TO: HOLDERS OF SA226 SERIES SERVICE INFORMATION MANUALS

Attached is SA226 Series Service Bulletin 226-27-080, **Inspection of the Elevator Control System Rod End Bearings,** Issued: November 5, 2015; Revised: February 23, 2016.

This revision removes the NAS43HT4-4 spacers from the elevator control links to quadrant hardware stack-up shown in Figures 1 and 4, and adds to the *Note in Figure 4 to allow use of one NAS43HT4-4 spacer in place of two AN960-416L washers if necessary.

Please replace existing Service Bulletin 226-27-080 IR with the attached Service Bulletin and replace revised Chapter 27 Index pages.

MZ AEROSPACE
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CHAPTER 27 – FLIGHT CONTROLS

NUMBER	DATE	TITLE	AIRCRAFT EFFECTIVITY
27-001	02-08-71 (R) 09-18-75	Replace Rollers Located Between Spars with Pulleys	SA226-T, S/N T201-207, SA226-AT, S/N AT001-002, SA226-TC, S/N TC201-202.
27-002	04-17-71 (R) 09-18-75	Adjustment of Rudder/ Aileron Interconnect Springs	SA226-T, S/N T201-209, SA226-AT, S/N AT001-002, SA226-TC, S/N TC201-202.
27-003	03-15-71 (R) 10-09-75	Deice Modification	SA226-T, S/N T201-218, SA226-AT, S/N AT001-006, SA226-TC, S/N TC201-202.
27-004	03-22-72 (R) 05-31-78	Pitch Trim Actuator- Increase in Time Between Overhauls	SA226-T, S/N T201-999, SA226-AT, S/N AT001-999, SA226-TC, S/N TC201-999.
27-005	10-10-72 (R) 10-21-75	Rudder Trim Control Rod	SA226-T, S/N T201-219, SA226-AT, S/N AT001-006, SA226-TC, S/N TC201-202.
27-006	06-20-73 (R) 10-21-75	Inspection and Repair of Rudder Trailing Edge Skin	SA226-T, S/N T201-237, SA226-AT, S/N AT001-009, SA226-TC, S/N TC201-202.
27-007	03-08-73 (R) 10-21-75	Stabilizer Actuator- Replacement to Ensure Irreversibility	SA226-T, S/N T201-225, SA226-AT, S/N AT001-008, SA226-TC, S/N TC201-202.
27-008	07-16-73 (R) 10-21-75	Inspection of Rudder Bellcrank for Hardness	SA226-T, S/N T201-234, SA226-AT, S/N AT001-009, SA226-TC, S/N TC201-207.
27-009	09-20-73 (R) 10-21-75	Installation of Aileron Control Cable Guard	SA226-T, S/N T228-238, SA226-AT, S/N AT009-012, SA226-TC, S/N TC205-207.
27-010	09-18-73 (R) 10-21-75	Inspection and Adjustment of Aileron Tab Gap	SA226-T, S/N T201-238, SA226-AT, S/N AT001-009, SA226-TC, S/N TC201-207.
27-011	05-31-74 (R) 10-21-75	Improved Rudder Tab Link Assembly	SA226-T, S/N T201-245, SA226-AT, S/N AT001-015, SA226-TC, S/N TC201-208E.

NUMBER	DATE	TITLE	AIRCRAFT EFFECTIVITY
27-012	07-31-84	RESCINDED	
27-013	07-31-84	RESCINDED	
27-014	11-12-73 (R) 10-21-75	Aileron Balance Weight Attachment	SA226-T, S/N T201-241, SA226-AT, S/N AT001-014, SA226-TC, S/N TC201-207.
A27-015	08-23-74 (R) 10-22-75	Horizontal Stabilizers - Spar Cracks-Inspection & Repair.	SA226-AT, S/N AT001-024, SA226-TC,S/NTC201-211EE.
A27-016	08-23-74 (R) 10-22-75	Horizontal Stabilizers - Spar Cracks-Inspection & Repair.	SA226-T, S/N T201-248.
27-017	06-25-75 (R)10-22-75	Improved Stabilizer Trim Actuator Availability	SA226-T, S/N T201-251, SA226-AT, S/N AT001-033, SA226-TC, S/N TC201-212.
27-018	11-11-74 (R) 10-22-75	Modification of Aileron Trim Tab Leading Edge	SA226-T, S/N T201-250, SA226-AT, S/N AT001-026, SA226-TC, S/N TC201-211EEE.
27-019	03-13-75 (R) 10-22-75	Replace Trim Limit Switch Mounting Bracket & Rod.	SA226-T, S/N T249-250.
27-020	01-14-76	Installation of Oilite Bearings on Rudder Pedal	SA226-T, S/N T201-256, SA226-AT, S/N AT001-043, SA226-TC, S/N TC201-216.
27-021	11-11-76	Flight Controls-Rudder and Tab	SA226-T, S/N T201-271, SA226-AT, S/N AT001-051, SA226-TC, S/N TC201-222.
27-022	01-05-79 (R) 01-21-82	Installation of Cable Guard & Retainer	SA226-T, S/N T201-290, SA226-AT, S/N AT001-066, SA226-TC, S/N TC201-255.
27-023	11-13-79	Elevator/Horizontal Stabilizer Support Mod.	SA226-T, S/N T201-302, SA226-AT, S/N AT001-070, SA226-TC, S/N TC201-286.

NUMBER	DATE	TITLE	AIRCRAFT EFFECTIVITY
A27-024	11-13-79	Inspection of SAS Servo	SA226-T, S/N T201-291 except T276, SA226-AT, S/N AT001-073, SA226-TC, S/N TC201-314.
A27-025	03-21-80	Inspection of Aileron Control Cable Routing	SA226-T(B), S/N T(B)292-329, SA226-AT, S/N AT067-074, SA226-TC, S/N TC256-325.
27-026	05-09-80	Installation - Adjust-table Angle of Attack (AOA) Transmitter Bracket	SA226-T(B), S/N T(B)276, T(B) 292-298, 300-311.
27-027	07-17-80	Rudder Cable Attaching Hardware-Inspect and Replace	SA226-T, S/N T201-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-999, SA226-AT, S/N AT001-999, SA226-TC, S/N TC201-999.
A27-028	12-11-80	Inspection of Yaw Damper and SAS Servos	SA226-T, S/N T201-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-391.
27-029	04-23-81	Inspection of Elevator Mass Balance Weights	All SA226 Series Aircraft.
27-030	06-03-81	Aileron Balance Requirements	SA226-T(B), S/N T(B)394, T(B)397, 400, 403, 405, 407, and 414, SA226-TC, S/N TC401, TC413, 415, and 418.
27-031	07-08-81	Elevator Return Spring and Attaching Bolts Inspection	SA226-AT, S/N AT001-419, SA226-TC, S/N TC201-419.
27-032	09-14-81 (R) 01-19-83	Relocation of Elevator Down Spring	SA226-AT, S/N AT001-999, SA226-TC, S/N TC201-999.
A27-033	12-03-82 (R) 01-06-83	Removal of Second Clutch from CONRAC SAS Servo	SA226-T(B), S/N T(B)276, T(B)292-999.

NUMBER	DATE	TITLE	AIRCRAFT EFFECTIVITY
27-034	03-20-84	Rudder Gust Lock Rework	SA226-T, S/N T201-291, except T-276, SA226-T(B), S/N T(B)276 T(B)292-417, SA226-AT, S/N AT001-074 except AT070, SA226-TC, S/N TC201-419.
27-035	12-13-83 (R)09-19-84	Rudder Torque Tube	SA226-T, S/N T201-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.
27-036	03-20-84	Improved Flap Control Handle Bracket	SA226-T, S/N T201-275, T277-282, SA226-T(B), S/N T(B)298-T(B)417, SA226-AT, S/N AT001-062, AT071-074, SA226-TC, S/N TC201-246, TC280-419.
27-037	02-15-85 (R) 09-16-85 (R) 11-04-85 (R) 04-15-88 (R) 02-10-93 (R) 05-06-96 (R) 07-24-08 (R) 06-12-13	CONRAC SAS System Inspection and Recalibration CATEGORY III	SA226-T(B), S/N T(B)276, T(B)292-417 SA226-T, S/N T201-275, T277-291* SA226-AT, S/N AT001-074* SA226-TC, S/N TC201-419* * Aircraft modified by S.T.C SA4725SW.
27-038	02-15-85 (R)09-16-85 (R)11-04-85 (R)01-07-88 (R)01-16-90 (R)07-26-99	Rosemount SAS System Inspection and Recalibration CATEGORY III	SA226-T, S/N T201-275, T277-291*, SA226-AT, S/N AT001-074*, SA226-TC, S/N TC201-419*, *Except aircraft modified by S.T.C SA4725SW.

NUMBER	DATE	TITLE	AIRCRAFT EFFECTIVITY
27-039	03-20-85 (R)10-16-85 (R)12-09-86	Rework or Replacement of 27-71016 Bellcrank Assembly	SA226-T, S/N T201-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.
27-040	07-31-85	Rudder Pedal Bellcrank Hardware Inspection	SA226-T, S/N T201-275, T277-291. SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.
27-041	10-21-85 (R) 02-18-86	Alternate Elevator Gust Lock	SA226-T, S/N T201-275, T277-291. SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.
27-042	06-17-86 (R) 10-31-86 (R) 03-24-87	Pitch Trim Actuator Replacement Category III	SA226-T, S/N T201-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-417. SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.
27-043	03-05-87	Improved SAS Servo Idle Control Assembly Category III	SA226-T(B), S/N T(B)276, T(B)292-417.
27-044	06-08-87	Aileron Trim Cable Drum Guard Pin Category III	SA226-T, S/N T201-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.
27-045	06-18-87	Rudder Bellcrank Improvements Category III	SA226-T, S/N T201-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.

NUMBER	DATE	TITLE	AIRCRAFT EFFECTIVITY
27-046	02-19-88	Aileron Bellcrank Housing Modification Category III	SA226-T, S/N T201-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.
27-047	01-27-88	Rudder Hinge Bolts-Improved Access Category III	SA226-T, S/N T249-275, T277-291, SA226,T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.
27-048	07-26-89	Elevator Control Cable Hardware Category III	SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.
27-049	01-10-90	CANCELLED	
27-050	01-22-90	Elevator Torque Tube Category III	SA226-T, S/N T258-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.
27-051	05-19-94	Rudder Bellcrank Hinge Assembly Rework Category III	SA226-T, S/N T201-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT025-074, SA226-TC, S/N TC201-413, TC418, 419.
27-052	07-23-93	Replacement of Turn and Slip Indicator	SA226-T, S/N T201-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT001-074, SA226-TC, S/N TC201-419.
27-053	12-15-94 (R) 01-05-96	Increased Service Life of 27-42030 Rudder Bellcrank	All SA226 Series Airplanes

NUMBER	DATE	TITLE	AIRCRAFT EFFECTIVITY
27-054	05-22-95	Rudder Torque Tube Drain Hole	SA226-T, S/N T258-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT043-074, SA226-TC, S/N TC222-419.
27-055	08-09-95	Rudder Control Lock Weldment and Bellcrank Inspection-Optional Improved Strength Rudder Torque Tube, Control Lock Weldment and Aluminum Bellcrank Installation	SA226-T, S/N T258-275, T277-291, SA226-T(B), S/N T(B)276, T(B)292-417, SA226-AT, S/N AT043-074, SA226-TC, S/N TC222-419.
27-056	00-00-00	NOT ISSUED	
27-057	09-08-95	Rudder Trim Tab Actuator Decal	All SA226 Series Airplanes
27-058	05-15-96	Rework of UP/DOWN Elevator Quadrant Stops and LH/RH Rudder Bellcrank Stops	All SA226 Series Airplanes
27-059	00-00-00	NOT ISSUED	
27-060	12-11-96 (R) 02-24-97 (R) 12-05-14	Control Column Roller Bearing and Elevator Rod End Bearing Inspection/Replacement	All SA226 Series Airplanes
27-061	06-16-97	Control Column Pivot Improvement	All SA226 Series Airplanes
27-062	11-18-98	Installation of Simmonds Precision P/N DL5040M5 and/or DL5040M6 Pitch Trim Actuator (PTA)	All SA226 Series Airplanes with Barber Colman, P/N 27-19008-001/-002 Pitch Trim Actuator Installed.
27-063	05-11-99 (R) 12-27-99 (R) 11-18-02	Installation of P/N DL5040M8, Simmonds Precision Pitch Trim Actuator (PTA)	All SA226 Series Airplanes with P/N 27-19008-001/-002/-004/-005/-006/-007 Barber-Colman PTA Installed.

NUMBER	DATE	TITLE	AIRCRAFT EFFECTIVITY
27-064	03-08-99	Installation of 27-19008-006/-007 Barber-Colman Pitch Trim Actuator (PTA Installed.	All SA226 Series Airplanes with P/N 27-19008-001/-002/ -004/-005 Barber-Colman PTA
27-065	12-05-00	Installation of Fairleads at F.S. 174.06	All SA226 Series AT and TC Airplanes
27-066	09-29-03	Life Limit for Rudder Gust Lock Assembly, Part Number 27-70066-001, of 5000 Hours	All SA226 Series Airplanes
27-067	04-02-04	Inspection of 26-72003 Rudder Pedals for cracks	All SA226 Series Airplanes
27-068	00-00-00	NOT ISSUED	
27-069	00-00-00	NOT ISSUED	
27-070	09-19-08	Gravel Guard Installation	All SA226 Series Airplanes
27-071	04-28-09	Pilot's and Copilot's Control Column Access Panels Modification	All SA226 Series Airplanes
27-072	06-27-11	Flight Control Cable Replacement	SA226-T, S/N T265, T267 SA226-T(B), S/N T(B)348 SA226-TC, S/N TC277 SA226-AT, S/N AT071, AT072, AT073
27-073	06-10-11 (R) 09-06-11 (R) 10-14-11	Inspection and Repair / Replacement of Pitch Trim Actuator Fuselage Fittings	All SA226 Series Airplanes
27-074	06-06-13 (R) 09-30-13 (R) 10-23-13	Inspection and Lubrication of the Aileron Control Cable Chain in the Pilot's and Co-Pilot's Control Columns	All SA226 Series Airplanes
27-075	09-04-14	Inspection/Replacement of the Aileron Control System Rod End Bearings	All SA226 Series Airplanes

NUMBER	DATE	TITLE	AIRCRAFT EFFECTIVITY
27-076	09-04-14	Inspection of the Aileron Link Rod, Bellcrank, and Aileron Hinge Bracket for Damage	All SA226 Series Airplanes
27-077	08-18-14	Inspection/Repair of Wiring Harnesses in the Vertical Stabilizer	All SA226 Series Airplanes
27-078	10-08-15	Inspection of Cockpit Control Column Horizontal Tube for Cracks	All SA226 Series Airplanes
27-079	04-23-15 (R) 09-21-15 (R) 10-12-15	Inspection of Rudder Bellcrank	All SA226 Series Airplanes
27-080	11-05-15 (R) 02-23-16	Inspection of the Elevator Control System Rod End Bearings	All SA226 Series Airplanes

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SERVICE BULLETIN

Flight Controls

Inspection of the Elevator Control System Rod End Bearings

1. PLANNING INFORMATION

A. Effectivity:

All SA226 Series Airplanes.

B. Reason:

An operator reported a crew was performing flight control checks before take-off and noted something was wrong with the elevator control. Review of the elevator control system by maintenance personnel found the control link assembly located between the elevator torque tube and the elevator quadrant broken.

This revision removes the NAS43HT4-4 spacers from the elevator control links to quadrant hardware stack-up shown in Figures 1 and 4, and adds to the *Note in Figure 4 to allow use of one NAS43HT4-4 spacer in place of two AN960-416L washers if necessary.

C. Description:

Inspect both control link assemblies between the elevator torque tubes and the elevator quadrant for frozen (stiff, hard to move) bearings, or broken/cracked links (rod ends). Replace rod ends if required and inspect mating quadrant for any signs of related damage. Otherwise, lubricate bearings, reinstall elevator control link assemblies, check system rigging/freeplay, and repeat inspection at next interval specified below.

D. Compliance:

Mandatory.

1) If flight crew reports abnormally high resistance when operating the elevators, perform Step 2.A. INSPECTION OF ELEVATOR CONTROL LINKS - INSTALLED prior to next flight.

2) For reasons other than 1.D.1), at the next zone related Phase or Letter Check inspection or next 600 flight hours (but no later than 6 calendar months), whichever occurs later, perform Step 2.B. INSPECTION OF ELEVATOR CONTROL LINKS - REMOVED.

3) Continue to repeat inspect elevator control link assemblies IAW Step 2.B. INSPECTION OF ELEVATOR CONTROL LINKS - REMOVED at both locations (1 per elevator). Repeat on an annual basis after compliance with applicable Step 1.D.1) or 1.D.2) threshold inspection.

4) Continue to repeat lubrication of rod end bearings (male and female) on both elevator control link assemblies IAW Step 2.E every 3 to 6 months, concurrent with Step 1.D.3) when possible. For aircraft located in climates conducive to corrosion, lubricate using the shorter interval. For aircraft with the previous lubricant application still present, it is permissible to use the longer interval. Adjust this 3 to 6 month interval as required to maintain lubricant on bearings at all times.

5) The repeat inspection and lubrication tasks will be added to the Phase and Letter Check programs.

E. Approval:

FAA Approved for Engineering Design.

F. Manpower:

M7 Aerospace estimates 2 manhours to perform the inspect/torque check and a further 4 hours for rod end bearing replacement and rigging checks. This estimate is for direct labor only.

G. Material - Cost and Availability:

Contact M7 Aerospace Spares/Sales Department for Cost and Availability. See Table 1 for listing.

H. Tooling-Price and Availability:

Refer to the SA226 Maintenance Manual (MM) for required tooling for rigging of control system.

I. Weight and Balance:

None. The weight of the rod ends is comparable.

NOTE: It is recommended the aircraft operating weight be re-established after incorporating 20 service bulletins classified as having negligible impact on aircraft weight and balance. This recommendation is derived from data provided in FAA Advisory Circular 120-27.

J. Reference:

M-5813 M7 Aerospace White Paper;
M7 Aerospace SDR Review Item;
SA226 Maintenance Manual, 27-00-00;
SA226 Illustrated Parts Catalog (IPC) 27-30-04, Figure 1;
M7 Aerospace Drawing 27-43000 (latest FAA approved revision).

NOTE: References are for manufacturers' use only.

K. Other Publications Affected:

SA226 Illustrated Parts Catalog (IPC) 27-30-04;
SA226 Maintenance Manual (MM) 27-30-00;
SA226 Phase and Letter Check Inspection Manuals.

2. ACCOMPLISHMENT INSTRUCTIONS

A. Inspection of Elevator Control Links - Installed:

Refer to Figure 1 for location of the elevator control link rod end bearings to be checked. The subject rod end bearings are directly attached to the elevator quadrant and to the elevator torque tube at the inboard end of each elevator. Check each control link assembly as follows:

1) Remove panel 808 (see Figure 2) on the RH side of the vertical stabilizer to gain access to the elevator quadrant.

2) Ensure both rod ends on both elevator control link assemblies are intact.

3) Physically rotate the control link assemblies about their longitudinal axis in situ by hand. Do not remove any hardware at this stage.

4) If the control link assemblies rotate freely under hand force:

a) Hand lube the elevator control link rod end bearings with MIL-PRF-81322 grease with link installed. Work in the grease by rotating link.

b) Reinstall panel 808 and return aircraft to service.

c) Perform procedures in step 2.B at the next zone related Phase or Letter Check inspection or next 600 flight hours (but no later than 6 calendar months), whichever occurs later.

5) If the control link does not rotate freely under hand force, or if link feels very stiff (slight movement only), proceed with Step 2.B.

B. Inspection of Elevator Control Links - Removed:

1) Disconnect electrical power from the aircraft and disconnect main batteries. Tag out circuit breakers and switches to prevent injury to personnel or damage to the aircraft.

2) Placard the cockpit controls of the elevator and trim system "DO NOT OPERATE/ MOVE".

3) Unless access has already been attained (Step 2.A.1) above), remove panel 808 (see Figure 2) on the RH side of the vertical stabilizer to gain access to the elevator quadrant.

4) Locate the elevator control link assemblies on each side of the quadrant. Each control link assembly consists of a male rod end (HM-4M) attached to elevator quadrant and a female rod end (HF-4M) attached to elevator torque tube, secured with a nut (AN316-C4R). Both control link assemblies must be checked.

5) Remove both elevator control link assemblies from the vertical stabilizer.

6) Initially by applying finger pressure, determine if the spherical bearing in each

control link rod end can be rotated in-plane within the outer race of the rod end bearing (see Figure 3 for in-plane rotation illustration).

a) When performing the in-plane rotation check, inspect rod end bearings (male and female) for corrosion and general condition.

b) Only during the initial compliance with Step 2.B. Inspection of Elevator Control Links - Removed, perform a magnetic particle inspection or liquid penetrant inspection to check for cracks on male rod end exposed threads, taking care to avoid any penetrant fluid entering the bearing race area. Repetitive magnetic particle or liquid penetrant inspections of the male rod ends are not required during the repeat inspections called for in Step 1.D.3). If for any reason the male rod end threads at the nut appear to be damaged, the nut must be rotated to expose the threads and threads under the nut inspected.

c) The bearing should move smoothly and freely without any binding or sticking. If not, perform Step 2.C. Torque Check Procedure to determine if the bearing must be replaced or may be reinstalled.

d) Replace any rod end that fails the torque check or is found to have corrosion or other damage. Replace affected rod end(s) IAW Step 2.D. (see Step 3 Material Listing for parts).

e) If the rod end bearings are not found to have corrosion or other damage, rotate freely and smoothly without any sloppiness, the control link assemblies may be reinstalled. Proceed to Step 2.E.

C. Torque Check Procedure:

1) This method simply inserts a standard 1/4" diameter bolt through the rod end to be checked. The bolt must be of sufficient grip length to allow installation of the NAS1149* washer (of 0.032 min thickness) under the head, and nut, MS21042L4, with one or two threads showing past the end of the nut.

2) While holding the bolt head, lightly torque the nut to approximately 30-50 in-lbs. This provides adequate clamping support to measure the breakout friction of the rod end bearing.

3) Obtain a torque wrench with a reading tolerance of +/- 0.5 in-lbs or better. Ensure the wrench is in calibration and is capable of measuring 4 to 7 in-lbs torque.

4) The torque wrench is then reset and applied to the bolt head only, rotating in-plane to measure the breakout torque of the bearing. A torque greater than 5 in-lbs indicates the rod end bearing needs replacement. Values less than 5 in-lbs permit the rod end bearing to remain in service.

a) Torque greater than 5 in-lbs - replace the affected rod end IAW Step 2.D.

b) Torque less than or equal to 5 in-lbs - return to relevant Step 2.B. to complete inspection and in-plane rotation check of remaining rod end bearings.

D. Link Rod End Replacement:

1) Whether the existing bearings are "frozen" or do not meet the torque requirement, or by choice of the operator, the rod end should be removed and replaced with a new rod end (see Step 3. Material Listing).

2) Prior to disassembly of a control link assembly, note orientation of rod ends and length of link assembly. Either using witness marks or some form of marking, note orientation with respect to the elevator quadrant and elevator torque tube as the new rod end must be installed in the same orientation and link assembly must have same length as removed. These features must be maintained to avoid any interference with other parts of the system.

3) Discard the old rod end and install the new rod end. Reassemble the system using the witness marks or other orientation marking as noted above. Torque the AN316-C4R jam nut which secures the male and female rod ends to each other (Ref AMM 20-10-00).

E. Hand lube the elevator control link rod end bearings with MIL-PRF-81322 grease. Install elevator control links to elevator quadrant and elevator torque tubes (see Figures 4 and 5 for correct stack-up, and Step 3. Material Listing for part numbers).

F. Visually check the installation for correct orientation, positioning, and location of parts. Correct any noted discrepancies (See Figures 4 and 5).

G. Restore all systems disturbed by the steps above to perform this inspection/replacement. Check elevator rigging and free play IAW MM section 27-00-00.

H. Remove warning placards from cockpit controls of the elevator and trim system.

I. Perform several elevator operation cycles while looking for clearance between all parts and proper operation. Correct any noted discrepancies.

J. Reinstall panel 808.

K. Complete aircraft records in accordance with 14 CFR 43.9.

L. Complete and return service bulletin Compliance Form to M7 Aerospace Technical Publications Department. Email: MetroTech@M7Aerospace.com.

3. MATERIAL LISTING

Location / Item	Part Number	Alternate P/N	Quantity
At Elevator Quadrant:			
Control Link Rod End, Male	HM-4M	MM-4M-18 §	2
Bolt	NAS464P4-38 ǂ	NAS6204-38D ǂ	1
Washer	AN960-416L ǂ		2 *
Spacer	NAS43HT4-4 ǂ		2
Nut	AN310-4 ǂ		1
Cotter Pin (Use with HM-4M)	MS24665-153 ǂ		1
On Elevator Control Link:			
Jam Nut	AN316-C4R ǂ		2
At Elevator Torque Tubes:			
Control Link Rod End, Female	HF-4M	MW-4M-17 §	2
Bolt	NAS464P4-14 ǂ	NAS6204-14D ǂ	2
Washer	AN960-416 ǂ		4
Washer	AN960-416L ǂ		A/R **
Spacer, (INBD)	NAS43HT4-5 ǂ		2
Spacer, (OUTBD)	NAS43HT4-10 ǂ		2
Nut	AN310-4 ǂ		2
Cotter Pin	MS24665-153 ǂ		2
On Rod End Bearings:			
Grease	MIL-PRF-81322 ǂ ¤		A/R

§ M7 Aerospace Sales Support item: M7-Sales@M7Aero.com
ǂ Customer Furnished Material.
* Extra washer may be added under nut to ensure proper torque on nut and cotter pin installation are met.
** Optional, 1 or 2 washers may be installed as required for proper bearing clamp-up or nut/cotter pin installation.
¤ MIL-PRF-23827 may be used as an alternate to MIL-PRF-81322.

TABLE 1
MATERIAL LISTING FOR CONTROL LINKS / ATTACHMENT HARDWARE
(SEE FIGURES 4 AND 5 FOR PROPER STACK-UP)

SERVICE BULLETIN

ELEVATOR CONTROL LINK ASSEMBLIES
(EACH ASSEMBLY CONSISTS OF 1 MALE ROD END, 1 FEMALE ROD END AND 1 JAM NUT)

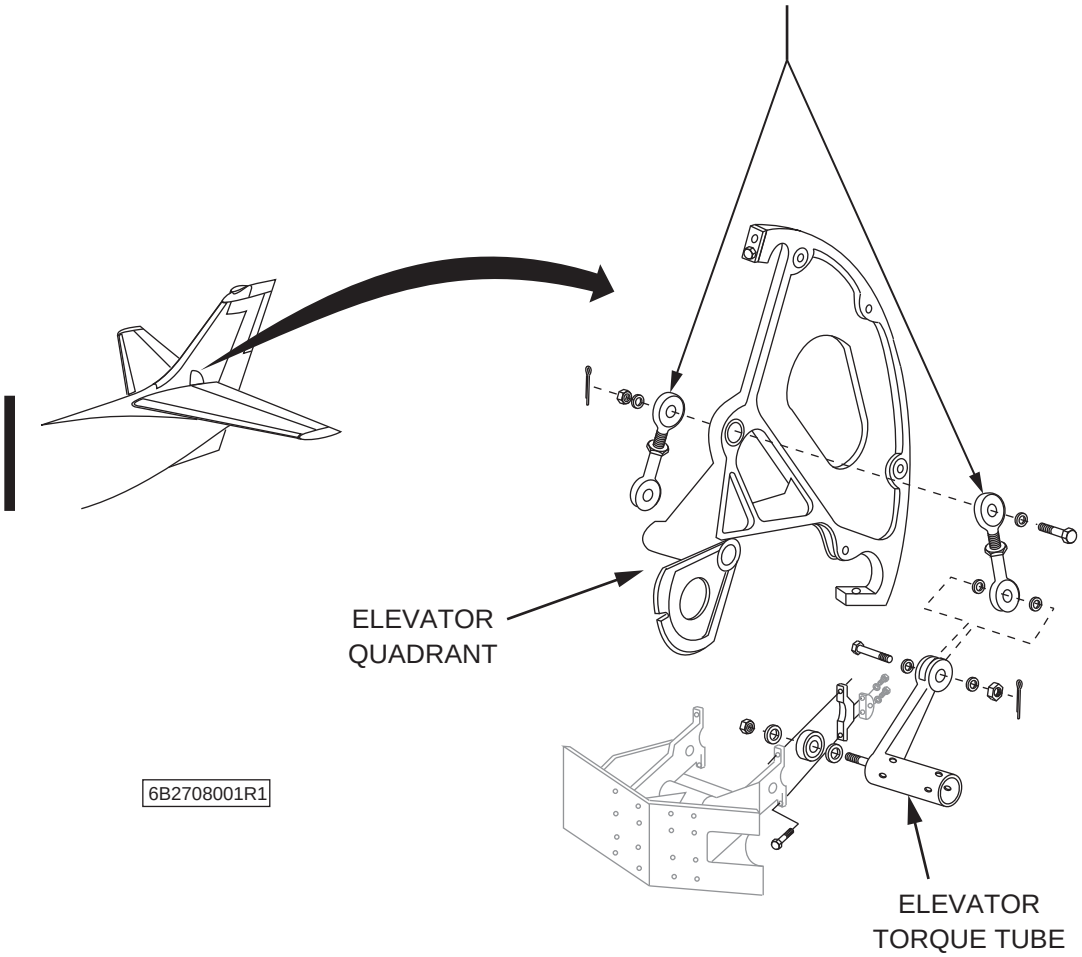


FIGURE 1
LOCATOR - ELEVATOR CONTROL LINKS

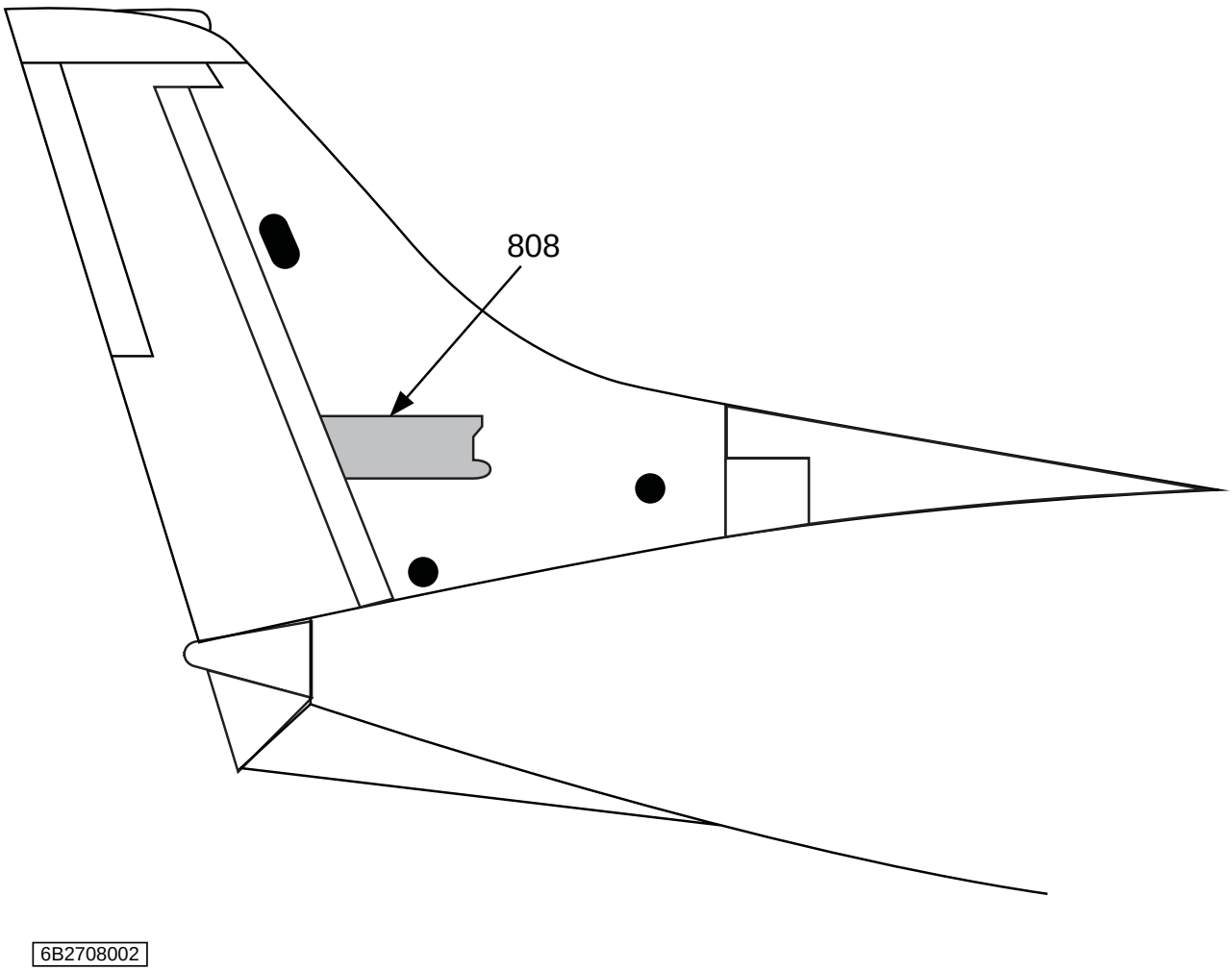


FIGURE 2
ELEVATOR QUADRANT ACCESS PANEL 808

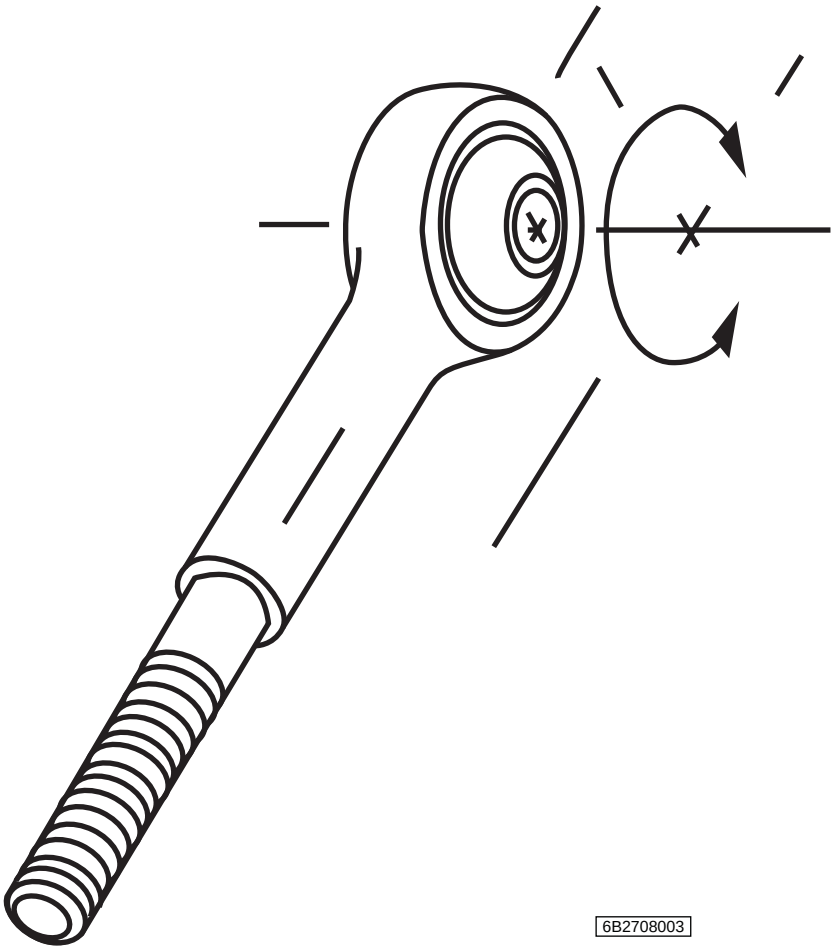
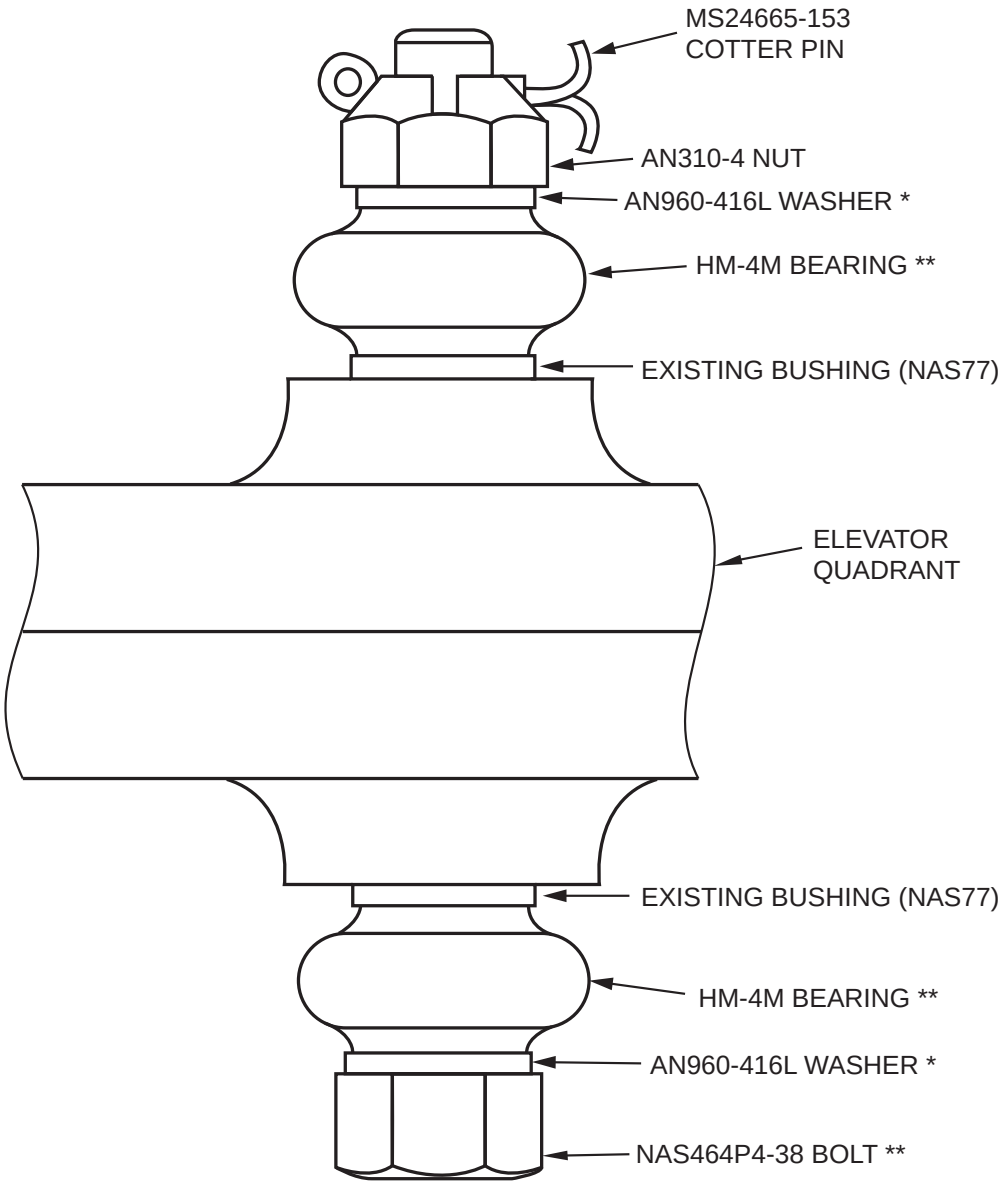


FIGURE 3
IN-PLANE ROTATION OF ROD END BEARING WITHIN RACE

SERVICE BULLETIN



* AN EXTRA WASHER MAY BE ADDED UNDER NUT AND/OR HEAD OF BOLT TO ENSURE PROPER TORQUE ON NUT AND COTTER PIN INSTALLATION ARE MET. IT IS PERMISSIBLE TO USE ONE NAS43HT4-4 SPACER IN PLACE OF TWO AN960-416L WASHERS.

** (SEE 3. MATERIAL LISTING FOR ALTERNATE P/N)

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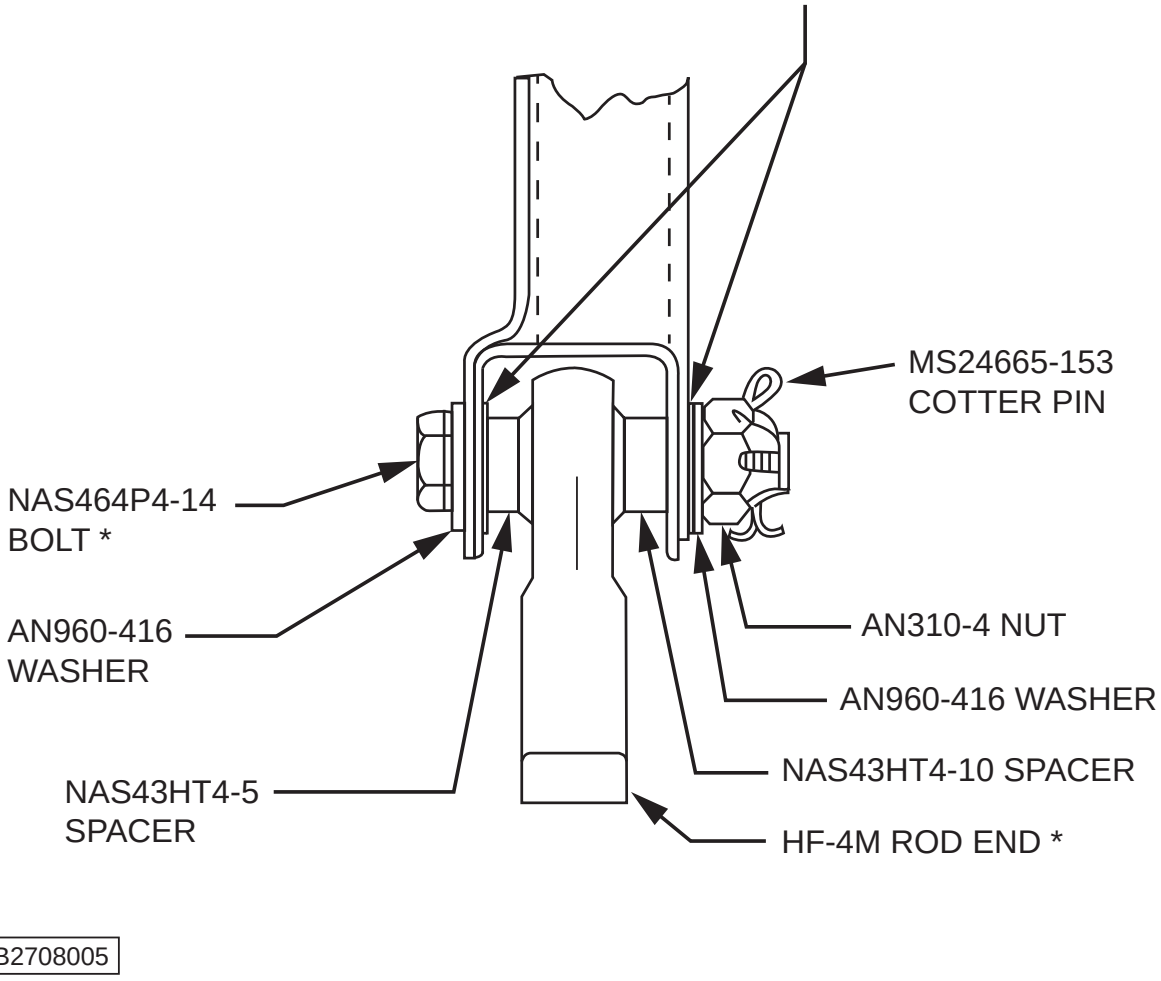
FIGURE 4
CONTROL LINK ATTACHMENT AT QUADRANT



* (SEE 3. MATERIAL LISTING FOR ALTERNATE P/N)

FIGURE 5
CONTROL LINK ATTACHMENT TO ELEVATOR TORQUE TUBE

INTENTIONALLY LEFT BLANK

SERVICE BULLETIN COMPLIANCE FORM

226-27-080 R1

TO: OPERATOR OR SERVICE FACILITY ACCOMPLISHING BULLETIN

Please complete this compliance form, and mail according to the instructions on the reverse side.

Thank you for returning this form.

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Bulletin Issue Date _____ Revision Date _____

Aircraft Registration Number _____

Operator/Owner _____

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Time on Aircraft _____

Date Accomplished _____

Comments _____

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