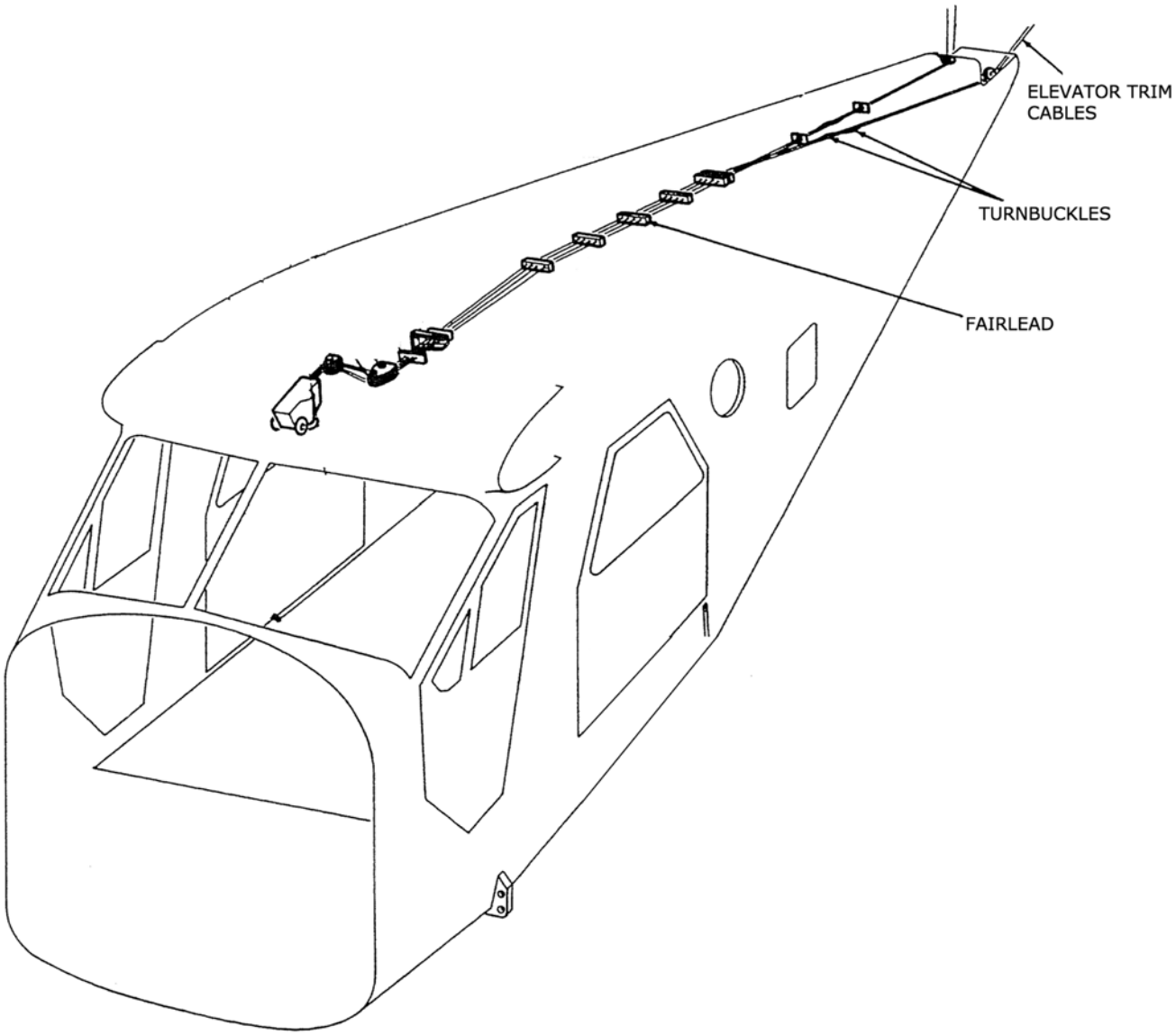


C27–30–06

Elevator Trim Control Cable Assemblies, Fittings and Full Cable Lengths

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C27–30–07
Elevator Control Cable Assemblies, Fittings and Full Cable Lengths

ATA CHAPTER: 27 – Flight Controls

MANUAL REF: PSM 1–2–2, Part 2, Flight Controls, Fig. 2-20 and 2-22
PSM 1–2–4, Part 2, Fuselage Group, Fig. 53
PSM 1–2T–4, Part 2, Fuselage Group, Fig. 46

EFFECTIVITY: All

REF DOCUMENTS: Nil

ACCESS: Remove utility access panel (PSM 1-2-2, Fig. 1-3, Item 16).
Remove access panel from cabin aft bulkhead.
Remove tail cone (PSM 1-2-2, Fig. 1-3, Item 5).

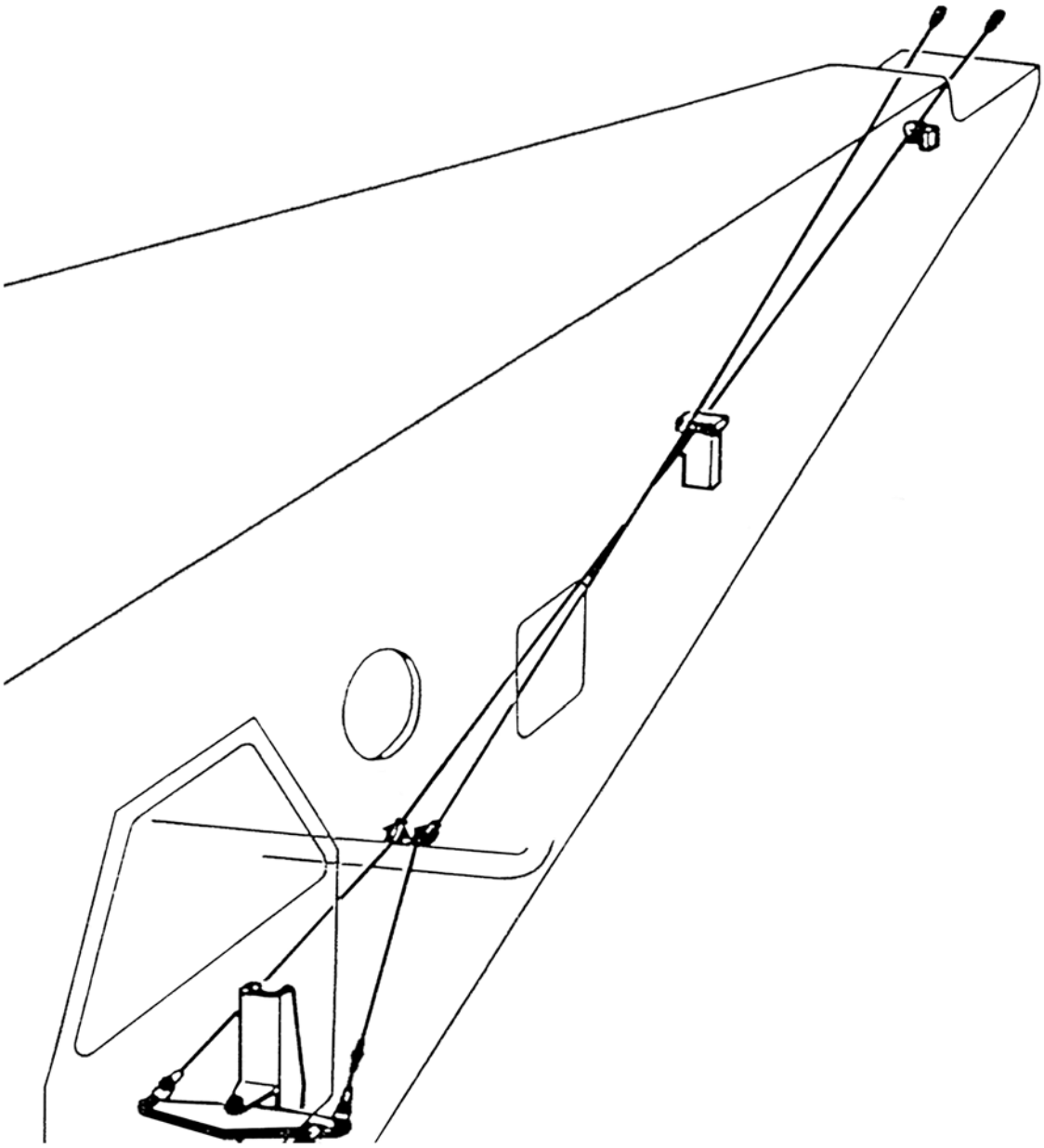
INSPECTION METHOD: Detailed Visual Inspection (DVI)

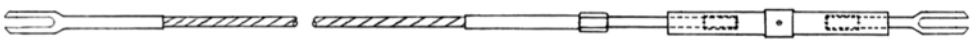
INSPECTION OBJECTIVE:
1) Cables for corrosion, wear, distortion, broken wires.
2) Crevice corrosion, pitting, plating and/or paint degradation and surface corrosion at cable terminals, turnbuckles, and fork ends.

RETREATMENT: Standard cables: AS REQUIRED, lubricate with MIL-PRF-81322 to maintain thin film of lubricant over the length of the cable.

Corrosion resistant cable: NONE

NOTES AND SPECIAL INSTRUCTIONS:
1) Replace cables if bends, kinks, or distortion is observed.
2) Inspect for broken wires by passing a clean, dry cloth along the entire length of the cable. A second person may be required to operate controls and provide access to the full length. If the cloth snags, remove the cable assembly for further inspection. For guidance and limitations on repair refer to PSM 1-2-2, Part 2, Paragraph 2.40.4.
3) Inspect entire length for corrosion. Where external corrosion or broken wires are found, remove the cable and inspect for internal corrosion, wear and broken wires.
4) Light external corrosion can be removed with a coarse weave cloth or a fibre brush. Re-protect after corrosion removal.
5) Replace cables with any internal corrosion and/or external wear that involves 2 or more adjacent wires.
6) Replace cables with pitted/cracked terminals or fork ends.
7) In the event that cables are removed for inspection and/or replacement, ensure the control cables have the correct tension on installation. Refer to PSM 1-2-2, Part 2, Paragraph 2.40.2 for tensioning instructions.





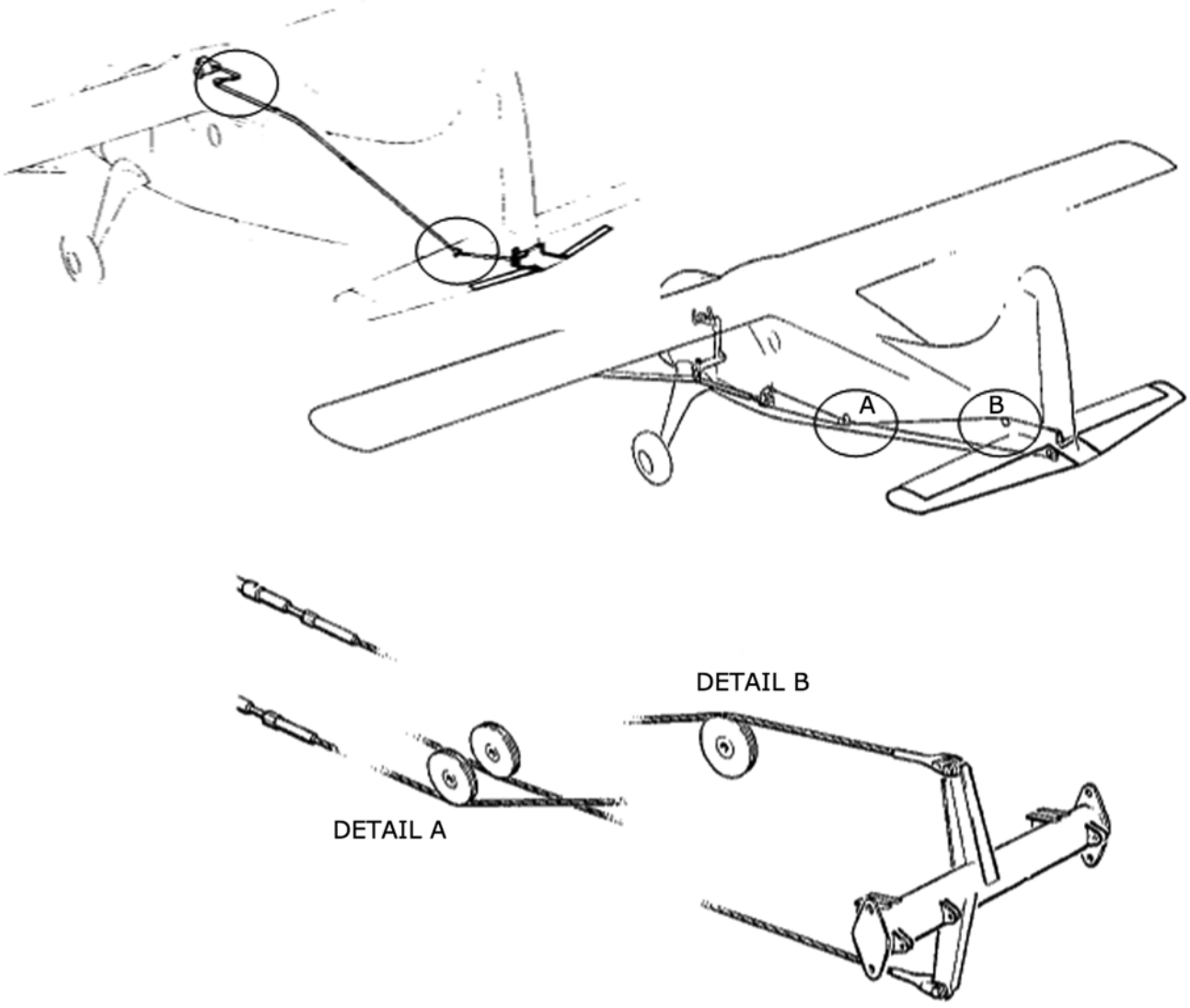
C27–30–07

Elevator Control Cable Assemblies, Fittings and Full Cable Lengths

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM:	C27–30–08 Elevator and Elevator Trim Control Cable Guide Pulleys and Pulley Attachment Parts
ATA CHAPTER:	27 – Flight Controls
MANUAL REF:	PSM 1–2–2, Part 2, Flight Controls, Fig. 2-20 and 2-22 PSM 1–2–4, Part 2, Fuselage Group, Fig. 53 and 55 PSM 1–2T–4, Part 2, Fuselage Group, Fig. 46 and 48
EFFECTIVITY:	All
REF DOCUMENTS:	Nil
ACCESS:	Remove forward fuselage left hand, centre, and bottom access panels (PSM 1-2-2, Fig. 1-3, Items 18,19, 20). Remove rear cabin bulkhead access panel. Lift all floorboards. Remove cabin headliner panels. Remove trim control box cover.
INSPECTION METHOD:	Detailed Visual Inspection (DVI)
INSPECTION OBJECTIVE:	1) Pulley bearings for corrosion and loss of free movement. 2) Pulley groove for debris, roughness, and wear. 3) Attachment brackets for deformation, cracking, degradation of coatings, pitting, and evidence of crevice corrosion. 4) Loose/working/broken bracket attachment fasteners. 5) Pulley pivot pin/bolt and hardware for loss of plating, surface, and crevice corrosion.
RETREATMENT:	AS REQUIRED, re-treat attachment brackets only as per Part 1, Paragraph 7.
NOTES AND SPECIAL INSTRUCTIONS:	1) Refer to PSM 1-2-2, Part 2, Paragraph 2.40.3. for pulley cleaning instructions. 2) Operate cables through full range to observe pulley motion and cable groove surfaces. Replace pulleys that do not rotate freely with cable motion.



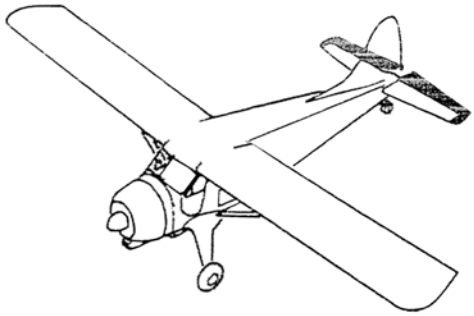
C27–30–08

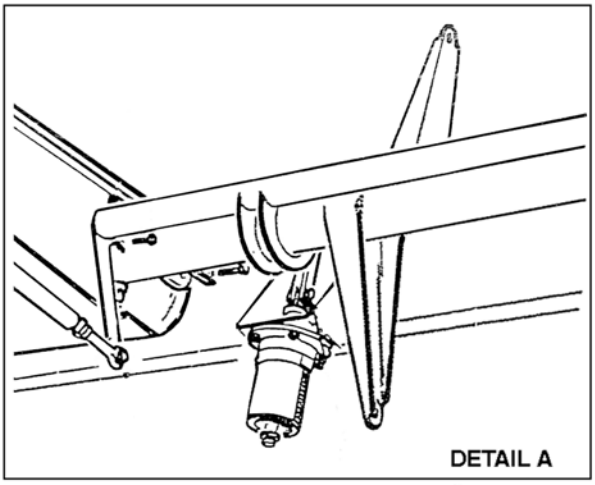
Elevator and Elevator Trim Control Cable Guide Pulleys and Pulley Attachment Parts

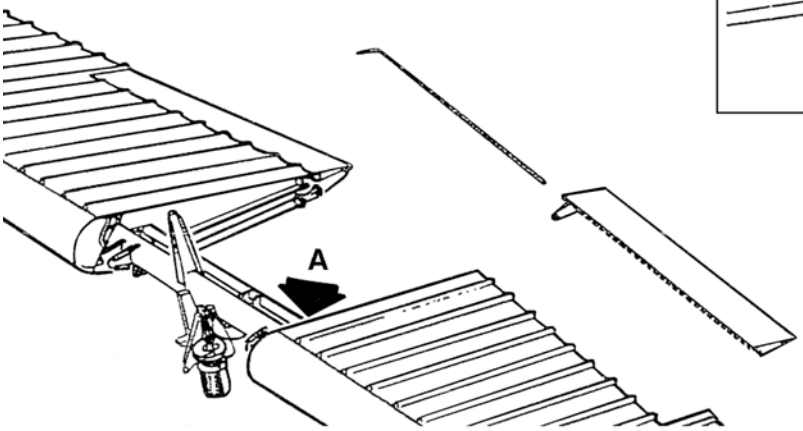
DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM:	C27–30–09 Elevator Torque Tube and Trim Torque Tube Accessible Surfaces and Attachment Parts
ATA CHAPTER:	27 – Flight Controls
MANUAL REF:	PSM 1–2–2, Part 2, Flight Controls, Fig. 2-22 PSM 1–2–4, Part 2, Empennage Group, Fig.10 PSM 1–2T–2, Part 2, Supplement 6 PSM 1–2T–4, Part 2, Empennage Group, Fig.8
EFFECTIVITY:	All
REF DOCUMENTS:	Nil
ACCESS:	Remove tail cone (PSM 1-2-2, Fig. 1-3, Item 5).
INSPECTION METHOD:	Detailed Visual Inspection (DVI)
INSPECTION OBJECTIVE:	1) Surface paint and plating discontinuity/blistering and corrosion. 2) Crevice corrosion, wear, cracking at attachments.
RETREATMENT:	RE-PROTECT as per Part 1, Paragraph 7.
NOTES AND SPECIAL INSTRUCTIONS:	None







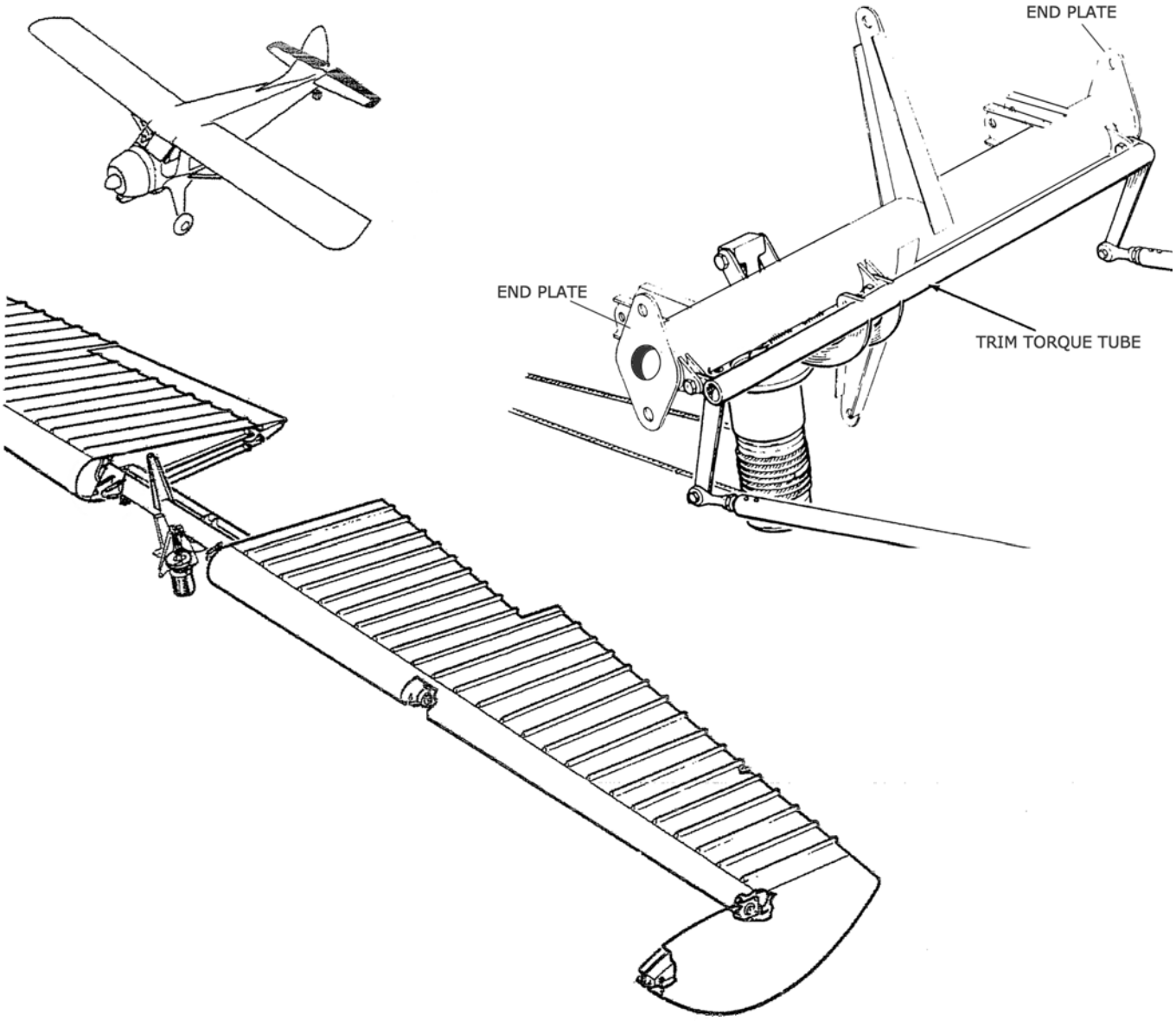
C27–30–09

Elevator Torque Tube and Trim Torque Tube Accessible Surfaces and Attachment Parts

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM:	C27–30–10 Elevator Torque Tube and Trim Torque Tube End Plates and Interior Surfaces
ATA CHAPTER:	27 – Flight Controls
MANUAL REF:	PSM 1–2–2, Part 2, Flight Controls, Fig. 2-22 PSM 1–2–4, Part 2, Empennage Group, Fig. 10 PSM 1–2T–2, Part 2, Supplement 6 PSM 1–2T–4, Part 2, Empennage Group, Fig. 9
EFFECTIVITY:	All
REF DOCUMENTS:	SB 2/47, Rev E or later, Stabilizers - Special Inspection for Cracks in the Front Spar of the Horizontal Stabilizer SB 2/30, Rev NC or later, Flight Controls - Elevator Root Rib - Inspection for Cracking and Replacement.
ACCESS:	Remove tail cone (PSM 1-2-2, Fig. 1-3, Item 5). Remove left and right-hand elevators (PSM 1-2-2, Part 2). Use flashlight or borescope, as required, to inspect interior of tube.
INSPECTION METHOD:	Detailed Visual Inspection (DVI)
INSPECTION OBJECTIVE:	Surface coating or paint discontinuity, surface corrosion and pitting.
RETREATMENT:	RE-PROTECT as per Part 1, Paragraph 7.
NOTES AND SPECIAL INSTRUCTIONS:	1) Can be coordinated with horizontal stabilizer inspection or elevator root rib inspection (see ref. documents, above). 2) Refer to Part 1, Paragraph 6.C.(2)(c) for recommended surface treatment for interior portion of the tube.



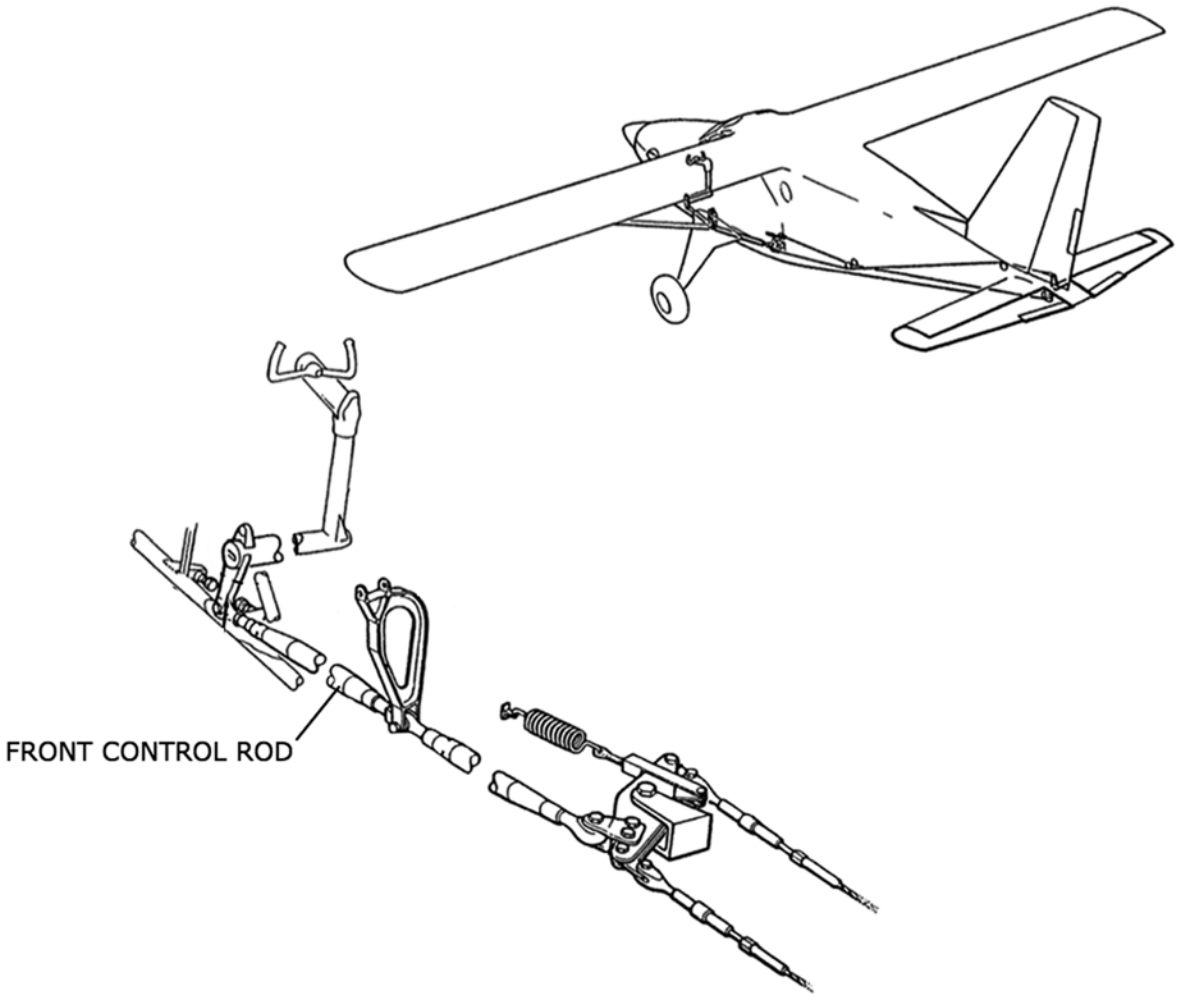
C27–30–10

Elevator Torque Tube and Trim Torque Tube End Plates and Interior Surfaces

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM:	C27–30–11 Elevator Front Connecting Rod
ATA CHAPTER:	27 – Flight Controls
MANUAL REF:	PSM 1–2T–2, Supplement 6, Fig. 6-6 PSM 1–2T–4, Fuselage Group, Fig. 46
EFFECTIVITY:	MK lll
REF DOCUMENTS:	Nil
ACCESS:	Access per PSM 1-2T-2, Supplement 6, Paragraph 6.19.C. All surfaces must be visible with 10x magnification, remove as required.
INSPECTION METHOD:	Detailed Visual Inspection (DVI) - Use 10x magnification and a strong light source.
INSPECTION OBJECTIVE:	1) Surface paint blistering, flaking, or cracking. 2) Evidence of corrosion or cracking, particularly at mating parts/surfaces. 3) Corrosion at bearings. 4) Loose rivets at ends of the rod. 5) Corrosion or loss of plating on steel parts (rod ends).
RETREATMENT:	AS REQUIRED, re-protect as per Part 1, Paragraph 7.
NOTES AND SPECIAL INSTRUCTIONS:	Blistered, flaked or cracked surface finish should be removed locally as per Part 1, Paragraph 5.C., to inspect for underlying corrosion and cracking. Re-protect as per Part 1, Paragraph 7.



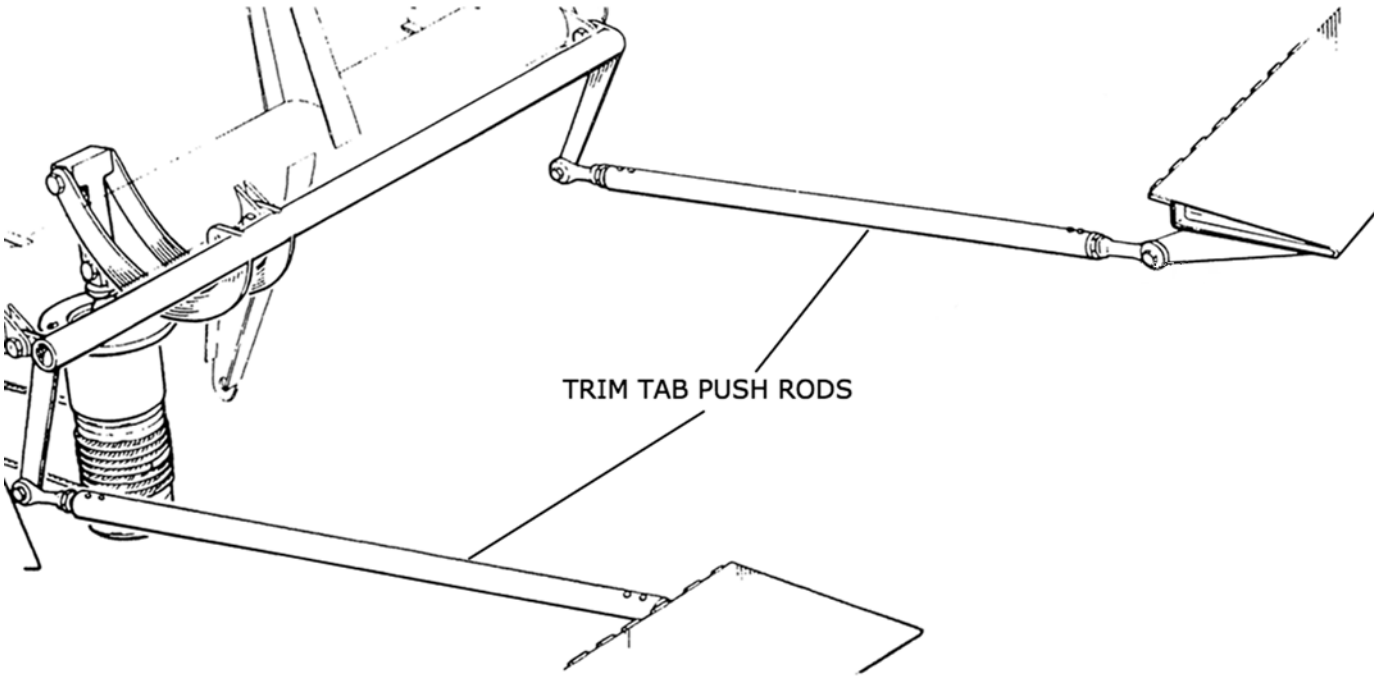
C27–30–11

Elevator Front Connecting Rod

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM:	C27–30–12 Elevator Trim Tab Push Rod
ATA CHAPTER:	27 – Flight Controls
MANUAL REF:	PSM 1–2–2, Part 2, Flight Controls, Fig. 2-22 PSM 1–2–4, Part 2, Empennage Group, Fig.10 PSM 1–2T–2, Supplement 6 PSM 1–2–4, Part 2, Empennage Group, Fig. 9
EFFECTIVITY:	All
REF DOCUMENTS:	Nil
ACCESS:	Remove tail cone (PSM 1-2-2, Fig. 1-3, Item 5).
INSPECTION METHOD:	Detailed Visual Inspection (DVI)
INSPECTION OBJECTIVE:	1) Surface paint discontinuity and corrosion. 2) Evidence of crevice corrosion. 3) Bearing corrosion and wear. 4) Cracking at or loose rivets.
RETREATMENT:	RE-PROTECT as per Part 1, Paragraph 7.
NOTES AND SPECIAL INSTRUCTIONS:	None



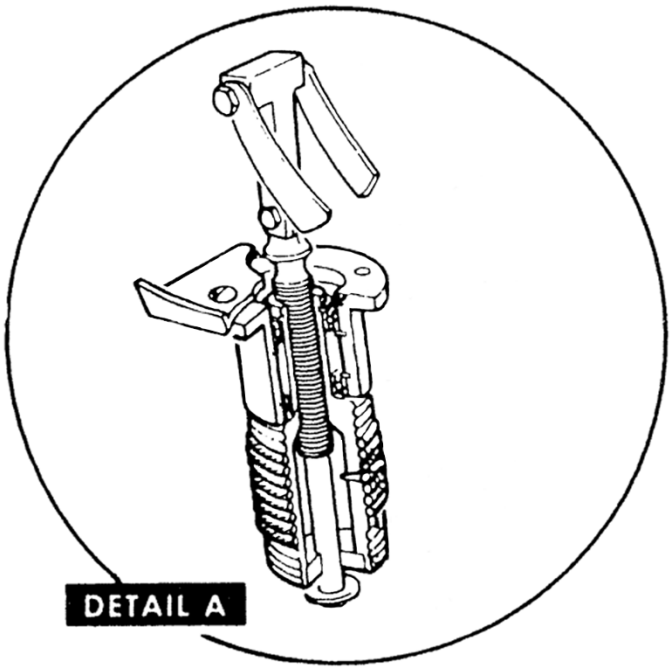
C27–30–12

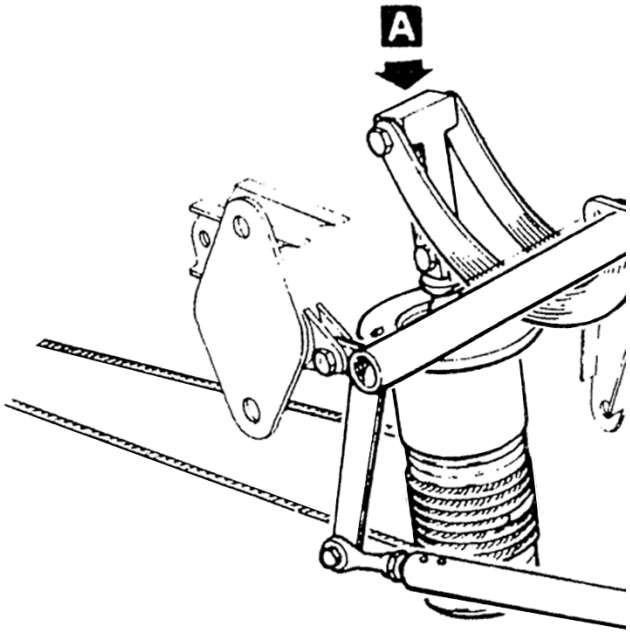
Elevator Trim Tab Push Rod

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM:	C27–30–13 Elevator Trim Screw Jack Assembly
ATA CHAPTER:	27 – Flight Controls
MANUAL REF:	PSM 1–2–4, Part 2, Empennage Group, Fig. 10 PSM 1–2T–4, Part 2, Empennage Group, Fig. 9
EFFECTIVITY:	All
REF DOCUMENTS:	Nil
ACCESS:	Remove tail cone (PSM 1-2-2, Fig. 1-3, Item 5).
INSPECTION METHOD:	Detailed Visual Inspection (DVI) - Remove, disassemble and clean as per PSM 1-2-2, Paragraph 2.46.
INSPECTION OBJECTIVE:	1) Surface corrosion, crevice corrosion and pitting. 2) Fretting corrosion on cable drum. 3) Bearing corrosion and wear. 4) Corrosion and wear of internal parts.
RETREATMENT:	External grease cable drum. Lubricate internal parts as per PSM 1-2-2, Part 1, Paragraph 2.46.5.
NOTES AND SPECIAL INSTRUCTIONS:	Housing has many cavities that can collect water and debris. Pay particular attention to bearings, bottoms of cavities, and the region around the retaining ring.





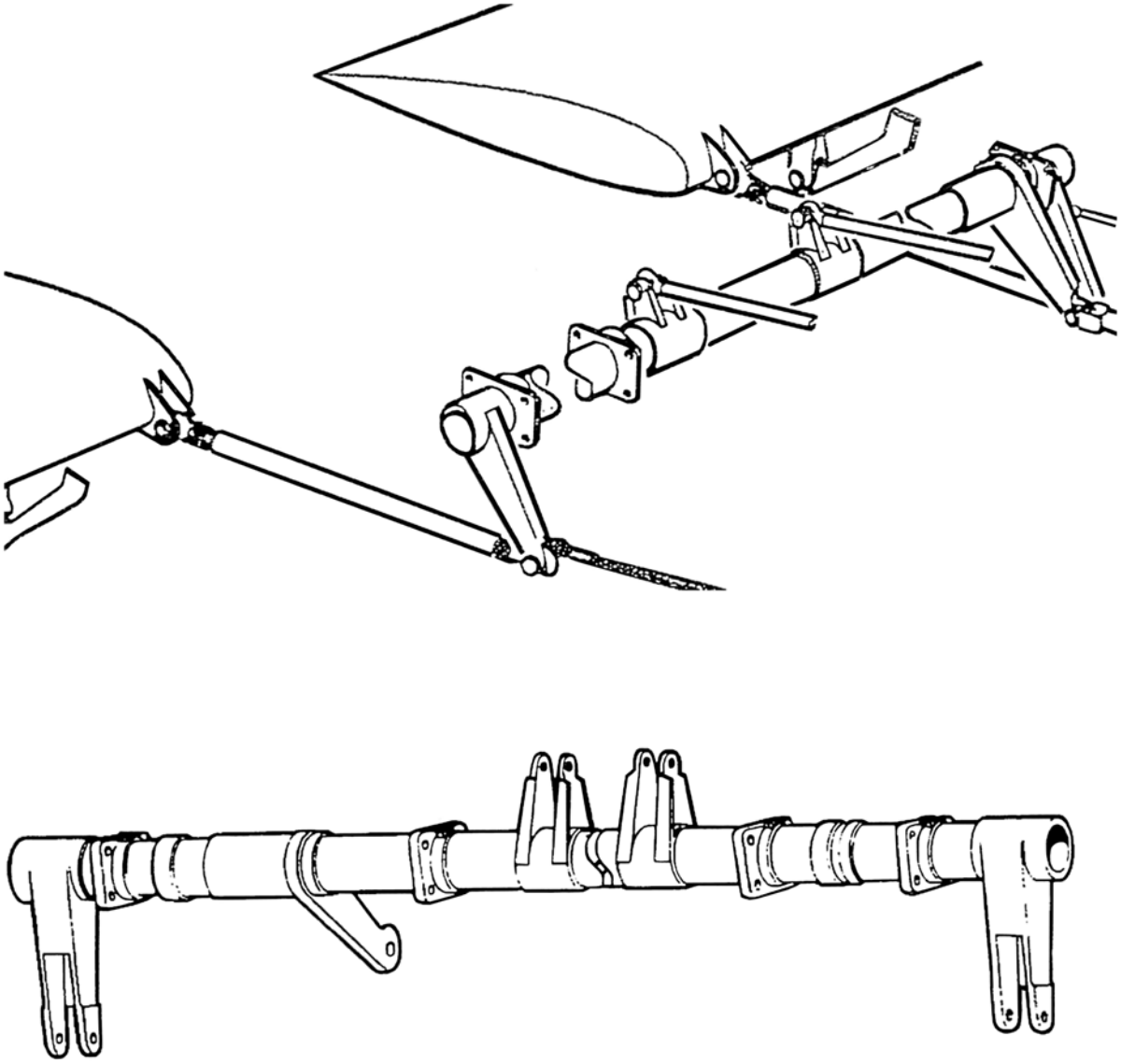
C27–30–13

Elevator Trim Screw Jack Assembly

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM:	C27–50–01 Flap Torque Tube Assembly
ATA CHAPTER:	27 – Flight Controls
MANUAL REF:	PSM 1–2–2, Part 2, Flight Controls, Fig. 2-27 PSM 1–2–4, Part 2, Fuselage Group, Fig. 47 PSM 1–2–2T–2, Supplement 6 PSM 1–2T–4, Part 2, Fuselage Group, Fig. 41
EFFECTIVITY:	All
REF DOCUMENTS:	Nil
ACCESS:	Remove cabin headliner. Remove excess grease at bearings. Remove wing root fairings; remove debris from inner surface of tube at both ends. Use mirror or borescope and strong light source.
INSPECTION METHOD:	Detailed Visual Inspection (DVI)
INSPECTION OBJECTIVE:	1) Surface paint discontinuity, blistering and corrosion. 2) Evidence of fretting corrosion at bearings. 3) Surface corrosion and pitting of inner tube surfaces.
RETREATMENT:	AS REQUIRED, re-protect interior and exterior non-lubricated tube surfaces as per Part 1, Paragraph 7. Lubricate bearings as per PSM 1-2-2, Part 1, Lubrication Diagram Figure 1-10.
NOTES AND SPECIAL INSTRUCTIONS:	In severe corrosion (refer to Part 1, Paragraph 4.C.) environments, treat full length of interior of tube with water displacing corrosion inhibiting compound as per Part 1, Paragraph 7.



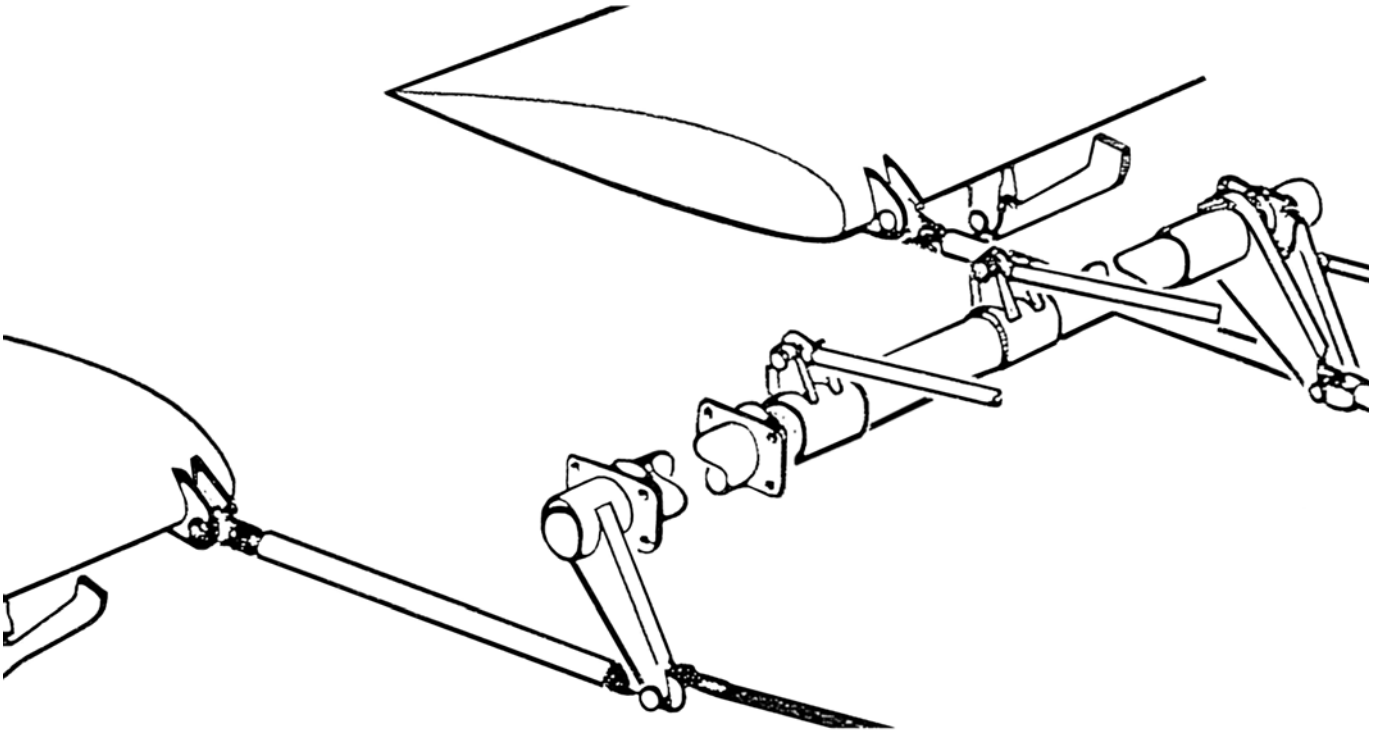
C27–50–01

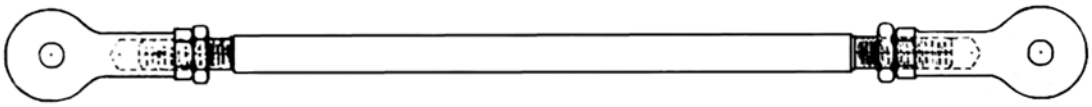
Flap Torque Tube Assembly

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM:	C27–50–02 Flap Control Rods
ATA CHAPTER:	27 – Flight Controls
MANUAL REF:	PSM 1–2–2, Part 2, Flight Controls, Fig. 2-27 PSM 1–2–4, Part 2, Fuselage Group, Fig. 47 PSM 1–2T–2, Supplement 6 PSM 1–2T–4, Fuselage Group, Fig. 41
EFFECTIVITY:	All
REF DOCUMENTS:	Nil
ACCESS:	Remove lower wing root fairing (PSM 1-2-2, Fig. 1-3, Item 17).
INSPECTION METHOD:	Detailed Visual Inspection (DVI)
INSPECTION OBJECTIVE:	1) Surface paint or plating discontinuity, blistering and corrosion. 2) Corrosion and wear of bearings. 3) Evidence of crevice corrosion.
RETREATMENT:	RE-PROTECT as per Part 1, Paragraph 7
NOTES AND SPECIAL INSTRUCTIONS:	Corrosion is most often found at the exposed end of the control rod, nearest the flap.





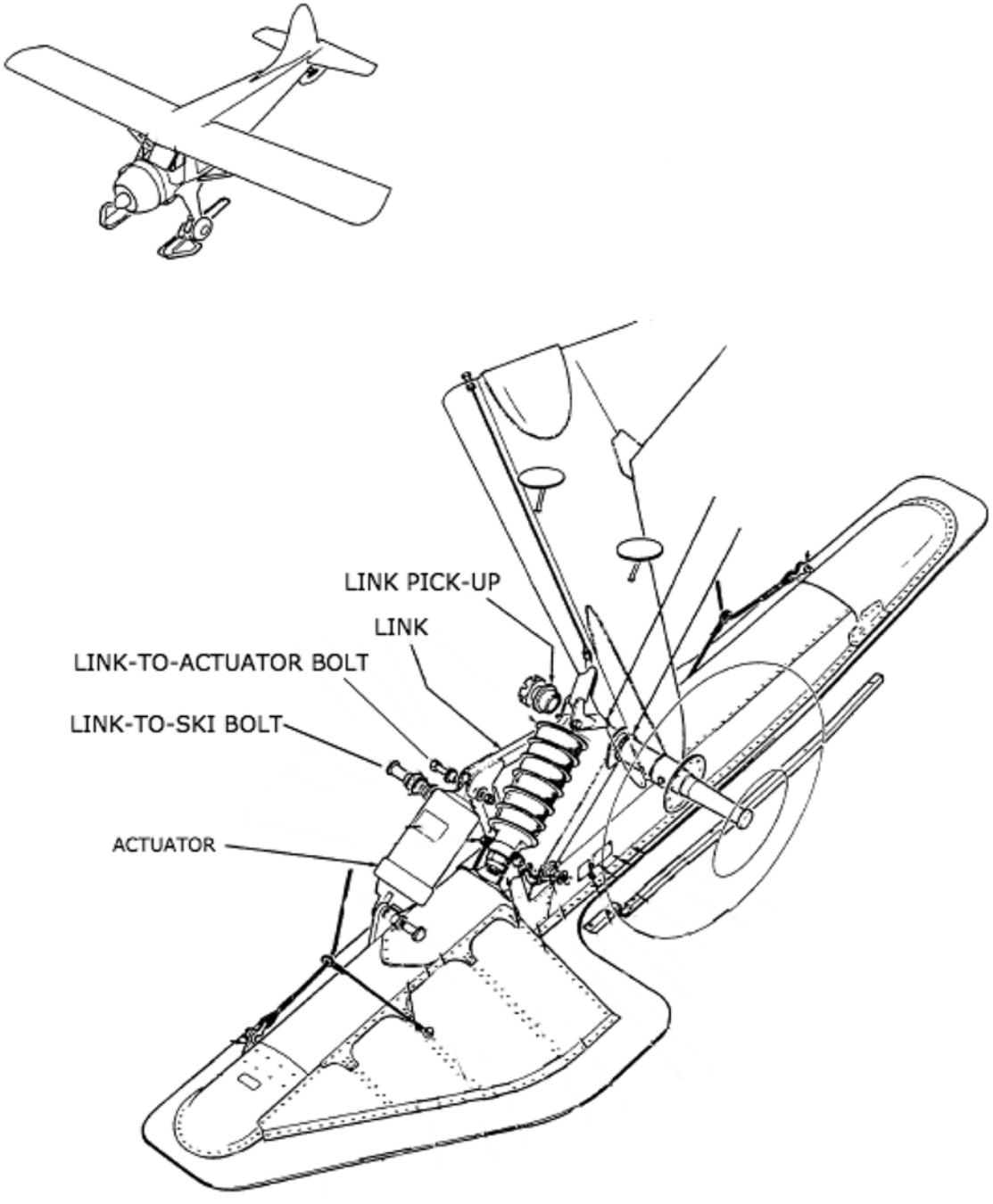
C27–50–02

Flap Control Rods

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM:	C32–46–01 Ski Link and Attachment Bolts, Link-to-Ski and Link-to-Actuator
ATA CHAPTER:	32 – Landing Gear
MANUAL REF:	PSM 1–2–4, Special Order Group, Fig. 83
EFFECTIVITY:	Wheel-Ski Installations
REF DOCUMENTS:	Nil
ACCESS:	Disassemble link from ski, actuator, and axle.
INSPECTION METHOD:	Detailed Visual Inspection (DVI) - Use 10x magnification and strong light source.
INSPECTION OBJECTIVE:	1) Surface finish degradation, flaking, cracking, blistering, surface corrosion. 2) Evidence of corrosion on/in link. Pay particular attention to bushings, areas around drive screws. 3) Loose or missing drive screws. 4) Cracking. Pay particular attention to undercuts, threads, radius changes on bolts. 5) Excessive free play.
RETREATMENT:	LUBRICATE at all bolt/bushing locations with general low temperature lubricating grease on assembly. AS REQUIRED re-protect internal surfaces by flushing with corrosion preventive compound (ref. Part 1, Paragraph 6.C.(2)(c))
NOTES AND SPECIAL INSTRUCTIONS:	1) If corrosion is found or suspected at drive screws, or screws are loose or missing, internal corrosion may be present. 2) Remove light corrosion on link and re-protect as Part 1, Paragraph 6.D. If moderate to severe corrosion is found, replace. 3) Refer to PSM 1-2-2, Part 1, Fig.1-10 for lubricants. 4) Replace cracked or damaged bolts.



C32–46–01

Ski Link and Attachment Bolts, Link-to-Ski and Link-to-Actuator

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C53–10–01
Forward Fuselage Tubular Frame “Birdcage”

ATA CHAPTER: 53 – Fuselage

MANUAL REF: PSM 1–2–2, Part 2, Fig. 2-20 & Fig. 2-24
PSM 1–2–3, Fuselage Group, Fig. 4-4
PSM 1–2–4, Fuselage Group, Fig. 25 & 26
PSM 1–2T–4, Fuselage Group, Fig. 23

EFFECTIVITY: All

REF DOCUMENTS: SB 2/49, Rev C or later (MK l and MK II) or TB/57, Rev D or later (MK lll), Fuselage - Forward Tubular Frame - Inspection for Corrosion and Repair.

ACCESS: Remove fuselage access panels under cockpit (ref. PSM 1-2-2, Part 1, Fig. 1-3 or PSM 1-2T-2, Supplement 6, Fig.6-3).

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Clean as per Part 1, Paragraph 5.D. Use a plastic scraper to remove any loose paint or primer. Use borescope, mirror, strong light source, and 10x magnification to view all external surfaces.

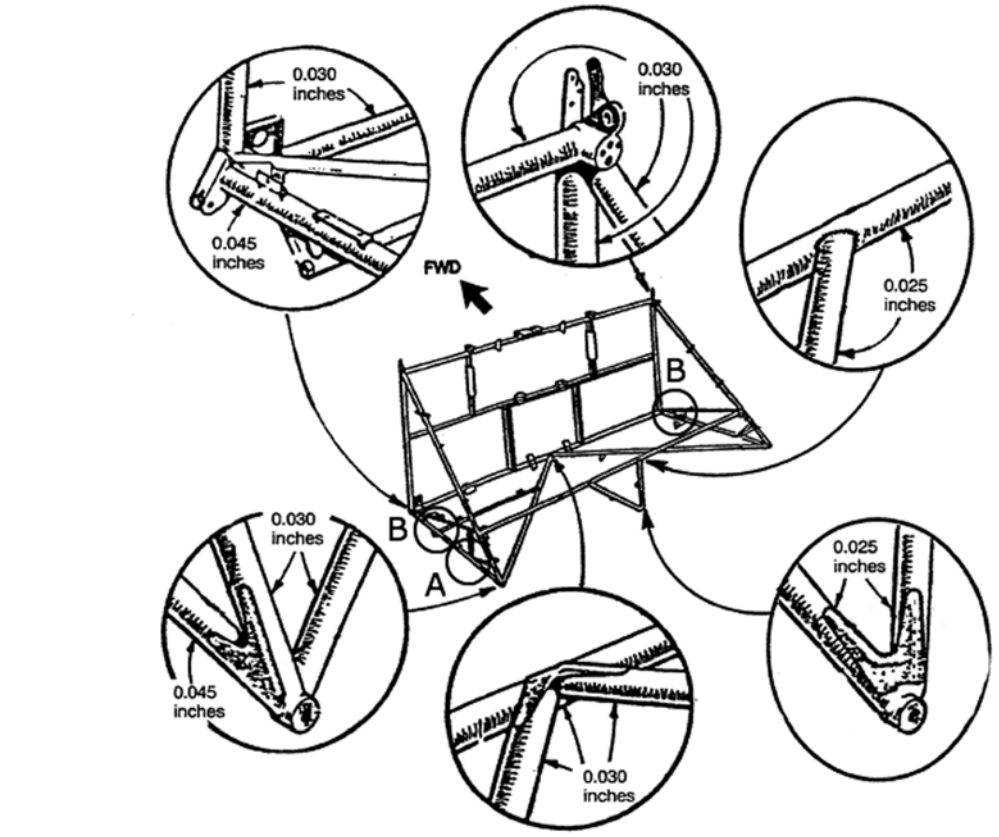
INSPECTION OBJECTIVE:

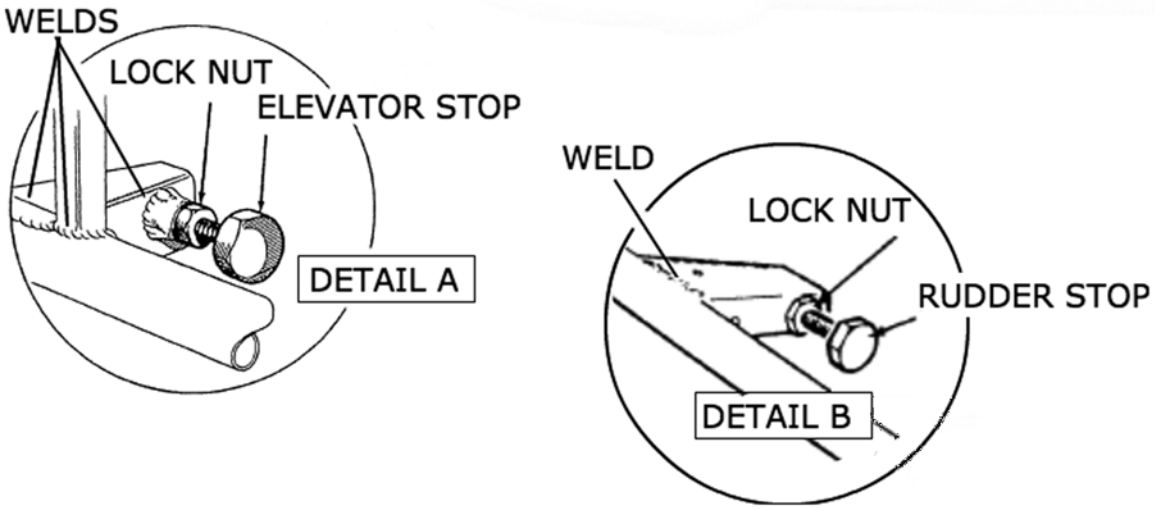
1) Surface finish degradation, blistering, cracking, flaking.
2) Surface corrosion.
3) Cracking. Pay particular attention to welded joints, elevator and rudder stops, forward fuselage strut mounting points, webbed plate tie bar mounting points.
4) Loose or missing drive screws, drive screws ‘leaking’ corrosion. This may indicate internal corrosion.

RETREATMENT: RE-PROTECT as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS:

1) If surface finish is cracked or damaged, locally remove finish to inspect for surface corrosion and cracking on the frame. Remove light corrosion, apply cold galvanizing compound (min 93% zinc) and restore surface finish as per Part 1, Paragraph 6.C.(2)(b). Re-protect as per Part 1, Paragraph 7.
2) Measure thickness after corrosion removal by ultrasonic thickness check as per SB 2/49 or TB/57. Tube must meet the minimum thickness requirements of SB 2/49 or TB/57 after corrosion removal.
3) Refer to SB 2/49 or TB/57 for repair instructions if thickness is below minimum.
4) If loose, missing, or corroded drive screw(s) are found, remove screw(s), remove light corrosion, and locally ultrasonic thickness check as per SB 2/49 or TB/57. If wall thickness is within limits, re-protect internal surfaces by spraying with corrosion preventive compound (LPS 3 or equivalent). Re-install drive screws wet with sealant as per Part 1, Paragraph 6.D. Re-protect as per Part 1, Paragraph 7.
5) If evidence of cracking is found, locally remove surface finish as per Part 1, Paragraph 5, and inspect for cracks using fluorescent dye penetrant as per ASTM E1417 (Type 1) or magnetic particle inspection as per ASTM E1444. If no cracks are found, restore surface finish as per Note 1), above. If cracks are found, repair as per SB 2/49 (MK l and MK II) or TB/57 (MK lll).





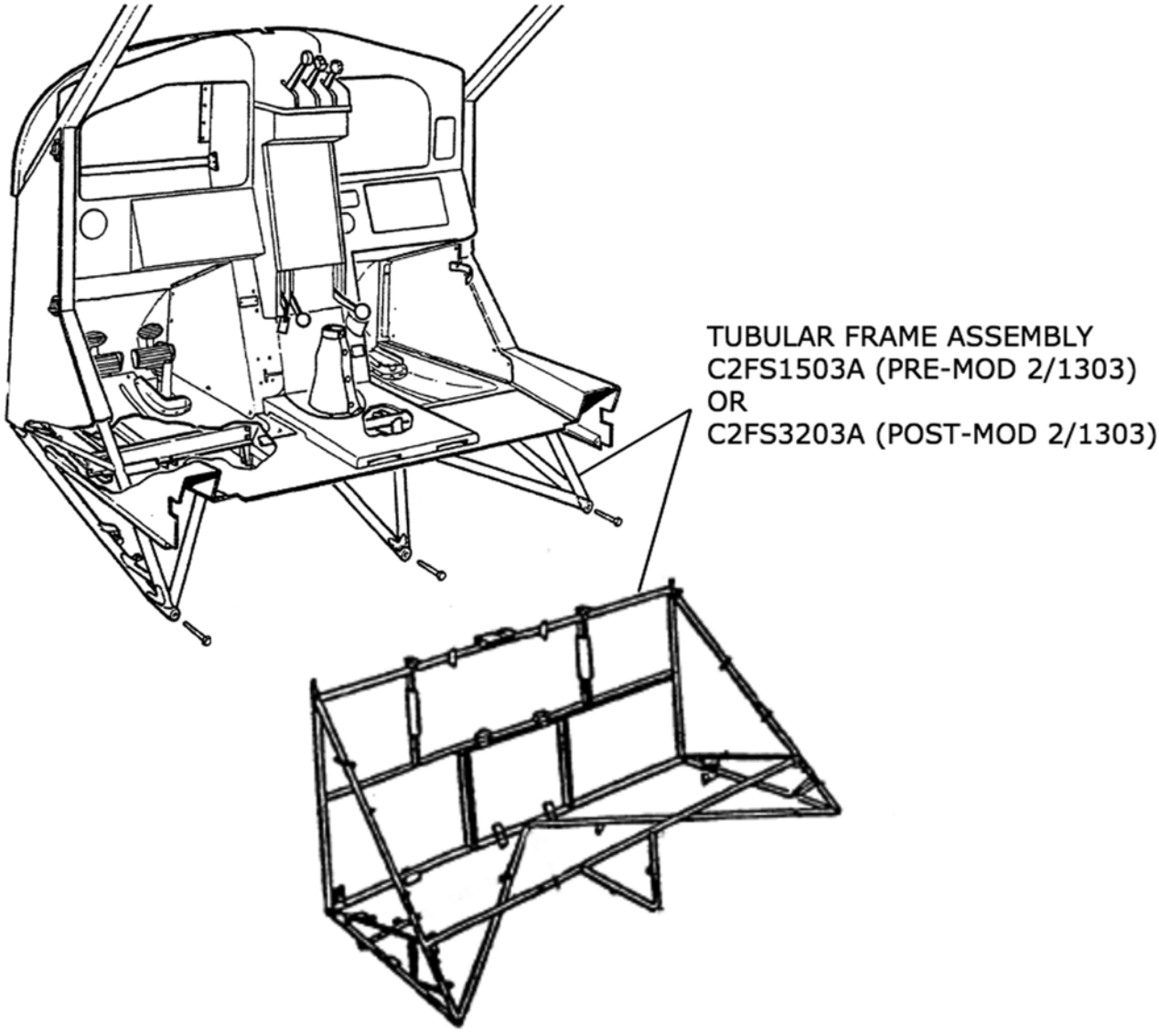
C53–10–01

Forward Fuselage Tubular Frame “Birdcage”

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM:	C53–10–02 Forward Fuselage Tubular Frame “Birdcage”, Thickness Check
ATA CHAPTER:	53 – Fuselage
MANUAL REF:	PSM 1–2–2, Part 2, Fig. 2-20 & Fig. 2-24 PSM 1–2–3, Fuselage Group, Fig. 4-4 PSM 1–2–4, Fuselage Group, Fig. 25 & 26 PSM 1–2T–4, Fuselage Group, Fig. 23
EFFECTIVITY:	All
REF DOCUMENTS:	SB 2/49, Rev C or later (MK l and MK II), or TB/57, Rev D or later (MK lll), Fuselage - Forward Tubular Frame - Inspection for Corrosion and Repair.
ACCESS:	Prepare for inspection as per SB 2/49 or TB/57.
INSPECTION METHOD:	Non-Destructive Inspection (NDI) - Accomplish ultrasonic thickness test as per SB 2/49 or TB/57, as applicable.
INSPECTION OBJECTIVE:	Corrosion thickness loss.
RETREATMENT:	RE-PROTECT as per Part 1, Paragraph 7.
NOTES AND SPECIAL INSTRUCTIONS:	Refer to SB 2/49 (MK l/ll) or TB/57 (MK lll) for thickness limits, repair instructions, and close-out.



C53–10–02

Forward Fuselage Tubular Frame “Birdcage”, Thickness Check

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C53–40–01
Webbed Plate and Tie Bars (STA -16.00)

ATA CHAPTER: 53 – Fuselage

MANUAL REF: PSM 1–2–4, Fuselage Group, Fig.16
PSM 1–2T–4, Fuselage Group, Fig. 21

EFFECTIVITY: All

REF DOCUMENTS: Nil

ACCESS: Remove LH and RH landing gear/front float strut fairings. Remove belly access panels adjacent to the firewall.

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Use magnification and strong light source. Use borescope to view surfaces that are difficult to reach, including top and bottom of tie bar ends when landing gear are installed.

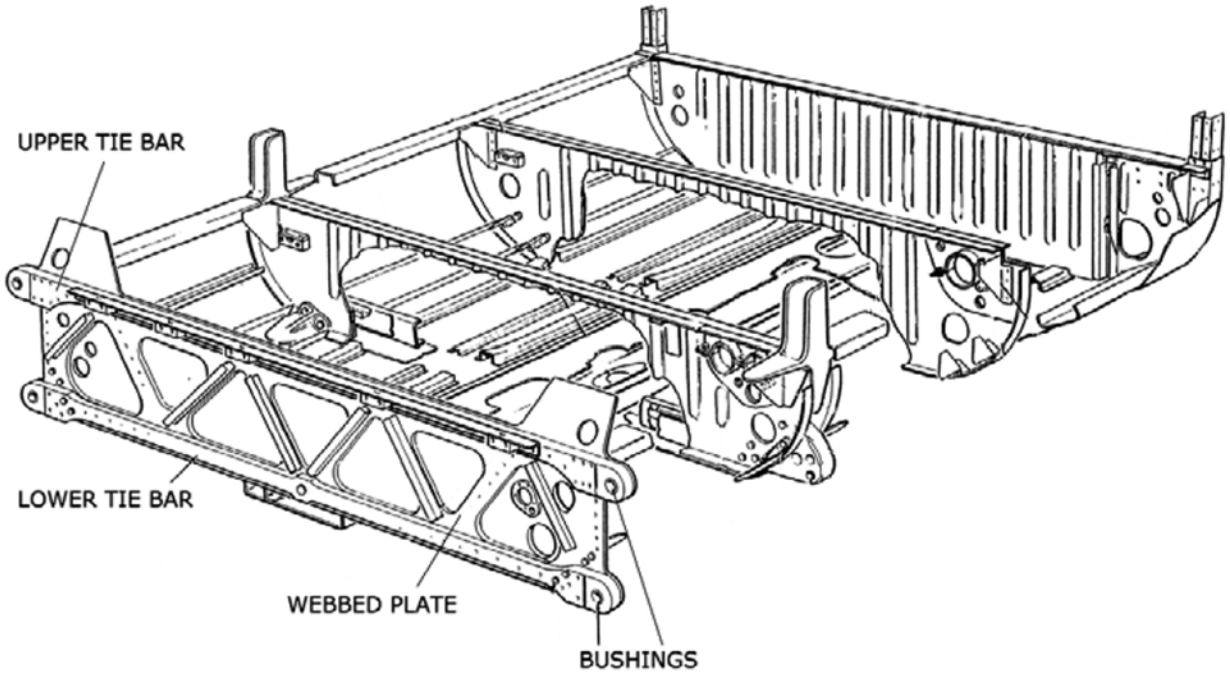
INSPECTION OBJECTIVE:

1) Surface finish degradation, blistering, cracking, flaking.
2) Surface corrosion and pitting. Pay particular attention to areas around bushings at forward fuselage frame (‘Birdcage’) and float fitting/landing gear attachment points.
3) Excessive free play at the tie bar ends.
4) Cracked, damaged, missing sealant around bushings.
5) Corrosion product at landing gear/float strut/forward fuselage frame (‘Birdcage’) attachments indicating crevice or fretting corrosion at bushings/attachment bolts.
6) Evidence of seized landing gear/float strut attachment bolts.

RETREATMENT: RE-PROTECT as per Part 1, Paragraph 7. For areas around landing gear/float strut attachment bolts, ensure they are thoroughly clear of debris so that the compound can freely wick into the joint. AS REQUIRED - seal accessible bushing edges as per Part 1, Paragraph 6.D.

NOTES AND SPECIAL INSTRUCTIONS:

1) If there is a large amount of stubborn dirt/debris or corrosion product around any of the attachment bolts, if excessive free play is found, or if bolts are found/ suspected to be seized, disassemble as per PSM 1-2-2, Part 2 for further cleaning and inspection of tie bar(s) and attachment bolts for damage and corrosion.
2) Replace corroded, worn or damaged attachment parts. Repair/replace webbed plate and tie bars as per PSM 1-2-3, Section IV, Paragraph 4.8.1.
3) On reassembly of landing gear/float strut:
   a) Seal edges around bushing as per Part 1, Paragraph 6.D.
   b) Wet install landing gear/float strut attachment bolts as per PSM 1-2-2, Part 2, Paragraph 2.20.8 and 2.32.5.



C53–40–01

Webbed Plate and Tie Bars (STA - 16.00)

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C53–40–02
Fuselage Fittings, Landing Gear/Float Strut/Wing Strut Attachment (STA 8.00)

ATA CHAPTER: 53 – Fuselage

MANUAL REF: PSM 1–2–4, Fuselage Group, Fig.16
PSM 1–2T–4, Fuselage Group, Fig. 21

EFFECTIVITY: All

REF DOCUMENTS: C2Z3101, Fitting Assembly, Attachment - Undercarriage and Wing Strut Pickup on Fuselage, Retrofit Installation.
VALBVS1256-27, DHC-2 MK I 5600 lb Gross Weight Increase, Installation Instructions.
VALTB1200-27, DHC-2 MK III Turbo Beaver 6000 lb Gross Weight Increase Kit, Installation Instructions.

ACCESS: Remove LH and RH lower wing cuff, main landing gear or float fairings to access external portion of fitting. Remove LH and RH cabin seats and floorboards.

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Use magnification and strong light source.

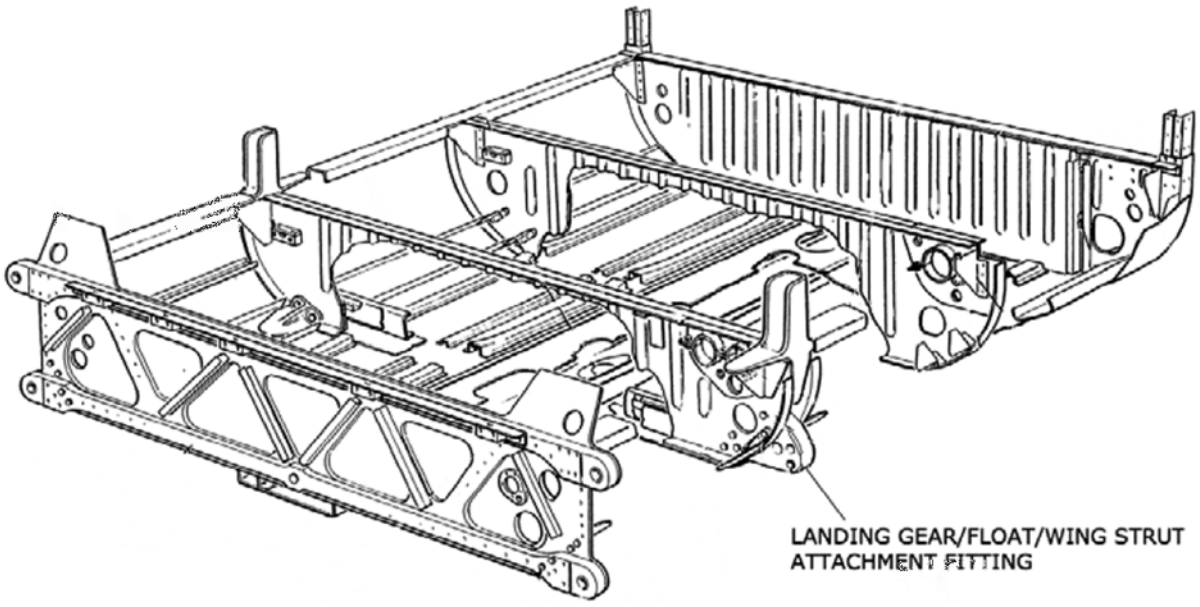
INSPECTION OBJECTIVE:

1) Surface finish degradation, blistering, cracking, flaking.
2) Surface corrosion and pitting. Pay particular attention to areas around bushings and landing gear/float strut/wing strut attachments.
3) Excessive free play at landing gear/float strut/wing strut attachment points.
4) Cracked, damaged, or missing sealant around bushings.
5) Corrosion product at landing gear/float strut/wing strut attachments indicating crevice or fretting corrosion at bushings/attachment bolts.
6) Evidence of seized attachment bolts.

RETREATMENT: RE-PROTECT as per Part 1, Paragraph 7. For areas around landing gear/float strut/ wing strut attachment bolts, ensure they are thoroughly clear of debris so that the compound can freely wick into the joint.
AS REQUIRED restore sealant around bushing edges as per Part 1, Paragraph 6.D.

NOTES AND SPECIAL INSTRUCTIONS:

1) If there is a large amount of stubborn dirt/debris or corrosion product around any of the landing gear/float strut/ wing strut attachment bolts, or if bolts are found/ suspected to be seized, disassemble as per PSM 1-2-2, Part 2, for further cleaning and inspection of fitting, wire pull (if present), and attachment bolts for damage and corrosion. Replace corroded, worn or damaged attachment parts and/or fittings.
2) On reassembly of landing gear/float strut/wing strut:
   a) Seal edges around bushings as per Part 1, Paragraph 6.D.
   b) Wet install landing gear/float strut/wing strut attachment bolts as per PSM 1-2-2, Part 2, Paragraph 2.32.5 and/or 2.20.8.
3) Replace worn or damaged fittings as per:
   a) C2Z3101 for P/N C2FS419A, C2FS475A, or C2FS5487A.
   b) VALBVS1256-27 for P/N VALTBS1209-1 installed on MK I aircraft.
   c) VALTB1200-27 for P/N VALTBS1209-1 installed on MK III aircraft.
4) When replacing worn or damaged fittings, clean away any dirt or debris from the fuselage where the fitting is installed and inspect for corrosion.



C53–40–02

Fuselage Fittings, Landing Gear/Float Strut/Wing Strut Attachment (STA 8.00)

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C55–10–01
Horizontal Stabilizer (Tailplane), Structure and Skin

ATA CHAPTER: 55 – Stabilizers

MANUAL REF: PSM 1–2–3, Part 3, Tail Group, Fig. 3-1
PSM 1–2–4, Tail Group, Fig. 9
PSM 1-2T-4, Empennage Group, Fig.12

EFFECTIVITY: All

REF DOCUMENTS: SB 2/47, Rev E or later, Stabilizers - Special Inspection for Cracks in the Front Spar of the Horizontal Stabilizer (and Rectification).

ACCESS: Remove the tail cone (ref. PSM 1-2-2, Part 2, Paragraph 2.16.1).
Optionally remove elevators and/or horizontal stabilizer (ref. PSM 1-2-2, Part 2, Paragraph 2.17.1 and Paragraph 2.18.1).

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Use flexible borescope through inspection access points, tooling holes, lightening holes on rib webs and spars.

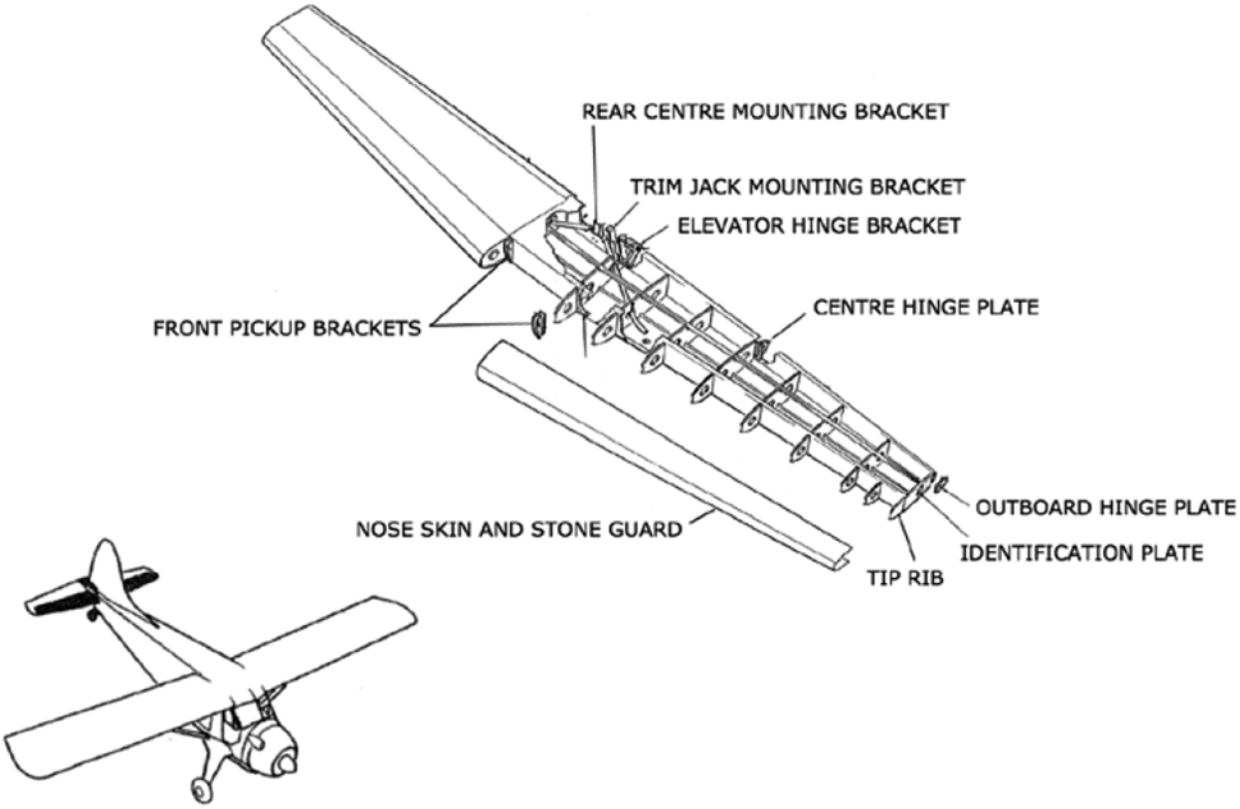
INSPECTION OBJECTIVE:

1) Cracking. Pay particular attention to structure around fastener holes and open holes at the following areas:
   a) Spar and skin splices/joints.
   b) Rib and former flanges at attachments, bending radii.
   c) Access cutouts and lightening holes on ribs, spars.
   d) Mounting, hinge, pickup and attachment brackets and plates.
   e) Gusset plate on aft side of front spar.
2) Evidence of loose or “smoking” rivets.
3) Loose elevator mounting hinge brackets and plates.
4) Evidence of corrosion between mounting brackets and front/rear spars.

RETREATMENT: RE-PROTECT as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS:

1) Can be coordinated with front spar inspection as per SB 2/47.
2) If evidence of cracking is found, disassemble and inspect by fluorescent dye penetrant (refer to SB 2/47 for NDI technique). Replace cracked or unserviceable parts before next flight. Replace gusset plates if cracks are found on the gusset or if the front spar is replaced (refer to SB 2/47 for rectification of front spar in case of cracking).
3) If evidence of corrosion behind mounting bracket(s) is found, remove affected bracket(s) for further inspection.
4) If loose mounting bracket(s) is/are found, remove and fluorescent dye penetrant inspect around attachment holes on the stabilizer structure (refer to SB 2/47 for NDI technique).
5) If elevators and/or horizontal stabilizer are removed, check for correct movement of controls on re-installation as per PSM 1-2-2, Part 2, Paragraphs 2.43 and 2.44.


REAR CENTRE MOUNTING BRACKET
TRIM JACK MOUNTING BRACKET
ELEVATOR HINGE BRACKET
FRONT PICKUP BRACKETS
CENTRE HINGE PLATE
OUTBOARD HINGE PLATE
NOSE SKIN AND STONE GUARD
IDENTIFICATION PLATE
TIP RIB

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C55–10–02
Front Horizontal Stabilizer (Tailplane) Pick-up Brackets

ATA CHAPTER: 55 – Stabilizers

MANUAL REF: PSM 1–2–4, Tail Group, Fig. 9
PSM 1–2T–4, Empennage Group, Fig.12

EFFECTIVITY: All

REF DOCUMENTS: Technical News Sheet Series B No.49, Overtightening of Attachment Bolts in Tailplane Front Spar Attachment Brackets.
Technical News Sheet Series B No.55, Beaver Tailplane to Fuselage Front Joint Cracks in Tailplane Front Spar.
SB 2/47, Rev E or later, Stabilizers - Special Inspection for Cracks in the Front Spar of the Horizontal Stabilizer (and Rectification).

ACCESS: Remove the tail cone (ref. PSM 1-2-2, Part 2, Paragraph 2.16.1).
Remove horizontal stabilizer (ref. PSM 1-2-2, Part 2, Paragraph 2.18.1) and disassemble front pick-up bracket from the forward spar.
Access attachment nuts from the lightening holes on the rear spar.

INSPECTION METHOD: Non-Destructive Inspection (NDI) - After removing bracket, packing plate, and washer plate, use borescope to inspect gusset. Use fluorescent dye penetrant as per ASTM E1417 (Type 1) or Standard High Frequency Eddy Current (SHFEC) as per Appendix C, Paragraph 3, to inspect bracket and washer plate.

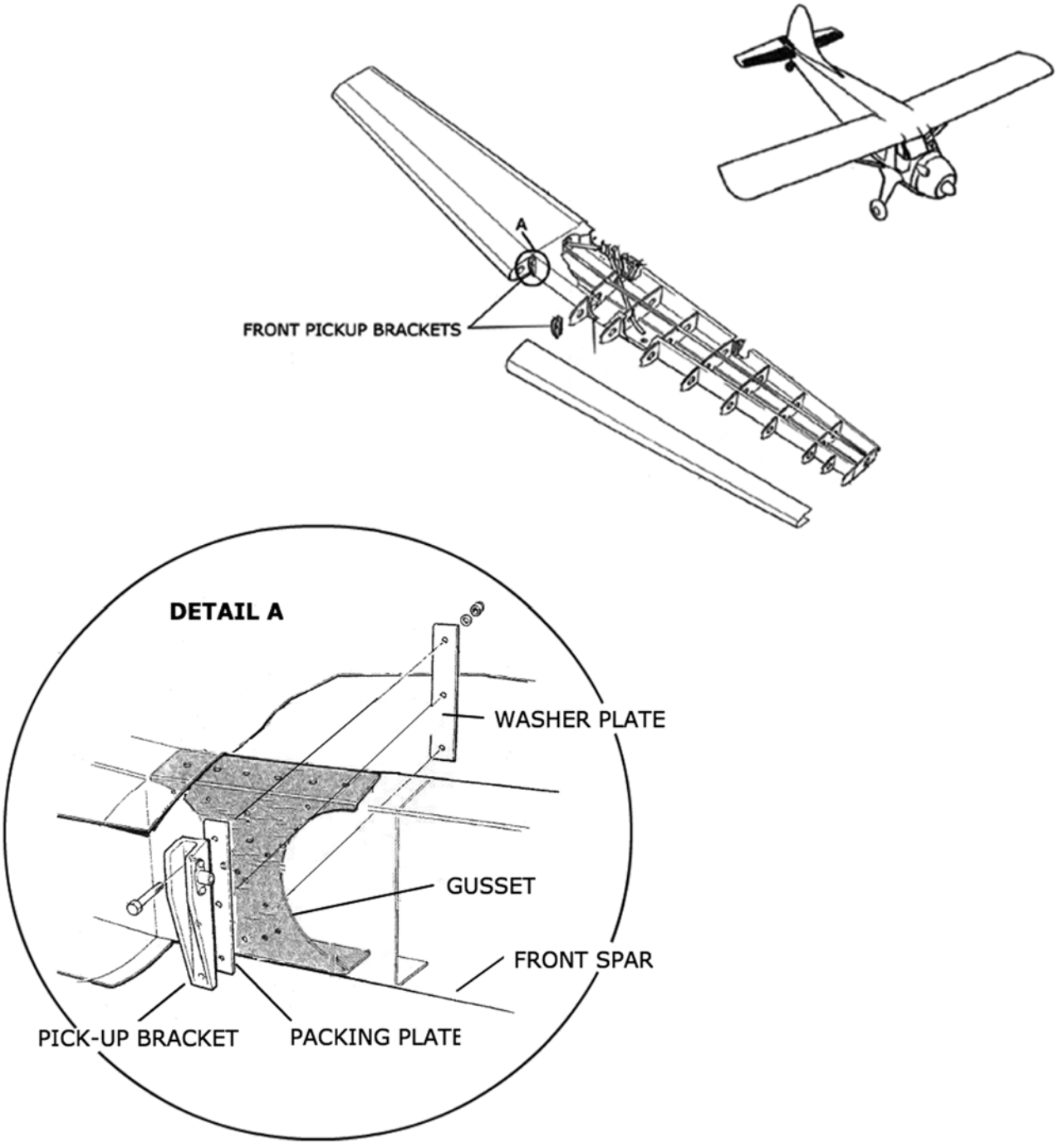
INSPECTION OBJECTIVE:

1) Cracking on brackets, packing plates, and washer plate (NDI). Pay particular attention to areas around attachment holes and bushings.
2) Surface corrosion and pitting on bracket body, bushings, washer plate, packing, attachment parts.
3) Elongated holes on bracket, washer plate, and packing.
4) Cracking on gussets (borescope). Pay particular attention to fastener holes, and areas at the top and bottom of the washer plate.

RETREATMENT: RE-PROTECT as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS:

1) Can be coordinated with horizontal stabilizer inspection SB 2/47.
2) Remove light corrosion and re-protect before further flight. Brackets with moderate to severe corrosion shall be replaced before further flight.
3) Replace cracked or unserviceable parts before further flight.
4) Refer to TNS B49 and B55 for appropriate installation torque values.
5) On re-installation, re-secure bolt to fitting with locking wire. Re-install tail cone and check for proper operation of flight controls as per PSM 1-2-2, Part 2, Paragraphs 2.43 and 2.44.



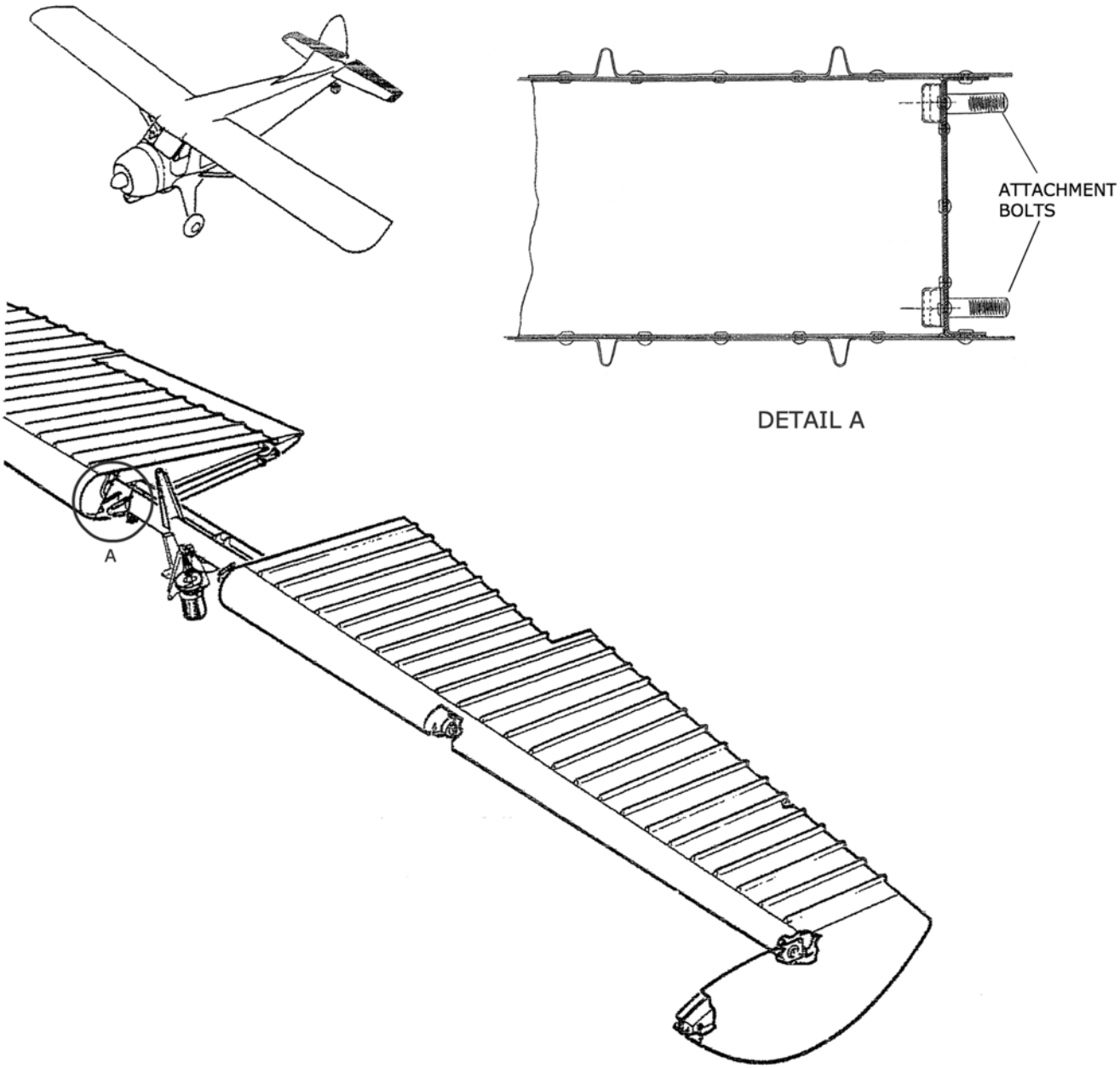
C55–10–02

Front Horizontal Stabilizer (Tailplane) Pick-up Bracket Assembly

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM:	C55–20–01 Elevator Torque Tube Root Rib Attachment Bolts
ATA CHAPTER:	55 – Elevators
MANUAL REF:	PSM 1–2–4, Part 2, Empennage Group, Fig. 10 PSM 1–2T–4, Part 2, Empennage Group, Fig. 9
EFFECTIVITY:	All
REF DOCUMENTS:	SB 2/47, Rev E or later, Stabilizers - Special Inspection for Cracks in the Front Spar of the Horizontal Stabilizer. SB 2/30, Rev NC or later, Flight Controls - Elevator Root Rib - Inspection for Cracking and Replacement.
ACCESS:	Remove tail cone (PSM 1-2-2, Fig. 1-3, Item 5). Remove left and right-hand elevators (PSM 1-2-2, Part 2, Paragraph 2.45).
INSPECTION METHOD:	Detailed Visual Inspection (DVI)
INSPECTION OBJECTIVE:	1) Surface plating or paint discontinuity and corrosion. 2) Evidence of crevice corrosion.
RETREATMENT:	RE-PROTECT as per Part 1, Paragraph 7.
NOTES AND SPECIAL INSTRUCTIONS:	Can be coordinated with horizontal stabilizer inspection or elevator root rib inspection (SB 2/47 or SB 2/30). In the case of rotational movement of bolt, an indicator of corrosion of the bolt or anchor plate inside the elevator at the root rib, disassemble the root rib (ref. SB 2/30 for disassembly instructions). If moderate to severe corrosion exists around the root rib torque tube attachment bolts, disassemble the root rib, remove anchor plate and inspect for crevice corrosion, pitting, surface corrosion, paint discontinuity.



C55–20–01

Elevator Torque Tube Root Rib Attachment Bolts

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C55–20–02
Elevator Mass Balance

ATA CHAPTER: 55 – Elevators

MANUAL REF: PSM 1–2–2, Part 2, Flight Controls, Fig. 3 -1
PSM 1–2–4, Part 2, Fuselage Group, Fig. 10
PSM 1–2T–2, Supplement 6
PSM 1–2T–4, Part 2, Fuselage Group, Fig. 9

EFFECTIVITY: All

REF DOCUMENTS: MK I/II SB 2/50, Rev NC or later, Stabilizers - Installation of Access Cover and Special Inspection for the Elevator Mass Balance Weight for Separation - Modification 2/1540.
MK III TB/58, Rev NC or later, Stabilizers - Installation of Access Cover and Special Inspection of the Elevator Mass Balance Weight for Separation - Modification T2/2079.

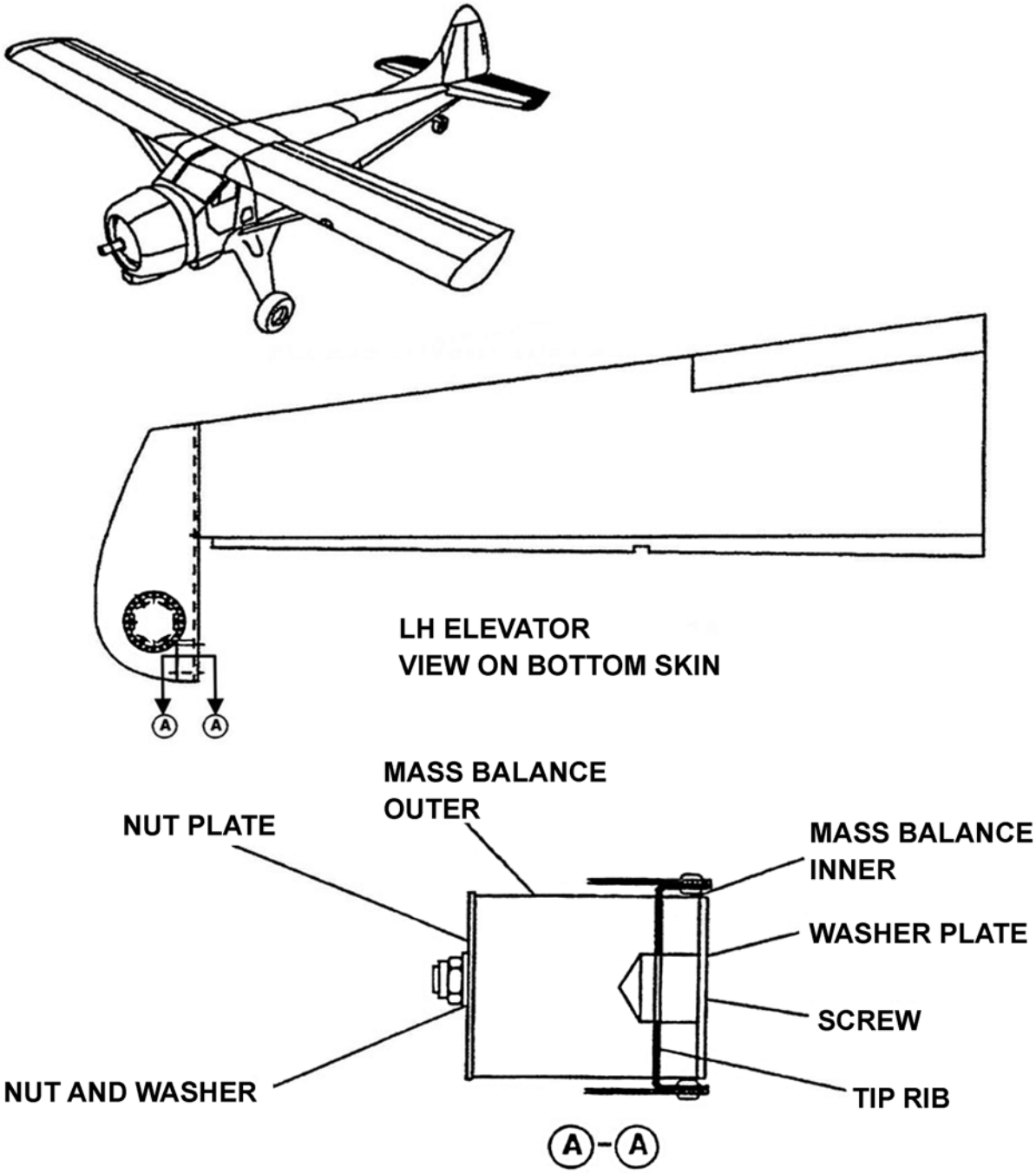
ACCESS: Remove elevator mass balance access panels.
Remove and retain balance weights as per SB 2/50 or TB/58, as applicable.

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Inspect with 10x magnification, mirror, and strong light.

INSPECTION OBJECTIVE:
1) Surface paint discontinuity and surface corrosion on elevator tip structure under and around lead mass balance weights.
2) Corrosion and loss of plating on attachment parts.
3) Security of mass balance.

RETREATMENT: RE-PROTECT elevator supporting structure and mass balance weights separately as per Part 1, Paragraph 7. Use light film (Grade 3) corrosion inhibiting compound or corrosion inhibiting jointing compound. After assembly apply corrosion inhibiting compound to exposed fasteners as per Part 1, Paragraph 7.B.

NOTES AND SPECIAL INSTRUCTIONS:
1) Refer to SB 2/50 or TB/58, as applicable, for corrosion repair limits.
2) After repair, check balance of elevator as per PSM 1-2-3, Section 1, Paragraph 1.19 and Figure 1-7, or PSM 1-2T-2, Supplement 6, Paragraph 6.12A.4.
3) If moderate or severe corrosion is observed under/around the elevator mass balance, inspect the rudder mass balance and supporting structure:
   a) Disassemble rudder tip fairing and disassemble rudder mass balance.
   b) Inspect rudder tip rib, packing plate, and fasteners for corrosion, cracking.
   c) Repair tip rib, as required, as per PSM 1-2-3, Section 3, Paragraph 3.10 through 3.13.
   d) Restore surface finish of rib, packing plate, and mass balance as per Part 1, Paragraph 6.C., applying at least one coat of corrosion inhibiting primer, followed by a thin film of corrosion inhibiting compound as per Part 1, Paragraph 7, or corrosion inhibiting jointing compound (e.g. CorBan 27L, Duralac, or equivalent) prior to re-assembly.
   e) After assembly apply corrosion inhibiting compound to exposed fasteners as per Part 1, Paragraph 7.B.
   f) Re-assemble rudder tip fairing.



C55–20–02

Elevator Mass Balance

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C55–20–03
Elevator and Tab, Structure and Skin

ATA CHAPTER: 55 – Elevators

MANUAL REF: PSM 1–2–3, Part 3, Tail Group, Fig. 3-2
PSM 1–2–4, Tail Group, Fig. 10
PSM 1–2T–4, Empennage Group, Fig. 12

EFFECTIVITY: All

REF DOCUMENTS: SB 2/30, Rev NC or later, Flight Controls - Elevator Root Rib - Inspection for Cracking and Replacement. SB 2/47, Rev E or later, Stabilizers - Special Inspection for Cracks in the Front Spar of the Horizontal Stabilizer.

ACCESS: Open mass balance access panels. Optionally, remove elevators to improve overall access.

INSPECTION METHOD: Detailed Visual Inspection (DVI) - External and internal (use flexible borescope through inspection access points, tooling holes, and lightening holes on rib webs/front spar, skin flutes).

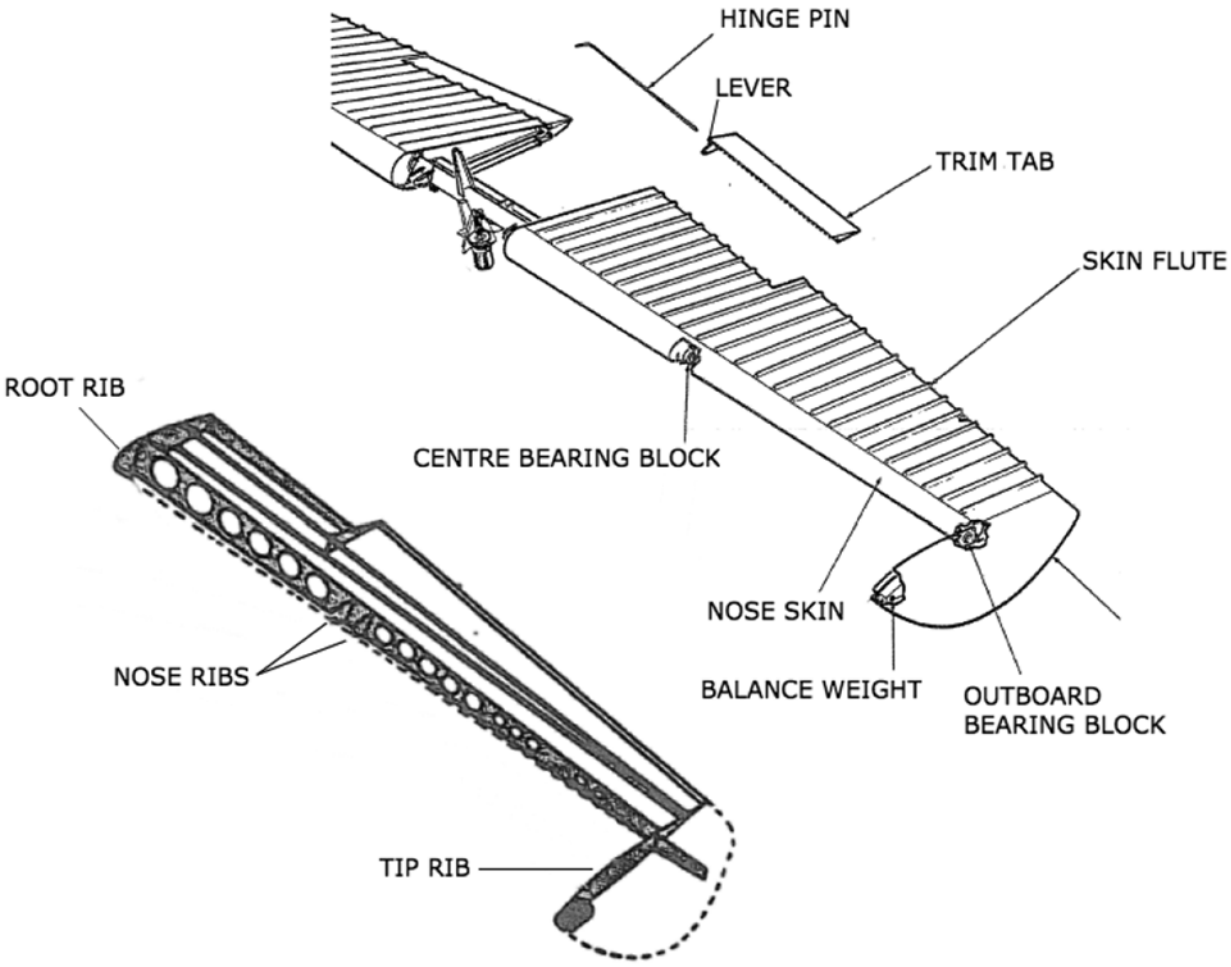
INSPECTION OBJECTIVE:

1) Cracking. Pay particular attention to structure around fastener holes and open holes at the following areas:
   a) Spar and skin splices/joints.
   b) Rib and former flanges at attachments, bending radii.
   c) Access cut-outs and lightening holes on ribs, spars.
   d) Centre, outboard bearing block attachment holes, as viewed from inside elevator
   e) Trim tab hinges.
   f) Trim tab levers, paying particular attention to rod attach points.
2) Surface finish blistering, cracking, flaking, and corrosion. Pay particular attention to areas around the elevator torque tube attachment bolts (external and internal surfaces), bearing blocks.
3) Evidence of loose or “smoking” rivets.
4) Loose hinge bearing brackets.
5) Evidence of corrosion between hinge bearing blocks and elevator structure.
6) Corrosion products at trim tab bushings.
7) Corrosion products at elevator bearings.

RETREATMENT: RE-PROTECT as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS:

1) Can be coordinated with SB 2/30 and/or C55-20-02.
2) If evidence of corrosion behind hinge bearing block(s) is observed, remove elevator(s) and blocks for further inspection.
3) If loose hinge bearing blocks are observed, remove elevator(s) and brackets for fluorescent dye penetrant inspection around block attachment holes on the elevator structure (refer to SB 2/47 for NDI technique).
4) If necessary, open up skin flute(s) at trailing edge to allow borescope to pass into elevator. If opening and/or subsequent inspection damages the surface finish, restore as per Part 1, Paragraph 6.



C55–20–03

Elevator and Tab, Structure and Skin

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C55–30–01
Fin Attachment Fittings and Bolts (MK I)

ATA CHAPTER: 55 – Stabilizers

MANUAL REF: PSM 1–2–2, Part 2, Paragraph 2.14.3, 2.14.4
PSM 1–2–4, Fuselage Group, Fig. 12
PSM 1–2–4, Tail Group, Fig. 8

EFFECTIVITY: MK I

REF DOCUMENTS: SB 2/11, Rev B or later, Fin Rear Attachment Bolts - Special Inspection

ACCESS: Remove tail cone as per PSM 1-2-2, Part 2, Paragraph 2.16.1, and remove fin access door. Remove lockwire from front attachment fitting. Access fuselage-side fitting through the aft cabin bulkhead. Complete Inspection Objective items 1) through 3) before removing fin attachment bolt(s). Refer to SB 2/11 and PSM 1-2-2, Part 2, Paragraph 2.14.4.

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Use mirror and strong light source. Use borescope, through existing access holes, tooling holes, lightening holes, or open fastener holes for additional visibility to supporting structure and attachment fittings.
Non-Destructive Inspection (NDI) - Use magnetic particle inspection as per ASTM E1444, to inspect AN-type front/rear attachment bolts.

INSPECTION OBJECTIVE:

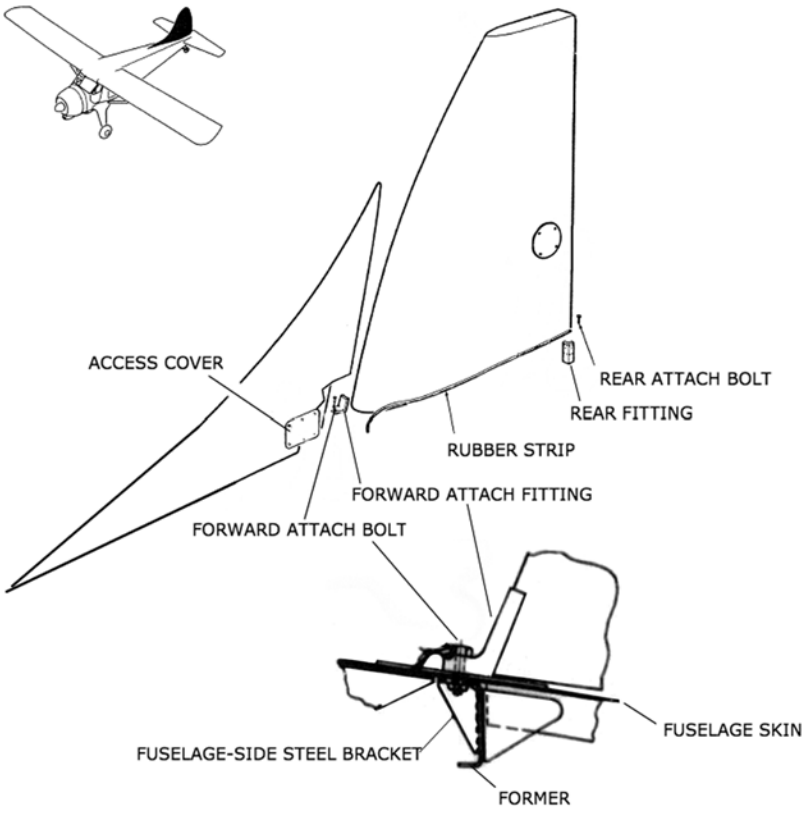
1) Correct washer configuration at rear fin attachment bolts (refer to SB 2/11).
2) Evidence of nut bottoming at rear fin attachment bolts (refer to SB 2/11).
3) Evidence of loosening of the forward and rear fin attachment bolts. Pay particular attention to the tamper proof seals on bolt heads and castellated nuts for any signs of relative movement between the bolt threads or head and the fin attachment fittings.
4) AN-type bolts: Corrosion and cracking on bolts. Use NDI method as per above.
5) Non AN-type bolts: Evidence of corrosion, cracking.
6) Surface finish blistering, cracking, flaking, damage, surface corrosion, and pitting on fittings and supporting structure.
7) Loose or ‘smoking’ or broken rivets.
8) Fittings (forward attach fitting, rear fittings, fuselage-side forward and rear fittings): Evidence of cracking, looseness, distortion, damage of the fin attachment fittings. Pay particular attention to common stress concentration points on fittings (fillets, areas around fastener heads, areas with abrupt profile changes, small radii, open holes) for cracks and corrosion. When bolts are removed, inspect fitting bore for corrosion, cracking, damage.
9) Supporting structure at fin attachment fittings (fin and fuselage): Evidence of cracking, distortion, damage of the supporting structure at and near attachment fittings. Pay particular attention to common stress concentration points (fillets, areas around fastener heads, areas with abrupt profile changes, small radii, lightening holes, open holes) for cracks and corrosion. Pay particular attention to the former at the forward steel bracket inside the fuselage for cracks around fastener heads common to the bracket, and at the former bending radius between the top flange and vertical flange (check forward and aft, right and left sides).

10) Mating surfaces: Evidence of corrosion or cracking at the edges of the mating surfaces between fittings (forward attach fittings, rear fittings, fuselage-side forward and rear fittings) and supporting structure (fin and fuselage).

RETREATMENT: RE-PROTECT as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS:

1) Bolts may be replaced in lieu of NDI.
2) If there is evidence of nut bottoming, corrosion, cracking, or if the tamper proof seal shows signs of relative movement between the bolt and the fitting, remove and inspect or replace bolts and fittings as per SB 2/11. Replace fittings and bolts that are cracked, distorted, damaged or have moderate to severe corrosion.
3) If surface finish is blistered, disassemble and remove finish as per Part 1, Paragraph 5 for further inspection.
4) If evidence of corrosion, cracking or damage at fittings or support structure is found, or if loose or ‘smoking’ rivets are found, disassemble for inspection. Use fluorescent dye penetrant inspection to ASTM E1417 (Type 1). Inspect supporting structure for cracks with 10x magnification and a strong light source, paying particular attention to areas around rivet holes.
5) Refer to PSM 1-2-2, Part 2, Paragraph 2.14.3 and 2.14.4 for attachment parts, stack-up and washer configuration, torque values and application of tamper-proof sealant stripe.
6) Ensure lockwire is re-installed after inspection and re-protection.



C55–30–01

Fin Attachment Fittings and Bolts (MK I)

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C55–30–02
Fin Attachment Fittings and Bolts (MK III)

ATA CHAPTER: 55 – Stabilizers

MANUAL REF: PSM 1–2T–2, Supplement 6, Paragraph 6.16.2
PSM 1–2–4, Fuselage Group, Fig. 12
PSM 1–2T–4, Empennage Group, Fig. 11

EFFECTIVITY: MK III

REF DOCUMENTS: Nil

ACCESS: Remove tail cone and fin access door. Remove lockwire from fittings.
Access fuselage-side fitting through aft cabin bulkhead.

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Use mirror and strong light source. Use borescope, through existing access holes, tooling holes, lightening holes, or open fastener holes, for additional visibility to supporting structure and attach fittings.

INSPECTION OBJECTIVE:

1) Evidence of corrosion, cracking of attachment bolts and fasteners.
2) Correct washer configuration at fin attachment bolts (refer to PSM 1-2T-2, Supplement 6, Paragraph 6.16.2, Table IIA.
3) Evidence of loosening of the forward and rear fin attachment bolts. Pay particular attention to the tamper proof sals on the rear fin attachment bolt heads for any signs of relative movement between the bolts and the adjacent fitting.
4) Surface finish blistering, cracking, flaking, damage and surface corrosion and pitting on fittings.
5) Loose or ‘smoking’ or broken rivets.
6) Fittings (forward attach fitting, rear fittings, fuselage-side forward and rear fittings): Evidence of cracking, looseness, distortion, damage of the fin attachment fittings. Pay particular attention to common stress concentration points on fittings (fillets, areas around fastener heads, areas with abrupt profile changes, small radii, open holes, barrel nut holes), for cracks and corrosion.
7) Supporting structure (fin and fuselage) at fin attachment fittings: Evidence of cracking, distortion, damage of the supporting structure at and near attachment fittings. Pay particular attention to common stress concentration points (fillets, areas around fastener heads, areas with abrupt profile changes, small radii, lightening holes, open holes) for cracks and corrosion. At the forward fin attachment, pay particular attention to the former at the forward steel bracket inside the fuselage for cracks around fastener heads common to the bracket and at the former bending radius between the top flange and vertical flange (check forward and aft, right and left sides).
8) Mating surfaces: Evidence of corrosion or cracking at the edges of the mating surfaces between fittings (forward attach fittings, fuselage-side forward and rear fittings) and supporting structure (fin and fuselage).

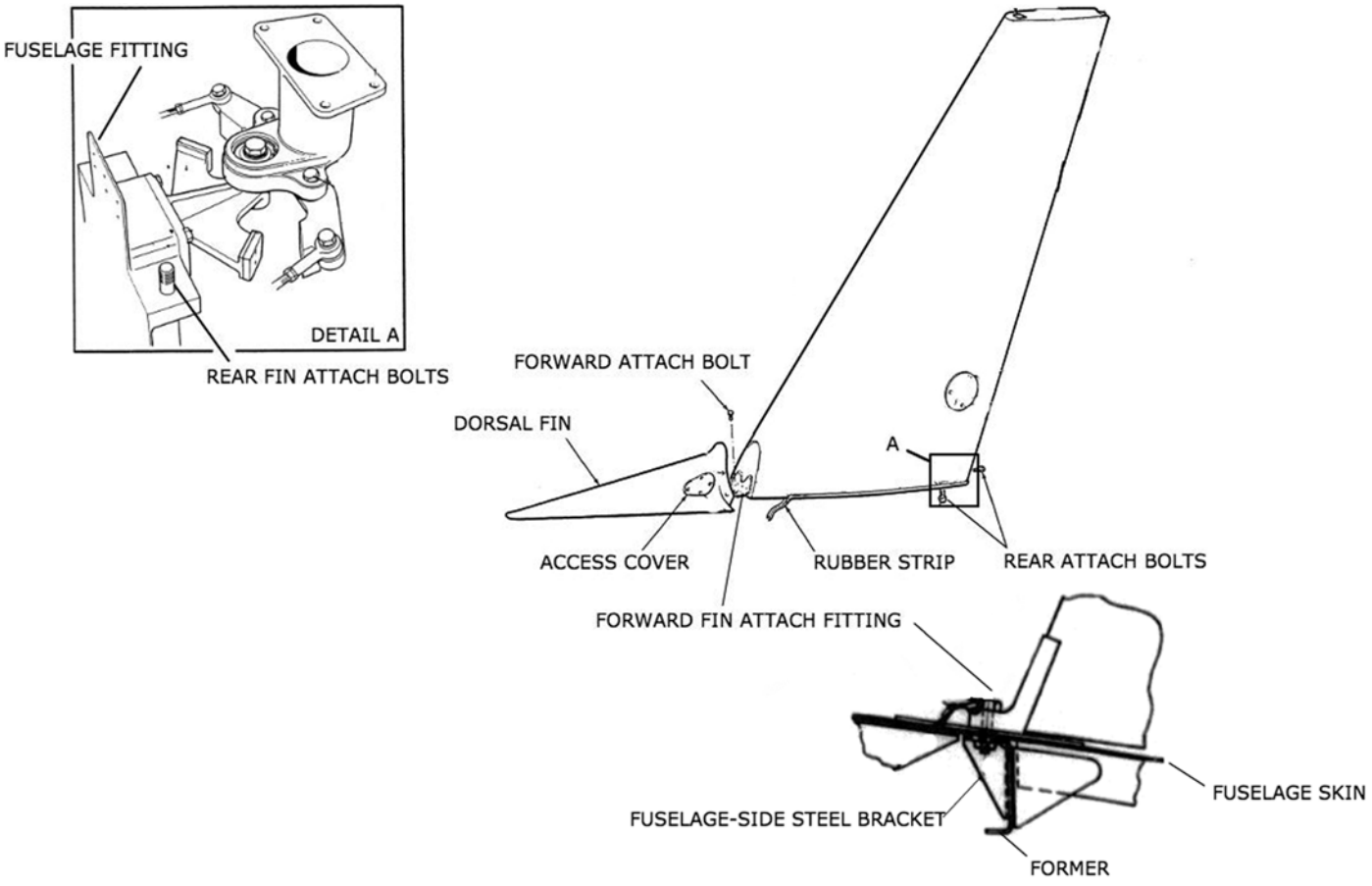
RETREATMENT: RE-PROTECT as per Part 1, Paragraph 7.

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

NOTES AND SPECIAL INSTRUCTIONS:

1) If tamper proof seals are not present on fin attachment bolts, without use of excessive force, use a suitable wrench to try to turn the assembly. If turning is possible, remove and replace bolt.
2) If there is evidence of bolt corrosion, cracking or if tamper proof seal shows signs of relative movement between the bolt and the fitting, replace bolt or magnetic particle inspect for cracks as per ASTM E1444. Replace bolts showing signs of corrosion, cracking, distortion, damage.
3) If bolts are removed for replacement or inspection, inspect fitting bore for corrosion, cracking, damage. Replace fittings that are cracked, distorted, damaged or have moderate to severe corrosion.
4) If surface finish is blistered, disassemble and remove finish as per Part 1, Paragraph 5 for further inspection.
5) If evidence of corrosion between fittings and supporting structure is found, or if loose or ‘smoking rivets are found, remove affected fittings and/or fin to inspect for corrosion and cracking on fitting and supporting structure.
6) Refer to PSM 1-2T-2, Supplement 6, Paragraph 6.16.2 for installation, attachment parts, stack-up and washer configuration, torque values, and application of tamper proof sealant.
7) Ensure lockwire is installed after inspection and re-protection.



C55–30–02
Fin Attachment Fittings and Bolts (MK III)

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C55–30–03
Fin Attachment Fittings and Bolts (MK II)

ATA CHAPTER: 55 – Stabilizers

MANUAL REF: PSM 1–2–4, Fuselage Group, Fig. 12
PSM 1–2–4, Tail Group, Fig. 8

EFFECTIVITY: MK II

REF DOCUMENTS: Nil

ACCESS: Remove tail cone as per PSM 1-2-2, Part 2, Paragraph 2.16.1. Gain access to forward fin attachment fitting. Remove lockwire from forward attachment fitting. Access fuselage-side fitting through aft cabin bulkhead. See Note 1).

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Use mirror and strong light source. Use borescope through existing access holes, tooling holes, lightening holes or open fastener holes, for additional visibility to supporting structure and attachment fittings. See Note 1).

INSPECTION OBJECTIVE:

1) Bolts: See Note 1).
2) Surface finish blistering, cracking, flaking, damage and surface corrosion, and pitting on fittings and supporting structure.
3) Loose or ‘smoking’ or broken rivets.
4) Fittings (forward attach fittings, rear fittings, fuselage-side forward and rear fittings): Evidence of cracking, looseness, distortion, damage of the fin attachment fittings. Pay particular attention to common stress concentration points on fittings (fillets, areas around fastener heads, areas with abrupt profile changes, small radii, open holes, barrel nut holes) for cracks and corrosion.
5) Supporting structure (fin and fuselage) at fin attachment fittings: Evidence of cracking, distortion, damage of the supporting structure at and near attachment fittings. Pay particular attention to common stress concentration points (fillets, areas around fastener heads, areas with abrupt profile changes, small radii, lightening holes, open holes) for cracks and corrosion. At the forward fin attachment, pay particular attention to the former at the forward steel bracket inside the fuselage for cracks around fastener heads common to the bracket and at the former bending radius between the top flange and vertical flange (check forward and aft, right and left sides).
6) Mating surfaces: Evidence of corrosion or cracking at the edges of the mating surfaces between fittings (forward attach fitting, rear fittings, fuselage-side forward and rear fittings) and supporting structure (fin and fuselage).

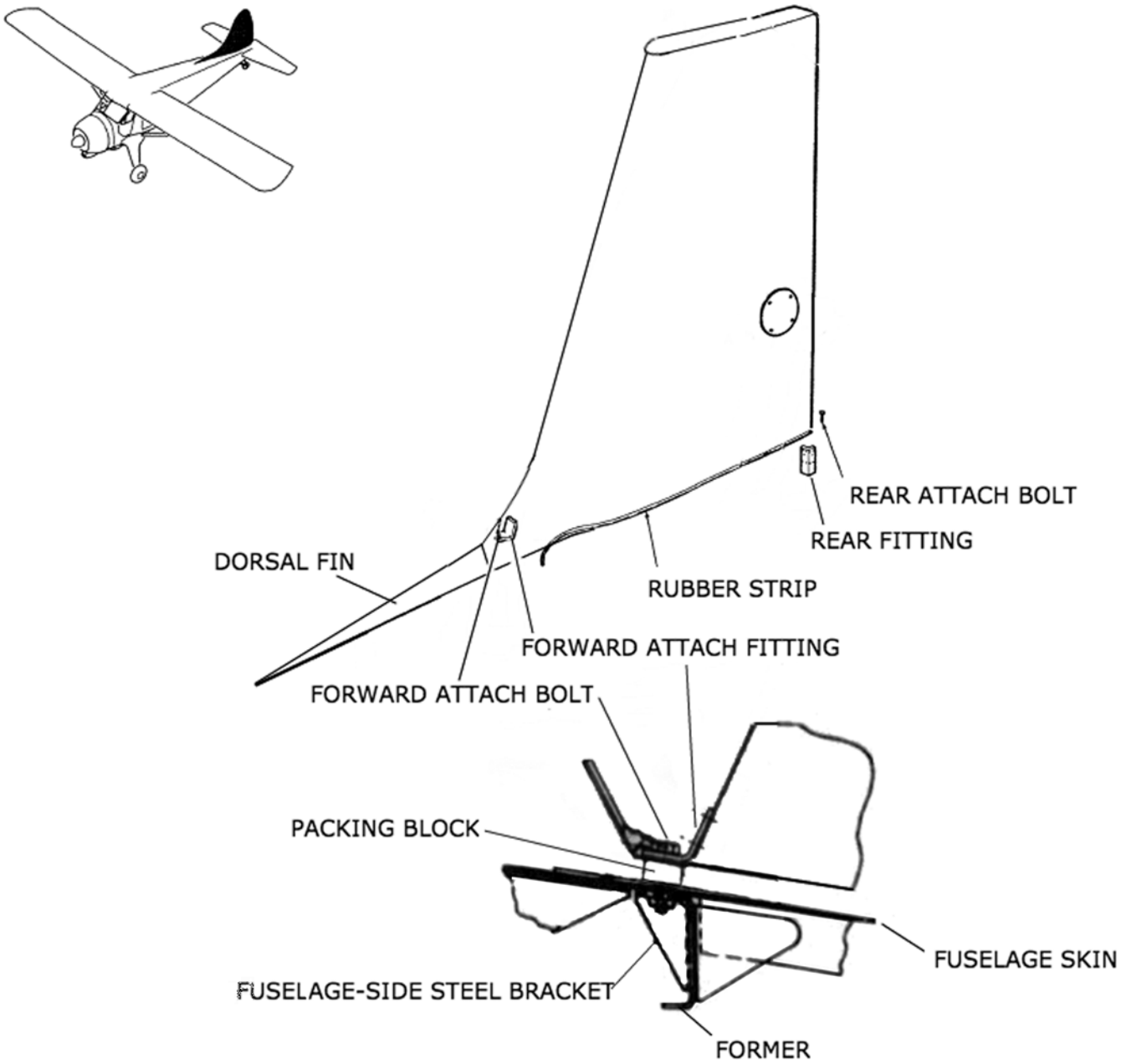
RETREATMENT: RE-PROTECT as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS:

1) For instructions on forward and rear fin attachment bolt replacement, inspection, and installation, contact Viking (refer to Introduction Paragraph 1.F.).
2) If bolts are removed for replacement/inspection, inspect fitting bore for corrosion, cracking and/or damage. Replace fittings that are cracked, distorted, damaged or have moderate to severe corrosion.

NOTES AND SPECIAL INSTRUCTIONS: (Cont'd)

3) If surface finish is blistered, disassemble and remove finish as per Part 1, Paragraph 5 for further inspection.
4) If evidence of corrosion between fittings and supporting structure is found, or if loose or 'smoking' rivets are found, remove affected fittings and/or fin to inspect for corrosion and cracking on fitting and supporting structure.
4) Replace corroded/damaged attachment parts.
6) Ensure lockwire is installed after inspection and re-protection.



C55–30–03
Fin Attachment Fittings and Bolts (MK II)

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C55–40–01
Rudder Tip Root Rib

ATA CHAPTER: 55 – Rudder

MANUAL REF: PSM 1–2–4, Part 2, Empennage Group, Fig. 8
PSM 1–2T–4, Part 2, Empennage Group, Fig. 10

EFFECTIVITY: All

REF DOCUMENTS: Nil

ACCESS: Exterior

INSPECTION METHOD: Detailed Visual Inspection (DVI)

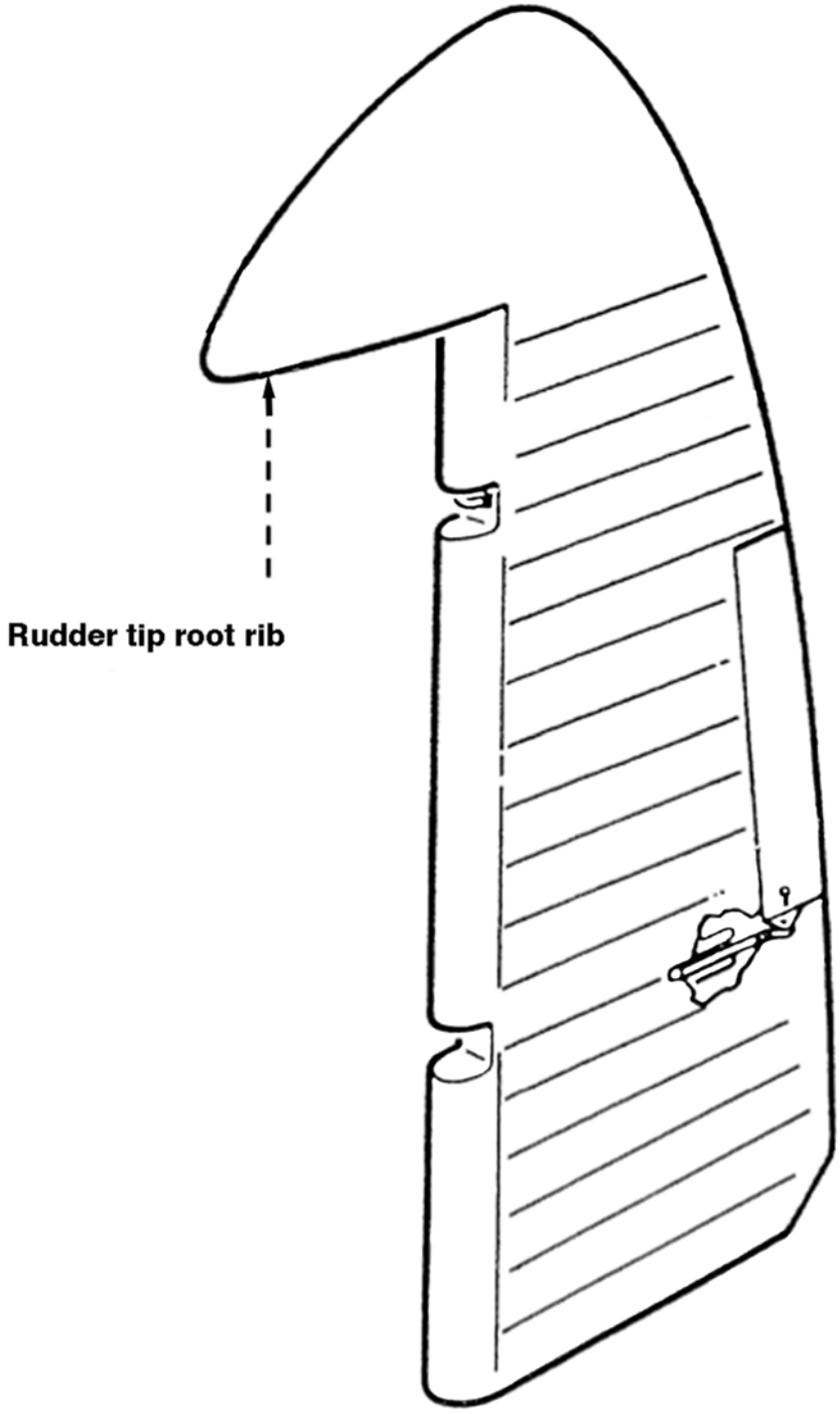
INSPECTION OBJECTIVE:

1) Evidence of crevice corrosion, surface corrosion at fasteners protruding from the underside of the rib.
2) Evidence of water intrusion into rudder tip.
3) Looseness of rudder mass balance.

RETREATMENT: RE-PROTECT as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS: If evidence of corrosion around exposed attachment bolts, water intrusion, or looseness of the mass balance is observed:

a) Disassemble tip fairing and disassemble rudder mass balance.
b) Inspect rudder tip rib, packing plate, and fasteners for corrosion, cracking.
c) Repair root rib, as required, as per PSM 1-2-3, Section 3, Paragraph 3.10 through 3.13.
d) Restore surface finish of root rib, packing plate, and mass balance as per Part 1, Paragraph 6.C., applying at least one coat of corrosion inhibiting primer followed by a thin film of corrosion inhibiting compound as per Part 1, Paragraph 7 or corrosion inhibiting jointing compound (e.g. CorBan 27L, Duralac, or equivalent) prior to re-assembly.
e) After re-assembly apply corrosion inhibiting compound to exposed fasteners as per Part 1, Paragraph 7.B.
f) Re-assemble rudder tip fairing.



C55–40–01

Rudder Tip Root Rib

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C55–40–02
Rudder Mass Balance

NOTES AND SPECIAL INSTRUCTIONS: For instructions regarding inspection of the rudder mass balance see ITEMS C55–20–02 and C55–40–01.

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

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DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C55–40–03
Rudder and Tab, Structure and Skin

ATA CHAPTER: 55 – Rudder

MANUAL REF: PSM 1–2–3, Part 3, Tail Group, Fig. 3-2
PSM 1–2–4, Tail Group, Fig. 8
PSM 1–2T–4, Empennage Group, Fig.10

EFFECTIVITY: All

REF DOCUMENTS: Nil

ACCESS: Remove tail cone.

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Use flexible borescope through lightening holes at spar-mounted bearing blocks, tooling holes, skin flutes, and bottom rudder hinge mount.

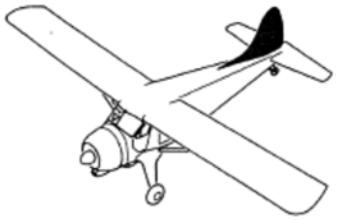
INSPECTION OBJECTIVE:

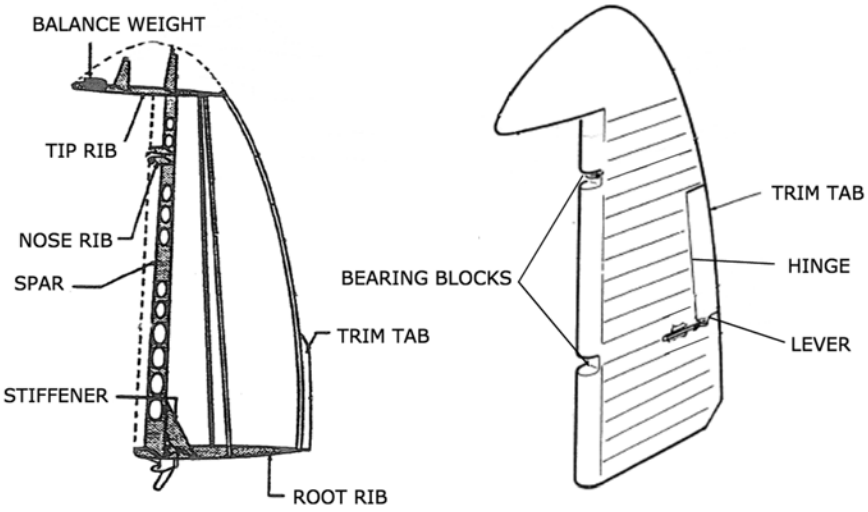
1) Cracking. Pay particular attention to structure around fastener holes and open holes at the following areas:
   a) Skin splices/joints.
   b) Rib and stiffener flanges at attachments, bending radii.
   c) Attachment holes at bearing blocks, as viewed from inside rudder.
   d) Trim tab hinge.
   e) Trim tab lever, paying particular attention to rod attach point.
2) Evidence of loose or ‘smoking’ rivets.
3) Loose hinge bearing blocks.
4) Evidence of corrosion between hinge bearing blocks and rudder structure.
5) Surface finish cracking, flaking, and surface corrosion on nut plate (MK I)/ mounting brackets (MK III) at the root rib.
6) Corrosion products at rudder bearings.

RETREATMENT: RE-PROTECT accessible areas as per Part 1, Paragraph 7.

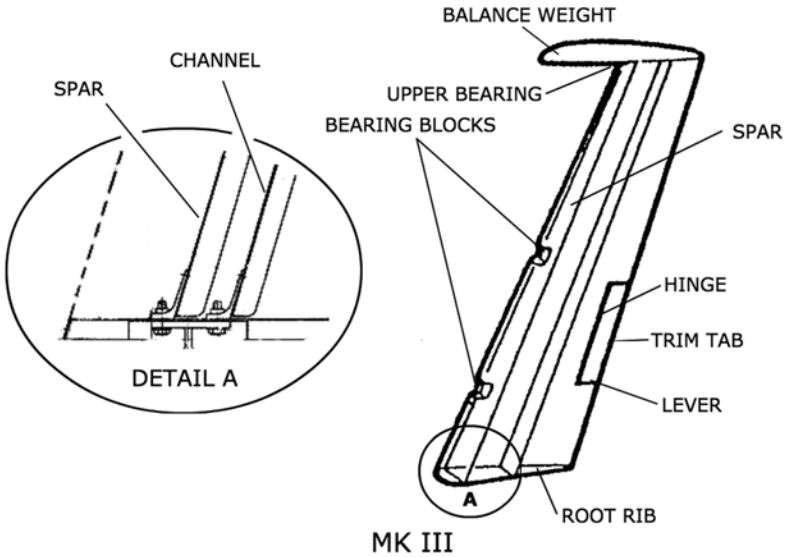
NOTES AND SPECIAL INSTRUCTIONS:

1) If evidence of corrosion behind hinge bearing block(s) is found, remove rudder and blocks for further corrosion inspection.
2) If loose hinge bearing blocks are observed, remove rudder and blocks for fluorescent dye penetrant inspection around block attachment holes on the rudder structure (refer to SB 2/47, Rev E or later, for NDI technique).
3) If necessary, open up skin flute(s) at trailing edge to allow borescope to pass into rudder. If opening and/or subsequent inspection damages the surface finish, restore as per Part 1, Paragraph 6.





MK I (MK II SIMILAR)



MK III

C55–40–03

Rudder and Tab, Structure and Skin

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C57–10–01
Wing Structure and Flap/Aileron Hinge Arm Support Brackets

ATA CHAPTER: 57 – Wings

MANUAL REF: PSM 1–2–3, Section II, Wing Group, Fig. 2-1
PSM 1–2–4, Part 2, Wing Group, Fig. 3
PSM 1–2T–4, Part 2, Wing Group, Fig. 3

EFFECTIVITY: All

REF DOCUMENTS: SB V2/0009, Rev A or later, Inspection-Wing Rear Spar and Flap/Aileron Hinge Brackets

ACCESS: Remove all wing access panels and fairings (ref. PSM 1-2-2, Part 1, Figure 1-3 or PSM 1-2T-2, Supplement 6, Figure 6-3). Additional access as per SB V2/0009.

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Use flexible borescope through inspection access points, tooling holes, and lightening holes on rib webs/front spar/rear spar. For flap and aileron hinge bracket/arm, use 10x magnification and a strong light source.

INSPECTION OBJECTIVE:

1) Cracking, buckling, wrinkles, ripples, damage on front and rear spar. Pay particular attention to spar splices, access cutouts, lightening holes, areas around fastener heads, and supporting structure at/near attachment fittings. For rear spar at WS 1.25, 56.0,125.5,137.0,191.0, and 246.0, pay particular attention to top of spar at hinge arm support brackets (view on arrow D).
2) Cracking on all ribs. Pay particular attention to stringer cut-outs, lightening holes, flanges, bending radii, and areas around fastener heads.
3) Evidence of loose or ‘smoking’ rivets.
4) Surface finish discontinuity, blistering, corrosion, cracking on hinge arm support brackets. Inspect brackets and, if installed, exterior store support arm bracket as per SB V2/0009.
5) Evidence of corrosion between all fittings and hinge arm support brackets and supporting structure.
6) Evidence of corrosion, cracking, looseness at attachment parts.
7) Cracking on stringers, skin upper and lower surfaces. Pay particular attention to areas around fasteners, doublers, skin splices, and access cutouts.

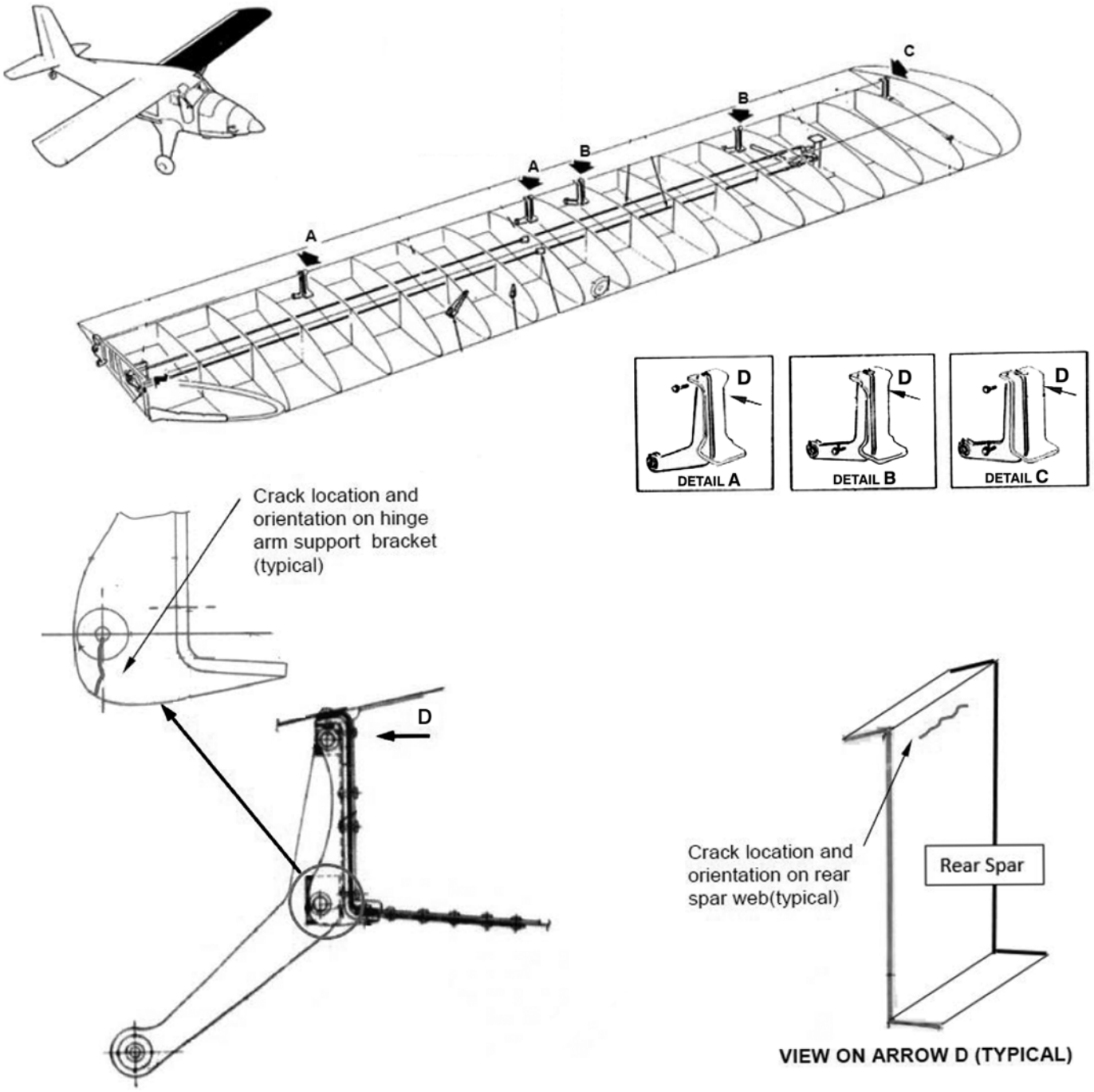
RETREATMENT: AS REQUIRED as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS:

1) The borescope camera head may need to be attached to an aid tool to reach the inspection area.
2) If evidence of corrosion, cracking, or looseness at attachment parts, remove bolts as per PSM 1-2-2, Part 2, Paragraph 2.9.1 and/or 2.10.1. Check bolts and hinge arm support brackets for corrosion, cracking and/or damage. Pay attention to open hole bore(s). Replace corroded, cracked, or damaged attachment parts. Replace fittings that are cracked, distorted, damaged or have moderate to severe corrosion.
3) If evidence of corrosion between hinge arm bracket(s) and supporting structure is found, or if loose or ‘smoking’ rivets are found, remove affected brackets to inspect for corrosion and cracking on fitting and supporting structure. Pay particular attention to areas around holes where cracking and corrosion is likely to occur.

NOTES AND SPECIAL INSTRUCTIONS: (CONT'D)

4) Repair or replace cracked/damaged wing structural parts as per PSM 1-2-3, Section II, Wing Group, Paragraph 2.16.



C57–10–01

Wing Structure and Flap/Aileron Hinge Arm Support Brackets

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C57–51–01
Aileron Mass Balance Weight Arm and Centre Hinge Bracket

ATA CHAPTER: 57 – Wings

MANUAL REF: PSM 1–2–4, Part 2, Wing Group, Fig. 4
PSM 1–2T–4, Part 2, Wing Group, Fig. 5

EFFECTIVITY: All

REF DOCUMENTS: SB 2/37, Rev C or later, Wings - Special Inspection & Replacement of Aileron Centre Hinge Bracket - Modification No.2/1536.
Engineering Bulletin No.17, Issue NC or later, Aileron Mass Balance Weight Arm AC2WA151 & C2WA152 or C2WA127 and C2WA128.

ACCESS: Exterior

INSPECTION METHOD: Detailed Visual Inspection (DVI).
Use 10x magnification, mirror, and strong light

INSPECTION OBJECTIVE:

1) Surface paint discontinuity, blistering, and corrosion.
2) Evidence of crevice corrosion at attachment parts.
3) Cracks and/or corrosion, particularly at welds, holes, and sharp corners.
4) Evidence of wear or looseness at the spigot/weight arm joint.
5) Loose rivets and attachment parts on the hinge bracket.
6) Cracked or missing sealant at the spigot/weight arm joint.
7) Loose, missing or corroded drive screws.

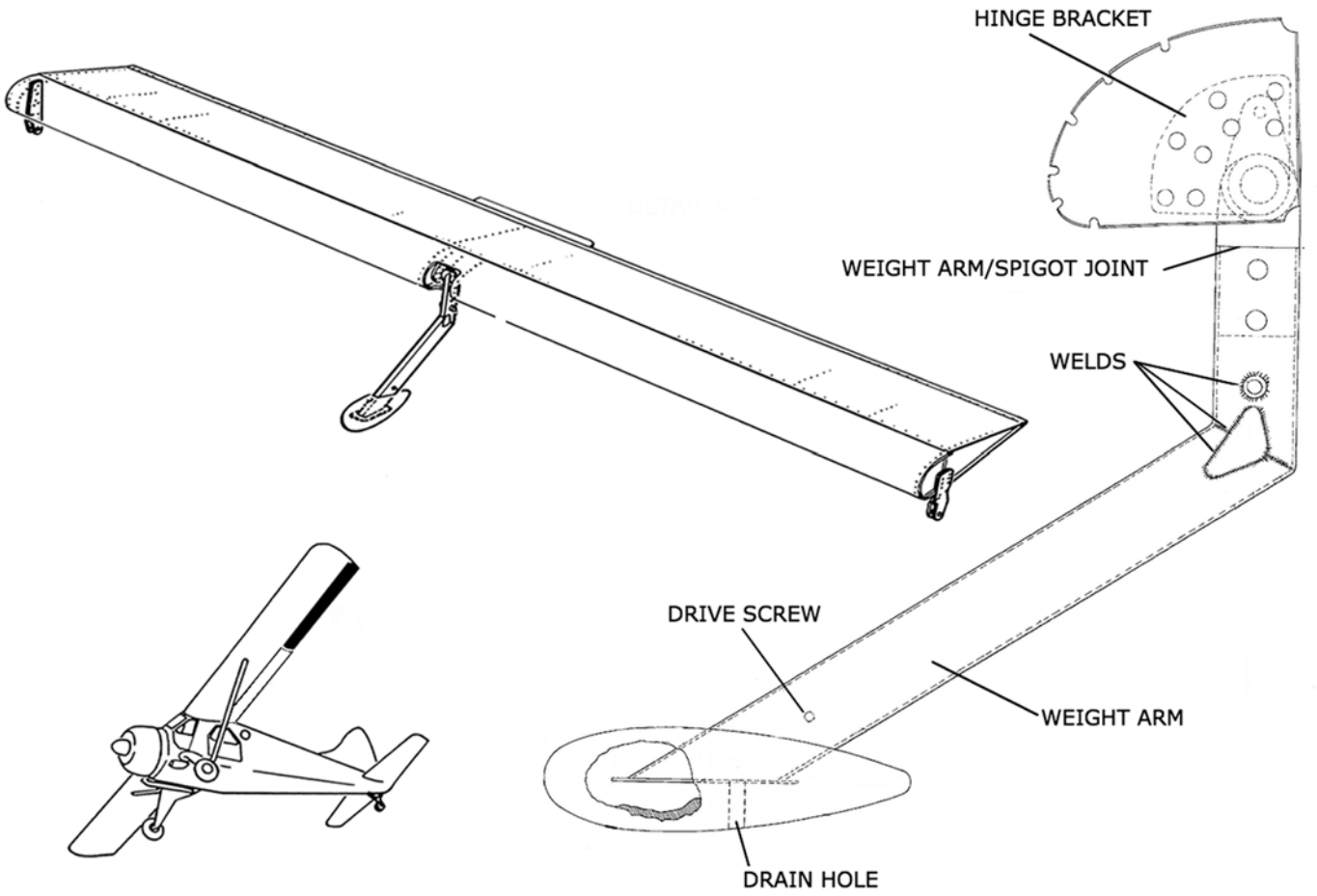
RETREATMENT: Restore fillet seal at weight arm/spigot joint as per Part 1, Paragraph 6.D.
RE-PROTECT as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS:

1) If evidence of cracking, wear, looseness of part is observed, disassemble, remove coatings, and fluorescent liquid penetrant inspect as per ASTM E1417 (Type1).
2) If cracking is found or suspected on centre hinge bracket, or rivets are loose, remove for further inspection. Use fluorescent liquid penetrant inspection as per ASTM E1417 (Type 1). Refer to SB 2/37 for instructions applicable to assemblies with separate hinge arm brackets.
3) For assemblies with separate hinge arm brackets, if corrosion is present on the weight arm, sealant at the spigot/weight arm joint is cracked or missing, or drive screws are loose, missing or corroded, disassemble as per Engineering Bulletin No.17 or SB 2/37. Inspect for corrosion and cracking on the inside of the weight arm and on the hinge arm spigot. If only minor corrosion is present, remove corrosion. Replace parts with moderate to severe corrosion. Re-protect internal surfaces of weight arm as per Part 1, Paragraph 6.C.(2).
4) Replace cracked or un-serviceable parts.
5) Prior to re-assembling weight arm to hinge bracket, ensure internal surfaces are re-protected as per Part 1, Paragraph 6.C. Re-apply conversion coating (e.g. Alodine) on hinge arm spigot and apply a thin film (Grade 3) corrosion inhibiting compound as per Part 1, Paragraph 7.B.

NOTES AND SPECIAL INSTRUCTIONS: (Cont'd)

6) When re-installing weight arm to spigot, wet install rivets with sealant and seal weight arm/spigot joint as per Part 1, Paragraph 6.D. Restore assembly external surface finish as per Part 1, Paragraph 6. Re-protect all surfaces as per Part 1, Paragraph 7.
7) If weight arm is disassembled for inspection and/or repair, balance aileron as per PSM 1-2-3 after re-installation.



C57–51–01

Aileron Mass Balance Weight Arm and Centre Hinge Bracket

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C57–51–02
Aileron Mass Balance Weight Arm

ATA CHAPTER: 57 – Wings

MANUAL REF: PSM 1–2–4, Part 2, Wing Group, Fig. 4
PSM 1–2–3, Section 2, Paragraph 2.23

EFFECTIVITY: All

REF DOCUMENTS: SB 2/37, Rev C or later, Wings - Special Inspection and replacement of Aileron Centre Hinge Bracket -Mod 2/1536
Engineering Bulletin No. 17, Aileron Mass Balance Weight Arm C2WA151 & C2WA152 or C2WA 127 & C2WA128

ACCESS: Items are external.
Optionally remove the aileron mass balance assembly (refer to SB 2/37).

INSPECTION METHOD: Non-Destructive Inspection (NDI) - Fluorescent dye penetrant inspect welded assemblies as per ASTM E1444 (Type I). Use borescope through mass balance weight drain hole to view interior of weight arm.

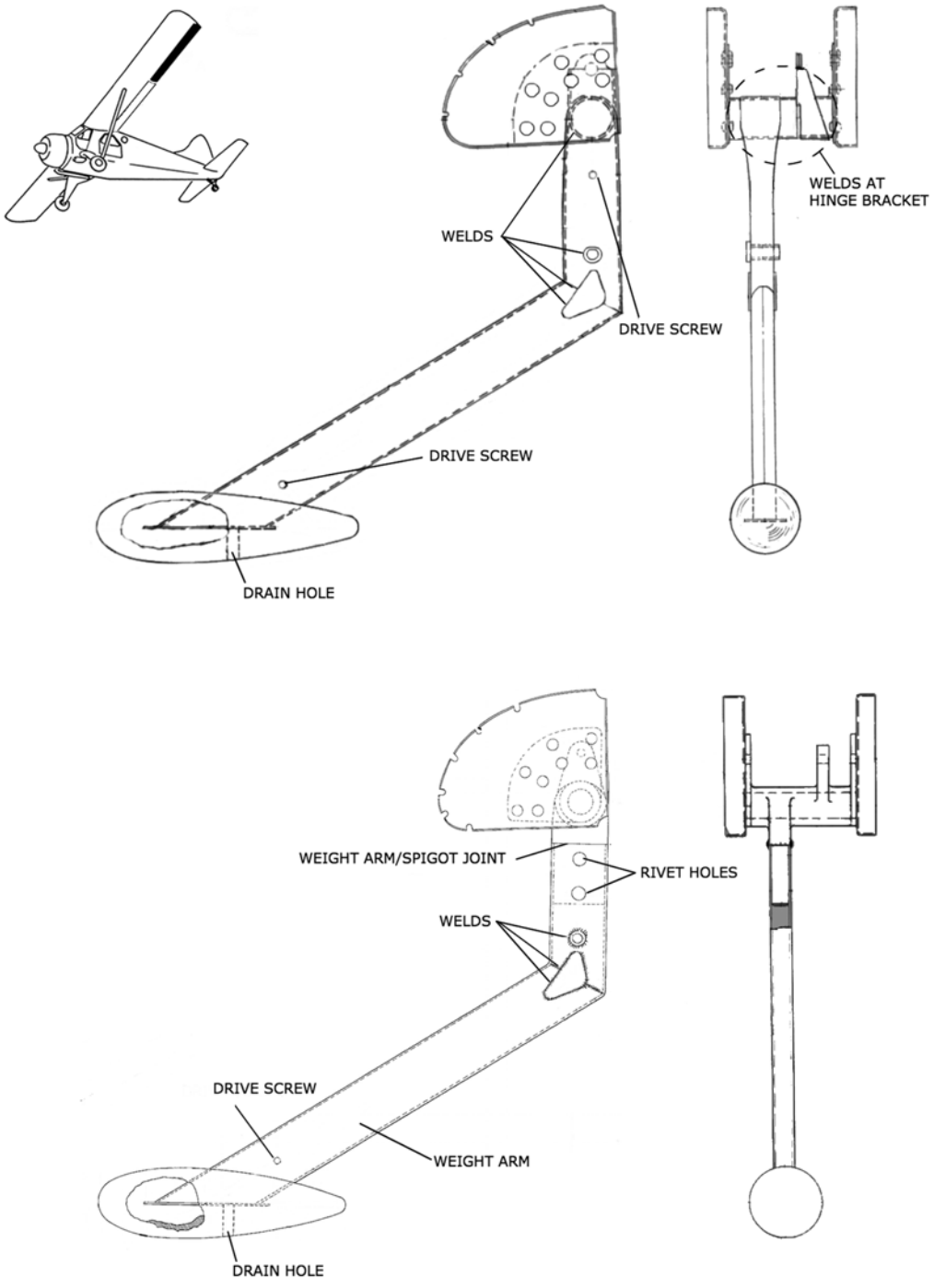
INSPECTION OBJECTIVE:

1) Cracking. Pay particular attention to welds, locations around holes, bushings, rivets, sharp corners, bending radii.
2) Internal and external surface finish degradation and surface corrosion.

RETREATMENT: Fillet seal around joint between weight arm and centre hinge bracket spigot as per Part 1, Paragraph 6.D.
Restore surface finish as per Part 1, Paragraph 6.C.
RE-PROTECT as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS:

1) If paint remover or any solvents enter the weight arm, disassemble for cleaning and further inspection.
2) If internal corrosion is observed, disassemble for corrosion removal and further inspection.
3) If weight arm is removed from hinge bracket, fluorescent dye penetrant inspect hinge arm spigot as per INSPECTION METHOD, above. Pay particular attention to area around rivet holes (see Figure C57-51-02, bottom).
4) Replace parts that are cracked or have moderate to severe corrosion.
5) After corrosion removal or part replacement, protect internal surfaces as per Part 1, Paragraph 6.D.(2)(c). Clean spigot, re-apply conversion coating (e.g. Alodine), and apply a thin film corrosion inhibiting compound as per Part 1, Paragraph 7.B before re-installing weight arm to spigot; wet install rivets with sealant and fillet seal weight arm/spigot joint as per Part 1, Paragraph 6.D.
6) Check aileron balance as per PSM 1-2-3 after inspection and re-installation.



C57–51–02

Aileron Mass Balance Weight Arm

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C73–20–01
Engine and Propeller Control Actuating Rods, Connecting Rods and Lay Shafts (MK I, MK II)

ATA CHAPTER: 73 – Engine Fuel and Control

MANUAL REF: PSM 1–2–2, Part 5, Power Plane and Related Systems, Fig. 5-9 & 5-9A
PSM 1–2–4, Fuselage Group, Fig. 27 & 29

EFFECTIVITY: MK I, MK II

REF DOCUMENTS: Nil

ACCESS: Remove rear cowling panels (ref. PSM 1-2-2, Part 1, Fig. 1-3) to access connecting rods and throttle secondary lay shaft. Access rods and shafts aft of the firewall as per PSM 1-2-2, Part 5.

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Use borescope and strong light source to view all shaft and rod surfaces.

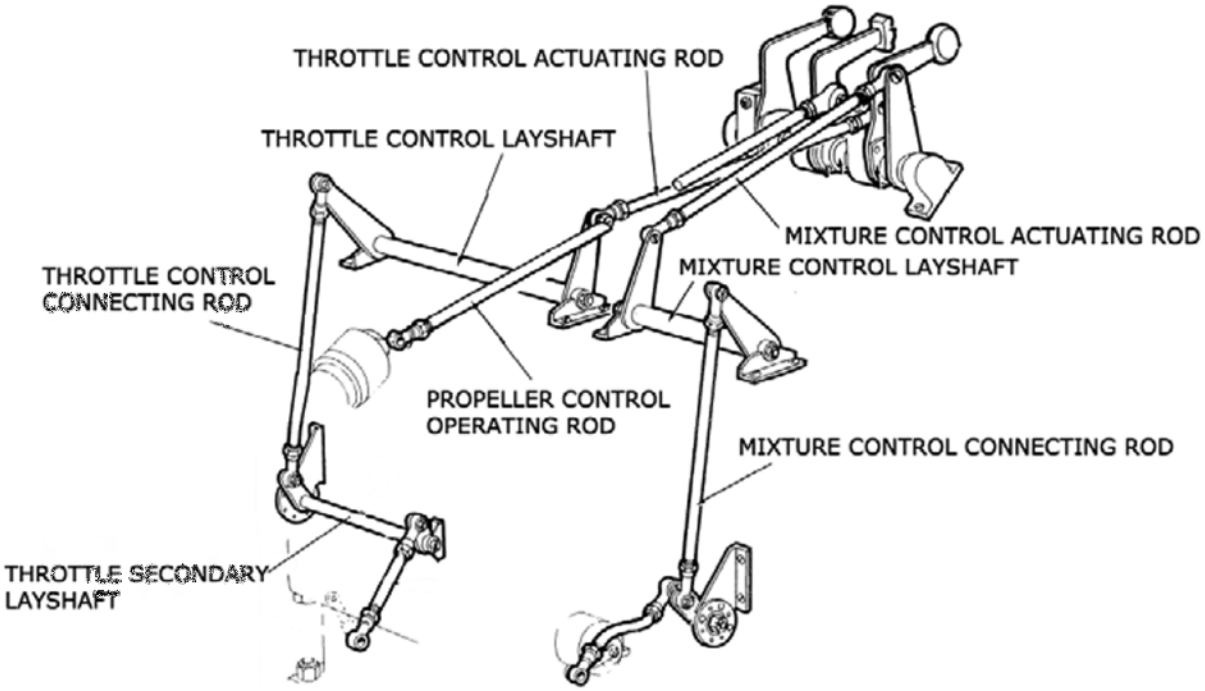
INSPECTION OBJECTIVE:

1) Surface finish blistering, flaking, cracking.
2) Surface corrosion and pitting.
3) Cracking. Pay particular attention to welds, threads, and holes at drive screws.

RETREATMENT: RE PROTECT as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS:

1) If corrosion is found at drive screws or drive screws are loose, replace part or perform ultrasonic thickness check of affected part as per SAE-ARP-2654 or ASTM E797.
2) Maximum corrosion blend out:
   a) Rods 0.003 in.
   b) Lay shafts 0.005 in.
3) If previous amount of blend out is unknown, perform ultrasonic thickness check as per SAE-ARP-2654 or ASTM E797.
4) Minimum wall thickness:
   a) Rods 0.025 in (nominal: 0.028 in).
   b) Lay shafts 0.030 in (nominal: 0.035 in).
5) If rods or lay shafts are removed for inspection/repair/replacement, ensure that the engine and constant speed unit adjustments are correct on installation as per PSM 1-2-2, Part 5, Paragraph 5.12.


THROTTLE CONTROL ACTUATING ROD
THROTTLE CONTROL LAYSHAFT
MIXTURE CONTROL ACTUATING ROD
MIXTURE CONTROL LAYSHAFT
THROTTLE CONTROL CONNECTING ROD
PROPELLER CONTROL OPERATING ROD
MIXTURE CONTROL CONNECTING ROD
THROTTLE SECONDARY LAYSHAFT

DHC-2 BEAVER

PART 2 - SPECIFIC SUPPLEMENTAL AND CORROSION INSPECTIONS

ITEM: C73–20–02
Engine and Propeller Control Actuating Rods and Lay Shafts (MK III)

ATA CHAPTER: 73 – Engine Fuel and Control

MANUAL REF: PSM 1–2T–2, Supplement 6, Fig. 6-11
PSM 1–2T–4, Power Plant Group, Fig. 76, 77, 83

EFFECTIVITY: MK III

REF DOCUMENTS: Nil

ACCESS: Remove upper engine cowling and door (ref. PSM 1-2T-2, Supplement 6, Fig. 6-9A) to access connecting rods and lay shafts. Remove engine control fairing to access rods and shafts aft of the forward cockpit bulkhead (STA -75.5).

INSPECTION METHOD: Detailed Visual Inspection (DVI) - Use borescope and strong light source to view all shaft and rod surfaces.

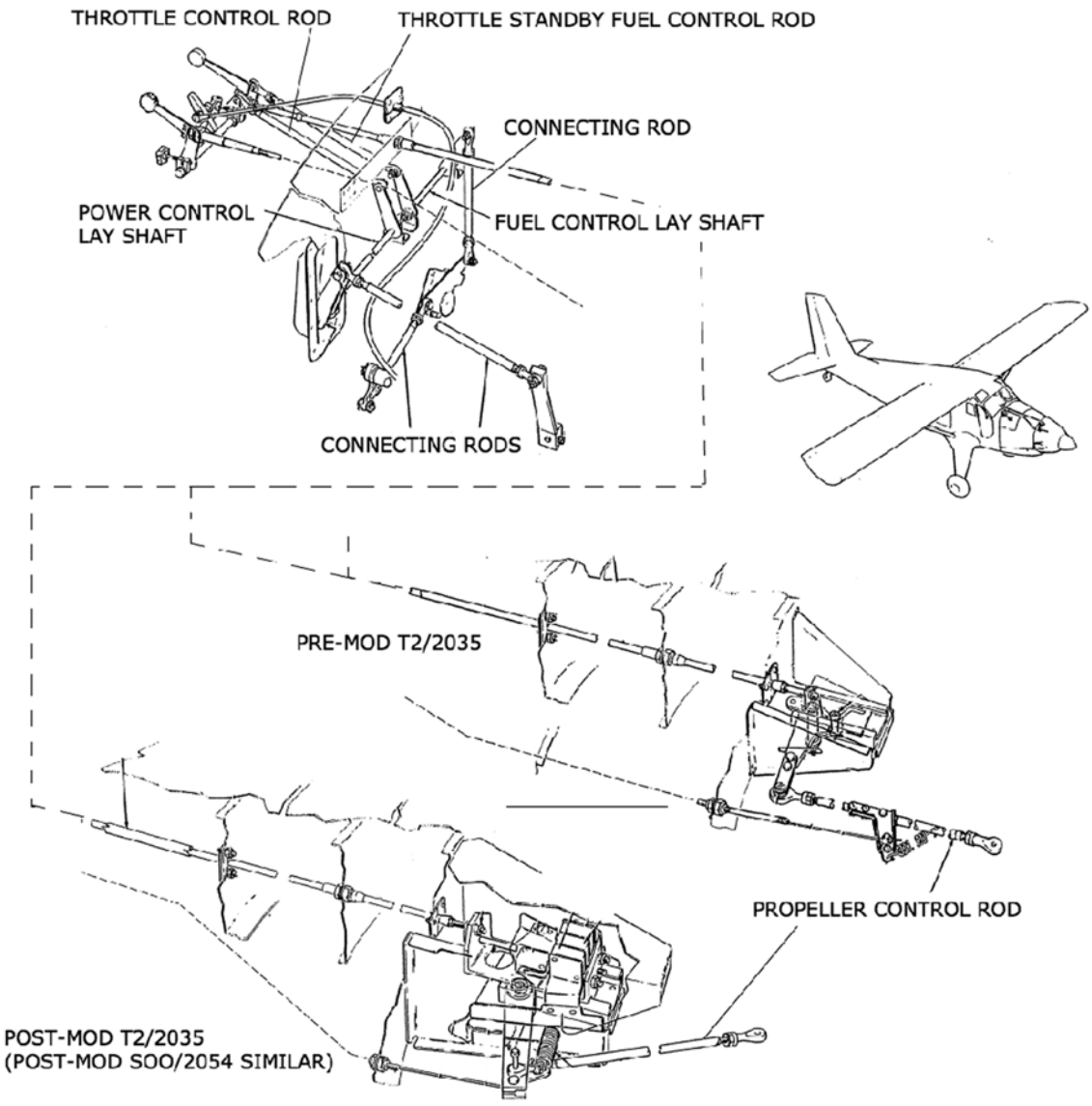
INSPECTION OBJECTIVE:

1) Surface finish blistering, flaking, cracking.
2) Surface corrosion and pitting.
3) Cracking. Pay particular attention to welds, threads, and holes at drive screws.

RETREATMENT: RE PROTECT as per Part 1, Paragraph 7.

NOTES AND SPECIAL INSTRUCTIONS:

1) If corrosion is found at drive screws or drive screws are loose, replace part or perform ultrasonic thickness check of affected part as per SAE-ARP-2654 or ASTM E797.
2) Maximum corrosion blend out:
   a) Rods 0.003 in.
   b) Lay shafts 0.005 in.
3) If previous amount of blend out is unknown, perform ultrasonic thickness check as per SAE-ARP-2654 or ASTM E797.
4) Minimum wall thickness:
   a) Rods 0.025 in (nominal: 0.028 in).
   b) Lay shafts 0.030 in (nominal: 0.035 in).
5) If rods or lay shafts are removed for inspection/repair/replacement, ensure that the engine rigging is correct as per PSM 1-2T-2, Supplement 6.



C73–20–02

Engine and Propeller Control Actuating Rods and Lay Shafts (MK III)

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PART 3

RECOMMENDED SUPPLEMENTAL INSPECTION AND CORROSION CONTROL PROGRAM

DHC-2 BEAVER

SUPPLEMENTAL INSPECTION AND CORROSION CONTROL MANUAL

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DHC - 2 BEAVER

PART 3 - RECOMMENDED SUPPLEMENTAL INSPECTION AND CORROSION CONTROL PROGRAM

1. Recommended Supplemental Inspection and Corrosion Control Program

A. Relationship to PSM 1-2-2 DHC-2 Maintenance Manual and PSM 1-2T-2, DHC-2 MK III Supplementary Maintenance Manual

Appendix 2 of PSM 1-2-2 and Part 4 of PSM 1-2T-2, Periodic Inspection Requirements, provide the overall inspection programs considered necessary to maintain the aircraft in a continuous state of airworthiness. This Supplemental Inspection and Corrosion Control Program is intended to deal with items affected by aircraft aging.

NOTE: This manual is a supplement to PSM 1-2-2 and PSM 1-2T-2, not a replacement for them. The repeat inspections in this manual DO NOT affect the inspection intervals prescribed in PSM 1-2-2 and PSM 1-2T-2.

B. Baseline Program

The supplemental inspection and corrosion control program provided in this section defines a baseline program for the DHC-2 Beaver. Operators shall incorporate the requirements outlined into their maintenance program.

B. Applicability

This program is applicable to all DHC-2 MK I, MK II, and MK III aircraft.

C. Inspection Intervals

(1) Repeat Interval

For a given Inspection Task, the inspection must be repeated in a period not exceeding the corresponding Repeat Interval.

(2) Threshold Interval

For any new part, the threshold interval is to be set equal to the repeat interval as per Part 3, unless otherwise specified. The threshold interval starts from the date of manufacture.

(3) Calendar Time

Where the Inspection Intervals are given in calendar time, they apply whether the aircraft is in service or out-of-service.

2. Structure of the Recommended Supplemental Inspection and Corrosion Control Program (SICCP)

A. General

The Recommended SICCP provides a description of the area or item associated with the inspection task, effectivity, the type of inspection to be completed, the repeat interval, and instructions for re-protection.

B. Definitions

(1) INSPECTION TASK: Same numbering system as Inspection ITEM in Part 2 (see Part 2, Para 1.D. Item Identification Series).

(2) DESCRIPTION: Describes the general area or element to be inspected under the Inspection Task.

(3) AIRCRAFT EFFECTIVITY: Models and/or S/Ns of aircraft to which the Corrosion Task applies.

(4) TYPE OF INSPECTION: General Visual (GVI), Detailed Visual (DVI), or Non-Destructive (NDI).

(5) R YEARS: The Repeat Interval, in years (or hours (hrs)), as applicable between completion of the Inspection Task.

NOTE: The SICCP repeat intervals listed in this manual do not supersede any inspection intervals presently listed in PSM 1-2-2, Appendix 2, or PSM 1-2T-2, Part 4, including any Temporary Revisions.

(6) RE-PROTECT: Whether re-protection of the ITEM is required. YES indicates re-treatment (as described in Part 2) is required. AS REQUIRED indicates re-treatment (as described in Part 2) is at the discretion of a responsible maintenance person. NONE indicates no re-treatment necessary or recommended.

3. Basic Inspection Task

A. General

The basic inspection task applies to all areas of the aircraft and all corrosion inspection tasks provided in this manual.

B. Typical Sequence

The typical sequence of tasks to be accomplished in each defined aircraft area as part of the SICCP is:

(1) Remove systems, equipment, and interior furnishings, as applicable, to gain access to the area.

(2) Remove access panels, floor boards, as applicable. For each Inspection Task described in Part 2, refer to the ACCESS portion of the specific task description.

NOTE: Visually inspect for signs of corrosion or damage before and after cleaning.

CAUTION: WHEN CLEANING/INSPECTING CABLES, WEAR GLOVES OR USE CLOTH OF SUITABLE THICKNESS TO AVOID INJURY DUE TO BROKEN WIRES.

(3) Clean the area as required.

(4) Visually inspect the area using details provided in Part 2. Additional inspections, e.g. NDI, and/or disassembly will be required if there are indications of hidden corrosion or damage (e.g., fretting corrosion products, corrosion running into splices, bulging skins, corrosion running under or between attachment parts).

(5) In the absence of corrosion, re-protect as indicated. If corrosion or damage is detected, see Part 3, Paragraph 4. Re-protect item(s) following repair/replacement.

(6) Clear any debris from joints, crevices, and low-lying areas, and unblock all drainage openings.

(7) Re-install access panels, floor boards, covers, etc. Ensure all adjacent water absorbing materials and surfaces (e.g., insulation blankets) are clean and dry. Do not apply corrosion preventive compounds to insulation blankets.

(8) Make suitable inspection record entries in the aircraft maintenance log books, in accordance with airworthiness authority instructions.

(9) Report Level 2 and Level 3 corrosion as per Part 3, Paragraph 5.

4. Repairs

Replace or repair damaged part before next flight, in accordance with PSM1-2-2, PSM1-2-3 or AC 43-13 or AC 43.4, as applicable. In cases where the damage is outside the limitation of these publications, repair before next flight, in accordance with a repair design approved by Viking Air Limited Design Approval Organization (DAO), or a repair design acceptable to the local Civil Aviation Authority (CAA).

5. Reporting System

A. General

In addition to the routine reporting procedures already established for DHC-2 aircraft, the Recommended Supplemental Inspection and Corrosion Control Program includes a reporting system.

B. Damage Detection Report

The Damage Detection Report form provided is to be used for reporting all Level 2 and Level 3 damage and corrosion found as a result of Inspection Tasks carried out, as per Part 3. Any additional comments and/or photographs that would contribute towards identifying the problem area or damage type, should be attached to the form.

NOTE: During the first inspection of this Recommended Supplemental Inspection and Corrosion Control Program, detected corrosion may exceed Level 1 because the item may never have been the subject of a directed corrosion inspection. Level 2 corrosion should, therefore, only be reported when found after second and subsequent inspections. All Level 3 corrosion is to be reported.

C. Reporting Timeline

(1) Level 2 Reporting

Report Level 2 corrosion or equivalent damage detected on second or subsequent inspections within 90 days.

(2) Level 3 Reporting

Report Level 3 corrosion or equivalent damage detected on first or subsequent inspections within 30 days.

D. Report Submission

All data and reports dealing with the DHC-2 Recommended Supplemental Inspection and Corrosion Control Program shall be submitted to Viking Air Limited:

Viking Air Limited Technical Support
www.vikingair.com
Tel: (587) 430-0572
Toll Free: 1-800-663-8444
Fax: (403) 295-8888
e-mail: technical.support@vikingair.com

Reported data will be used to evaluate and adjust, as necessary, the DHC-2 Beaver Recommended Supplemental Inspection and Corrosion Control Program.

DHC-2 DAMAGE DETECTION REPORT
This form only required for LEVEL 2 or 3 corrosion or equivalent damage.
Please submit a separate form for each occurrence.

OPERATOR:			DATE OF INSPECTION:
SERIAL NO.:			PREVIOUS INSPECTION DATE:
FLIGHT HOURS:			INSPECTION TASK:
JASC:			PART NUMBER:
IPC FIGURE & INDEX NUMBER (Describe if none):			
OPERATING ENVIRONMENT:	☐ Temperate ☐ Tropical ☐ Desert ☐ Arctic	☐ Marine land ☐ Marine float ☐ Fresh water float ☐ Other: _____	☐ Severe ☐ Moderate ☐ Mild
TYPE OF DAMAGE:	☐ Corrosion	☐ Other - specify: _____	
LEVEL OF DAMAGE:	☐ LEVEL 2 ☐ LEVEL 3	☐ LOCAL ☐ WIDESPREAD	
GROUP:	☐ Wing ☐ Fuselage ☐ Float (Specify installation): _____	☐ Tail ☐ Landing Gear	☐ Engine ☐ Other: _____
LOCATION:	STA _____ ☐ Above floor ☐ Below floor	To STA _____ ☐ Port ☐ Starboard	
CAUSE:	☐ Blocked drainage ☐ Cargo leakage ☐ Chemical spill – specify: _____ ☐ Environment – specify: _____ ☐ Other – specify: _____	☐ Wet insulation blanket ☐ Animal/pest	
ADDITIONAL DESCRIPTION OF CORROSION/DAMAGE:			

DESCRIPTION OF AIRCRAFT AREA: 27 – FLIGHT CONTROLS						
INSPECTION TASK	**DESCRIPTION**	**AIRCRAFT EFFECTIVITY**	**INSPECTION TYPE**	**R YEARS**	**RE-PROTECT**	**NOTES**
C27–10–01	Aileron chain stops, check nuts and links	All	DVI	4	YES	
C27–10–02	Aileron control cable assembly, fittings and full cable length	All	DVI	4	Standard cables: AS REQUIRED CRES: NONE	
C27–10–03	Aileron control guide pulleys and pulley attachment parts	All	DVI	4	AS REQUIRED (attachment brackets)	
C27–10–04	Aileron differential assembly	All	DVI	2	AS REQUIRED	
C27–10–05	Aileron droop transmission rods, attachment parts	All	DVI	2	AS REQUIRED	
C27–10–06	Aileron differential rod assembly, attachment parts	All	DVI	4	AS REQUIRED	
C27–10–07	Inboard aileron bell crank and attachment parts	All	DVI	2	AS REQUIRED	
C27–10–08	Outboard aileron bell crank and attachment parts	All	DVI	2	AS REQUIRED	
C27–10–09	Aileron in-wing cable assemblies	All	DVI	4	CRES: NONE	
C27–20–01	Rudder pedal torque tube assembly	All	DVI	1	YES	
C27–20–02	Rudder pedal torque tube assembly, torque tube thickness	All	NDI	10	YES	Can coordinate with C53-10-02
C27–20–03	Connecting rods and link for rudder pedal torque tube assembly	All	DVI	1	YES	

DESCRIPTION OF AIRCRAFT AREA: 27 – FLIGHT CONTROLS						
INSPECTION TASK	**DESCRIPTION**	**AIRCRAFT EFFECTIVITY**	**INSPECTION TYPE**	**R YEARS**	**RE-PROTECT**	**NOTES**
C27–20–04	Rudder trim control cables, fittings and full cable length	All	DVI	4	Standard cables: AS REQUIRED CRES: NONE	
C27–20–05	Rudder control cables, fittings and full cable length	All	DVI	4	Standard cables: AS REQUIRED CRES: NONE	
C27–20–06	Rudder and rudder trim control cable guide pulleys and pulley attachment parts	All	DVI	4	AS REQUIRED (attachment brackets)	
C27–20–07	Aft rudder torque tube, tie rod, and attachment parts	All	DVI	1	YES	
C27–20–08	Rudder control links	All	DVI	1	YES	
C27–20–09	Rudder mounting assembly	All	DVI	1	YES	
C27–20–10	Rudder mounting assembly, mounting plate/mounting block faying surfaces and attachment holes.	All	DVI	4	YES	
C27–20–11	Rudder trim screw jack assembly	All	DVI	2	AS REQUIRED (cover, barrel, mounting bracket)	
C27–20–12	Rudder trim connecting rod	All	DVI	1	YES	
C27–30–01	Control column	All	DVI	2	YES	
C27–30–02	Elevator control rod	All	DVI	4	YES	
C27–30–03	Elevator control idler bracket	MK lll	DVI	4	AS REQUIRED	
C27–30–04	Elevator bell crank assembly	All	DVI	2	AS REQUIRED	

DESCRIPTION OF AIRCRAFT AREA: 27 – FLIGHT CONTROLS						
INSPECTION TASK	**DESCRIPTION**	**AIRCRAFT EFFECTIVITY**	**INSPECTION TYPE**	**R YEARS**	**RE-PROTECT**	**NOTES**
C27–30–05	Elevator bell crank return spring assembly	MK lll	DVI	4	AS REQUIRED	
C27–30–06	Elevator trim control cable assemblies, fittings and full cable lengths	All	DVI	4	Standard cables:AS REQUIRED CRES: NONE	
C27–30–07	Elevator control cable assemblies, fittings and full cable lengths	All	DVI	4	Standard cables: AS REQUIRED CRES: NONE	
C27–30–08	Elevator and elevator trim control cable guide pulley bearings and pulley attachment parts	All	DVI	4	AS REQUIRED (attachment brackets)	
C27–30–09	Elevator torque tube and trim torque tube accessible surfaces and attachment parts	All	DVI	1	YES	
C27–30–10	Elevator torque tube and trim torque tube end plates and interior surfaces	All	DVI	2	YES	Can coordinate with inspections as per SB 2/47, Rev E or later, or SB 2/30, Rev NC or later
C27–30–11	Elevator front connecting rod	MK III	DVI	4	AS REQUIRED	
C27–30–12	Elevator trim tab push rod	All	DVI	1	YES	
C27–30–13	Elevator trim screw jack assembly	All	DVI	1	YES	
C27–50–01	Flap torque tube assembly	All	DVI	4	AS REQUIRED	
C27–50–02	Flap control rods	All	DVI	1	YES	

DESCRIPTION OF AIRCRAFT AREA: 32 – LANDING GEAR						
INSPECTION TASK	**DESCRIPTION**	**AIRCRAFT EFFECTIVITY**	**INSPECTION TYPE**	**R YEARS**	**RE-PROTECT**	**NOTES**
C32–46–01	Ski link and attachment bolts, link-to-ski and link-to-actuator	Wheel-ski Installations	DVI	4	YES	Disassembly required

DESCRIPTION OF AIRCRAFT AREA: 53 – FUSELAGE						
INSPECTION TASK	**DESCRIPTION**	**AIRCRAFT EFFECTIVITY**	**INSPECTION TYPE**	**R YEARS**	**RE-PROTECT**	**NOTES**
C53–10–01	Forward fuselage frame “Birdcage”	All	DVI	1	YES	
C53–10–02	Forward fuselage frame “Birdcage”	All	NDI	5	YES	Threshold: 10 Years for new PN C2FS1503A (Pre Mod 2/1303) or C2FS3203A (Post Mod 2/1303)
C53–40–01	Webbed plate and tie bars (STA-16.00)	All	DVI	1	YES	
C53–40–02	Fuselage fittings, landing gear/float strut/wing strut attachment (STA 8.00)	All	DVI	1	YES	

DESCRIPTION OF AIRCRAFT AREA: 55 – STABILIZERS						
INSPECTION TASK	**DESCRIPTION**	**AIRCRAFT EFFECTIVITY**	**INSPECTION TYPE**	**R YEARS**	**RE-PROTECT**	**NOTES**
C55–10–01	Horizontal stabilizer (tailplane), structure and skin	All	DVI	4	YES	

DESCRIPTION OF AIRCRAFT AREA: 55 – STABILIZERS						
INSPECTION TASK	**DESCRIPTION**	**AIRCRAFT EFFECTIVITY**	**INSPECTION TYPE**	**R YEARS**	**RE-PROTECT**	**NOTES**
C55–10–02	Horizontal stabilizer (tailplane) front pick-up brackets	All	NDI	2	YES	Can coordinate with SB 2/47, Rev E or later
C55–20–01	Elevator torque tube root rib attachment bolts	All	DVI	4	YES	Can coordinate with inspections per SB 2/47, Rev E or later, or SB 2/30, Rev NC or later
C55–20–02	Elevator mass balance	All	DVI	5	YES	Ref. SB 2/50, Rev NC or later (MK I, II), TB/58, Rev NC or later (MKIII)
C55–20–03	Elevator and tab, structure and skin	All	DVI	3250 hrs	YES	
C55–30–01	Fin attachment fittings and bolts	MK I, MK II	DVI, NDI	1	YES	
C55–30–02	Fin attachment fittings and bolts	MK III	DVI	1	YES	
C55–30–03	Fin attachment fittings and bolts	MK II	DVI	1	YES	Contact Viking for disposition on attachment bolts
C55–40–01	Rudder tip root rib	All	DVI	1	YES	
C55–40–02	Rudder Mass Balance	Incorporated into C55-20-02 & C55-40-01				
C55–40–03	Rudder and tab, structure and skin	All	DVI	4000 hrs	YES	

DESCRIPTION OF AIRCRAFT AREA: 57 – WINGS						
INSPECTION TASK	**DESCRIPTION**	**AIRCRAFT EFFECTIVITY**	**INSPECTION TYPE**	**R YEARS**	**RE-PROTECT**	**NOTES**
C57–10–01	Wing structure and flap/aileron hinge arm support brackets	All	DVI	2200 hrs	YES	
C57–51–01	Aileron mass balance weight arm and centre hinge bracket	All	DVI	2	YES	
C57–51–02	Aileron mass balance weight arm	All	NDI	4Y or 500 hrs, which-ever comes first	YES	

DESCRIPTION OF AIRCRAFT AREA: 73 – ENGINE FUEL AND CONTROL						
INSPECTION TASK	**DESCRIPTION**	**AIRCRAFT EFFECTIVITY**	**INSPECTION TYPE**	**R YEARS**	**RE-PROTECT**	**NOTES**
C73–20–01	Engine and propeller control actuating rods, connecting rods and lay shafts	MK I, MK II	DVI	2	YES	
C73–20–02	Engine and propeller control actuating rods, connecting rods and lay shafts	MK III	DVI	2	YES	

APPENDIX A

ADDITIONAL INFORMATION

DHC-2 BEAVER
SUPPLEMENTAL INSPECTION AND CORROSION CONTROL MANUAL

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DHC-2 BEAVER

SUPPLEMENTAL INSPECTION AND CORROSION CONTROL MANUAL
APPENDIX A - ADDITIONAL INFORMATION

1. General

Appendix A provides additional information that operators may find useful in preventing and/or correcting the effects of corrosion on the DHC-2 Beaver items and areas described in Parts 2 and 3 of this manual.

2. Corrosion Removal Procedure after Mercury Spillage

A. General

(1) The corrosive action of mercury is very rapid. Immediate action must be taken when mercury spillage is discovered.

(2) Mercury amalgamates (forms an alloy) readily with aluminum alloys at room temperature when the surface oxide film has been scratched or damaged. Once a small area of aluminum has been amalgamated, corrosion occurs. This process is accelerated by moisture and primarily by salt water.

(3) The amalgamation of stressed aluminum structure or part may also result in rapid cracking similar to stress corrosion cracking.

(4) Mercury is not consumed in the amalgamation process. As the aluminum alloy oxidizes it separates from the amalgam and the mercury continues to attack fresh aluminum alloy.

(5) The presence of organic finishes, greases, or a thick continuous oxide layer retards the amalgamation process.

B. Detection

(1) The presence of corrosion caused by spilled mercury is indicated by a grayish-white powder or fuzzy coating on aluminum surfaces.

(2) The presence of even small amounts of mercury can be detected by a sniffer. This is an electronic device that is sensitive to mercury vapor.

(3) Mercury can be best detected by x-ray in which it will appear on the film as small white spots. Corrosion may appear as tree-like forms penetrating the affected component.

C. Personnel Precautions

WARNING: DO NOT EAT, SMOKE, OR BLOW NOSE AFTER CONTACT WITH MERCURY WITHOUT FIRST WASHING HANDS THOROUGHLY.

THE EFFECTS OF MERCURY EXPOSURE ARE CUMULATIVE AND MAY RESULT IN ORGAN DAMAGE, CHRONIC EYE IRRITATION, SEVERE SKIN IRRITATION, RESPIRATORY TRACT IRRITATION LEADING TO ATTACKS OF BRONCHIAL INFECTION, AND A GENERAL DETERIORATION OF HEALTH.

ALWAYS PROVIDE AMPLE VENTILATION WHILE CLEANING AREAS CONTAMINATED BY MERCURY.

(1) Significant amounts of mercury will vaporize at normal temperatures to the extent that a stagnant air mass can become dangerous. Mercury is toxic by inhalation and is irritating to the eyes and respiratory system.

(2) Free mercury or amalgam must not be picked up by hand. Mercury is toxic by absorption through the skin. Mercury is corrosive to skin and may produce burns.

(3) To clean tools that may be contaminated with mercury, use soap and hot water or steam bath. Discard drill bits after use on structure contaminated by mercury, according to local mercury disposal procedures.

D. Isolation of Contaminated Areas

(1) On discovery of spilled mercury, steps should be taken to control the contaminated area. The following precautions are recommended:

(a) Until such time as the area has been thoroughly cleaned up, do not remove access or inspection plates, or even fasteners in the area of the spill, to avoid the spread of the mercury.

(b) If hands become contaminated, do not touch any exposed metal in the surrounding area, to avoid further contamination. Immediately follow first aid measures as per the MSDS.

(c) Mercury spreads easily from one surface to another by adhering to hands, shoes, clothes, tools, etc. Keep traffic to a minimum in the contaminated area.

(d) Wear foot covers (wing socks) to prevent damage to finish. Failure to wear foot covers may result in exposing bare metal to attack.

(e) Consider protecting uncontaminated areas by securing protective material such as plastic sheets or toweling to the under-structure. Plastic sheeting or toweling can also be secured over a contaminated area to isolate it while equipment is being collected for the removal of mercury. Protective materials should be disposed of in accordance with local mercury disposal procedures.

E. Mercury Removal

(1) Remove all visible mercury without delay. The following methods of removal are suggested:

NOTE: The more primitive methods are less effective than those requiring special equipment. Nevertheless, speed of removal is essential and any available method should be used.

(a) Use paper or cardboard troughs to scoop up the mercury.

(b) Use adhesive tape to pick up small droplets.

(c) Use a medicine dropper for globules.

(d) Use a high-powered vacuum cleaner with a trap. See Fig. A.1 for a suggested method of making a trap.

(e) Use a mercury pickup brush to attract mercury. Foam pads that will pick up mercury are also commercially available. Refer to Paragraph F for details regarding use of brushes.

(f) Use a Hg vacuum cleaner, if available.

WARNING: ALL DETECTABLE MERCURY MUST BE REMOVED FROM THE AIRCRAFT.

(2) After removal of any and all visible mercury, more sophisticated means must be used to ensure hidden mercury is located and removed. X-ray imaging is recommended but a sensing device known as a mercury sniffer can be used.

(3) Where there is evidence of the presence of mercury in joints, between faying surfaces, or trapped in any way between structural members, these must be disassembled as necessary to permit complete removal of the mercury.

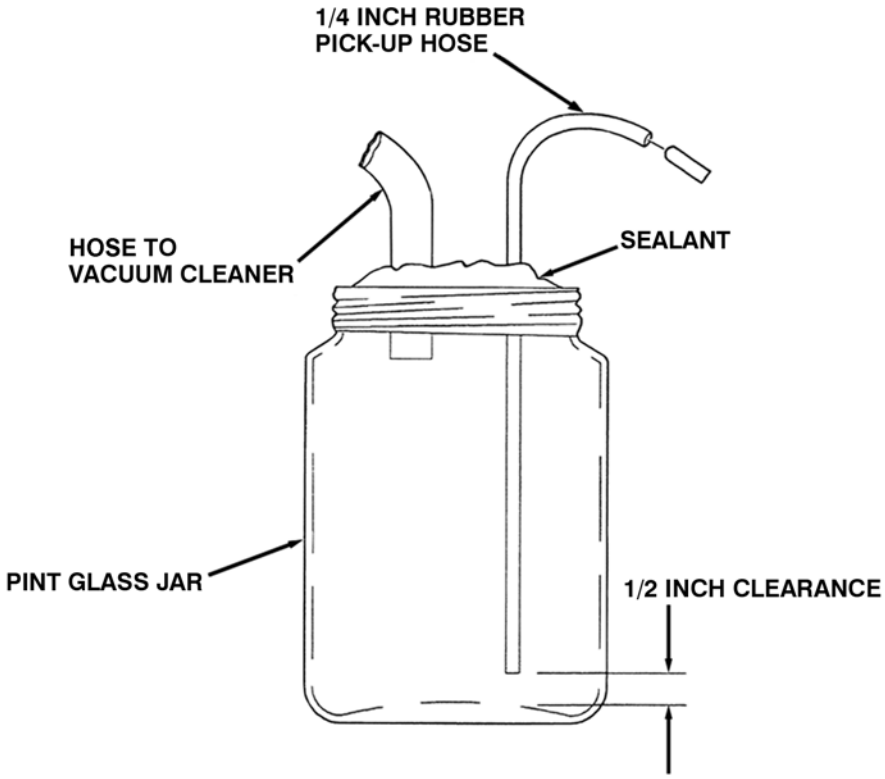


FIGURE A.1 - VACUUM CLEANER MERCURY TRAP

F. Removal of Mercury Using Brushes

(1) Mercury removal brushes are made from nickel-plated carbon fibers that pick up mercury. Refer to Paragraph G for supply sources.

(2) A brush made from fine copper wire can also be used to pick up mercury. If needed, a suitable brush could be manufactured locally using the fine wires used in domestic flexible electrical cable. The procedure for using the copper brush is:

(a) Dip the brush in nitric acid (HNO_3) to clean the wires.

(b) Dip the brush into water to remove the acid.

(c) Dip the brush into alcohol to remove the water.

(d) Pick up mercury with the brush. Mercury adheres to the copper wires by forming an amalgam. After collecting a quantity of mercury with the brush, shake the mercury off into a suitable container and repeat until all mercury has been collected.

G. Special Equipment

(1) Because of the urgency involved in removing mercury from the aircraft, most of these procedures utilize materials that are readily available locally. However, the use of special equipment is beneficial in ensuring all traces of mercury are removed.

(a) Hg vacuum cleaner: Nilfisk Industrial Vacuum Solutions or equivalent.

(b) Sensing device (mercury sniffer).

(c) Nickel plated carbon-fiber brushes.

(d) Mercury sponge: J.T. Baker Chemical.

3. Corrosion Removal Procedure After Fire Damage

A. General

(1) Service experience has indicated that corrosion problems can occur if fire damaged areas are not immediately cleaned. The sooty deposits resulting from burning organic materials and the residue from the use of dry powder type fire extinguishers, are sources of contaminates that may initiate corrosion in metal systems and structure.

(2) The dry powder type fire extinguishers are considered very effective in combating aircraft fires. The powder from extinguishers of this type is decomposed by heat to form carbon dioxide. The residual deposit, however, is hygroscopic and forms sodium hydroxide when moisture is absorbed from the air or mixed with water from aircraft flushing. Sodium hydroxide is alkaline and can cause corrosion damage to aluminum structure, electrical components, etc. Large quantities of water are necessary for flushing in every component, crevice and corner, and behind electrical panels, to eliminate all traces of this rather insoluble white powder.

(3) BCF and similar halogen type fire extinguishers normally leave no chemical residue to corrode parts or surfaces. However, when subjected to flame or hot surfaces, halogenated agents can decompose to produce small amounts of halogen acids.

B. Preventive Maintenance

(1) Remove fire damaged interiors to expose systems and structure. This may include interior trim, seats, linings, insulations, etc. Removal of tubing, cables, electrical wiring, etc., is not necessary if they are unaffected.

(2) Screen or mask off areas not affected.

(3) Open all drains, hatches and doors for drainage and ventilation. Use compressed air to blow dry all hidden recesses.

(4) Inspect structure and systems for heat damage, soot, fire extinguishing material residue and corrosion. Paint discoloration indicates the temperature exceeded 350°F (180°C); these items require structural analysis to confirm their airworthiness. Check for acid contamination using litmus paper. Products of combustion or decomposed extinguishants can combine with moisture to form corrosive chemicals. Flush with water, as necessary, to remove contaminants. Replace systems; e.g., control cables, etc., as necessary.

(5) Remove and replace systems and structure that is damaged beyond repair.

NOTE: Use eddy current technique to determine any change in heat-treat of any suspect item or area.

WARNING: SOLVENT-TYPE CLEANERS CAN CAUSE SKIN IRRITATION. THEIR VAPORS MAY IRRITATE EYES AND RESPIRATORY SYSTEM OR CAUSE HEADACHES, SLEEPINESS OR FAINTING. USE WITH ADEQUATE VENTILATION AND SUITABLE PERSONAL PROTECTIVE EQUIPMENT. AVOID PROLONGED BREATHING OF VAPORS OR REPEATED CONTACT WITH SKIN.

(6) Remove soot by washing affected areas with a suitable, nonflammable, non-alkaline (pH 8 or less) solvent-type cleaner or suitable soot remover. Pressure gun application is suggested for flushing fay surface joints, such as stringers to body skins. An absorbent cloth held beneath the area will catch the contaminated solvent. Refer to the MSDS for required personal protective equipment.

WARNING: SODIUM DICHROMATE IS TOXIC IF TAKEN INTERNALLY, IN CONTACT WITH SKIN, AND/OR IN CONTACT WITH EYES. SODIUM DICHROMATE IS A KNOWN CARCINOGEN. AVOID PROLONGED EXPOSURE. USE PROTECTIVE CLOTHING, FACE MASK AND RESPIRATOR WHEN SPRAYING. CONTACT LOCAL AUTHORITIES FOR WASTE DISPOSAL REQUIREMENTS.

(7) Inhibit corrosion that could be caused by residue from the dry powder fire extinguisher by washing affected areas with a 10-percent-by-weight solution of sodium dichromate. The dichromate solution acts as a mild corrosion inhibitor. Thoroughly dry all treated surfaces before continuing with any other treatment. Repeat rinse and inhibitor treatment if any white residue shows.

NOTE: Liquid dichromate solution can discolor the exterior paint finish on contact. If humidity is high, forced hot air may be necessary to dry the area before further flight.

(8) Inspect for contaminant residues that may remain behind clips, brackets, nut plates, etc. Contaminated item(s) may need to be removed before cleanup can be completed.

(9) Remove corrosion using an appropriate method (refer to Part 1, Paragraph 5). Treat reworked surfaces as per Part 1, Paragraph 6, and paint the same as the surrounding area.

(10) Apply water displacing corrosion inhibiting compound (see Part 1, Paragraph 7) to cleaned affected items and areas. It is important that the affected area be covered with a continuous film. Use a rag or brush to spread puddles. A thin even application is all that is required to provide corrosion protection and to prevent moisture from dissolving sodium dichromate into solution, which could result in staining of exterior surfaces. Allow the corrosion inhibiting compound to completely air dry before re-installing insulation blankets, liners, etc.

(11) Replace all interior items and restore aircraft to serviceable condition.

4. Corrosion Removal Procedure After Alkaline Spills

A. General

(1) Alkaline spills are caustic and can cause corrosive damage unless neutralized.

(2) The primary source of alkaline spillage is from batteries, e.g., in the battery compartment where alkaline electrolytes may overflow during charging or spill during battery servicing.

(3) Alkali-based corrosion removal compounds and aircraft cleaners are used quite extensively during routine maintenance operations. Without thorough neutralizing and/or rinsing, a spilled alkaline compound can cause corrosion damage.

(4) As part of a cargo, containers of alkaline compounds broken during loading or unloading may create spills larger in scale than battery electrolyte spills. Alkaline spills should be neutralized as soon as possible.

B. Detection

(1) Alkaline liquids can be clear and may not be visibly detectable. Known spills, when spread by personnel working in the immediate area, should be neutralized a soon as possible.

(2) In the cases where a spill has gone undetected and has penetrated the protective finish, a white powdery deposit (aluminum oxide) would indicate corrosion of an aluminum item. The location of the corrosion and/or recent cargo history can help to identify an alkaline spill as the source of corrosion.

(3) In other instances, primarily around the top of nickel-cadmium battery cells, alkaline electrolyte that overflows the vent caps will react with the carbon dioxide in the air to produce a white powdery deposit. This white deposit is not corrosive and otherwise harmless, but is an indication that electrolyte has spilled or otherwise escaped.

C. Precautions

WARNING: ALKALINE LIQUIDS ACCIDENTALLY SPILLED ON SKIN, CLOTHING OR OTHER MATERIAL, SHOULD BE FLUSHED IMMEDIATELY WITH CLEAN WATER. IN CASE OF CONTACT WITH EYES, IMMEDIATELY REMOVE CONTACT LENSES AND FLUSH WITH CLEAN WATER OR BORIC ACID EYEWASH SOLUTION AND SEEK EMERGENCY MEDICAL ASSISTANCE.

(1) If possible, identify the spilled material and consult the MSDS for spill management and personal protection information.

(2) Wear adequate protective clothing (chemical resistant gloves, gloves, goggles, face shields, aprons, boots, head gear, etc.) when handling or working in alkaline contaminated areas.

(3) Wash hands after using alkaline neutralizing treatment solutions and/or materials before eating, smoking, blowing nose, etc.

(4) Waste materials, solvents, chemical solutions, wiping rags, masking materials, and any other contaminated articles must be collected and disposed of in accordance with local regulations.

D. Isolation of Contaminated Area

(1) On discovery of alkaline spills, steps should be taken to contain the contaminated area(s). The following precautions are recommended:

(a) Do not allow alkaline spills to spread to adjacent areas that will not be cleaned.

(b) In battery areas, use plastic sheets to protect adjacent equipment. If equipment is operating, venting should be maintained.

(c) Consider protecting uncontaminated areas by taping down protective material such as plastic sheets.

E. Alkaline Spillage Cleanup

(1) Use plastic sheets to isolate the contaminated and treatment area(s) (refer to Paragraph D), and to prevent splashing of alkaline or treatment fluids onto adjacent equipment.

(2) Wipe up excess fluids with cloth and discard cloth into plastic container for disposal.

(3) Neutralize the treatment area with a 5% acetic acid solution, full-strength household vinegar, or commercial neutralizer applied with a brush or cloth swab.

(4) Continue to apply the solution until the mixture is neutral pH as determined with litmus paper or pH meter; allow the neutralizing solution to remain on the surface for an additional 5 minutes. Pay particular attention to faying surface joints and/or crevices. Pressure application may be necessary to flush the joint thoroughly.

(5) Remove the neutralized mixture with a mop or sponge.

(6) Rinse the affected area with generous quantities of clean water. Occasionally agitate the surface with a soft brush.

(7) Wipe dry with clean cloths.

(8) After thoroughly drying, repair or replace damaged finishes (refer to Part 1, Paragraph 6).

(9) Apply water displacing corrosion inhibiting compound over the entire area (refer to Part 1, Paragraph 7).

5. Corrosion Removal Procedure After Acid Spills

A. General

(1) Acid spills, unless neutralized, can rapidly corrode metallic systems and structure.

(2) The primary source of acid spillage is in the battery compartment (when acid batteries are installed) where acid electrolytes may overflow during charging, or spill during battery servicing.

(3) Acid-based corrosion removal compounds and aircraft cleaners are sometimes used during routine maintenance and repair. Thorough neutralizing and/or rinsing is necessary to avoid corrosion damage.

(4) As part of cargo, containers of acid concentrates or acid-based chemicals broken during loading or unloading may create spills larger in scale than battery electrolyte or maintenance servicing chemical spills. Acid spills should be neutralized as soon as possible.

NOTE: Acids may deteriorate non-metallic materials such as fabrics, wood, leather, plastics, etc.

(5) Damaged lithium sulfur dioxide batteries may leak sulfur dioxide gas, which combines with moisture to form extremely corrosive sulfurous acid.

B. Detection

Any discoloration on the part surface that is black, white, yellow and/or brown should be investigated. These precipitate colors are indicative of chemical reaction. Precipitate colors depend on the acid and the material on which the acid is spilled.

C. Precautions

WARNING: ACIDS ACCIDENTALLY SPILLED ON SKIN, CLOTHING OR OTHER MATERIAL, SHOULD BE FLUSHED IMMEDIATELY WITH CLEAN WATER. IN CASE OF CONTACT WITH EYES, IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF CLEAN WATER AND SEEK EMERGENCY MEDICAL ASSISTANCE.

(1) If possible, identify the spilled material and consult the MSDS for spill management and personal protection information.

(2) Wear protective clothing (rubber or plastic gloves, goggles, face shields, aprons, boots, head gear, etc.) when handling or working in acid contaminated areas.

(3) Wash hands after using acid neutralizing treatment solutions and/or materials before eating, smoking, blowing nose, etc.

(4) Waste materials, solvents, chemical solutions, wiping rags, masking materials and other contaminated articles shall be collected and disposed of in accordance with local regulations.

D. Isolation of Contaminated Area

(1) On discovery of acid spills, steps should be taken to contain the contaminated area(s). The following precautions are recommended:

(a) Do not allow acid spills to spread to adjacent areas that will not be cleaned.

(b) In battery areas, using plastic sheets beneath batteries to protect adjacent equipment is recommended. If equipment is operating, venting should be maintained.

(c) Consider protecting uncontaminated areas by taping down protective material such as plastic sheets.

E. Acid Spillage Cleanup

(1) Use plastic sheets to protect equipment adjacent to the treatment area from inadvertent splashing of acids or treatment fluids.

(2) Wipe up excess fluids with cloth and discard cloth into plastic container for disposal.

(3) Neutralize the treatment area with a 10% sodium bicarbonate solution (100g added to every 1L of water) applied with a brush or cloth swab. Pay particular attention to faying surface joints and crevices. Pressure application may be required to flush the joint thoroughly.

NOTE: One pound of sodium bicarbonate in 1 U.S. gallon of water will give the desired mixture.

(4) Continue to apply the solution until bubbles cease. Neutralization of the acid fluid should be determined with litmus paper. After neutralization, allow the solution to remain on the surface for an additional 5 minutes.

(5) Remove the neutralized mixture with mop or sponge.

(6) Rinse the affected area with generous quantities of clean water. Occasionally agitate the surface with a soft brush.

(7) Wipe dry with clean cloths.

(8) After thoroughly drying, repair or replace damaged finishes (refer to Part 1, Paragraph 6).

(9) Apply water displacing corrosion inhibiting compound over the entire area (refer to Part 1, Paragraph 7).

APPENDIX B

SAFETY PRECAUTIONS

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APPENDIX B - SAFETY PRECAUTIONS

1. Chemical Safety Precautions

A. General

Guidance for handling hazardous materials used in corrosion removal are contained in the general safety precautions. The immediate treatment for personnel who inadvertently come into contact with one of the hazardous materials is contained in the emergency safety precautions paragraph of those procedures.

B. Material Safety Data Sheet

Any personnel handling hazardous materials should have read the applicable Material Safety Data sheet(s) (MSDS) and be familiar with the hazards, first aid measures, fire and explosion data, and handling, storage and disposal guidelines.

C. General Safety Precautions

The following safety precautions shall be observed when using or handling solvents, special cleaning compounds, paint strippers (strong alkalies and acids), etchants (corrosion removers containing acids), or conversion coating chemicals:

(1) Avoid prolonged breathing of solvent or acid vapors. Avoid use in confined spaces without adequate ventilation or approved respiratory protection.

(2) Never add water to acid. Always add acid to water at a very slow rate.

(3) Do not mix chemicals except as prescribed by procedure or manufacturer directions.

(4) Always have clean water for emergency use available in the immediate work area before starting work and throughout the work period.

(5) Avoid all skin contact with solvents, cleaners, etchants (acid), or conversion coating material. Rubber or chemical-resistant plastic gloves should be worn when using solvents, cleaners, paint strippers, etchants or conversion coating materials. Goggles, plastic face shields, rubber raincoats and rain hats shall be worn when cleaning, stripping, etching, or conversion coating overhead surfaces.

(6) When mixing alkalies with water or other substances, use containers that can withstand the heat generated by this process.

(7) Wash body skin or clothing immediately after contact with any corrosive chemical or hazardous material.

(8) If materials are splashed in the eyes, immediately flush with clean water and seek medical treatment.

(9) Do not eat or keep food in areas where they may absorb these chemicals. Always wash hands before eating or smoking.

(10) All equipment should be thoroughly cleaned after work has been completed.

D. Emergency Safety Procedures

Personnel shall be fully trained regarding the hazards and emergency first aid procedures applicable to any materials used in the course of corrosion maintenance operations. Latest revision Material Safety Data Sheets (MSDS) should be accessible at all times. The following emergency safety procedures are provided as guidance. Where a discrepancy exists between this document and the MSDS, personnel should follow the MSDS.

WARNING: IMMEDIATE ATTENTION IS MOST IMPORTANT FOR SKIN, EYE AND INHALATION TREATMENT.

WARNING: IN THE CASE OF CONTACT WITH A MATERIAL NOT LISTED IN PARA (1), REFER TO THE MSDS OR FIRST AID MEASURES BEFORE COMMENCING WORK.

(1) If exposed to physical contact (eye, skin, inhalation) with any one of the following materials, treat as described in items (a) through (e):

- Xylene
- Mineral Spirits (Turpentines, Petroleum Spirits, Varsol, Stoddart Solvent, Paint Thinner, Petroleum Naphthas)
- Chromates
- Dichromates
- Acetates
- Epoxy resins
- Chromate conversion coatings (e.g., Brush Alodine)

(a) If splashed into eyes, do not rub. Remove contact lenses. Flush eyes immediately with clean water for at least 15 minutes. Lift upper and lower lids frequently to ensure complete washing. Seek medical attention.

(b) If splashed on clothing, immediately remove contaminated clothing and wash body with plenty of soap and water. Wash clothing before re-wearing or dispose.

(c) If splashed onto an easily accessible part of the body, immediately wash with soap and water.

(d) If suffering headache or other obvious symptoms resulting from over-exposure, move to fresh air immediately and seek medical attention.

(e) If vapors are inhaled and breathing has slowed down or stopped, remove person from exposure and start artificial respiration at once. Call ambulance and continue this treatment until ambulance arrives.

APPENDIX C

SPECIAL INSTRUCTIONS

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SUPPLEMENTAL INSPECTION AND CORROSION CONTROL MANUAL
APPENDIX C - SPECIAL INSTRUCTIONS

1. General

This Appendix C to the manual provides additional special instructions applicable to carrying out the special inspections described in Part 2 of this manual.

2. Non-Destructive Inspection Techniques

A. General

General instructions for specific non-destructive inspection (NDI) techniques are provided below. Inspections shall be carried out by personnel certified as Level II or higher to the applicable requirements of CAN/CGSB 48.9712 or equivalent rating and standard as acceptable to the operator's cognizant airworthiness authority.

B. Standard High Frequency Eddy Current (HFEC) Inspection Technique

The following provides general instructions for Standard High Frequency Eddy Current (HFEC) inspection.

STANDARD HIGH FREQUENCY EDDY CURRENT (HFEC) INSPECTION

EFFECTIVITY:	HFEC can be used to find surface cracks on all metallic (conductive) aircraft structure (aluminum, steel, titanium).
APPLICABLE TASK:	Any task that calls for Standard HFEC Inspection procedure.
METHOD DESCRIPTION:	High frequency Eddy Current (HFEC) inspection method is used where the defect being searched for on a metallic (conductive) material has extended to the surface. The primer and paint on the surface do not interfere with this inspection, provided the primer and paint is non-magnetic and non-conductive. For painted aircraft structure where small cracks cannot be found by visual inspection, due to crack size being small or covered by paint, HFEC inspection is most applicable. HFEC technique uses a probe to generate HF Electro-Magnetic Field (EMF) that goes into the surface to be inspected. As the EMF goes through, circular eddy currents that are parallel to the surface, start to flow on the surface. The intensity of eddy current generated determines the impedance of the probe-surface combination, as monitored by the equipment. If the intensity of the eddy current in the test material changes (due to a discontinuity in eddy current path caused by a crack or edge), then the overall probe-surface impedance changes. This change is sensed by the HFEC equipment and the Inspector looks for these changes.
PURPOSE:	HFEC inspection finds cracks that are accessible to the 'touch' of the probe.
ZONES:	HFEC can be used in all aircraft zones.
ACCESS:	Remove access panels as necessary so that the surface to be inspected has access to the 'touch' of the HFEC probe.
INSPECTION METHOD:	High frequency eddy current (HFEC) inspection.

EQUIPMENT REQUIRED:

Equivalents may be used provided the HFEC equipment and probe combination can find cracks on a typical HFEC calibration standard.
HFEC Equipment (DR.Forster 2.164 Defectometer or equivalent).
Calibration test standard.
Standard Probe (for most inspections).
Slanted, 90°and shielded probe (for inspection areas where the probe tip may get too close to edges, or other structure nearby may interfere with overall probe impedance).

NONDESTRUCTIVE TESTING

PREPARATION:

(1) Remove access panels as necessary
(2) Clean the inspection surface until clear paint or primer can be seen.
(3) Demagnetize (to remove residual magnetism) ferrous objects.

NOTE: Most HFEC equipment is provided with two calibration standards (one ferrous material and one non-ferrous material). Each standard has many EDM notches, 0.2mm, 0.5mm and 1.0mm deep (see Figure 1).

CALIBRATION (for DR Forster 2.164):

(1) Turn on the Equipment with NFe probe.
(2) Make sure battery charge is on green range scale.
(3) Push NFe push-button.
(4) Turn all knobs (‘zero’, ‘lift off’ and ‘sensitivity’) counterclockwise fully.
(5) Position probe tip on the calibration standard away from edges and notches, adjust ‘lift off’ control and bring pointer to ‘0’.
(6) Lift probe from the surface, use ‘zero’ control and adjust pointer to ‘0’.
(7) Do steps (5) and (6) again until pointer stays close to ‘0’.
(8) Move the probe tip to 1 mm notch, the pointer will move upscale.
(9) Increase ‘sensitivity’ until pointer reads ‘10’.
(10) Lift probe from surface and make sure that the pointer is close to ‘0’. If the pointer has moved away from ‘0’, do steps (5) and (6) again to bring the pointer back to ‘0’.
(11) Move the probe tip to 0.5mm and 0.2mm notches, one at a time, and calibrate so that proportional pointer indications on the scale (5 for 0.5mm notch and 2 for 0.2mm notch) are obtained.

NOTE: The calibration procedure given above is for NFe set up; calibration procedure for Fe set up is the same.

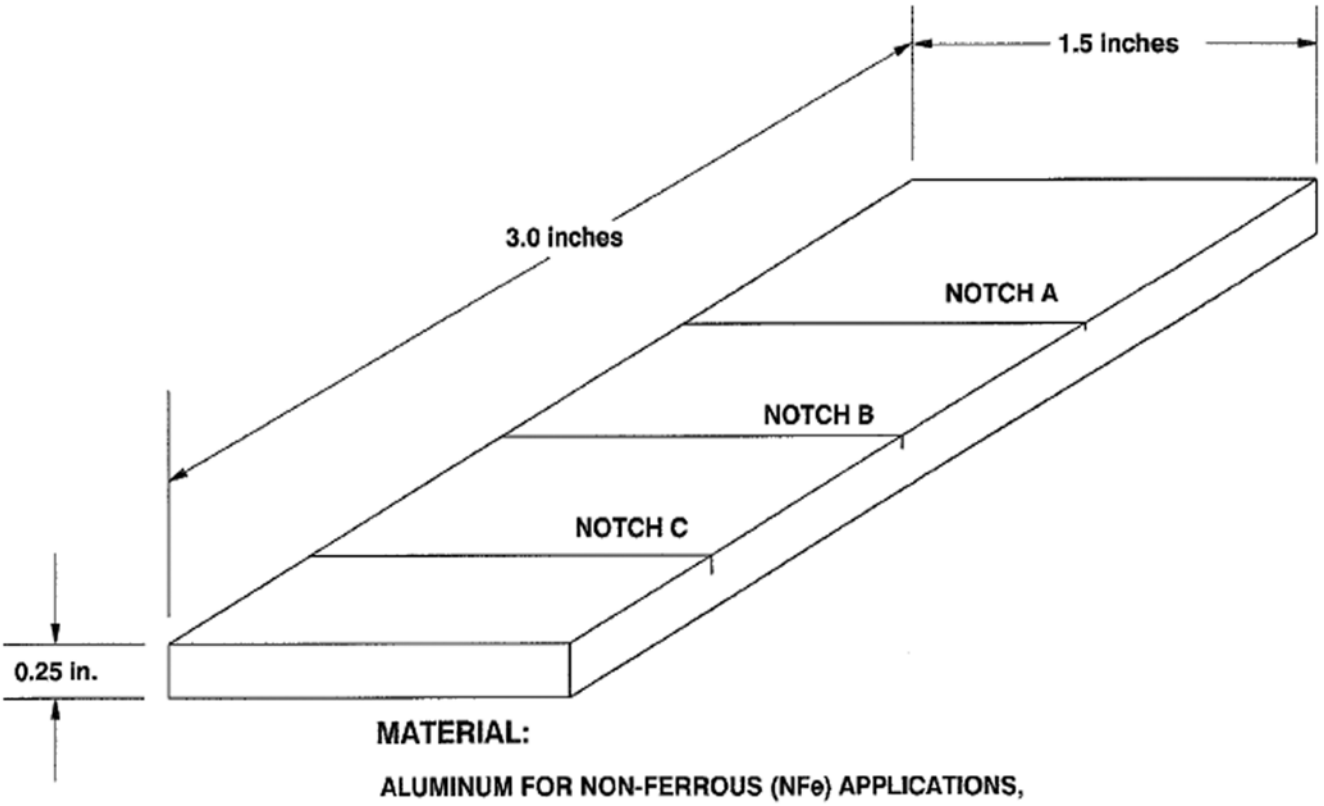
INSPECTION:

(1) Move the probe tip on the inspection area and do HFEC inspection, for fastener holes and curved surface inspection see Figure 2.

NOTE: Minor ‘lift off’ and ‘zero’ adjustments may be necessary due to differences between calibration standard material and the material and the paint on the surface tested.

ACCEPTANCE/REJECTION CRITERIA:

1) If any indication is 50% of full scale or more, it is cause for rejection.



MATERIAL:

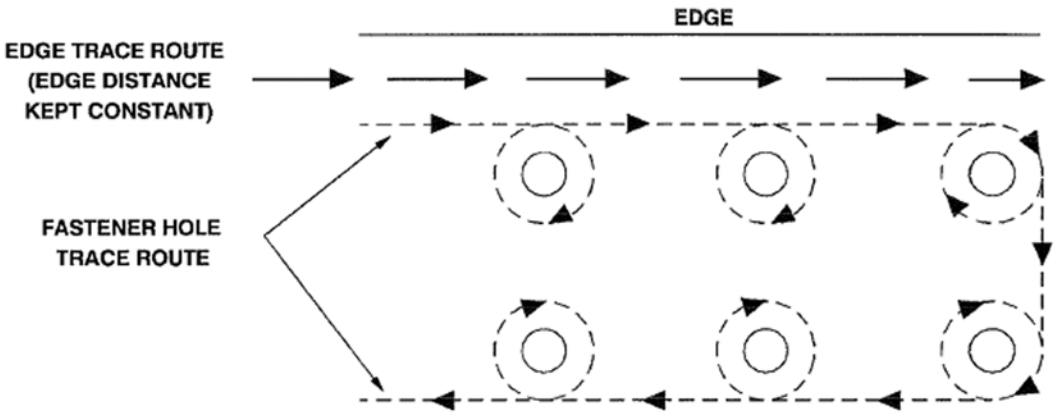
ALUMINUM FOR NON-FERROUS (NFe) APPLICATIONS,
STAINLESS STEEL FOR FERROUS (Fe) APPLICATIONS.
NFe CALIBRATION TEST STANDARD P/N 2.164-551
Fe CALIBRATION TEST STANDARD P/N SRS-0824S

NOTCHES (0.006 inches WIDE) EXTEND THROUGHOUT THE WIDTH.

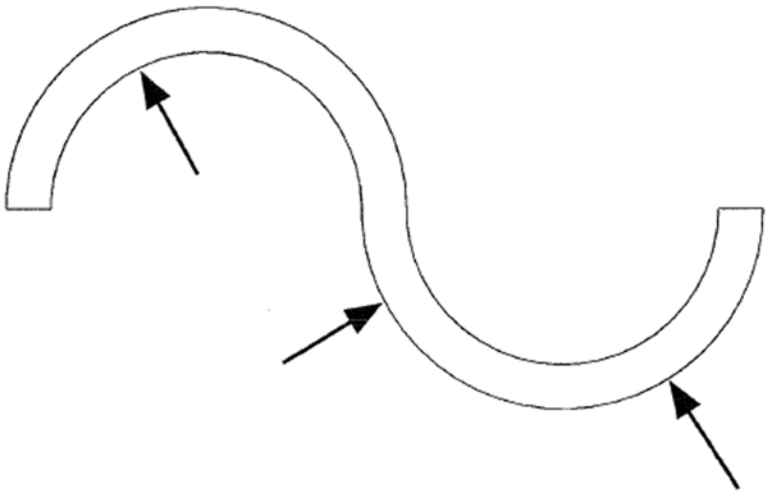
TYPICAL NOTCH DEPTHS ARE:

NOTCH A: 0.008 in. (0.2 mm)
NOTCH B: 0.020 in. (0.5 mm)
NOTCH C: 0.040 in. (1.0 mm)

FIGURE 1 - TYPICAL HFEC CALIBRATION TEST STANDARD WITH EDM NOTCHES



INSPECTION AROUND FASTENER HOLES
(EVERY FASTENER CIRCLED BY PROBE)



CURVED SURFACE INSPECTION
(PROBE TIP AT 90° TO SURFACE
AT POINT OF CONTACT)

FIGURE 2 - STANDARD HFEC INSPECTION APPLICATIONS