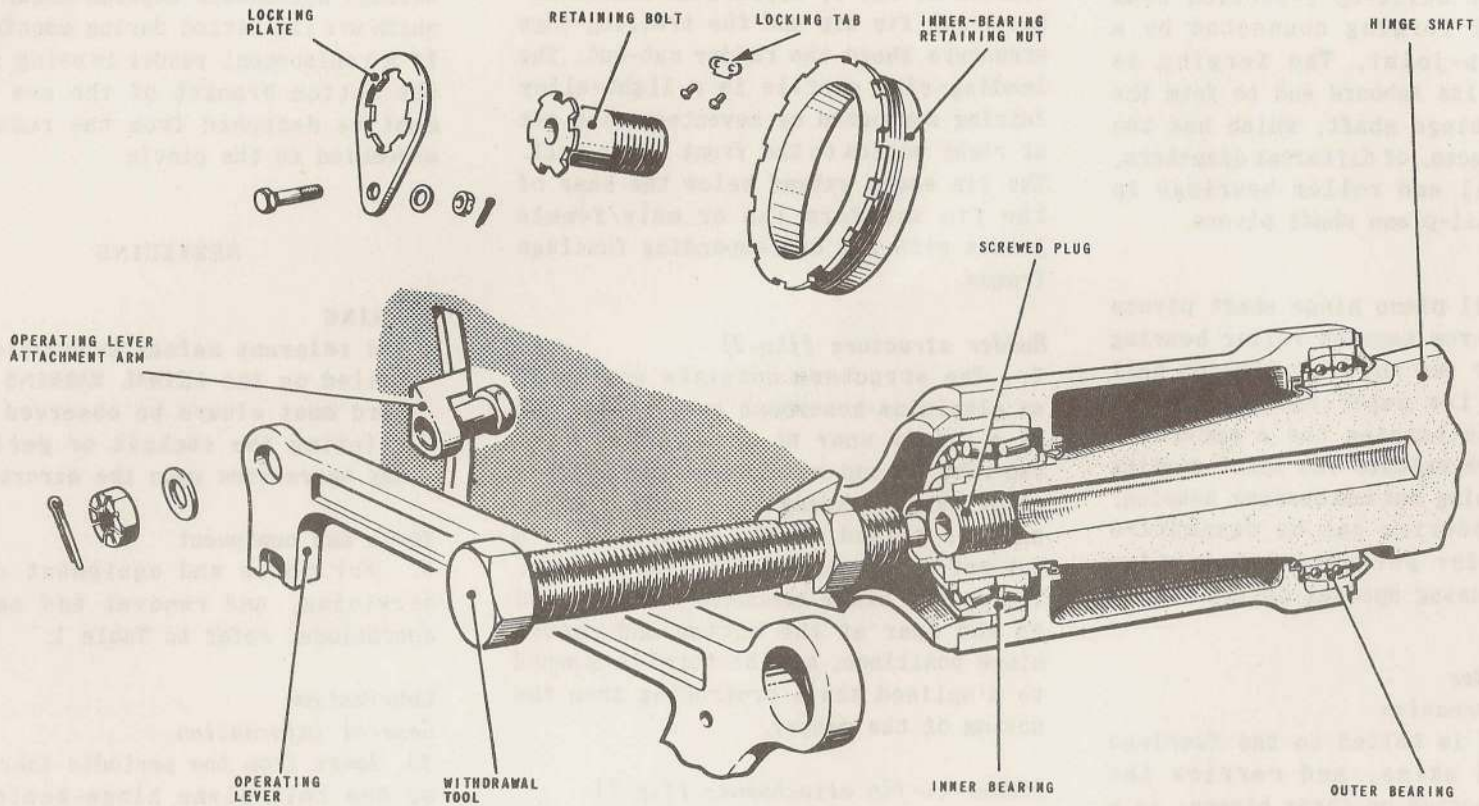

FIG.3. TAIL-PLANE REMOVAL

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removed (para.16) before the bearings can be lubricated or renewed.

Dismantling

11. To dismantle the bearing:-

(1) Secure an assembly rig, in a bench vice, and place the bearing over the spigot, locating the flats on the inner sleeves with the flanges of the rig body. Insert the steady bolt supplied with the rig. Straighten the lock-washer tabs and unscrew the bearing nut, using a socket and a ½ in. square drive tommy bar.

(2) Lift the bearing components off the inner sleeve and arrange them, on a dust-free surface, so that they may be assembled in the reverse order to that in which they were dismantled.

Repacking with grease

12. To repack the bearing:-

(1) Thoroughly degrease the components and allow them to dry out completely. No dust or grit must enter the components.

◀ (2) Apply grease XG-287 to the bearing ▶ cages and running surfaces, ensuring that all surfaces are completely covered.

Assembly

13. To assemble the bearing:-

(1) Place the inner sleeve of the bearing over the spigot of the assembly rig *(para.11)* and insert the steady bolt.

(2) Assemble the bearing cages, the spacer and the outer race.

(3) Fit a new lock washer.

(4) Fit and tighten the nut using a socket and torque wrench set to give 100 lb ft torque loading. Check the torque loading by two further applications of the wrench to the socket.

(5) Lock the nut by bending up at least two of the lock-washer tabs.

Charging the rudder damper

14. To charge the damper:-

(1) Remove the small panel in the fin port skin at the top of the rudder cut-out, by removing two countersunk screws.

(2) Remove the closing screw from the top of the damper plunger and fit the union.

(3) With an adapter fitted, and filled with oil OM-15, connect the lubricating gun to the union.

(4) Charge the damper until the plunger protrudes 0.5 in; do not exceed this dimension.

(5) Remove the gun and adapter, and unscrew the union.

(6) Adjust the pressure in the damper by displacing the valve in the end of the damper plunger until the plunger extension is 0.375 in. Use the checking gauge which is graduated for measurement and incorporates a probe for valve displacement. If air continues to emerge when the plunger has retracted to 0.375 in. repeat the charging operation until all air is removed. The damper shaft may be rotated to assist in the removal of air from the working chamber.

(7) Refit the closing screw and the panel.

Note...

1. If the damper is not installed in the aircraft the charging and bleeding procedure must be accomplished with the damper in a vertical position, plunger uppermost.

2. The dimensions given apply at a temperature of 70-80 deg F. For each 35 deg F increase add 0.03 in. For each 35 deg F decrease subtract 0.03 in.

Checking the rudder break-away torque

15. To check the torque:-

(1) Remove access panel 86S and release the rudder p.f.c.u. from the rudder king-lever.

(2) Insert a ¼ in. dia. bolt through the port end of the rudder slinging point and loop a piece of cord over the bolt head. The cord must contact the rudder skin and extend beyond the trailing edge.

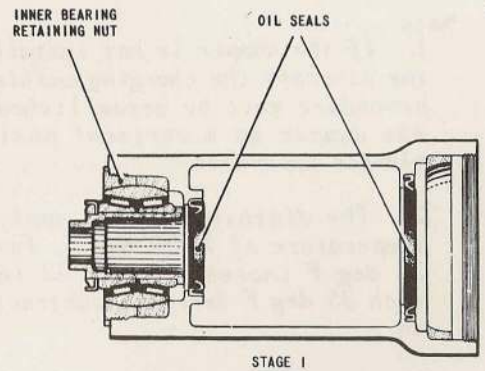
(3) Form a loop of the free end of the cord and attach a spring balance.

(4) Move the rudder fully to port.

(5) Pass the cord around the trailing edge of the rudder and apply a pull, with the spring balance, to move the rudder to starboard through its full travel; the cord must be kept at right angles to the rudder at all positions. At no time, throughout the travel, must the applied pull exceed 4 lb.

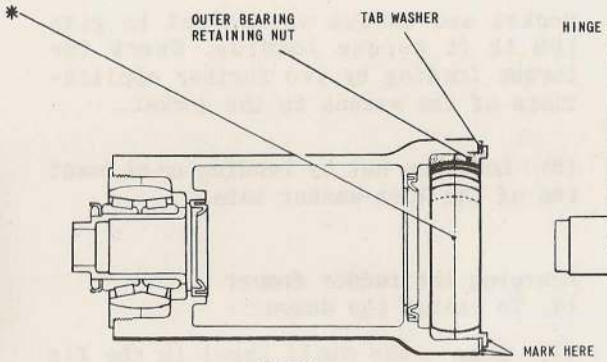
(6) Reverse the bolt and cord and repeat operation (5), moving the rudder to port.

(7) Connect the p.f.c.u. to the king lever, lock the attachment bolt, and refit the access panel.



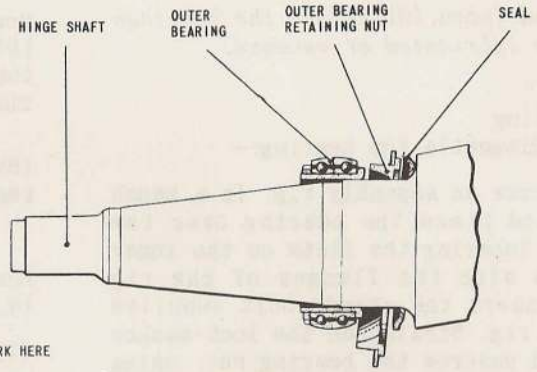
STAGE 1

FIT THE INNER AND OUTER OIL SEALS AND THE INNER BEARING TO THE TAIL-PLANE HOUSING. TIGHTEN THE RETAINING NUT WITH BOX SPANNER REF.NO.26DK/95149 AND FIT THE LOCKING TAB. LOCK ITS SCREWS BY CENTRE PUNCHING.



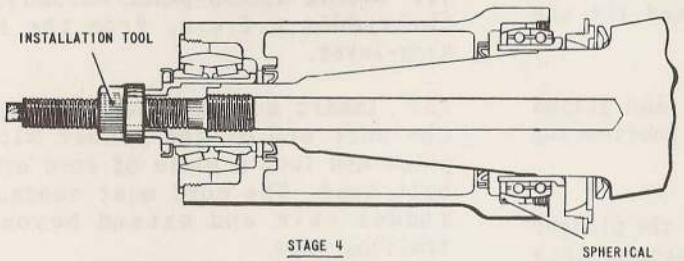
STAGE 2

FIT THE OUTER BEARING RETAINING NUT AND TAB WASHER AND TIGHTEN THE NUT WITH BOX SPANNER REF.NO.26DK/95061 UNTIL THE FACES MARKED * ABUT. MARK THE RELATIVE POSITIONS OF NUT, WASHER AND HOUSING AND REMOVE THE NUT.



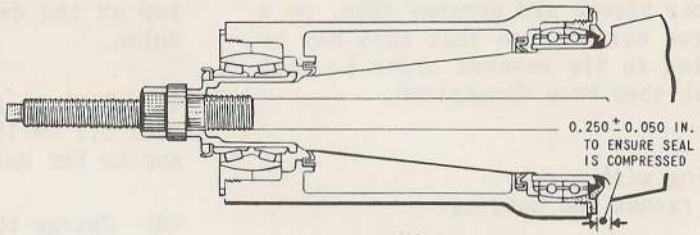
STAGE 3

PLACE THE OUTER SEAL AND RETAINING NUT OVER THE TAIL-PLANE HINGE SHAFT, AND PRESS THE OUTER BEARING EVENLY OVER THE SHAFT TO THE POSITION ILLUSTRATED.



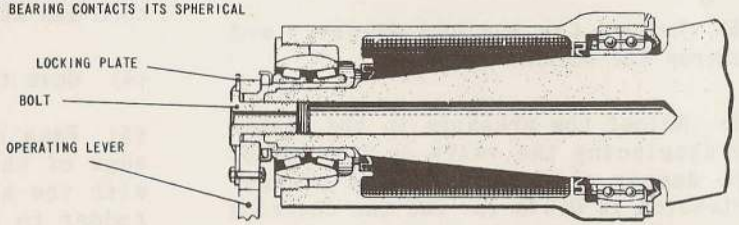
STAGE 4

ENTER THE TAIL-PLANE HINGE SHAFT INTO ITS HOUSING AND SCREW INSTALLATION TOOL REF.NO.26DK/95178 FULLY INTO THE SHAFT. DRAW THE SHAFT INTO THE INNER BEARING UNTIL THE OUTER BEARING CONTACTS ITS SPHERICAL SEATING.



STAGE 5

SCREW THE OUTER BEARING RETAINING NUT INTO THE HOUSING AND TIGHTEN IT WITH SPANNER REF.NO.26DK/95169 AND 26DK/95170, TO ALIGN THE MARKINGS MADE AT STAGE 2. LOCK THE NUT WITH THE TAB WASHER AND POSITION THE SEAL. DRAW THE TAIL PLANE FULLY HOME WITH THE INSTALLATION TOOL.



STAGE 6

REMOVE THE INSTALLATION TOOL. ATTACH THE TAIL-PLANE OPERATING LEVER, SECURE IT WITH THE BOLT AND LOCK THE BOLT WITH THE LOCKING PLATE.

FIG.4. TAIL PLANE ASSEMBLY

◀ STAGE 2 INSTRUCTIONS CLARIFIED ▶

REMOVAL AND ASSEMBLY

Tail plane

Removal (fig.3)

16. To remove either tail-plane component:-

(1) Exhaust all pressure from the tail plane and rudder, No.1 and No.2 controls systems accumulators by operating the rudder until all movement ceases.

(2) Position a fuselage trestle at frame 59 *(Sect.2, Chap.4)*.

(3) Remove No.1 engine reheat jet pipe *(Sect.4, Chap.1)*.

(4) Fit the fuselage lower walkway *(Sect.2, Chap.4)*.

(5) Remove the section of heat shield covering the appropriate tail-plane bearing housing, and the small triangular panel from the aft side of the fuselage slot.

(6) Disconnect the tail-plane operating lever from the attachment arm, and the p.f.c.u. screwjack.

Note...

It will be necessary to move the tail plane in order to remove the bolts. If the torque converter, of the p.f.c.u. is not fitted, the spline key can be used to rotate the jack drive pinions. If the p.f.c.u. is complete, connect a hydraulic ground servicing trolley to one of the controls systems and, using the trolley hand pump to provide pressure, operate the p.f.c.u. control valve to move the tail plane.

(7) Remove the locking plate from the tail-plane operating lever.

(8) Withdraw the retaining bolt, using a spanner, and then remove the operating lever.

(9) Remove the inner-bearing retaining nut, using a spanner, after removing the locking tab.

(10) Attach the tail-plane sling to the slinging point, and suspend it from suitable standard lifting tackle; take the weight of the tail plane.

(11) Insert the screwed plug, which is supplied with the withdrawal tool, as far as it will go into the end of the tail plane hinge-shaft.

(12) Screw the withdrawal tool cage into the bearing housing.

(13) With the tail plane supported, screw down the withdrawal tool bolt to push the hinge-shaft out of its housing.

(14) Place the tail plane in a stand.

(15) Unlock the outer bearing retaining nut tab washer and, using a spanner, unscrew the nut.

(16) Remove the withdrawal tool and screwed plug.

Assembly (fig.4)

17. To assemble a tail-plane component:-

(1) Coat all exposed surfaces of the hinge-shaft and bearing housing with ◀ grease XG-287. ▶

(2) Assemble the tail plane to the fuselage by following the instructions given in the illustration.

(3) Connect the tail plane operating lever to the tail plane attachment arm and the screwjack.

Note...

It is essential that the operating lever is correctly lined-up before final tightening is carried out at any one of the three attachment points.

(4) Refit the heat shield and the triangular panel.

(5) Remove the fuselage walkway.

(6) Refit the jet pipe *(Sect.4, Chap.1)*.

Rudder

Removal (fig.5)

18. To remove the rudder:-

(1) Exhaust all pressure from the tail plane and rudder, No.1 and No.2 controls systems accumulators by operating the tail plane until movement ceases.

(2) Fit the rudder sling suspended from standard lifting tackle.

(3) Remove the upper of two hexagon-headed bolts in the bottom hinge bracket. The bolt and its nut are visible through the cut-away in the fin skin.

(4) Withdraw the four countersunk hexagon-drive screws securing the bottom bracket to the rudder structure.

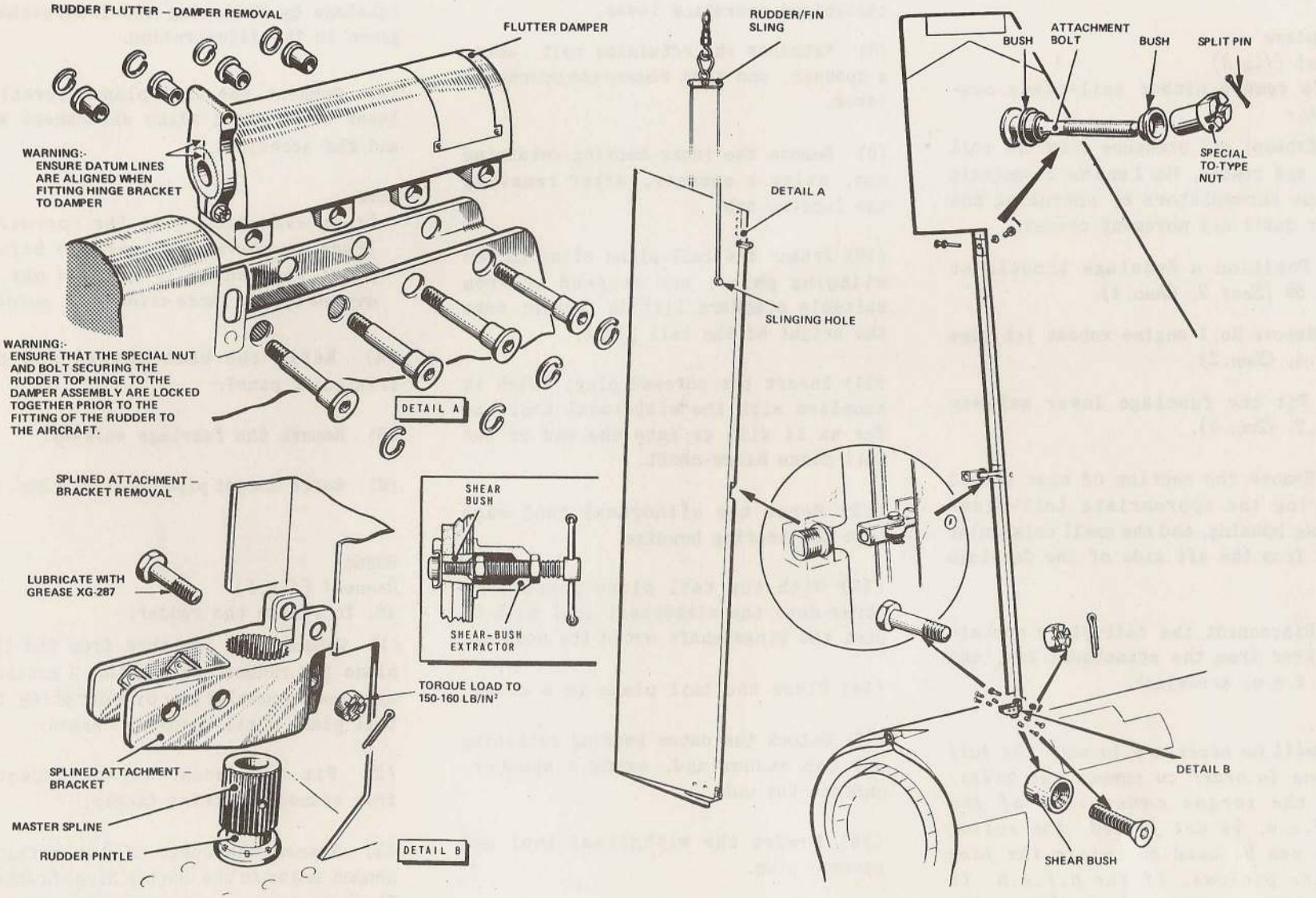


FIG.5. RUDDER-REMOVAL AND ASSEMBLY

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◀ WARNING NOTE ADDED ▶

HQ STC
COMMAND TEMPORARY
AMENDMENT NO 2 TO
AP 101B- 1003-1A

This page is to be inserted in Sect 3, Chap 3, FS5, facing the page containing Fig 6.

FIN TO No 2 JET PIPE BAY FOD MIGRATION

INTRODUCTION

1. Following damage to the fin which required the replacement of rivets (PWI/LTG/273), some debris has accumulated inside the fin structure. To avoid this debris falling into the No 2 jet pipe bay and the subsequent loose article hazard, possible FOD access holes between the fin and the jet pipe bay are blocked and sealed using asbestos tape and PRC bungs.

a. These access points include the gaps around the fin attachment webs, the electrical conduits and the hole just aft of frame 53.

b. A routine check to ensure the security of these bungs has been introduced at each No 2 jet pipe removal.

METHOD

2. Pump PRC 1422 B2 (33H/2203109) into the fin through possible debris access holes. Using suitable force fit bungs made from asbestos tape (32B/1250362) covered in PRC, seal the holes, when PRC dry paint over with viton (33H/516). Ensure bungs secure.

(5) Insert the extractor into each of the shear bushes in turn, using the extractor tommy bar, and free the bushes by screwing on the outer nut.

(6) Release the top hinge bracket from the fin by removing the split pin, special-to-type nut, bolt and bushes.

(7) Free the rudder from its bottom hinge bracket and remove it from the aircraft.

(8) If a replacement rudder is being fitted, remove the existing bottom bracket *(detail B)* from the pintle and attach it to the unserviceable rudder.

Assembly (fig.5)

19. To assemble the rudder:-

(1) If the rudder is a replacement item, detach the bottom hinge bracket as described in para.18(3) and (4).

Note...

If the rudder removed from the aircraft had a trim strip fitted the replacement rudder must have a similar strip fitted in accordance with the instructions given in A.P.101B-1006-6, Part 1, Chap.4.

(2) Lightly grease the splines of the bracket with grease XG-287 and fit it to the rudder pintle. Note the position of the master spline. Insert the clamp bolt and fit and lock its nut *(refer to fig.5 for torque loading)*.

(3) Lightly lubricate the spigot of the centre hinge with grease XG-287.

(4) Offer up the rudder, line up the centre hinge spigot, and secure the top hinge bracket to the fin, using the existing fastenings.

(5) Fit the shear bushes, the countersunk bolts and the hexagon-headed bolt to the bottom bracket.

(6) Examine the damper unit and recharge it if necessary *(para.14)*.

(7) Check the rudder break-away torque *(para.15)*.

Rudder damper

Removal and assembly

WARNING

Ensure that the special nut and bolt securing the rudder top hinge to the rudder damper assembly are locked together (fig.5 detail A) prior to the fitting of the rudder to the aircraft.

20. To remove or assemble the rudder damper refer to fig.5, detail A, paying particular attention to the WARNING for spline alignment.

Fin

Removal

21.

(1) Switch off battery and disconnect.

(2) Remove No.1 and No.2 engine reheat pipes *(Sect.4, Chap.1)*.

(3) Disconnect cables at compass detector unit and aerial. Draw cables out of fin.

(4) Unscrew clip on generator cooling duct at frame 55, release duct and remove closing panel.

(5) Remove rudder *(para.18)*.

(6) Attach sling to fin and, using standard lifting tackle, support fin.

Note...

To ensure correct assembly, shims and packing pieces must be identified with the positions from which they are removed.

(7) At frame 53 remove from the:-

Fin diaphragm No.1

Stiffnut, 2 B.A. (2 off)	28M/10328
Washer, 2 B.A.	28W/9419475
Bolt, 2 B.A.	28D/9133011
Shim, packing	26DK/33655

(8) At frame 54 remove from the:-

Fin front shear wall

Bolt, 1/4 in. B.S.F. (2 off)	A.25/3½E
Washer, pad (2 off)	26DK/1440111
Washer, 1/4 in. B.S.F. (2 or 4 as required)	28W/9418921
Shim	26DK/4891

(9) At frame 55 remove from the:-

Four bottom centre holes

Split pin, 1/16 in.	28P/1007741
Nut, 1/4 in. B.S.F. slotted	28M/13935
Washer, special	26DK/1440109
Bolt, special	26DK/1440092
Shim (1 or 2 as fitted)	26DK/1440080

Two bottom outer holes

Split pin, 1/16 in.	28P/1007741
Nut, 5/16 in. B.S.F. slotted	28M/14357
Washer, 5/16 in. B.S.F. (2 off)	28W/9419403
Bolt, 5/16 in. B.S.F. special	26DK/1440085
Washer, 5/16 in. B.S.F.	28W/9419455

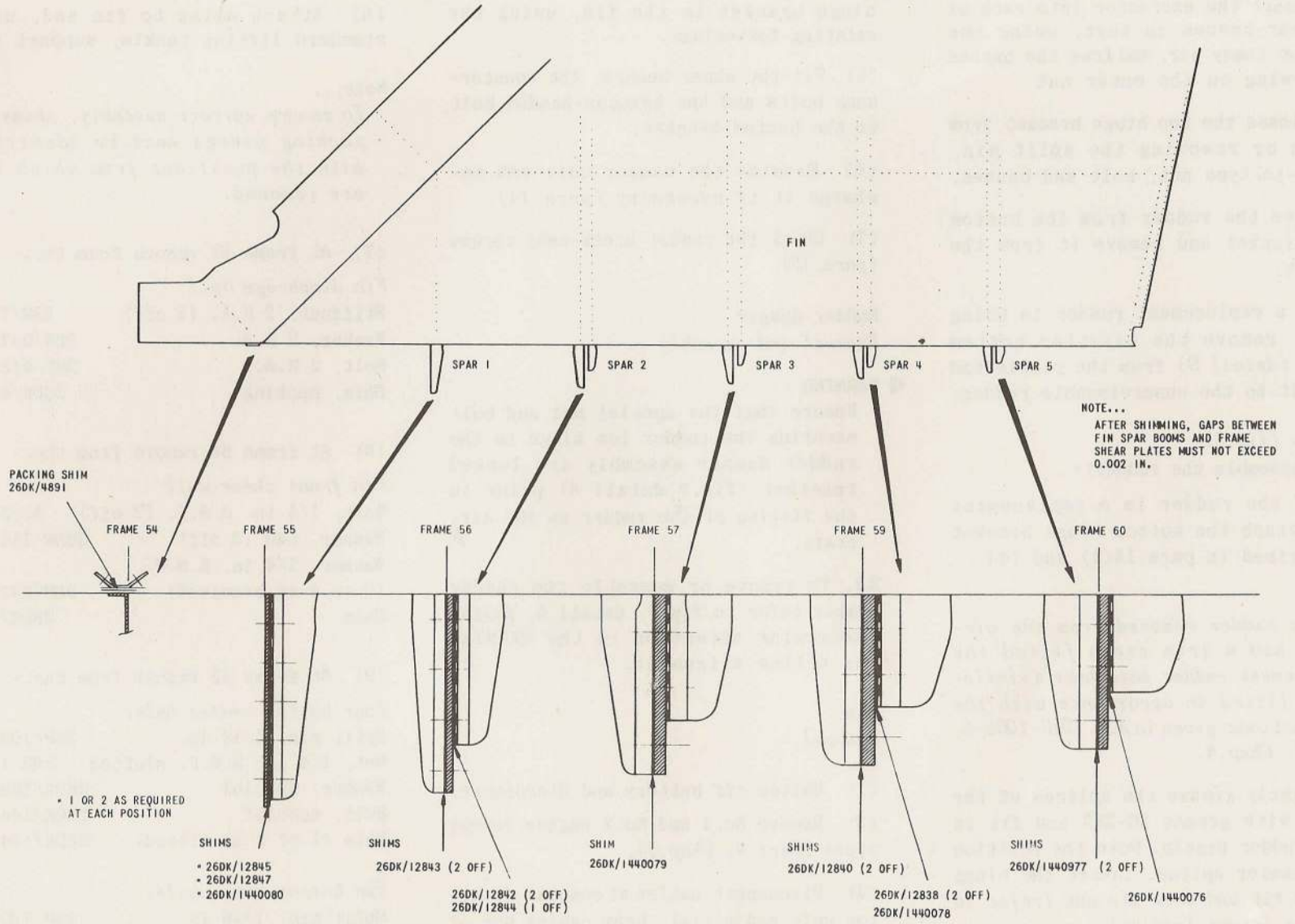

FIG. 6. FIN SPARS AND FUSELAGE FRAMES - SHIMMING

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Six centre outer holes

Split pin, 1/16 in.	28P/1007741
Nut, 5/16 in. B.S.F. slotted	28M/14357
Washer, 5/16 in. B.S.F. (2 off)	28W/9419403
◄ Bolt, 5/16 in. B.S.F. special	26DK/1440086
Washer, 5/16 in. B.S.F.	28W/9419455

Two top outer holes

Split pin, 1/16 in.	28P/1007741
Nut, 5/16 in. B.S.F. slotted	28M/14357
Washer, 5/16 in. B.S.F. (2 off)	28W/9419403
Bolt, 5/16 in. B.S.F. special	26DK/12856
Washer, 5/16 in. B.S.F.	28W/9419455
Shim (1 or 2 as fitted)	26DK/12847

Two top inner holes

Split pin, 1/16 in.	28P/1007741
Nut, 5/16 in. B.S.F. slotted	28M/14357
Washer, special	26DK/1440108
Bolt, special	26DK/1440093

Top centre hole

Split pin, 1/16 in.	28P/1007741
Nut, 5/16 in. B.S.F. slotted	28M/14357
Washer, special	26DK/1440108
Bolt, special	26DK/1440091
Shim (1 or 2 as fitted)	26DK/12845

Skin attachment bracket

Locking wire, 22 S.W.G. D.T.D. 189	
Bolt, 2 B.A. special (4 off)	26DK/12865

(10) At frame 56 remove from the:-

Two bottom outer holes

Split pin, 1/16 in.	28P/1007741
Nut, 5/16 in. B.S.F. slotted	28M/14357

Two bottom outer holes - continued

Washer, 5/16 in. B.S.F.	28W/9419403
Bolt, 5/16 in. B.S.F. special	26DK/1440083

Three top inner holes

Split pin, 1/16 in.	28P/1007741
Nut, 1/4 in. B.S.F. slotted	28M/13935
Washer, special	26DK/1440109
Bolt, special	26DK/1440092
Shim	26DK/12844

Four centre outer holes

Split pin, 1/16 in.	28P/1007741
Nut, 1/4 in. B.S.F. slotted	28M/13935
Washer, 1/4 in. B.S.F.	28W/9418941
Bolt, 1/4 in. B.S.F. special	26DK/12848

Two top outer holes

Split pin, 1/16 in.	28P/1006943
Nut, 2 B.A. slotted	28M/13121
Washer, 2 B.A.	28W/9419402
Bolt, special	26DK/21784
Packing, corner (2 off fwd)	26DK/2649
Packing, corner (1 off aft)	26DK/12825
Packing, corner (1 off aft)	26DK/12850
Shim (2 off)	26DK/12842
Shim (2 off)	26DK/12843

Skin attachment brackets

Locking wire, 22 S.W.G. D.T.D. 189	
Bolt, 2 B.A. special	26DK/12865

(11) At frame 57 remove from the:-

Two bottom outer holes

Split pin, 3/32 in.	28P/9429652
Nut, 7/16 in. B.S.F. slotted	28M/15199
Washer, 7/16 in. B.S.F. (2 off)	28W/9419467
Bolt, 7/16 in. B.S.F. special	26DK/1440084

Three top inner holes

Split pin, 1/16 in.	28P/1007741
Nut, 5/16 in. slotted	28M/14357
Washer, special	26DK/1440108
Bolt, special	26DK/1440091

Four centre and top outer holes

Split pin, 3/32 in.	28P/9429652
Nut, 7/16 in. B.S.F. slotted	28M/15199
Washer, 7/16 in. B.S.F.	28W/9419647
Bolt, 7/16 in. B.S.F. special	26DK/12852
Packing, corner (2 off)	26DK/2651
Packing, corner	26DK/2652
Packing, corner	26DK/2653
Shim	26DK/1440079

Skin attachment brackets

Locking wire, 22 S.W.G. D.T.D. 189	
Bolt, 2 B.A. special	26DK/12865

(12) At frame 59 remove from the:-

Two bottom centre holes

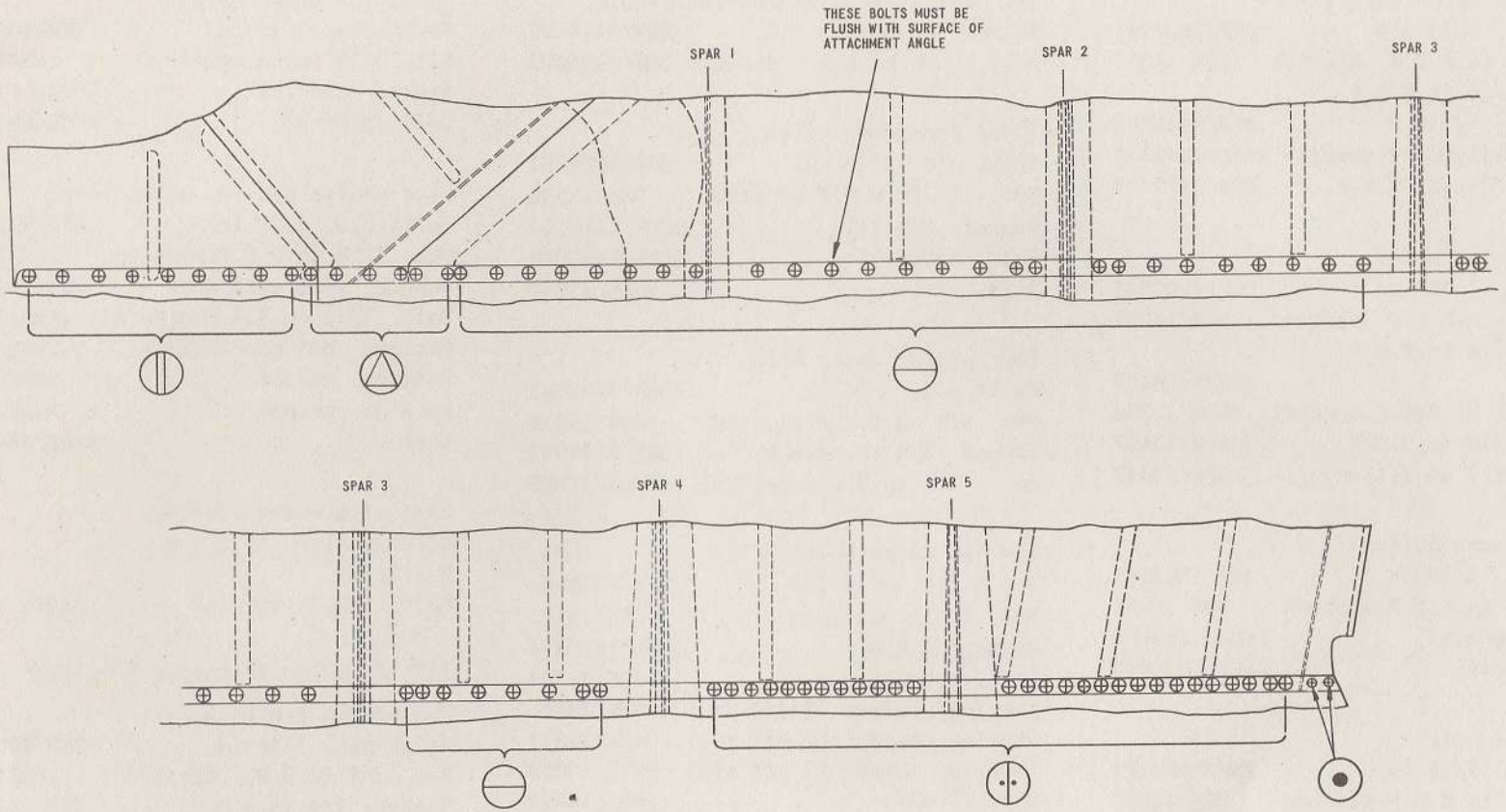
Split pin, 1/16 in.	28P/1007741
Nut, 1/4 in. B.S.F. slotted	28M/13935
Washer, 1/4 in. B.S.F.	28W/9418921
Bolt, 1/4 in. B.S.F. special	26DK/21957

Two bottom outer holes

Split pin, 3/32 in.	28P/9429652
Nut, 1/2 in. B.S.F. slotted	28M/14555
Washer, 1/2 in. B.S.F. (2 off)	28W/9419468
Bolt, special ►	26DK/1440087

Two centre and top outer holes (port)

Split pin, 3/32 in.	28P/9429652
Nut, 1/2 in. B.S.F. slotted	28M/14555
Washer, 1/2 in. B.S.F.	28W/9419468
Bolt, 1/2 in. B.S.F. special	26DK/12862
Packing, corner (aft)	26DK/2654



SYMBOL	BOLT	QTY.	STIFFNUT	QTY.
	26DK/12866	18	—	—
	26DK/12861	12	—	—
	26DK/12860	68	—	—
	26DK/12859	60	—	—
	26DK/12859	4	28M/7002430	4

FIG. 7. SECURING FIN TO FUSELAGE

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Two centre and top outer holes (port) - continued

Packing, corner (fwd)	26DK/2656
Shim (aft)	26DK/12838
Shim (fwd)	26DK/12840

Two centre and top outer holes (stbd.)

Split pin, 3/32 in.		28P/9429652
Nut, 7/16 in.B.S.F. slotted	aft	28M/15199
Washer, 7/16 in.B.S.F.		28W/9419467
Stud, special		26DK/1440105
Packing, corner (aft)		26DK/2654
Packing, corner (fwd)		26DK/2655
Shim (aft)		26DK/12838
Shim (fwd)		26DK/12840

Top centre hole

Split pin, 3/32 in.	28P/9429652
Nut, 1/2 in.B.S.F.slotted	28M/14555
Washer, special	26DK/1440110
Bolt, special	26DK/1440089
Shim	26DK/1440078

Skin attachment brackets

Locking wire, 22 S.W.G.
D.T.D.189

Bolt, 2 B.A. (8 off)	26DK/12865

(13) At frame 60 remove from the:-

Skin attachment brackets

Locking wire, 22 S.W.G.
D.T.D.189

Bolt, 2 B.A. (8 off)	26DK/12865

Two bottom outer holes

Split pin, 3/32 in.	28P/9429652
Nut, 1/2 in.B.S.F.slotted	28M/14555

Two bottom outer holes - continued

Washer, 1/2 in.B.S.F. (2 off)	28W/9419468
Bolt, 1/2 in.B.S.F.special	26DK/1440088

Centre and top outer holes (stbd.)

Split pin, 3/32 in.		28P/9429652
Nut, 1/2 in.B.S.F. slotted	aft	28M/14555
Washer, 1/2 in.B.S.F.		28W/9419468
Washer, special (2 off)		26DK/1440110
Stud, 9/16 in.B.S.F.special		26DK/1440106
Shim		26DK/1440077

Centre and top outer holes (port)

Split pin, 3/32 in.	28P/9429652
Nut, 9/16 in.B.S.F.special	26DK/2648
Washer, special (2 off)	26DK/1440110
Bolt, 9/16 in.B.S.F.special	26DK/12858
Shim	26DK/1440077
Shim	26DK/1440076

Top centre hole

Split pin, 1/16 in.	28P/1007741
Nut, 5/16 in.B.S.F.slotted	28M/14357
Bolt, special	26DK/1440094
Packing	26DK/1440095

(14) At frame 61 remove from the:-

Rudder lower hinge

Bolt, 3/8 in.B.S.F.special-to-type	26DK/4943
Washer, 3/8 in.B.S.F.	28W/9419477

(15) Remove the bolts securing the fin-to-fuselage attachment strips to the fin *(fig.7)*.

(16) Slacken the bolts securing the fin-to-fuselage attachment strips to the fuselage to facilitate reassembly of the fin.

(17) Rock the fin by hand to ensure that all securing bolts have been removed.

(18) Lift the fin away from the fuselage.

Assembly

22. Assembly of the fin is the reverse of the removal, with particular attention to the following points:-

(1) Before commencing assembly operations refer to fig.8 to ensure that any special techniques are observed and tolerances maintained.

(2) Use the location bolts and guide nuts itemized in A.P.101B-1000-6, Part 1, Chapter 4 to line-up the holes.

(3) Before finally tightening any bolts ensure that all other bolts will enter their respective holes.

(4) Check the gaps between spar booms and frame shear plates in accordance with fig.6.

(5) Seal with PR1422, Ref.No.33C/1598, any gaps existing between fin skins and fuselage attachment strips between frames 55 and 60.

(6) Carry out functioning checks on the rudder *(Chap.4D)*, and on the compass detector unit and aerial *(Sect.7, Chap.3C and Sect.8, Chap.1, respectively)*.

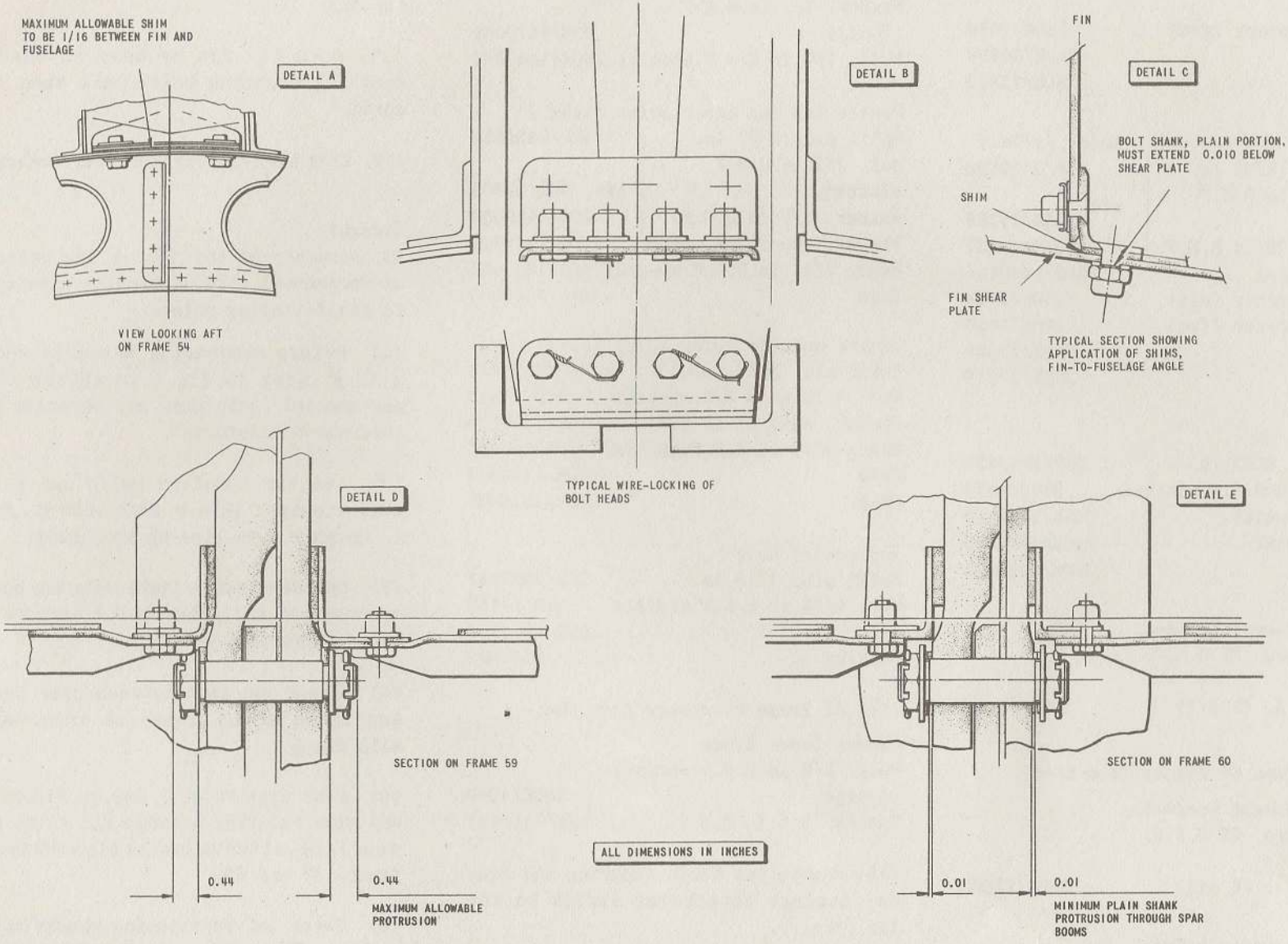

FIG. 8. FIN ASSEMBLY DETAILS

C2047-1

TABLE 1

Tools and equipment

Ref. No.	Description	Application/remarks
26DK/95102	Sling, tail-plane	
26DK/95055	Walkway, fuselage rear end	
26DK/95063	Key, spline	Tail-plane operating mechanism
26DK/95150	Spanner-box	Bolt attaching operating lever to tail-plane stub
26DK/95062	Tool, withdrawal	Tail-plane hinge shaft
26DK/95149	Spanner, box, outer race inner bearings	Tail plane
26DK/95061	Spanner outer race outer bearings	Tail plane, initial torque loading
26DK/95289	Stand, storage	Tail plane
1C/6686	Wrench, torque	Tail plane, inner bearing
26DK/95374	Socket	
26DK/95375	Rig, assembly	Tail plane, inner bearing lubrication
26DK/95178	Tool, installation	Tail plane
26DK/95169	Spanner special, 'C' and half-ring, peg	Tail plane, outer bearing retaining nut
26DK/95170		
26DK/95421	Tool assembly	Tail plane, spigot seal
1B/4467	Gun, lubricating	Re-charging rudder damper unit
27Q/14103	Adapter, use with 1B/4467	
26DK/95152	Union, special	
26DK/95786	Gauge, check	
26DK/95315	Case, rudder damper check gauge and adapter	
26DK/95022	Sling, fin or rudder	
26DK/95172	Extractor, tapered bush	Rudder to pintle
◄ EF3.88.2551	Spanner, special	Fin-to-fuselage attachment bolts ►

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