FLIGHT CONTROLS - AILERON & FLAP CONTROL ROD FORK ENDS - INSPECTION

1. PLANNING INFORMATION

A. Effectivity

All Nomad N22 Series and N24 Series aircraft.

B. Reason

(1) Instances have occurred where Fork Ends PN's 1/N-45-351 and 1/N-45-1059 have been found full of water in the internal drilled hole.

(2) Reason for Revision 1:

Introduces alternative PN's 2/N-45-351 and 2/N-45-1059, solid fork ends.
Editorial changes to enhance readability.

C. Description

The fork ends are removed from the aircraft and checked for corrosion and the presence of water.

D. Compliance

At the next 100 hour service after receipt of this bulletin.

E. Approval

The inspection and rework detailed herein has been approved pursuant to Air Navigation Regulation 40 and conforms with the type certification requirements.

F. Manpower

3 Manhours.

G. Materials , Price and Availability

Contact ASTA Defence (Logistics) Customer Spares for price and availability of parts.

H. Tooling , Price and Availability

None required.

I. Weight and Balance

Negligible effect.

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J. **References**

MM - Maintenance Manual
IPC - Illustrated Parts Catalogue

K. **Publications Affected**

IPC - Illustrated Parts Catalogue

2. **ACCOMPLISHMENT INSTRUCTIONS**

A. **Establish Flap/Aileron Datum Condition.**

WARNING

DO NOT OPERATE FLIGHT CONTROLS WITH CONTROL COMPONENTS DISCONNECTED OR WHEN PERSONEL ARE WORKING IN THE AREA CONCERNED. SERIOUS INJURY TO PERSONNEL OR DAMAGE TO COMPONENTS AND STRUCTURE COULD OCCUR.

NOTE

Ensure that the rear cabin door is properly secured before operation of flaps.

(1) Extend the flaps fully and open either LH or RH trailing edge doors to gain access to the aileron controls in the wing.

(2) Retract the flaps.

(3) Fit Rigging Pin PN 1/N-88-83 to the mechanical stop lever at wsta 167.50 in the assigned wing (Ref MM 27-10-00 page 206).

(4) Note and record the relative position of the flap trailing edge with reference to the flap datum plate on the aircraft fuselage (Ref MM 27-00-00 Fig 1).

(5) Note and record the relative streamline position of the aileron trailing edge to the flap trailing edge as established in Para (4).

B. **Remove, Inspect and Rework Flap Control Rod Fork Ends.**

(1) Remove the flap control rod assemblies PN 1/N-45-1060 (Ref Fig 1) from the forward and inner rear flaps at wsta 28.55 (Ref MM 27-50-00 Page 205 and IPC 27-50-02, Fig 6, Item 25). Discard the self locking nuts but retain all other attaching parts.

NOTE

Identify from which side of the aircraft (LH or RH) the flap control rod assemblies were removed to ensure that each rod is returned to its original position when refitted.

Do not alter the length of the adjustable flap control rod assembly. This will affect the rigging of the flap control system.

(2) Inspect the internally drilled holes, if they are not sealed, of the two fork ends (LH and RH) PN 1/N-45-1059 (IPC 27-50-02 Fig 6, Item 34) and around the internally drilled holes for surface corrosion. Due to the difficulty in assessing the extent of any corrosion it is recommended that corroded items be replaced with PN 2/N-45-1059 (IPC 27-50-02 Fig 6, Item 34) and then proceed with Para (4) below.

(3) For all unsealed PN 1/ N-45-1059 fork ends, seal the end of the internally drilled hole in each fork end using Silastic 738RTV applied in accordance with the manufacturer's instructions, then proceed to Para (17).

NOTE

Ensure hole is thoroughly dry prior prior to application of Silastic.

(4) Measure and record the distance between the pivot bolt hole centres of Flap Control Rod Assembly PN 1/N-45-1060.

(5) File off the peened ends of the two taper pins securing the control rod fork end PN 1/N-45-1059 to insert PN 1/N-45-352 and punch out the taper pins.

(6) Remove control rod fork end PN 1/N-45-1059, taking care not to damage the insert or bearing rod end. Discard the corroded fork end.

(7) Assemble the new control rod fork end to the insert and align the taper pin holes.

(8) Insert a taper pin PN MS24692-107P into one hole and gently tap in.

(9) Ream the remaining hole to suit taper pin PN MS24692-** using standard taper reamer and insert new taper pin PN MS24692-**. Gently tap the taper pin in to maintain alignment.

(10) Remove the taper pin from the first hole and ream the hole to suit taper pin PN MS24692-**.

(11) Disassemble and de-bur the reamed holes.

(12) Wet assemble and align the taper pin holes.

(13) Wet assemble the taper pins PN MS24692-**.

(14) Ensure taper pin protrusion is between $^1/_2$ to 1 diameter of the taper pin. Trim taper pin ends as required to achieve this dimension.

(15) Support the large end of the taper pin and peen the small end.

(16) Check distance between pivot bolt holes and adjust if necessary to coincide with dimension established in Para (4) above.

(17) Install the flap control rod assemblies (Ref MM 27-50-00 Page 205), fork end uppermost with boltheads facing outwards, using new self locking nuts PN MS21083N4, MS21083N6 and existing attaching hardware.

(18) With the ailerons set to the streamline condition and the flaps to 0^0, check that the alignment is the same as that established in Part 2.A.(4) . Torque tighten the control rod adjuster locking nuts to 95-110lb.in.

(19) Torque tighten fork end pivot bolt nut to 30-40lb.in and the bearing end pivot bolt nut to 95-110lb.in (Ref MM 27-50-00 Fig 1).

WARNING

AFTER ALL MAINTENANCE ACTIVITIES INVOLVING FLYING CONTROLS, OR WHENEVER FLYING CONTROL SERVICING AND ACCESS PANELS ARE REMOVED, ENSURE THAT THE AREAS CONCERNED ARE CLEAN AND FREE FROM FOREIGN OBJECTS.

C. **Remove, Inspect and Rework Aileron Control Rod Fork Ends.**

(1) Remove the aileron control rod assemblies PN 1/N-45-350 (Ref Fig 2) (Ref MM 27-10-10 Page 201 and IPC 27-10-01, Fig 4, Item 1A). Discard the self locking nuts but retain all other attaching parts.

NOTE

Identify from which side of the aircraft (LH or RH) the aileron control rod assemblies were removed to ensure that each rod is returned to its original position when refitted.

Do not alter the length of the adjustable aileron control rod assembly. This will affect the rigging of the flap control system.

(2) Inspect the internally drilled holes, if they are not sealed, of the two fork ends (LH and RH) PN 1/N-45-351 (IPC 27-10-01 Fig 4, Item 7) and around the internally drilled holes for surface corrosion. Due to the difficulty in assessing the extent of any corrosion it is recommended that corroded items be replaced with PN 2/N-45-351 (IPC 27-10-01 Fig 4, Item 7) and then proceed with Para (4).

(3) For all unsealed PN 1/ N-45-351 fork ends, seal the end of the internally drilled hole in each fork end using Silastic 738RTV applied in accordance with the manufacturer's instructions then proceed to Para (17).

NOTE

Ensure hole is thoroughly dry prior prior to application of Silastic.

(4) Measure and record the distance between the pivot bolt hole centres.

(5) File off the peened ends of the two taper pins securing the control rod fork end PN 1/N-45-351 to insert PN 1/N-45-352 and punch out the taper pins.

(6) Remove control rod fork end PN 1/N-45-351, taking care not to damage the insert or bearing rod end. Discard the corroded fork end.

(7) Assemble the new control rod fork end to the insert and align the taper pin holes.

(8) Insert a taper pin PN MS24692-107P into one hole and gently tap in.

(9) Ream the remaining hole to suit taper pin PN MS24692-** using standard taper reamer and insert new taper pin PN MS24692-**. Gently tap the taper pin in to maintain alignment.

(10) Remove the taper pin from the first hole and ream the hole to suit taper pin PN MS24692-**.

(11) Disassemble and de-bur the reamed holes.

(12) Wet assemble and align the taper pin holes.

(13) Wet assemble the taper pins PN MS24692-**.

(14) Ensure taper pin protrusion is between $^1/_2$ to 1 diameter of the taper pin. Trim taper pin ends as required to achieve this dimension.

(15) Support the large end of the taper pin and peen the small end.

(16) Check distance between pivot bolt holes and adjust if necessary to coincide with dimension established in Para (4) above.

(17) Install the aileron control rod assemblies (Ref MM 27-10-01), fork end uppermost with boltheads facing outwards, using new self locking nuts PN MS21083N4 and existing attaching hardware.

(18) Torque tighten the pivot bolt nuts to 30-40lb.in (Ref MM 27-10-10 Page 204).

WARNING

AFTER ALL MAINTENANCE ACTIVITIES INVOLVING FLYING CONTROLS, OR WHENEVER FLYING CONTROL SERVICING AND ACCESS PANELS ARE REMOVED, ENSURE THAT THE AREAS CONCERNED ARE CLEAN AND FREE FROM FOREIGN OBJECTS.

D. **Check Flap/Aileron to Datum**

(1) Check that the position of the flap trailing edge is as per that established in Para 2.A.(4).

(2) If alignment is outside of limits established in Para 2.A.(4), then adjust as per MM 27-50-00 Page 205.

(3) Check that the position of the aileron trailing edge is as per that established in Para 2.A.(5).

(4) If alignment is outside of limits established in Para 2.A.(5), then adjust as per MM 27-10-00 Page 207.

(5) Remove Rigging Pin PN 1/N-88-83 from mechanical stop lever wsta 167.5.

(6) Extend flaps.

(7) Secure trailing edge doors.

WARNING

AFTER ALL MAINTENANCE ACTIVITIES INVOLVING FLYING CONTROLS, OR WHENEVER FLYING CONTROL SERVICING AND ACCESS PANELS ARE REMOVED, ENSURE THAT THE AREAS CONCERNED ARE CLEAN AND FREE FROM FOREIGN OBJECTS.

(8) Operate the flaps and ailerons, checking for full and free movement and that the flap indicator is operating properly.

3. **MATERIALS INFORMATION**

A. **Parts Required per Aircraft**

(1) The following items are required per aircraft.

New Part No	Qty	Description	Old Part No	Instruction/Disposition
2/N-45-531	AR	Aileron Control Rod Fork End Assy	1/N45-531	Scrap
2/N-45-1059	AR	FlapControl Rod Fork End Assy	1/N-45-1059	Scrap
MS21083N4	6	Nut, Self Locking		
MS21083N6	2	Nut, Self Locking		
MS24692-**	AR	Pin, Taper		
Parts removed				
	6	Nut, Self Locking	MS21083N4	Scrap
	2	Nut, Self Locking	MS21083N6	Scrap
	AR	Pin, Taper	MS24692-107P	Scrap

B. **Parts Required for Corrosion Protection**

Obtain the following from local source:

Silastic 738RTV

C. **Special Tools and Equipment**

PN 1/N-88-83 Rigging Pin

D. **Recording Action**

Record compliance with Service Bulletin NMD-27-24 Rev 1 in the airframe log book.

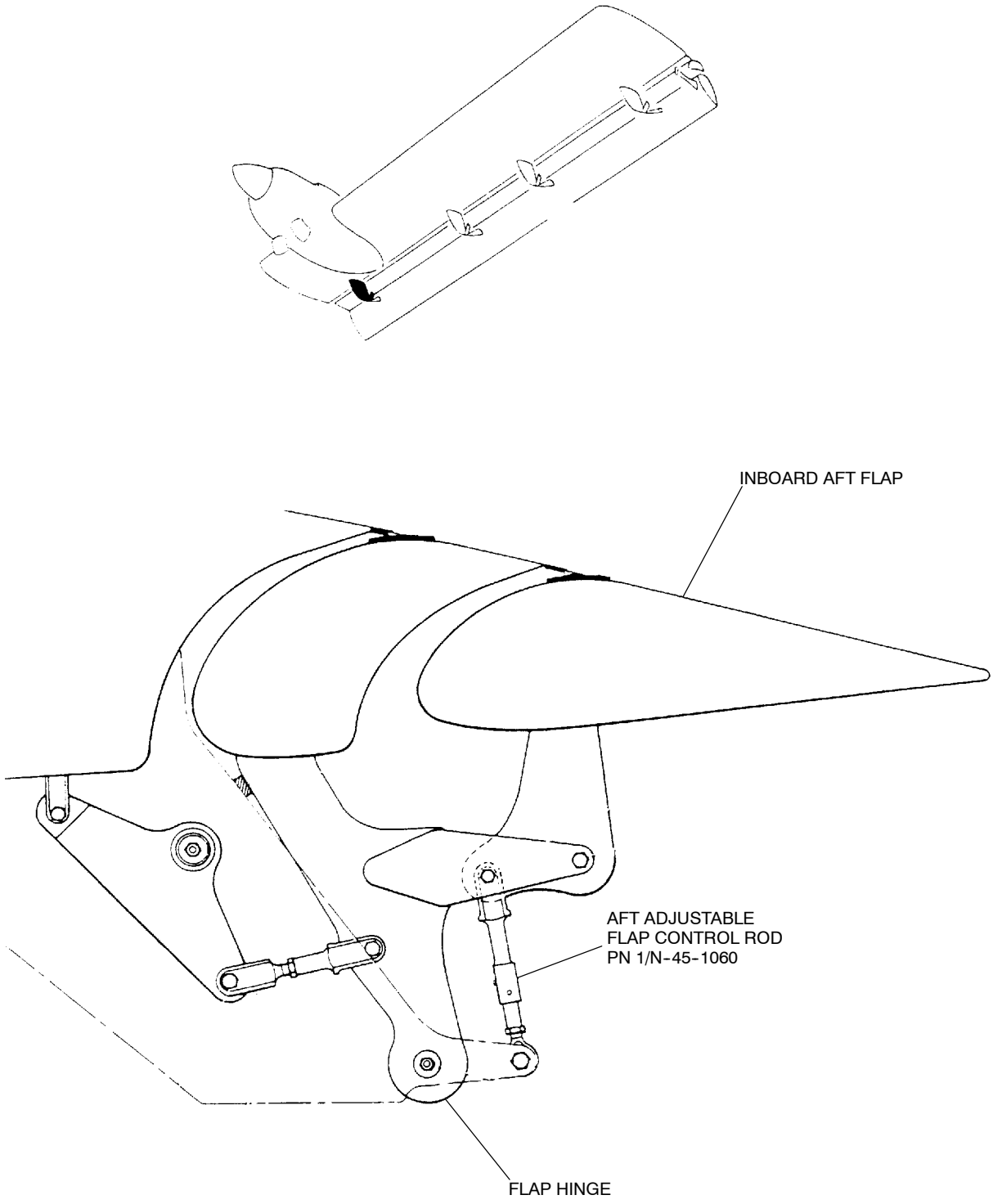

Figure 1 Adjustable Flap Control Rod- WSTA 28.55

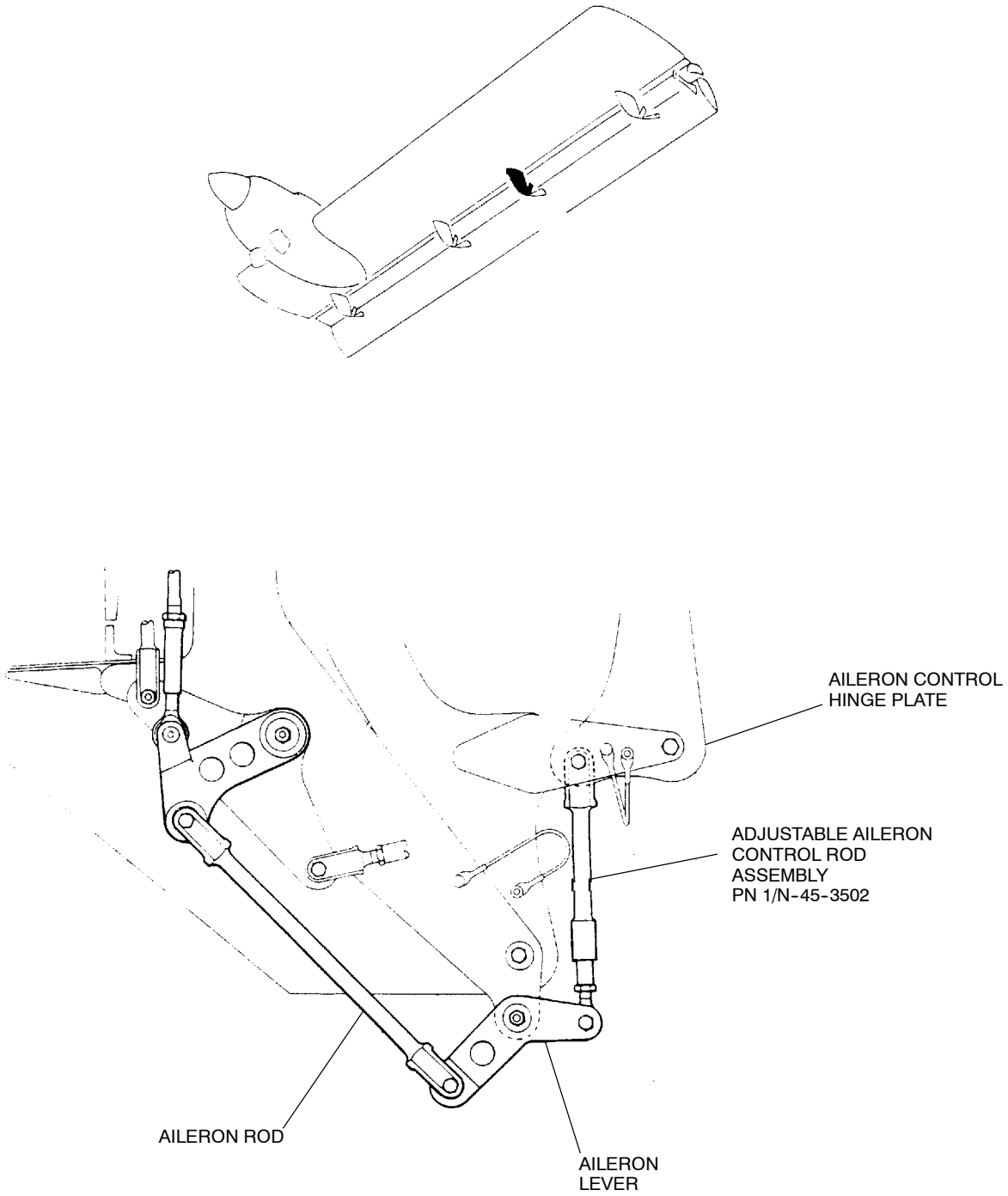

Figure 2 Adjustable Aileron Control Rod- WSTA 172.75