Nomad
SERVICE BULLETIN

WINGS – FUEL TANK BAYS – FRONT AND REAR SPARS – CORROSION INSPECTION

1. **PLANNING INFORMATION**

A. **Effectivity**

(1) Aircraft affected:

(a) **N22 Series** line sequence numbers 1 to 9, 11 to 29, 31, 33, 35, 37, 39 to 41, 43, 45, 47 to 59, 61, 63, 65 to 70, 82 to 88, 90 to 95, 97, 100, 102 to 114, 116, 118, 125,126, 131 to 134, 137, 138, 141, 143 to 170.

(b) **N24 Series** line sequence numbers 10, 30, 32, 34, 36, 38, 42, 44, 46, 60, 62, 64, 71 to 81, 89, 96, 98, 99, 101, 115, 117, 119 to 124, 127 to 130, 135, 136,139, 140, 142.

(2) Spares affected

None

B. **Reason**

Several operators have reported a significant amount of corrosion in the Wing Tank Bays area. Corrosion has been found on the front and rear spars of Outboard and Inboard Tank Bays.

Reason for Revision 1

To insert a repair kit PN and specify an alternative sealant PN. Annex A removed and reference to Nomad SRM Chap 51 inserted.

Reason for Revision 2

To correct parts quantities in Kit PN NMD–57–15–1 (Ref Para 3.A.).

Reason for Revision 3

Terminating action is introduced with new procedures and a modified kit (Kit NMD–57–15–2) of tank bay protective pads and corner fillets. Additionally, more detailed procedures are included for the use of the un-modified kits (Kit NMD–57–15–1) in the terminating action.

C. **Description**

Outboard and Inboard Tank Bays are visually inspected for any signs of corrosion (i.e pitting, surface corrosion etc.).

D. **Compliance**

(1) The compliance requirements of this Service Bulletin are MANDATORY.

(2) **Part 1 – Inspection**

(a) Initial inspection within 12 months of receipt of this Service Bulletin.

(b) Providing the conditions of Paras 2.A.(4)(i) or 2.A.(5)(j) are strictly followed for the application of Kit NMD–57–15–1 or Kit NMD–57–15–2, the action may be considered terminating.

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(3) **Part 2 – Conditional Inspection and Repair**

Conditional on Part 1 inspection.

E. **Approval**

The requirement detailed herein has been approved by a person authorised under Civil Aviation Regulation 35 and conforms to the type certification requirements.

F. **Manpower**

Approximately 20.0 manhours.

G. **Material – Price and availability**

Available upon application to Boeing Aerospace Support – ASTA, Nomad Support customer spares.

H. **Tooling**

None required.

I. **Weight and Balance Change**

None.

J. **References**

Maintenance Manual	Chap 7–00–00, Chap 12–10–00, Chap 28–10–00
	Chap 28–40–00.
Illustrated Parts Catalogue	Chap 57–30–02.
Structural Repair Manual	Chap 51–10–00.

K. **Publications Affected**

Structural Repair Manual

Inspection Requirements Manual

2. **ACCOMPLISHMENT INSTRUCTIONS**

A. **Part 1 – Inspection of Fuel Tank Bays**

WARNING

ENSURE THAT ALL ELECTRICAL POWER IS SWITCHED OFF.

(1) Drain the fuel tanks (Ref MM Chap 12–10–00).

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CAUTION

THE TANK BAY DOOR FORMS PART OF THE STRESSED WING AREA. BEFORE REMOVING A TANK BAY DOOR, THE WING AND ENGINE MUST BE ADEQUATELY SUPPORTED.

(2) Jack the Aircraft (Ref MM Chap 7–00–00) and position the wing trestle PN 1668–3619 at wsta 171.50 to 174.0 to support the wing.

(3) Remove the fuel quantity transmitters (Ref MM Chap 28–40–00).

NOTE

Mark the location of each transmitter to make sure each transmitter will be refitted to its original location.

(4) Inboard fuel tank bays.

(a) Remove the inboard tank filler blanking plate. Remove the mushroom headed screws securing the filler mounting ring assembly to the tank bay door. Release the tank support clips from the tank bay door support fittings.

(b) Remove the tank bay door from the wing structure.

(c) Compress the tank sufficiently to gain access to the tank support lacing.

(d) Remove sufficient lacing from the front and rear inboard end of the tank to gain access to the front and rear packing sheets (Ref Fig 1).

(e) Manoeuvre the tank and remove the packing sheets to gain access to the spar web reinforcing plates (Ref Fig 2).

(f) Using a strong light inspect the following areas for any sign of corrosion:

1 Flanges of the tank bay cover attachment angles (Ref Fig 2).

2 Skin lining and skin lining attachment angles (Ref Fig 5).

3 Rib attachment angles (Ref Fig 2).

4 Spar web reinforcing plates and adjacent spar web (Ref Fig 2).

(g) Using a sharp plastic instrument carefully lift off any adhesive on the surface of the webs, plates and any other adjacent components. Inspect the uncovered surface for any signs of corrosion (Ref Fig 2).

(h) Superficial corrosion of the spar web reinforcing plates surface is to be treated in accordance with the SRM Chapter 51–10–00.

NOTE

Significant corrosion of any surface will require Part 2 to be carried out (i.e inspection of the entire inner surface of all inboard and outboard tanks bay areas).

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(i) Install new packing sheets to spar web reinforcing plates with sealing compound PR1422 Class A or B or PR1440B2 or MIL–S 8802 Type II or PR1750 Class A or B (Ref Materials Information).

NOTE

- Prior to installing the packing sheets reprotect bare surfaces with Alodine 1200S Protective Coating and prime with two coats of Zinc Chromate Primer.
- The preferred packing sheets and corner fillets (Kit NMD–57–15–2) are made from semi rigid Polyurethane foam and have been pre-sprayed with PR1436G sealing compound. Prior to attachment it is essential to cover the entire contact surfaces with sealing compound PR1422 Class A or B or PR1440B2 or MIL–S–8802 Type II or PR1750 Class A or B.
- The packing sheets and corner fillets (Kit NMD–57–15–1) are made from semi rigid Polyurethane foam which is porous. Hence, the open cells on the surface can trap moisture. To avoid this, it is necessary to cover the entire pad with sealing compound PR1436G or PR1422 Class A or B or PR1440B2 or MIL–S–8802 Type II or PR1750 Class A or B. When attaching to aircraft it is essential to cover the entire contact surfaces with the sealing compound PR1422 Class A or B or PR1440B2 or MIL–S–8802 Type II or PR1750 Class A or B.

(j) Relace the inboard side of the front and rear of the tank (Ref MM Chap 28–10–00).

(k) Repair or renew tank bay door sealing, by applying a bead of sealing compound PR1422 Class B (or PR1440B2 or MIL–S–8802 Type II or PR1750 Class B) to the recess of the wing tank bay structure.

NOTE

Prior to an application of a sealing compound, apply a release agent such as Johnson's Durosil, Petroleum Jelly or similar to the door surrounds to prevent the door sticking to the wing tank bay structure.

(l) Position the tank bay door into its location on the wing structure. Tighten the countersunk securing bolts around the periphery of the door. Torque load to between 20 and 25 lb in.

(m) Using the filler aperture and the fuel quantity transmitter opening for access, engage the tank support clips with the tank bay door support fittings.

(n) Fit the adaptor – blanking plate as follows:

1 Apply a coating of sealing compound PR1422 Class B (or PR1440B2 or MIL–S–8802 Type II or PR1750 Class B) to the upper face of the adaptor – blanking plate. Locate into the recess of the tank bay door. Check that the contour of the adaptor and the door matches.

2 Secure the assembly through the door skin to the filler mounting ring.

3 Apply a coating of Loctite 222 or 243 to the threads of each mushroom head screws before use. Tighten and torque load each screw to between 20 and 25 lb in.

4 Fit blanking plate and apply Loctite 222 or 243 to threads of each countersunk head screw and secure to the adaptor.

5 Tighten and torque load each screw to between 20 and 25 lb in.

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(5) Outboard fuel tank bays.

(a) Remove the tank filler cap. Remove the screws securing the filler mounting assembly to the tank bay door. Carefully break the seal between the tank bay door skin and the filler cap adaptor.

(b) Compress the tank top sufficiently to give access to release the tank support clips from the support fittings.

(c) Remove the fasteners securing the outer tank bay door. Lift the tank bay door clear of the wing.

(d) Compress the tank sufficiently to gain access to the tank support lacing.

(e) Remove sufficient lacing from the front and rear inboard end of the tank to gain access to the front and rear packing sheets (Ref Fig 1).

(f) Manoeuvre the tank and remove the packing sheets to gain access to the spar webs (Ref Fig 3 & 4).

(g) Using a strong light inspect the following areas for any sign of corrosion:

1 Flanges of the tank bay cover attachment angles (Ref Fig 3).

2 Skin lining and skin lining attachment angles (Ref Fig 3).

3 Rib attachment angles. (Ref Fig 3).

4 Front and rear spar webs (Ref Fig 3 & 4).

(h) Using a sharp plastic instrument carefully lift off any adhesive on the surface of the webs, plates and any other adjacent components. Inspect the uncovered surface for any signs of corrosion (Ref Fig 4).

(i) Superficial corrosion of the spar web surface is to be treated in accordance with the SRM Chapter 51–10–00.

NOTE

Significant corrosion of any surface will require Part 2 to be carried out (i.e inspection of the entire inner surface of all inboard and outboard tanks bay areas).

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(j) Install new packing sheets to spar webs with sealing compound PR1422 Class A or B or PR1440B2 or MIL–S–8802 Type II or PR1750 Class A or B (Ref Materials Information).

NOTE

- Prior to installing the packing sheets, reprotect bare surfaces with Alodine 1200S Protective Coating and prime with two coats of Zinc Chromate Primer.
- The preferred packing sheets and corner fillets (Kit NMD–57–15–2) are made from semi rigid Polyurethane foam and have been pre-sprayed with PR1436G sealing compound. Prior to attachment it is essential to cover the entire contact surfaces with sealing compound PR1422 Class A or B or PR1440B2 or MIL–S–8802 Type II or PR1750 Class A or B.
- The packing sheets and corner fillets (Kit NMD–57–15–1) are made from semi rigid Polyurethane foam which is porous. Hence, the open cells on the surface can trap moisture. To avoid this, it is necessary to cover the entire pad with sealing compound PR1436G or PR1422 Class A or B or PR1440B2 or MIL–S–8802 Type II or PR1750 Class A or B. When attaching to aircraft it is essential to cover the entire contact surfaces with the sealing compound PR1422 Class A or B or PR1440B2 or MIL–S–8802 Type II or PR1750 Class A or B.

(k) Relace the inboard side of the front and rear of the tank (Ref MM Chap 28–10–00).

(l) Repair or renew tank bay door sealing, by applying a bead of sealing compound PR1422 Class B (or PR1440B2 or MIL–S–8802 Type II or PR1750 Class B) to the recess of the wing tank bay structure.

NOTE

Prior to an application of a sealing compound, apply a release agent such as Johnson's Durosil, Petroleum Jelly or similar to the door surrounds to prevent the door sticking to the wing tank bay structure.

(m) Position the tank bay door into its location on the wing structure. Tighten the countersunk securing bolts around the periphery of the door.

(n) Using the filler aperture and the fuel quantity transmitter opening for access, engage the tank support clips with the tank bay door support fittings.

(o) Fit the filler cap adaptor as follows:

1 Apply a coating of sealing compound PR1422 Class B (or PR1440B2 or MIL–S–8802 Type II or PR1750 Class B) to the recess about the face of the filler cap adaptor. Locate the washer – filler cap adaptor into the recess. Apply another coat of sealing compound to the upper face of the washer – filler cap adaptor and position the adaptor washer assembly between the tank filler aperture and the tank bay door skin. Check that the contour of the washer and the door matches.

2 Secure the assembly through the door skin to the filler mounting ring.

3 Apply a coating of Loctite 222 or 243 to the threads of each screw before use.

4 Tighten and torque load each screw to between 20 and 25 lb in.

(6) Fit the fuel quantity transmitters (Ref MM Chap 28–40–00).

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(7) Carry out calibration checks of the fuel quantity transmitters and their associated indicators (Ref MM Chap 28–40–00).

(8) Inspect all disturbed connections and joints for signs of leakage. Take remedial action as appropriate.

(9) Lower the Aircraft and remove the jacks and wing support trestle (Ref MM Chap 7–00–00).

B. **Part 2 – Conditional Inspection and repair of Inboard and Outboard Fuel Tank Bays**

NOTE

To be carried out if significant corrosion (i.e more than superficial corrosion) is found during Part 1 inspection.

(1) Remove inboard and outboard fuel tanks (Ref MM Chap 28–10–00 and IPC Chap 57–30–02).

NOTE

The tank must be inhibited if it is to be left empty for five days or longer .

(2) Remove all corner fillets and packing sheets from the tank bay areas (Ref Fig 2).

(3) Using a strong light inspect the whole inner tank bay area including the tank bay cover attachment angle, tank bay floor structure, bolts and rivet heads for any sign of corrosion.

(4) Treat superficial corrosion within the tank bay area in accordance with the SRM Chapter 51–10–00. Install packing sheets and corner fillets (Ref Installation procedure for packing sheets Part 1).

NOTE

Corrosion that can not be treated in accordance with the SRM must be reported to Boeing Aerospace Support – ASTA. Further repairs will be required before the next flight.

(5) Following the repair of the wing tank bays, reinstall the inboard and outboard fuel tanks (Ref MM Chap 28–10–00).

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3. **MATERIALS INFORMATION**

A. **Parts required per Aircraft**

Kit PN NMD–57–15–1 Qty 1 consists of the following.

New Part No	Qty	Description	Old Part No	Instruction/Disposition
1/N–57–211	2	Sheet, Packing	1/N–57–211	Replace
1/N–57–212	4	Sheet, Packing	1/N–57–212	Replace
1/N–57–223	1	Sheet, Packing	1/N–57–223	Replace
1/N–57–224	1	Sheet, Packing	1/N–57–224	Replace
1/N–57–239	16	Corner Fillet	1/N–57–239	Replace
1/N–57–209	14	Corner Fillet	1/N–57–209	Replace
1/N–57–213	2	Corner Fillet	1/N–57–213	Replace
1/N–57–216	32	Corner Fillet	1/N–57–216	Replace

Preferred Kit PN NMD–57–15–2 Qty 1 consists of the following.

New Part No	Qty	Description	Old Part No	Instruction/Disposition
2/N–57–211	2	Sheet, Packing	1/N–57–211	Replace
2/N–57–212	4	Sheet, Packing	1/N–57–212	Replace
2/N–57–223	1	Sheet, Packing	1/N–57–223	Replace
2/N–57–224	1	Sheet, Packing	1/N–57–224	Replace
2/N–57–239	16	Corner Fillet	1/N–57–239	Replace
2/N–57–209	14	Corner Fillet	1/N–57–209	Replace
2/N–57–213	2	Corner Fillet	1/N–57–213	Replace
2/N–57–216	32	Corner Fillet	1/N–57–216	Replace

B. **Materials required for corrosion and protection treatments**

Obtain the following from local sources:

- PR1422 Class A or B or PR1440B2 or MIL–S–8802 Type II or PR1750 Class A or B.
- Alodine 1200S Protective Coating.
- Zinc Chromate Primer.
- Release agent such as Johnson's Durosil, Petroleum Jelly or similar.
- LOCTITE 222 or 243

4. **SPECIAL TOOLS AND EQUIPMENT**

Wing support trestle PN 1668–3619.

5. **RECORDING ACTION**

Record compliance with Service Bulletin NMD–57–15 Rev 3 in the Airframe Log Book.

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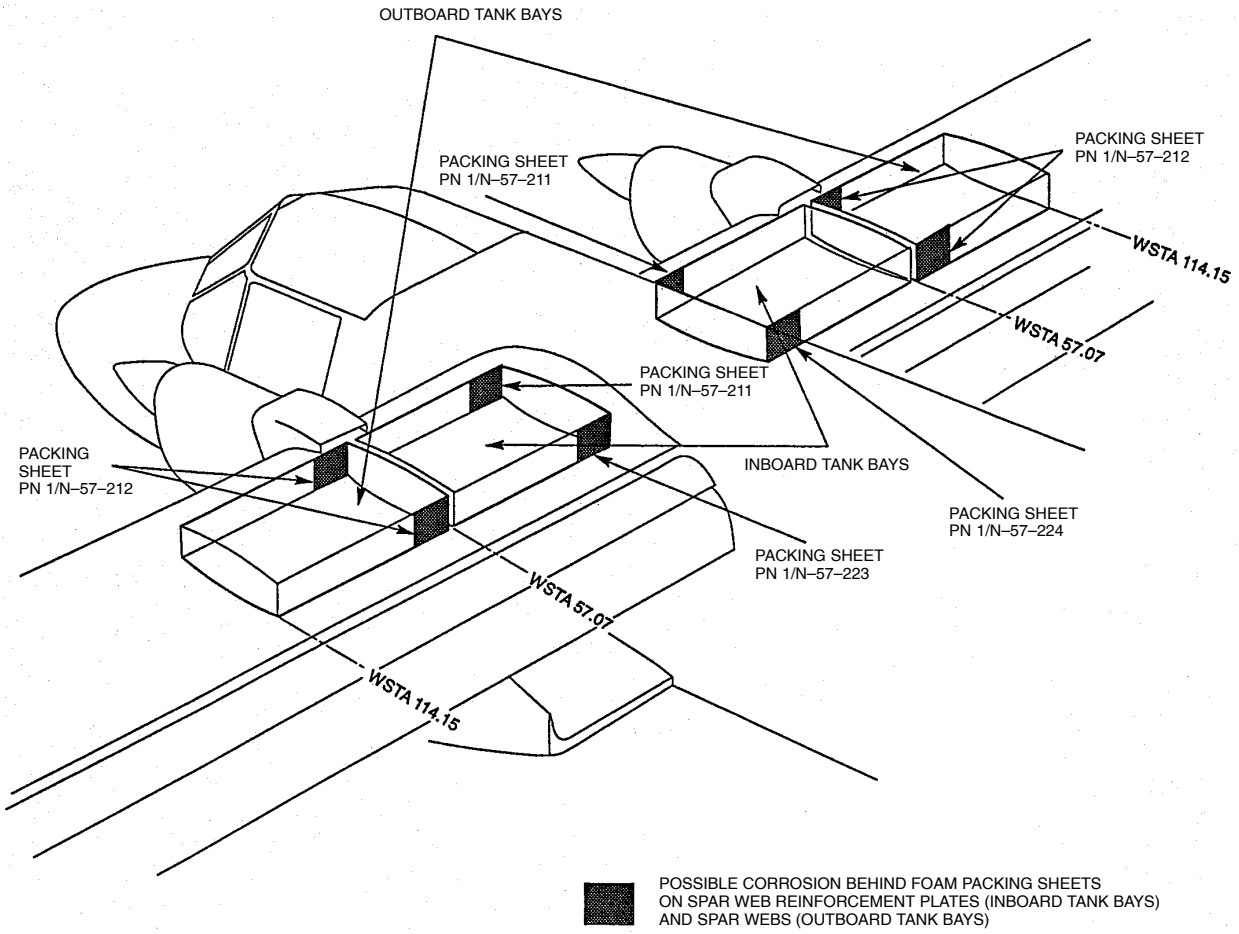

Figure 1 – Fuel Tank Bays

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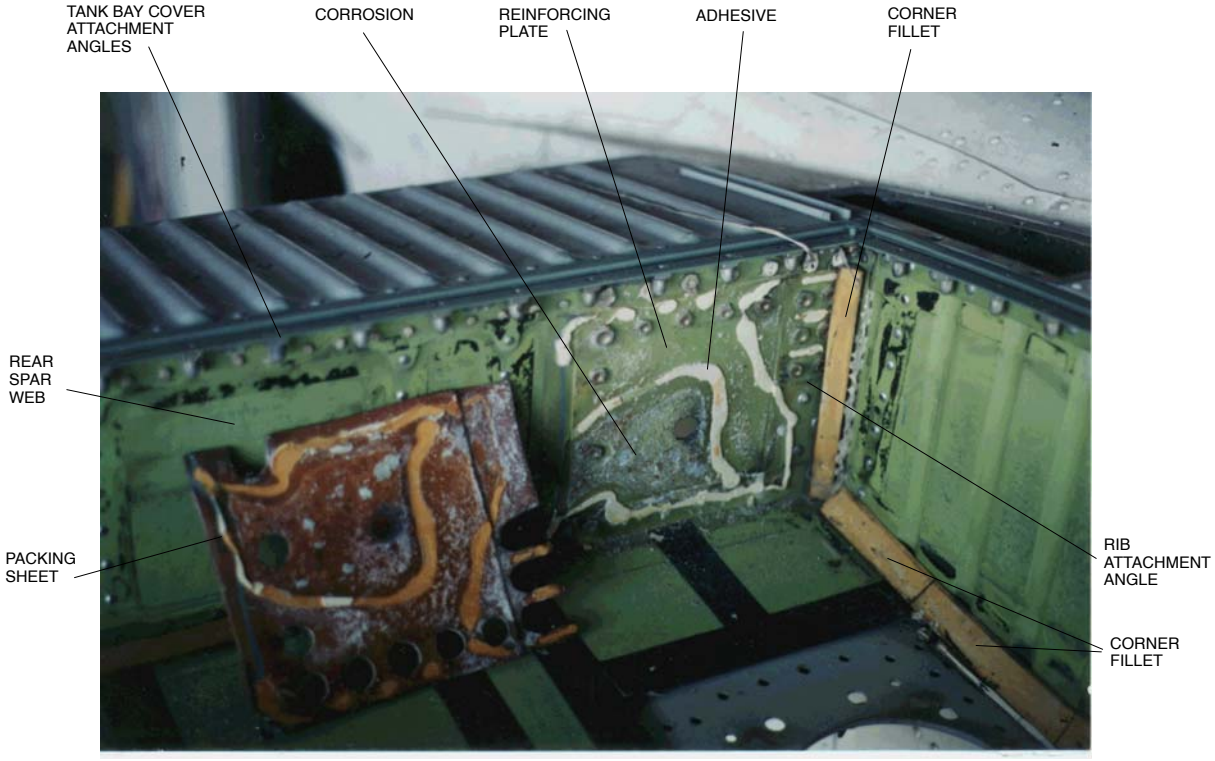

Figure 2 – Inboard Tank Bay – RH Wing

Figure 3 – Outboard Tank Bay – LH Wing

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Figure 4 – Outboard Tank Bay – RH Wing

Figure 5 – Inboard Tank Bay – RH Wing

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