



300 Old Pretoria Road

Albany, GA 31721

Phone: 229.883.1440

Fax: 229.439.9790

[www.thrushaircraft.com](http://www.thrushaircraft.com)

# SERVICE BULLETIN

## No. SB-AG-58

Revision A 10/15/2015

ELEVATOR, RUDDER, AND AILERON CONTROL SYSTEMS  
INSPECTION AND HARDWARE REPLACEMENT TO  
INCORPORATE CASTELLATED NUTS IN JOINTS SUBJECT  
TO ROTATION

A handwritten signature in blue ink, appearing to read "Jim Alman", is written over a horizontal line.

Jim Alman Vice President Engineering

**AIRPLANES AFFECTED:****MODEL****SERIAL NUMBERS**

600 S2D	600-1311D and Subsequent
S2R (S-2R)	1380R, 1416R thru 4999R
S2R-T34	6000 thru 6049, T34-001 and subsequent
S2R-T15	T15-001 and subsequent
S2R-R3S	R3S-001 and subsequent
S2R-T11	T11-001 and subsequent
S2R-R1340	R1340-001DC and subsequent
S2R-R1820	R1820-001DC and subsequent
S2R-T65	T65-001DC and subsequent
S2RHG-T65	T65-002DC thru T65-012DC, and T65HG-013DC and subsequent
S2R-T45	T45-001DC and subsequent
S2R-G6	G6-101 and subsequent
S2R-G10	G10-101 and subsequent
S2R-G5	G5-101 and subsequent
S2R-G1	G1-101 and subsequent
S2RHG-T34	T34HG-101DC and subsequent
S2R-T660	T660-101 and Subsequent
S2R-H80	H80-101 and subsequent

NOTE: This Service Bulletin applies to all serial numbers in this Airplane Affected Table. Each of these Serial Numbers may or may not have a "DC" suffix, but the Service Bulletin is applicable to all.

The S2R-T15 aircraft may have Serial Numbers beginning with T27.

The S2R-T34 aircraft may have Serial Numbers beginning with T34, T36, T41 or T42.

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**LOG OF REVISIONS**

**NOTE:** Re-formatting and correction of typographical errors is not considered revision. True revisions are indicated by a dark vertical line at the right margin of the lines revised.

<b>Rev.</b>	<b>Page</b>	<b>Description of Revision</b>	<b>By:</b>
IR	All	New Document Initial Release.	G. Moreland
A	i, ii,iii, 1	Remove the words "Self Locking" as associated with castellated nuts. Added information to the "Airplanes Affected" table. Updated Log of Revisions.	G. Moreland 10/15/2015

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## **1. PURPOSE/REASON FOR PUBLICATION:**

This Service Bulletin has been created to incorporation of castellated nuts in joints subject to rotation.

## **2. SCOPE/COMPLIANCE:**

This Service Bulletin is mandatory for all S2R airplanes included in the table labeled "AIRPLANES AFFECTED" which is included herein on page ii of this document.

## **3. BY WHOM WORK WILL BE ACCOMPLISHED:**

The work is to be accomplished by an FAA licensed A&P mechanic, or foreign equivalent. The action must be recorded in the airplane log book and signed off by the mechanic.

## **4. APPROVAL:**

### **4.1 THRUSH AIRCRAFT, INC. APPROVAL**

This Service Bulletin is approved by Thrush Aircraft, Inc. Proper execution of this Service Bulletin is required to ensure compliance with Part 3 of the Civil Air Regulations (CAR) and with Part 23 of the Federal Aviation Regulations (FAR) applicable to castellated nuts used on bolts subject to rotation in operation.

## 4.2 FAA APPROVAL

Per AC 20-114 dated 10/22/1981, FAA approval is not required as there is no major type design change involved.

# 5. MAN HOURS 15.25

## 5.1 REMOVE SKINS AS REQUIRED

The estimated time to remove applicable skins for subsequent inspections is 2 hours.

## 5.2 ELEVATOR CONTROL SYSTEM

Use sketches provided in Section 6 to identify the mechanical joints that are subject to hardware rotation and label for hardware replacement.

30 locations require 3 hours.

The repair of the elevator control systems shall consist of the following tasks:

- ① Remove existing nut and bolt and replace with hardware shown in applicable figure.
- ② Install cotter pin.

Repair is estimated at 1.5 hours.

## 5.3 RUDDER CONTROL SYSTEM

Use sketches provided in Section 6 to identify the mechanical joints that are subject to hardware rotation and label for hardware replacement.

29 locations require 3 hours.

The repair of the elevator control systems shall consist of the following tasks:

- ① Remove existing nut and bolt and replace with hardware shown in applicable figure.
- ② Install cotter pin.

Repair is estimated at 1.5 hours.

Repair is estimated at 1.5 hours.

#### **5.4 AILERON CONTROL SYSTEM**

Use sketches provided in Section 6 to identify the mechanical joints that are subject to hardware rotation and label for hardware replacement.

16 locations require 1.5 hours.

The repair of the elevator control systems shall consist of the following tasks:

- ① Remove existing nut and bolt and replace with hardware shown in applicable figure.
- ② Install cotter pin.

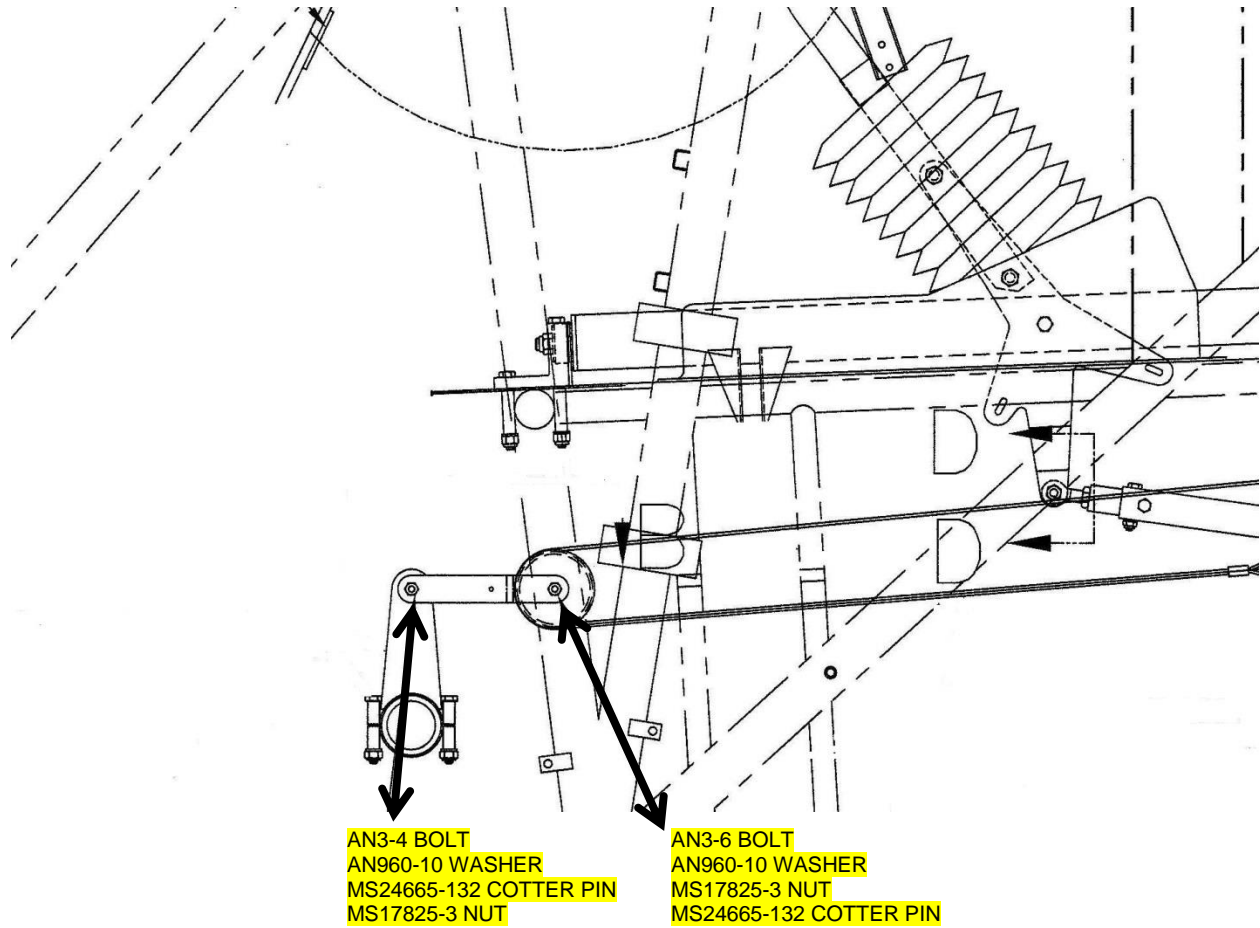
Repair is estimated at 1.5 hours.

Repair is estimated at 0.75 hours.

## **6. DETAILED INSPECTION AND REPAIR REQUIREMENTS**

### **6.1 ELEVATOR CONTROL SYSTEM**

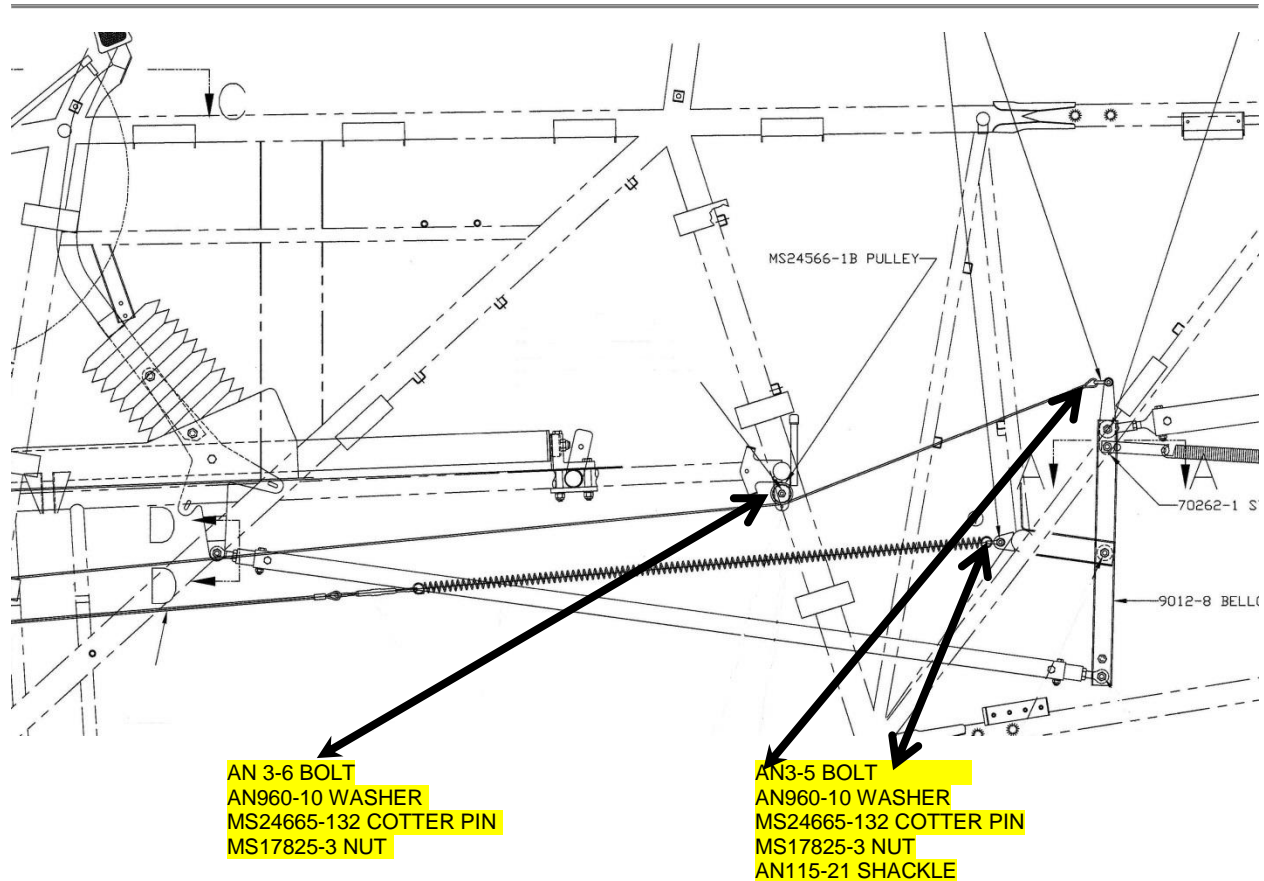
Inspect the applicable hardware using the diagrams below and replace existing hardware if it does not conform to the highlighted information.



**FIGURE 58-1**

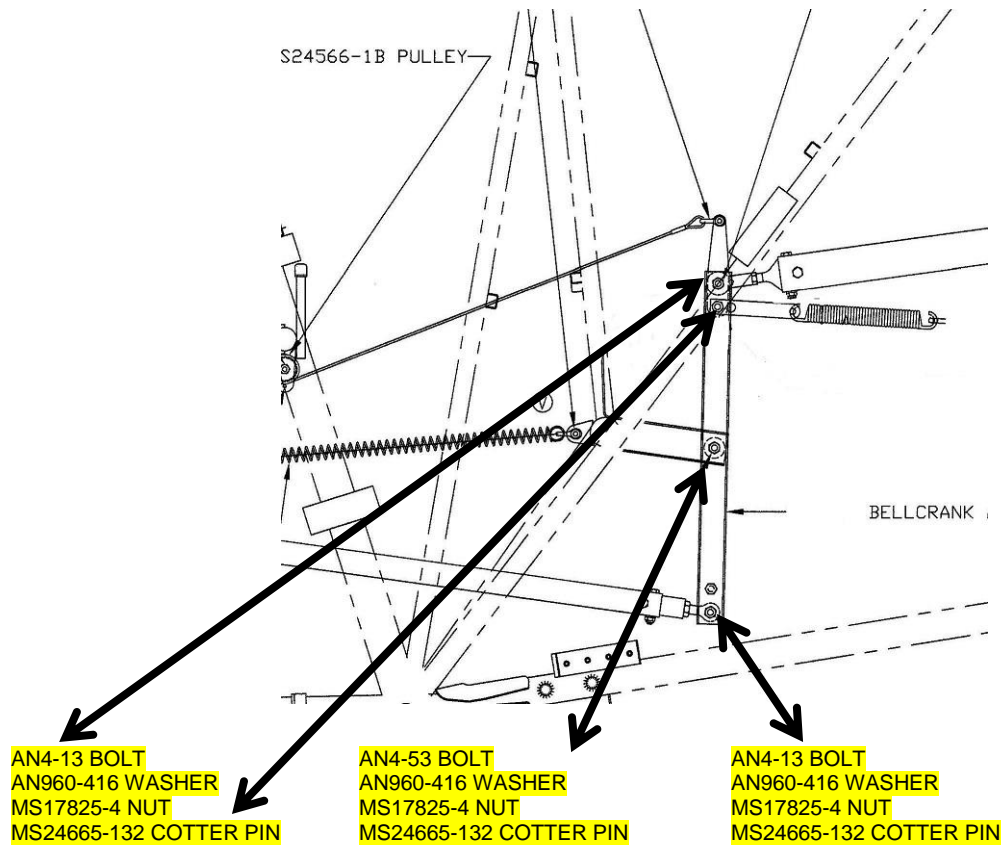
**VIEW LOOKING INBOARD FROM L/H SIDE FWD OF FUSELAGE  
TYPICAL ALL SINGLE COCKPIT MODELS EXCEPT H80**



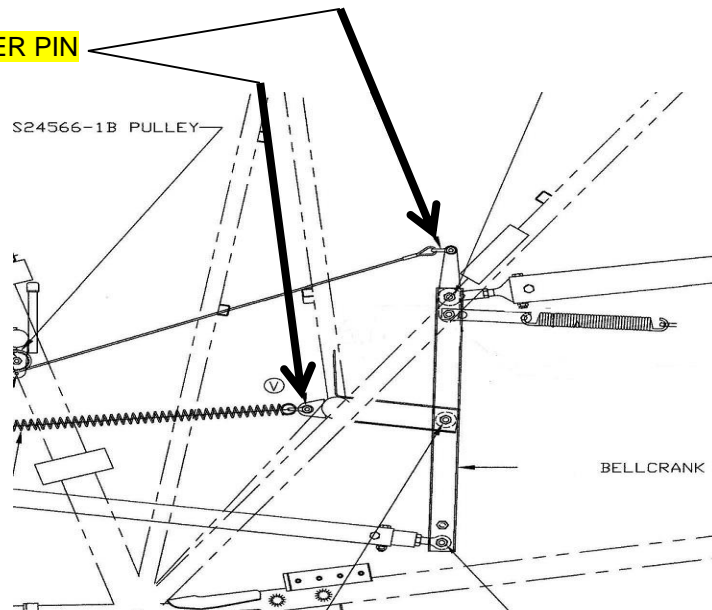


**FIGURE 58-2**

**VIEW LOOKING INBOARD FROM L/H SIDE CENTER OF FUSELAGE  
TYPICAL ALL SINGLE COCKPIT MODELS EXCEPT H80**

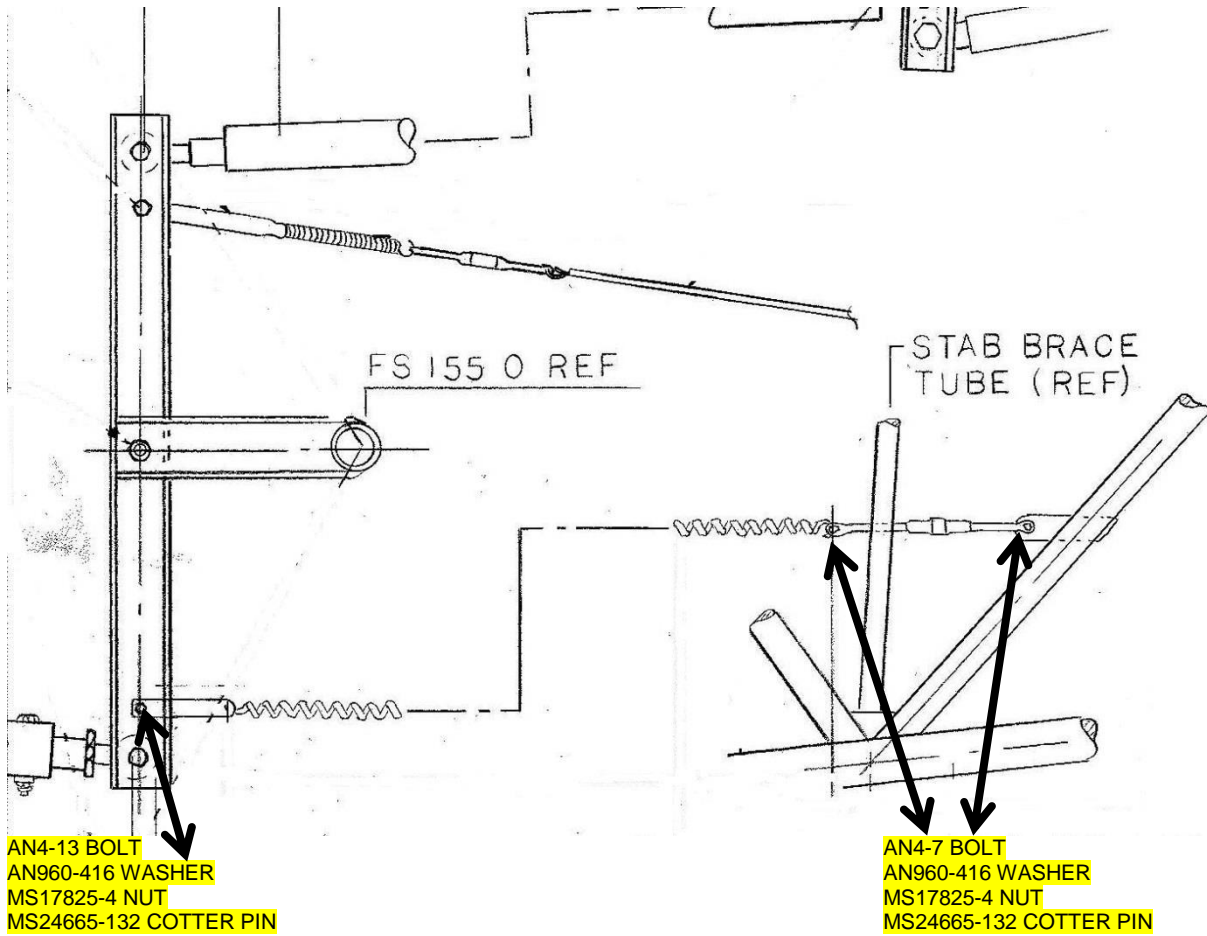


- AN3-5 BOLT
- AN960-10 WASHER
- MS17825-3 NUT
- MA24665-132 COTTER PIN
- AN115-21 SHACKLE



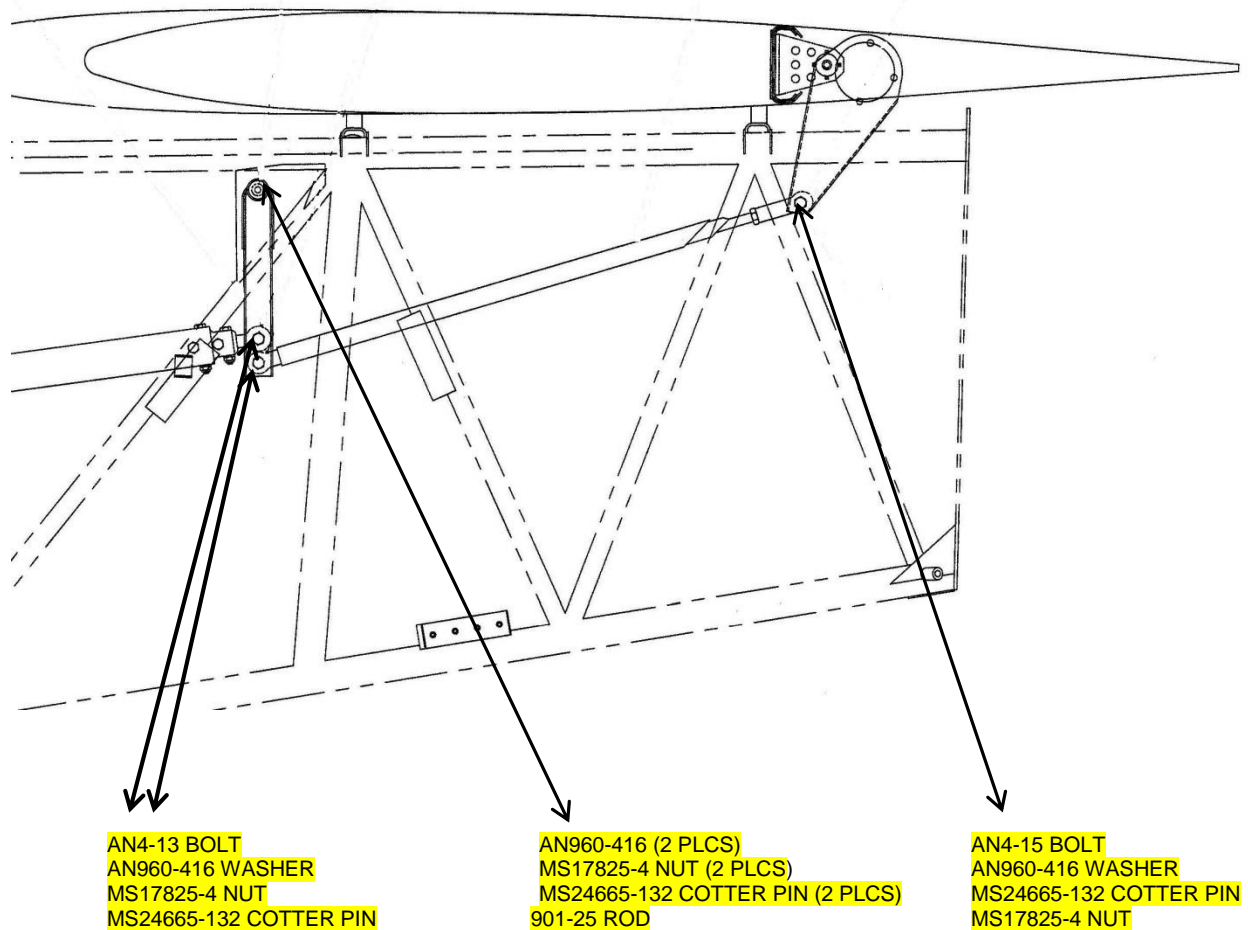
**FIGURE 58-3**

**VIEW LOOKING INBOARD FROM L/H SIDE CENTER OF FUSELAGE  
TYPICAL ALL SINGLE COCKPIT MODELS EXCEPT H80**



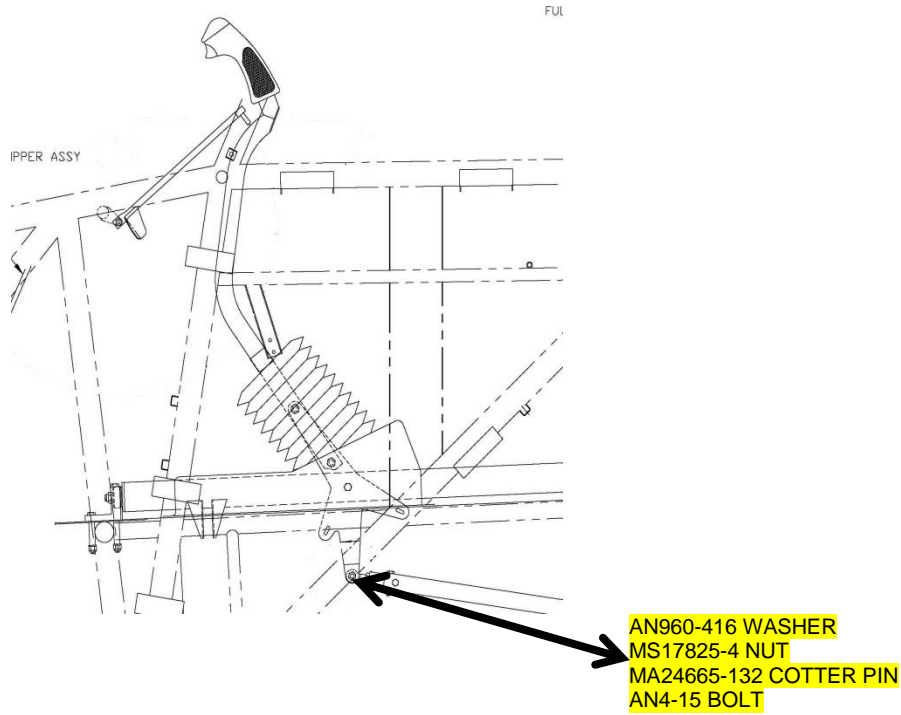
**FIGURE 58-4**

**VIEW LOOKING INBOARD FROM L/H SIDE AFT FUSELAGE  
TYPICAL ALL DUAL COCKPIT SINGLE CONTROL AND DUAL  
COCKPIT DUAL CONTROL ALL MODELS EXCEPT H80 AND T660**



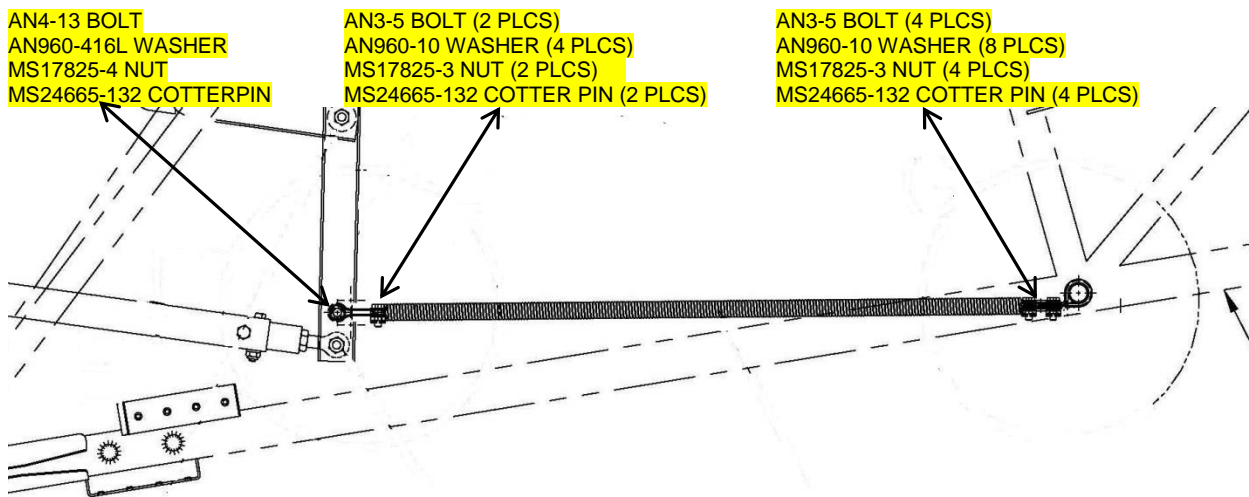
**FIGURE 58-5**

**VIEW LOOKING INBOARD FROM L/H SIDE AFT OF FUSELAGE  
TYPICAL ALL MODELS**



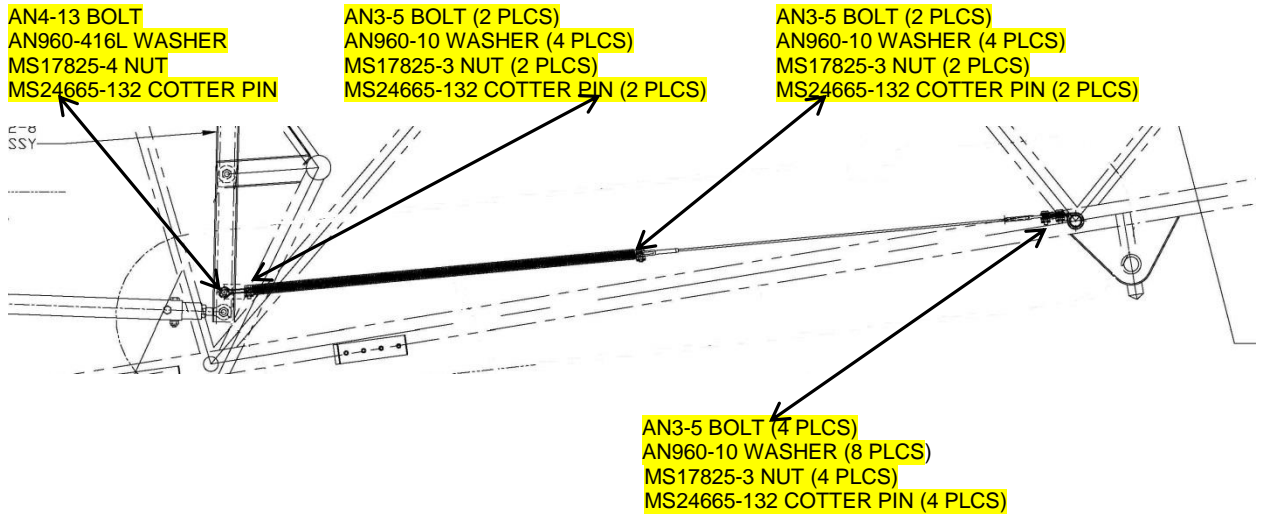
**FIGURE 58-6**

***VIEW LOOKING INBOARD FROM L/H SIDE FWD OF FUSELAGE  
TYPICAL ALL MODELS***



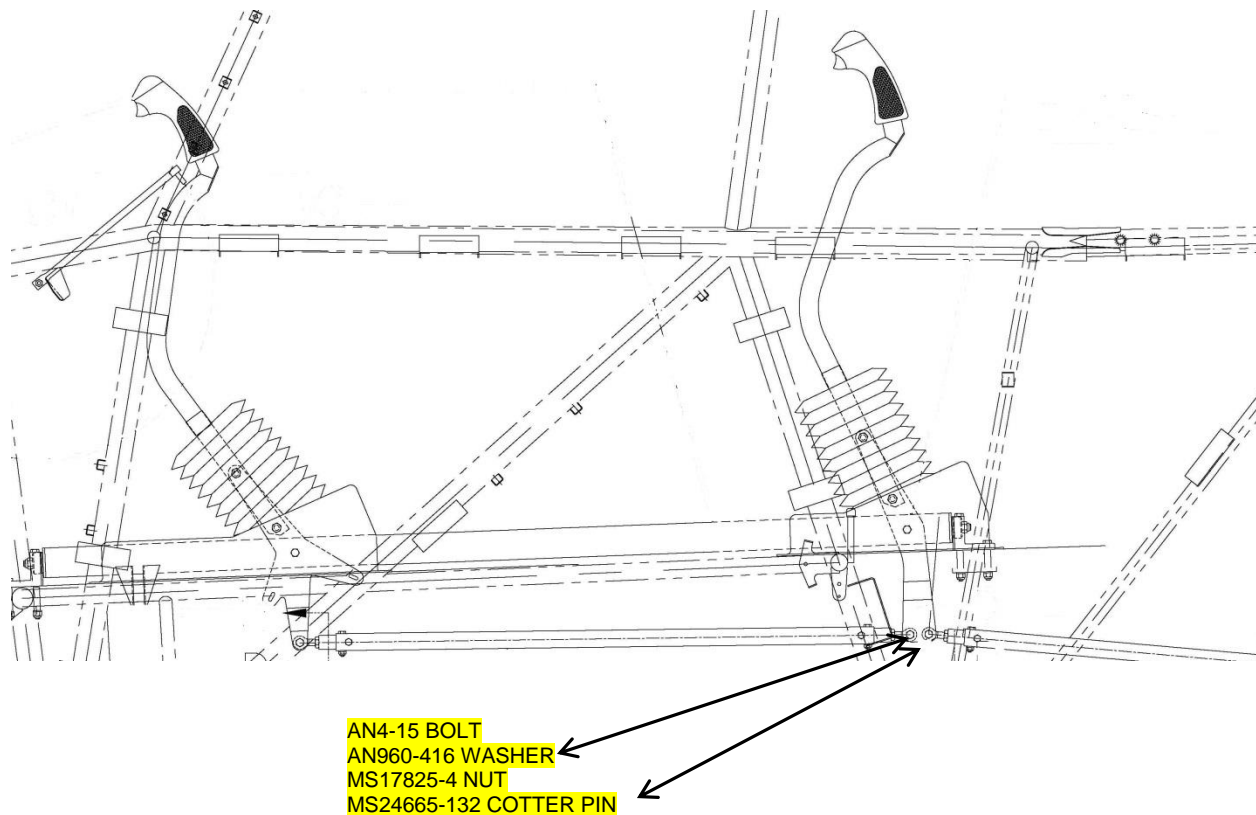
**FIGURE 58-7**

**VIEW LOOKING INBOARD FROM L/H SIDE CENTER OF FUSELAGE  
MODEL H80 SINGLE COCKPIT ONLY**



**FIGURE 58-8**

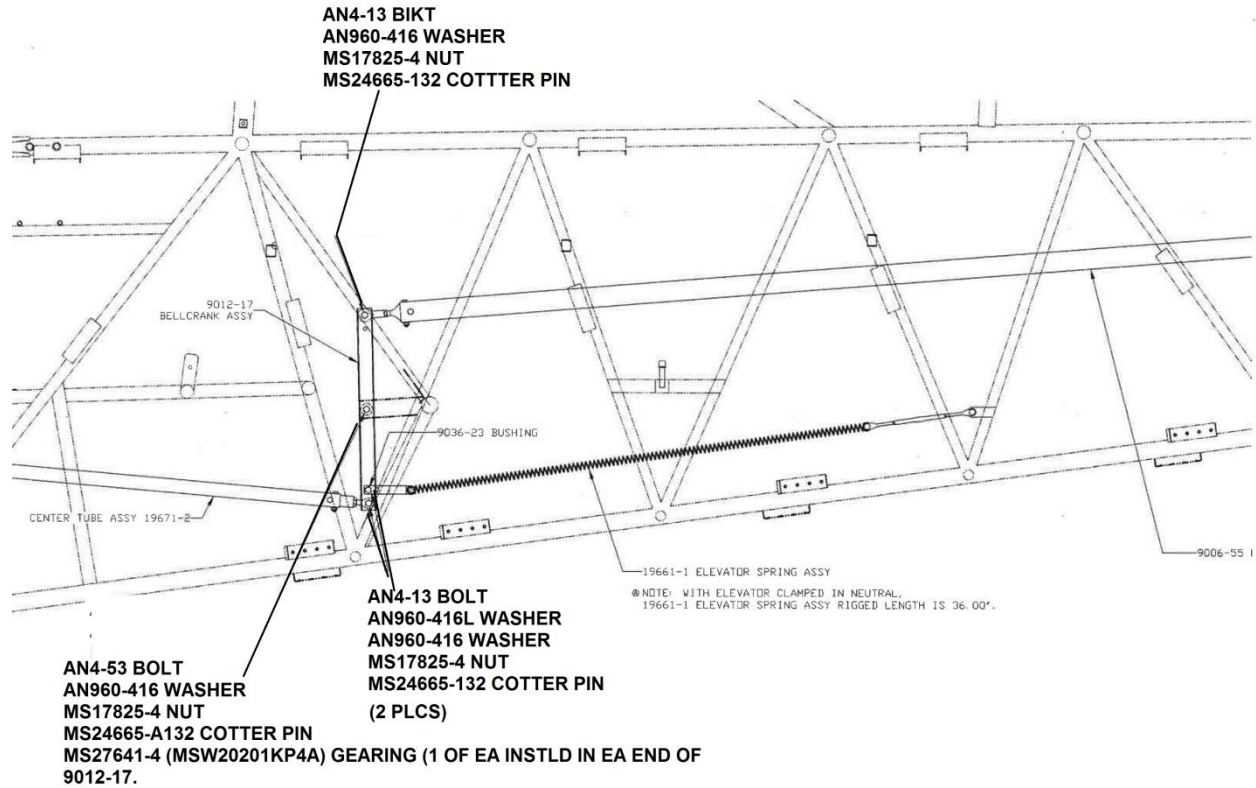
**VIEW LOOKING INBOARD FROM L/H SIDE CENTER OF FUSELAGE  
MODEL H80 DUAL COCKPIT SINGLE CONTROL AND DUAL  
COCKPIT DUAL CONTROL ONLY**



**FIGURE 58-9**

**VIEW LOOKING INBOARD FROM L/H SIDE OF  
CENTER OF FUSELAGE  
TYPICAL ALL DUAL COCKPIT MODELS**



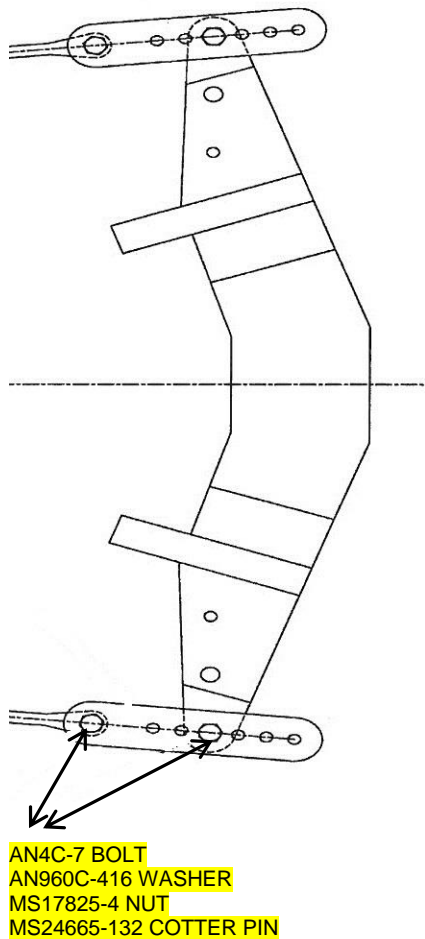


**FIGURE 58-10**

**VIEW LOOKING INBOARD FROM L/H SIDE OF  
AFT FUSELAGE  
TYPICAL T660 DUAL COCKPIT SINGLE CONTROL AND DUAL  
COCKPIT DUAL CONTROL MODELS**

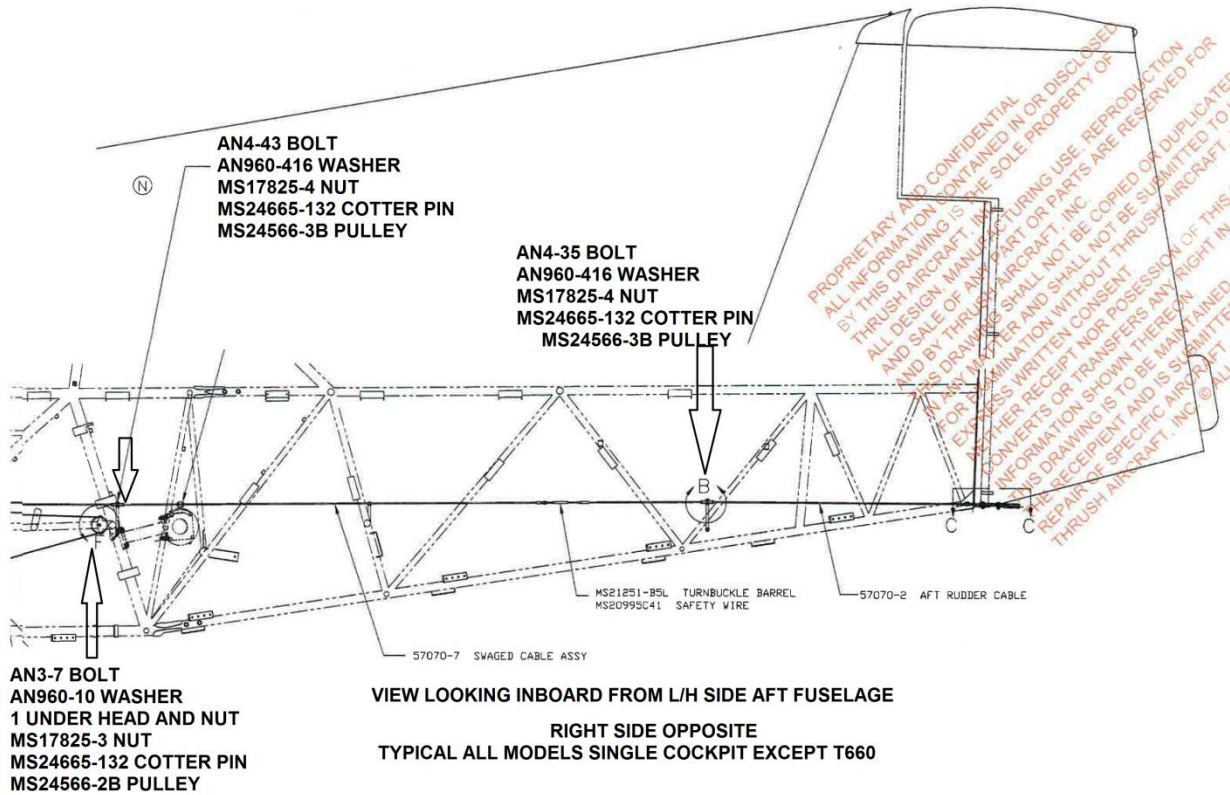
## 6.2 RUDDER CONTROL SYSTEM

Inspect the applicable hardware using the diagrams below and replace existing hardware if it does not conform to the highlighted information.



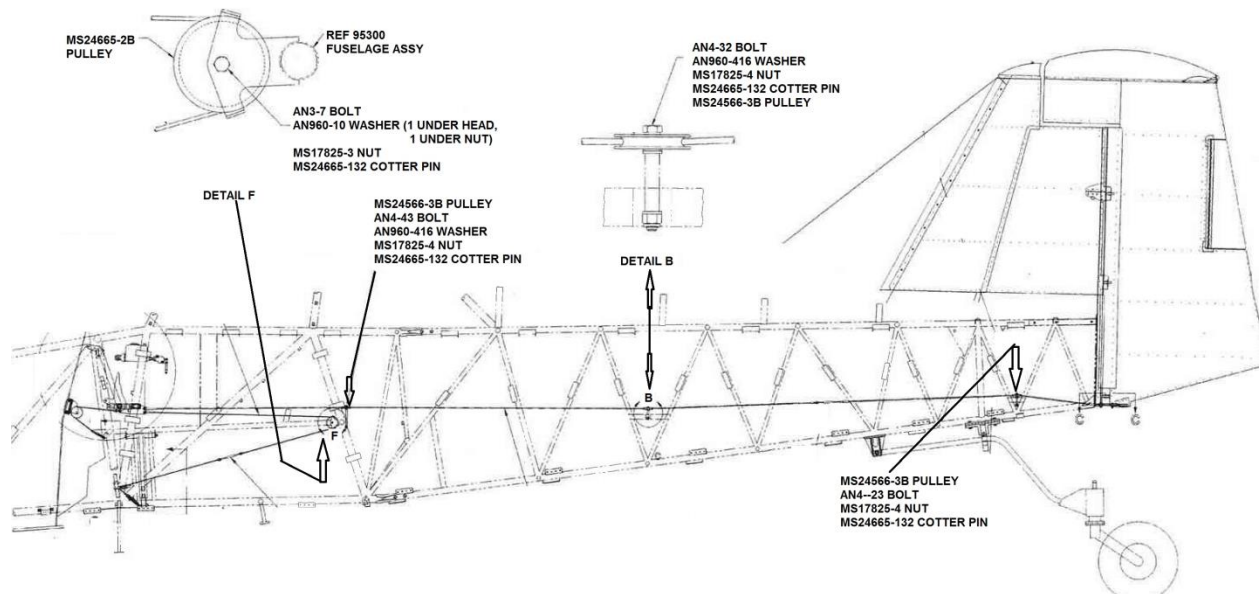
**FIGURE 58-11**

***VIEW LOOKING DOWN AT L/H SIDE OF RUDDER HORN  
RIGHT SIDE OPPOSITE  
TYPICAL ALL MODELS***

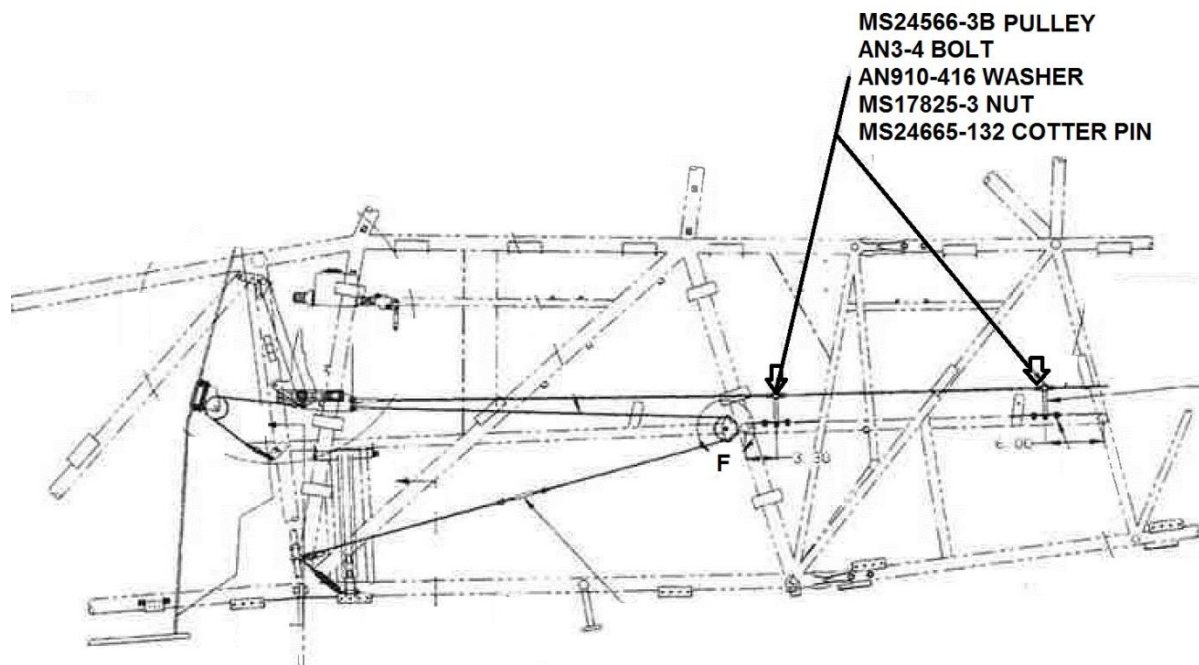


**FIGURE 58-12**

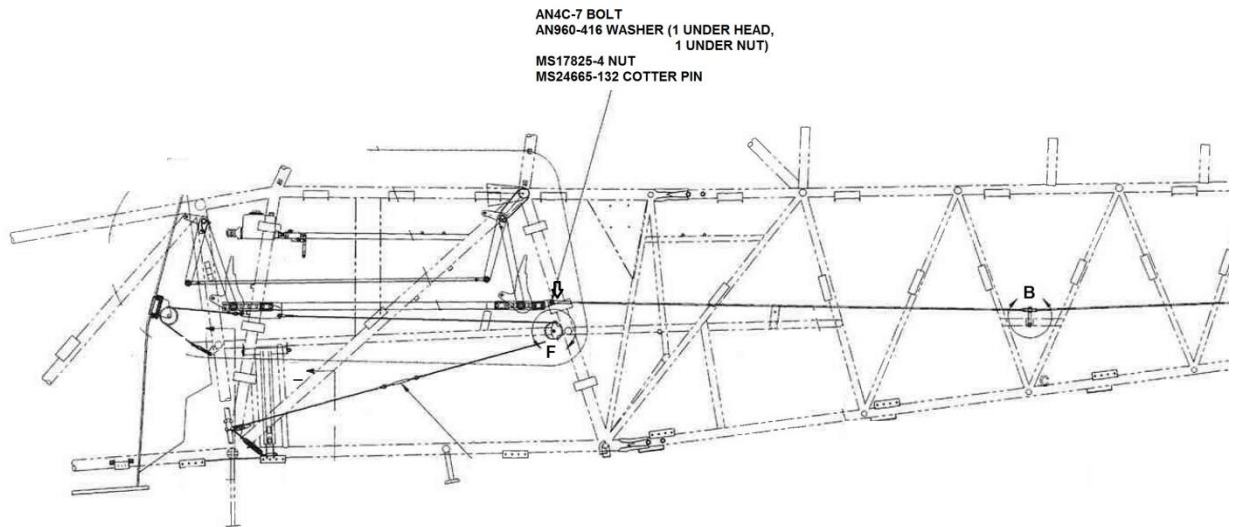




**FIGURE 58-14**  
**VIEW LOOKING INBOARD FROM L/H SIDE**  
**PULLEY DETAILS**  
**T660 SINGLE COCKPIT ONLY**

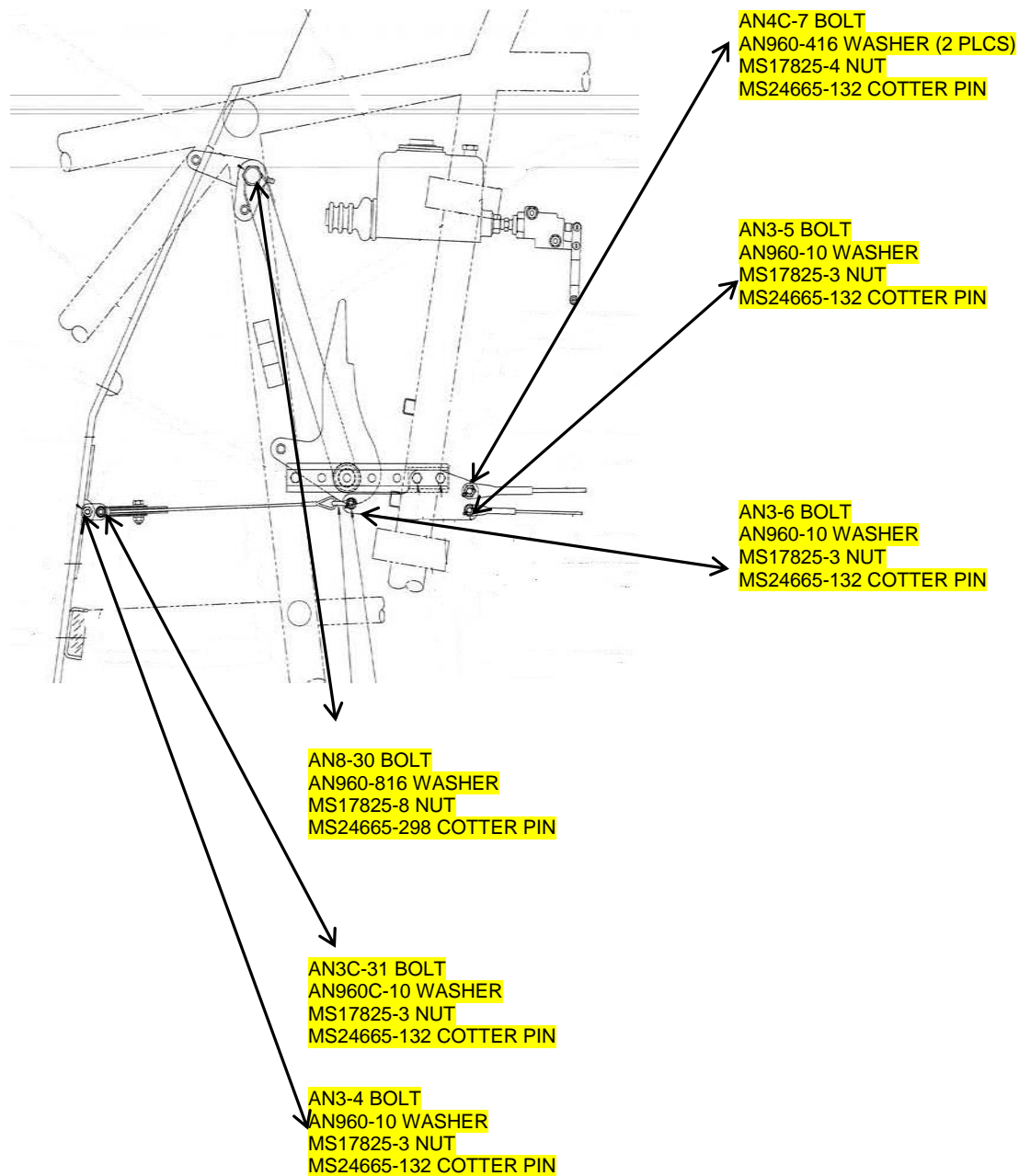


**FIGURE 58-15**  
**VIEW LOOKING INBOARD FROM L/H SIDE**  
**PULLEY DETAILS**  
**T660 DUAL COCKPIT SINGLE CONTROL ONLY**  
**SAME AS FIGURE 58-13 EXCEPT AS SHOWN**



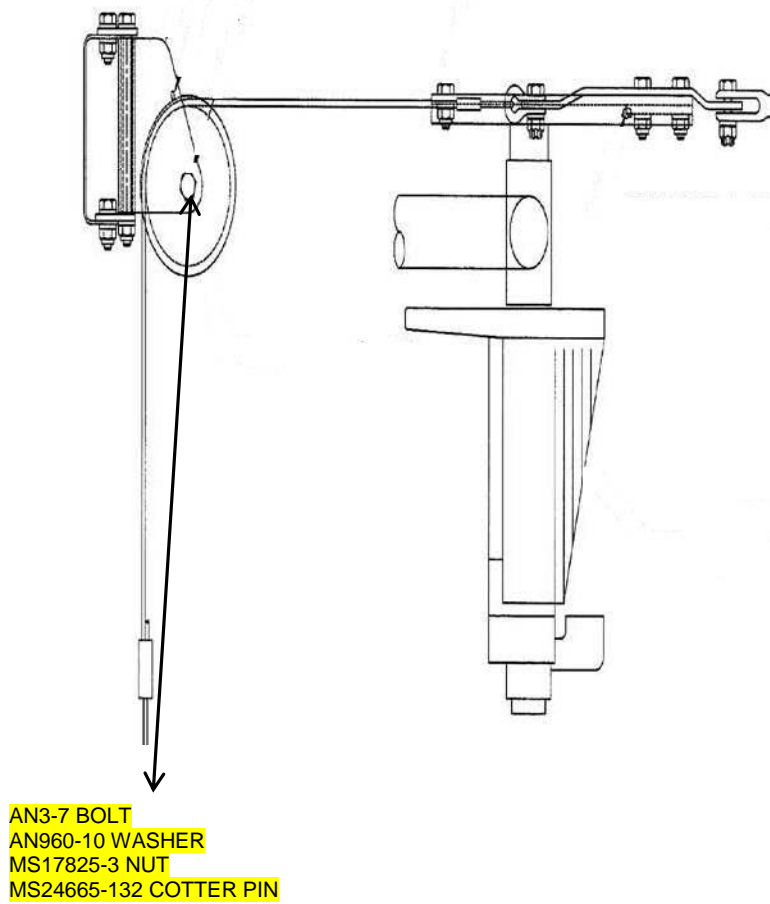
**FIGURE 58-16**

***VIEW LOOKING INBOARD FROM L/H SIDE PULLEY DETAILS  
T660 DUAL COCKPIT DUAL CONTROL ONLY  
SAME AS FIGURE 58-13 EXCEPT AS SHOWN***



**FIGURE 58-17**

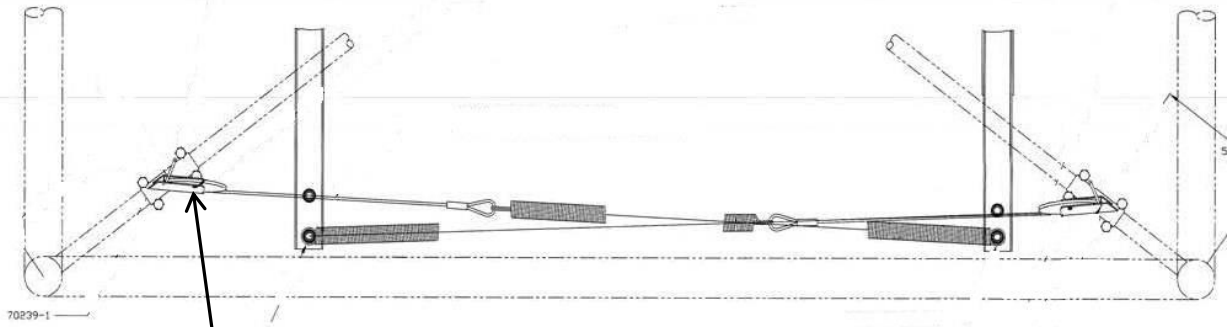
**VIEW LOOKING INBOARD FROM L/H SIDE FWD FUSELAGE  
RIGHT SIDE OPPOSITE  
TYPICAL ALL MODELS EXCEPT**



**FIGURE 58-18**

***VIEW LOOKING DOWN FROM R/H SIDE FWD FUSELAGE  
LEFT SIDE OPPOSITE  
TYPICAL ALL MODELS***

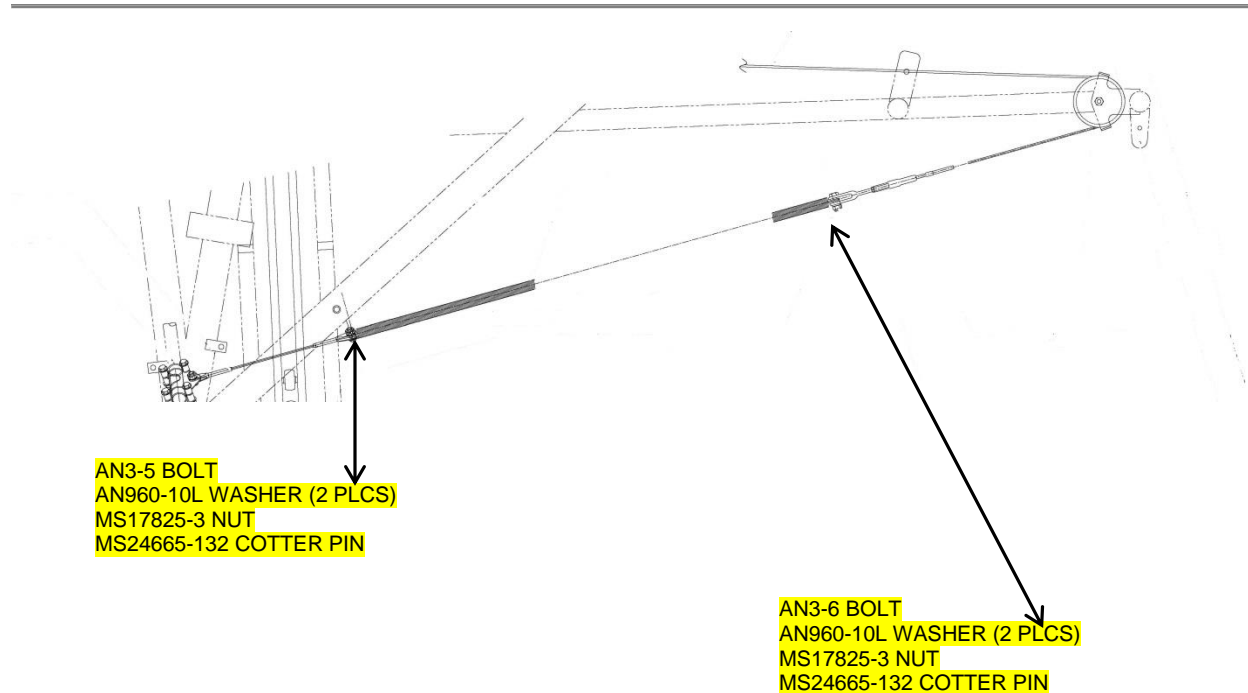




- PULLEY
- AN3-7 BOLT
- AN960-10 WASHER
- MS17825-3 NUT
- MS24665-132 COTTER PIN

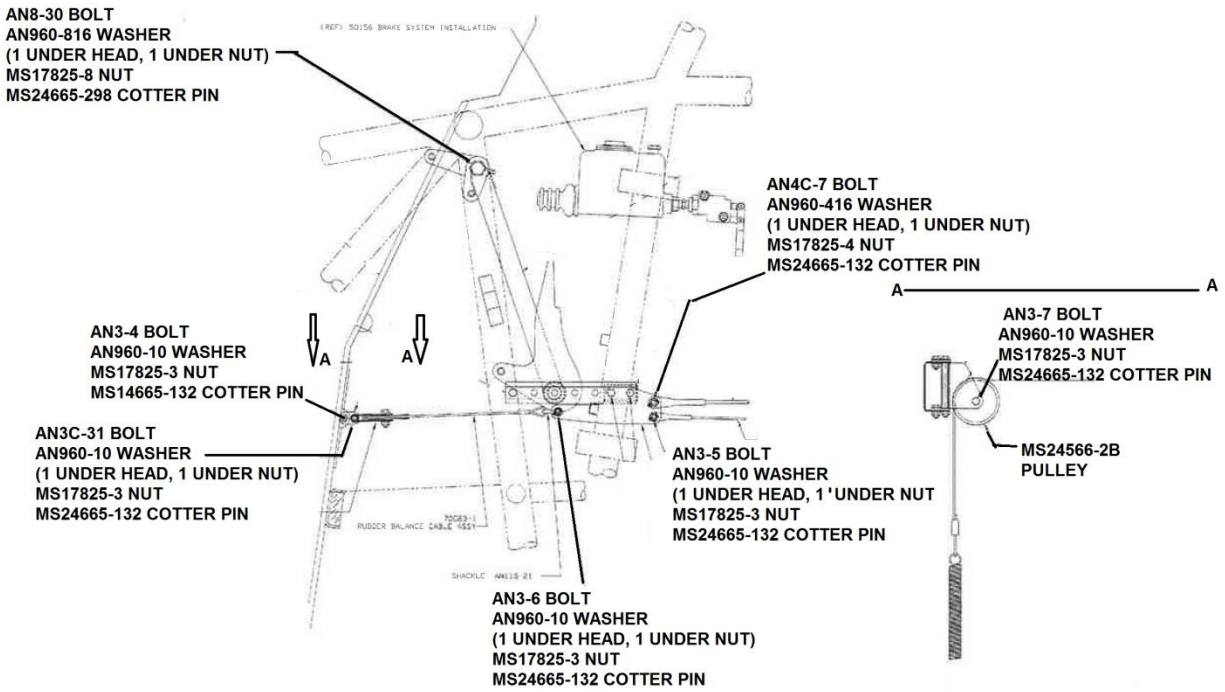
**FIGURE 58-19**

***VIEW BENEATH COCKPIT FLOOR LOOKING FWD  
TYPICAL ALL MODELS EXCEPT H80***



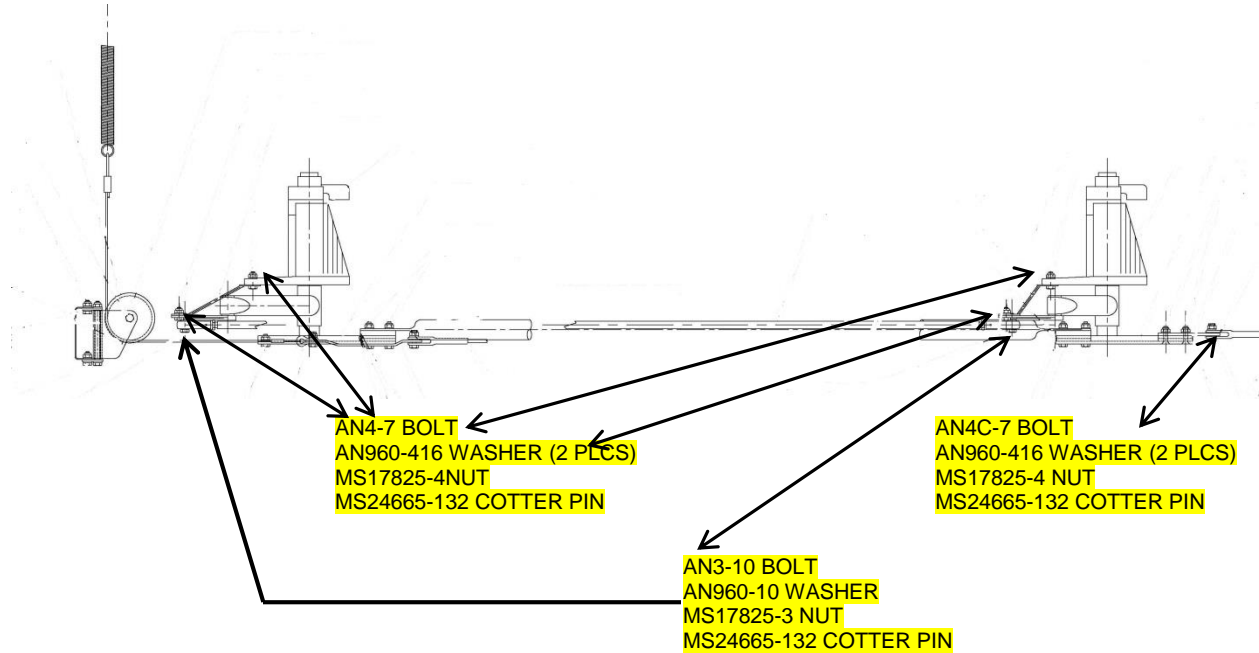
**FIGURE 58-20**

**VIEW LOOKING INBD FROM LEFT HAND SIDE OF COCKPIT  
LEFT SIDE SHOWN RIGHT SIDE OPPOSITE  
BENEATH THE COCKPIT  
TYPICAL MODEL H80 SINGLE, DUAL COCKPIT SINGLE CONTROL  
AND DUAL COCKPIT DUAL CONTROL**



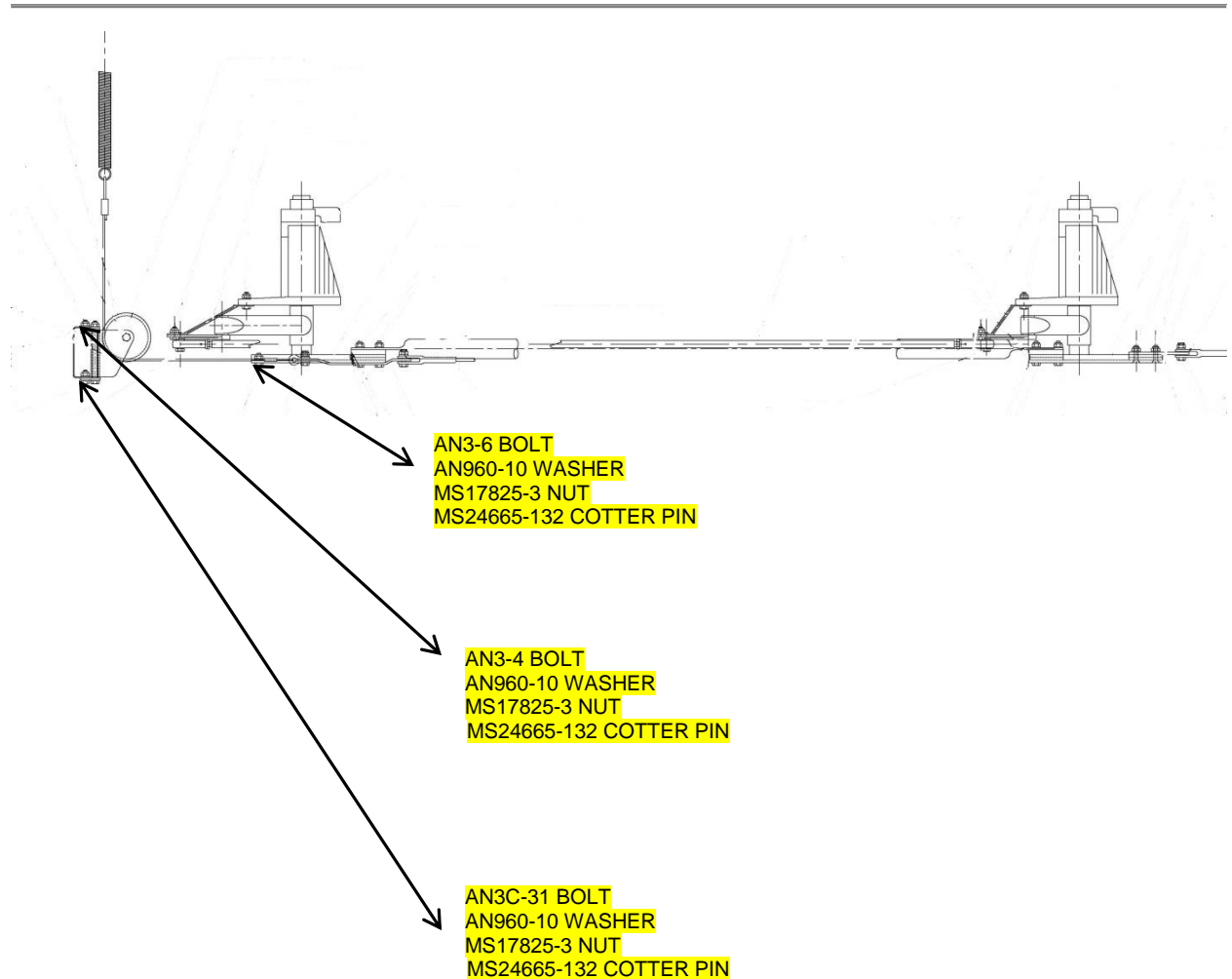
**FIGURE 58-21**

**VIEW LOOKING INBOARD  
LEFT SIDE SHOWN RIGHT SIDE OPPOSITE  
TYPICAL ALL SINGLE COCKPIT AND DUAL COCKPIT SINGLE  
CONTROL MODELS**



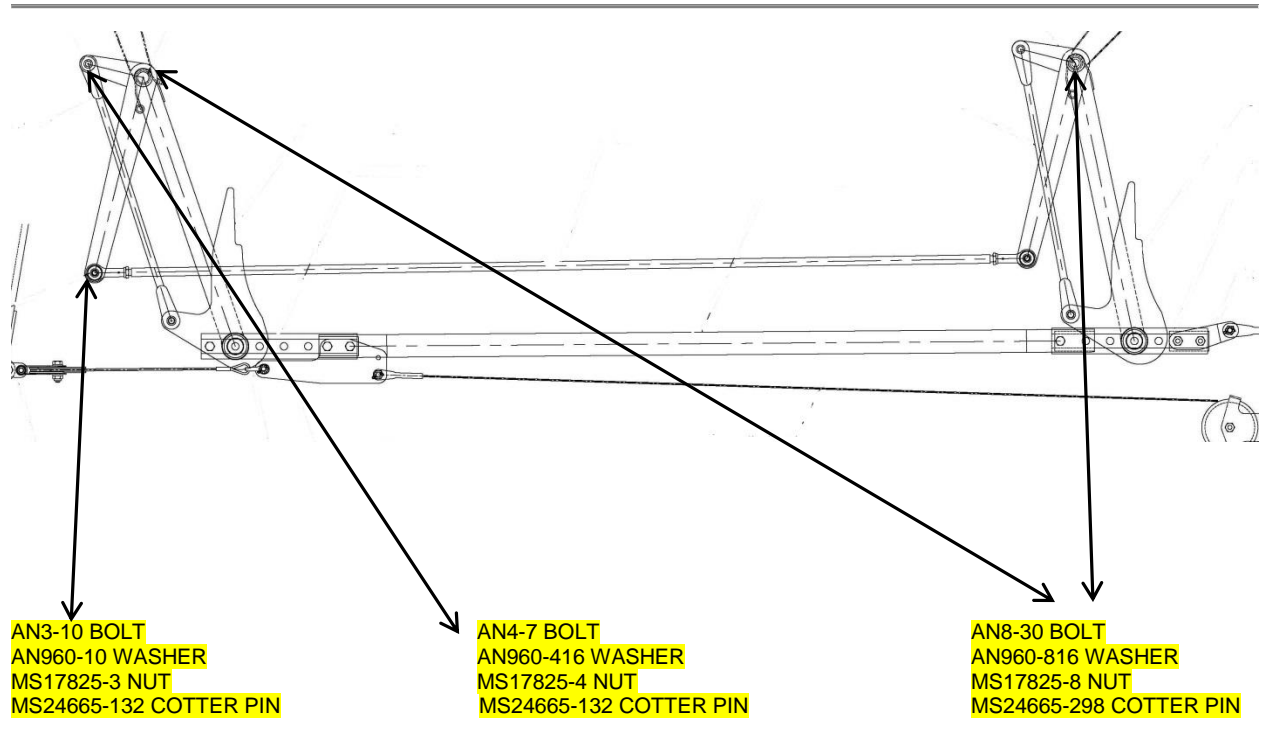
**FIGURE 58-22**

***VIEW INSIDE COCKPIT LOOKING DOWN  
LEFT SIDE SHOWN RIGHT SIDE OPPOSITE  
TYPICAL ALL DUAL COCKPIT DUAL CONTROL MODELS***



**FIGURE 58-23**

***VIEW INSIDE COCKPIT LOOKING DOWN  
LEFT SIDE SHOWN RIGHT SIDE OPPOSITE  
TYPICAL ALL DUAL COCKPIT/DUAL CONTROL MODELS***

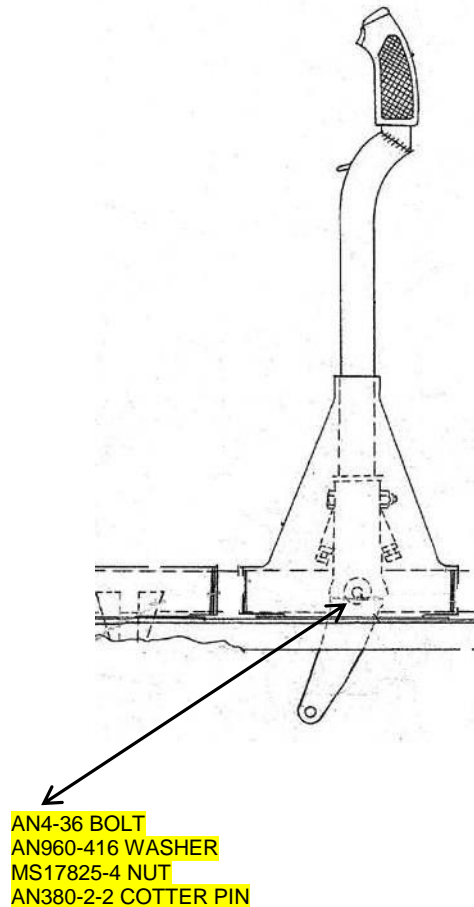


**FIGURE 58-24**

**VIEW LOOKING INBOARD FROM L/H SIDE FWD FUSELAGE  
RIGHT SIDE OPPOSITE  
TYPICAL ALL DUAL COCKPIT/DUAL CONTROL MODELS**

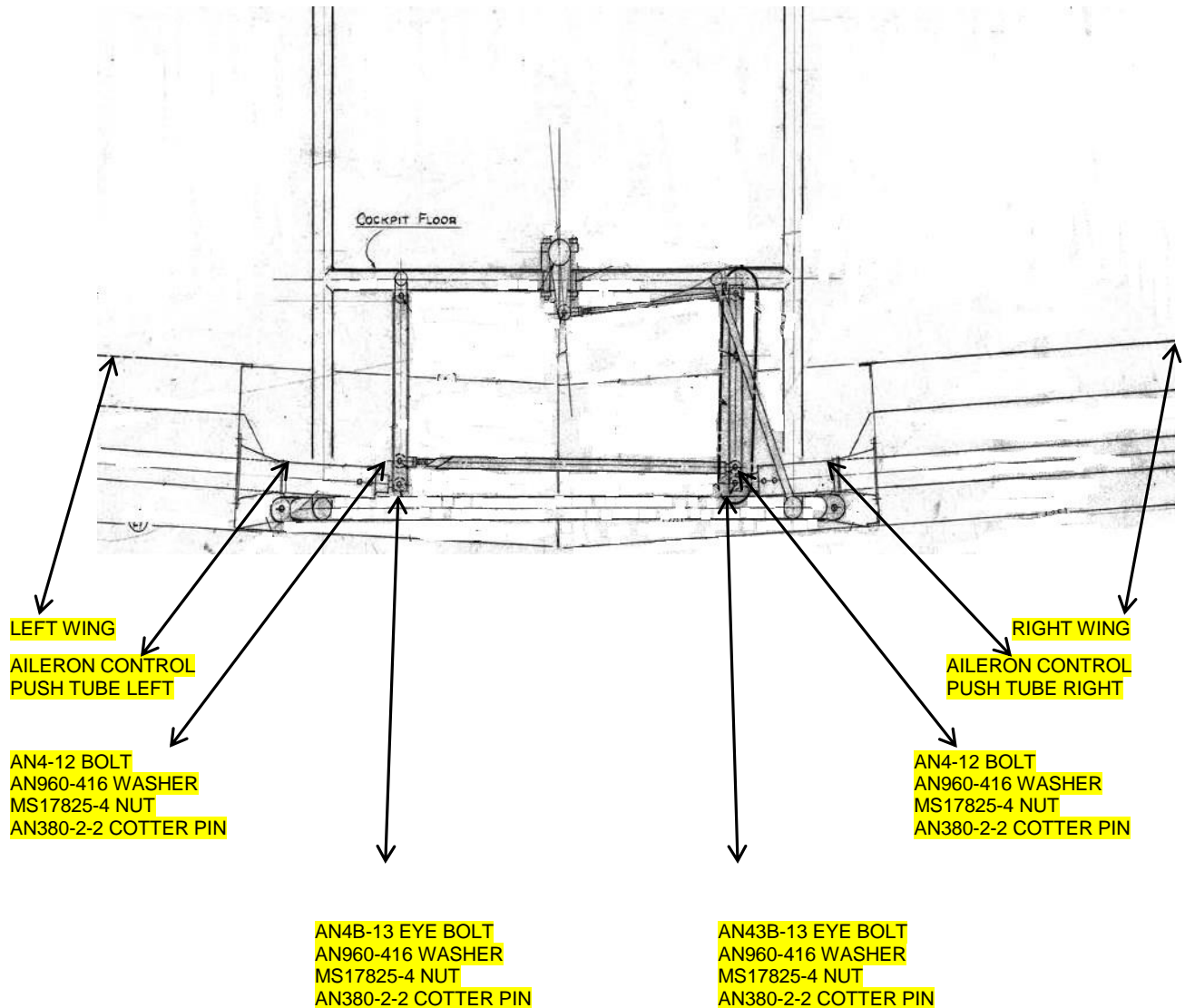
### 6.3 AILERON CONTROL SYSTEM

Inspect the applicable hardware using the diagrams below and replace existing hardware if it does not conform to the highlighted information.



**FIGURE 58-25**

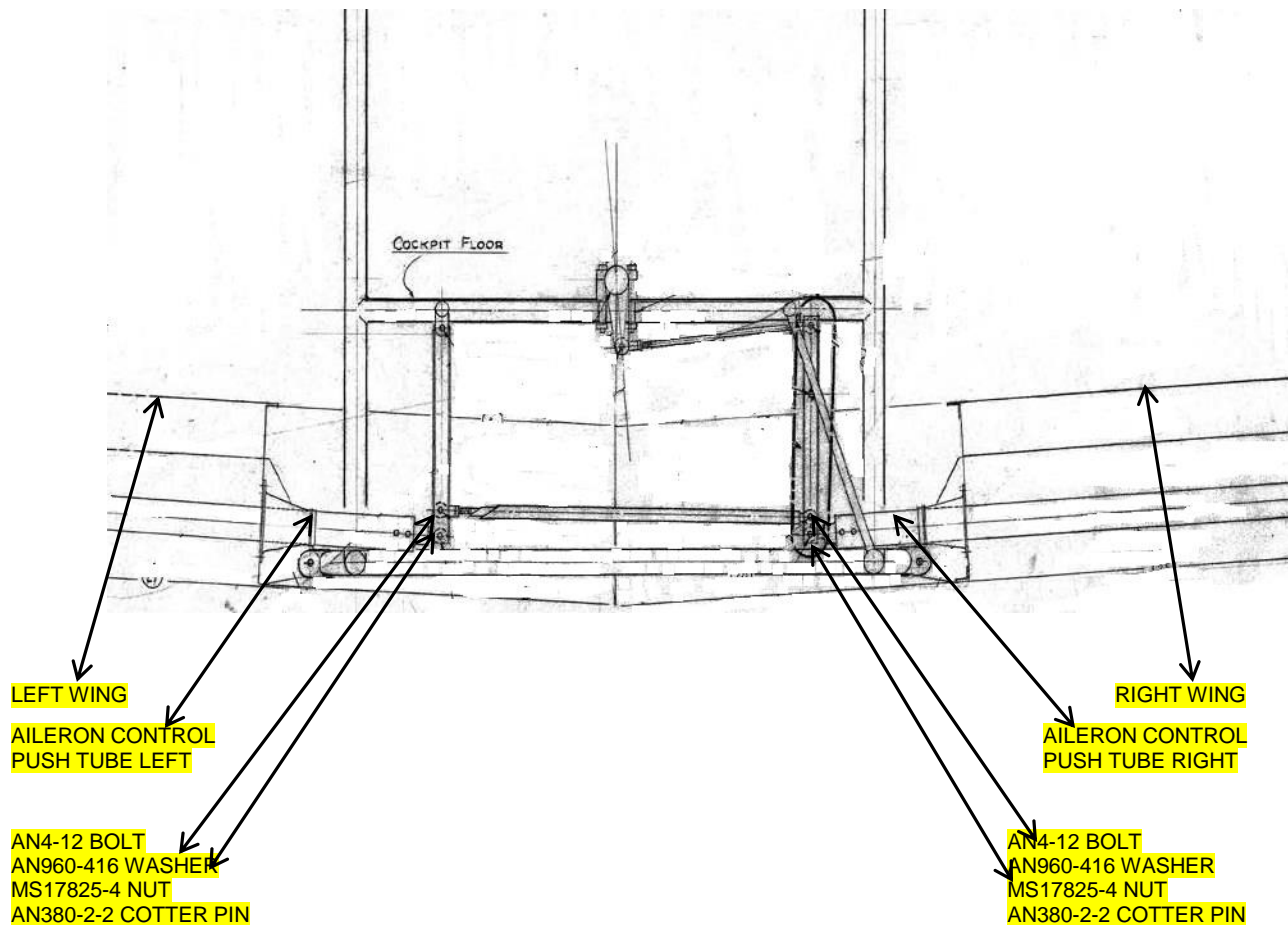
***VIEW LOOKING INBOARD FROM L/H SIDE FWD FUSELAGE  
TYPICAL ALL MODELS EXCEPT***



**FIGURE 58-26**

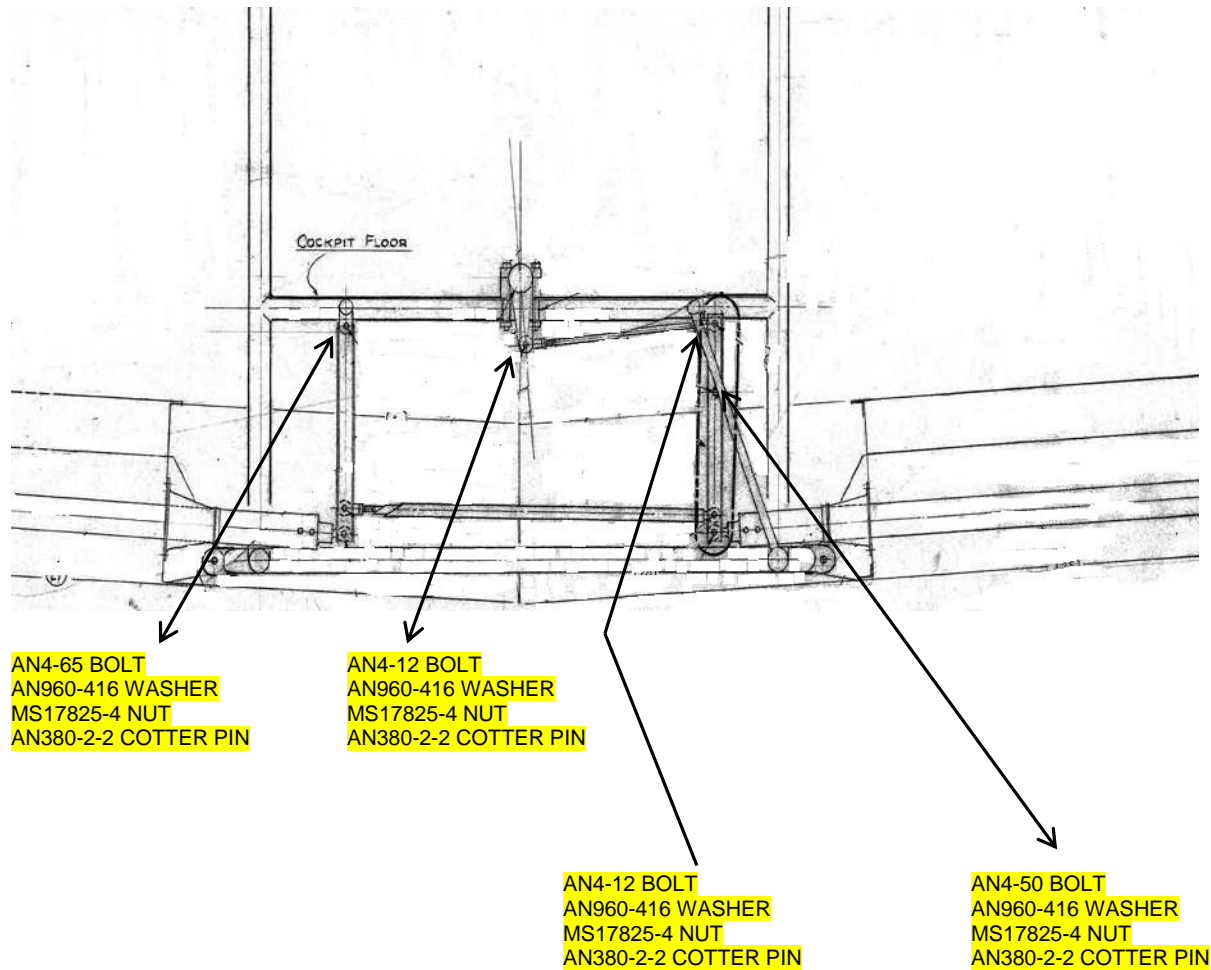
**VIEW LOOKING FWD FROM BENEATH THE COCKPIT  
TYPICAL ALL MODELS EXCEPT H80 AND T660**





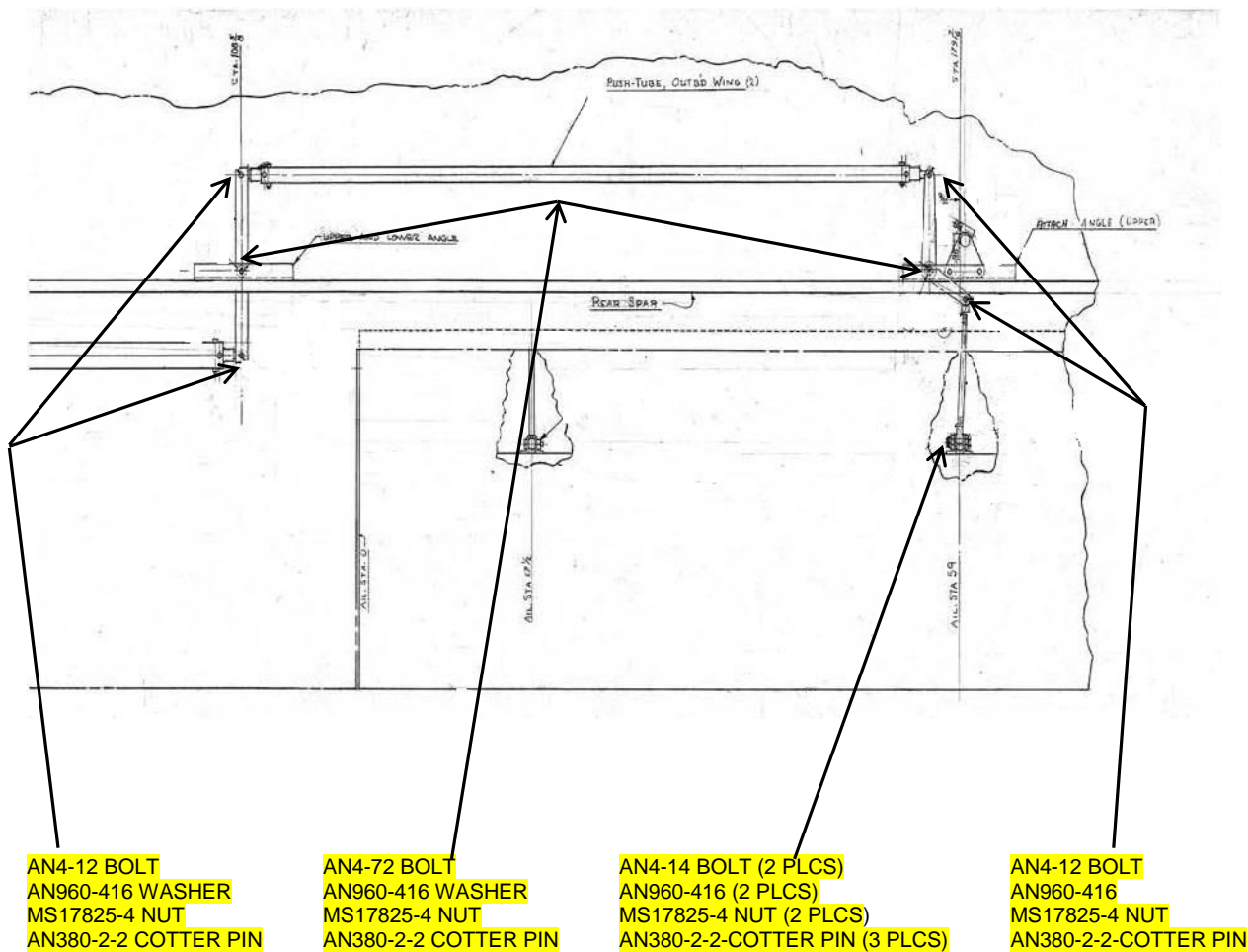
**FIGURE 58-27**

***VIEW LOOKING FWD FROM BENEATH THE COCKPIT  
TYPICAL H80***



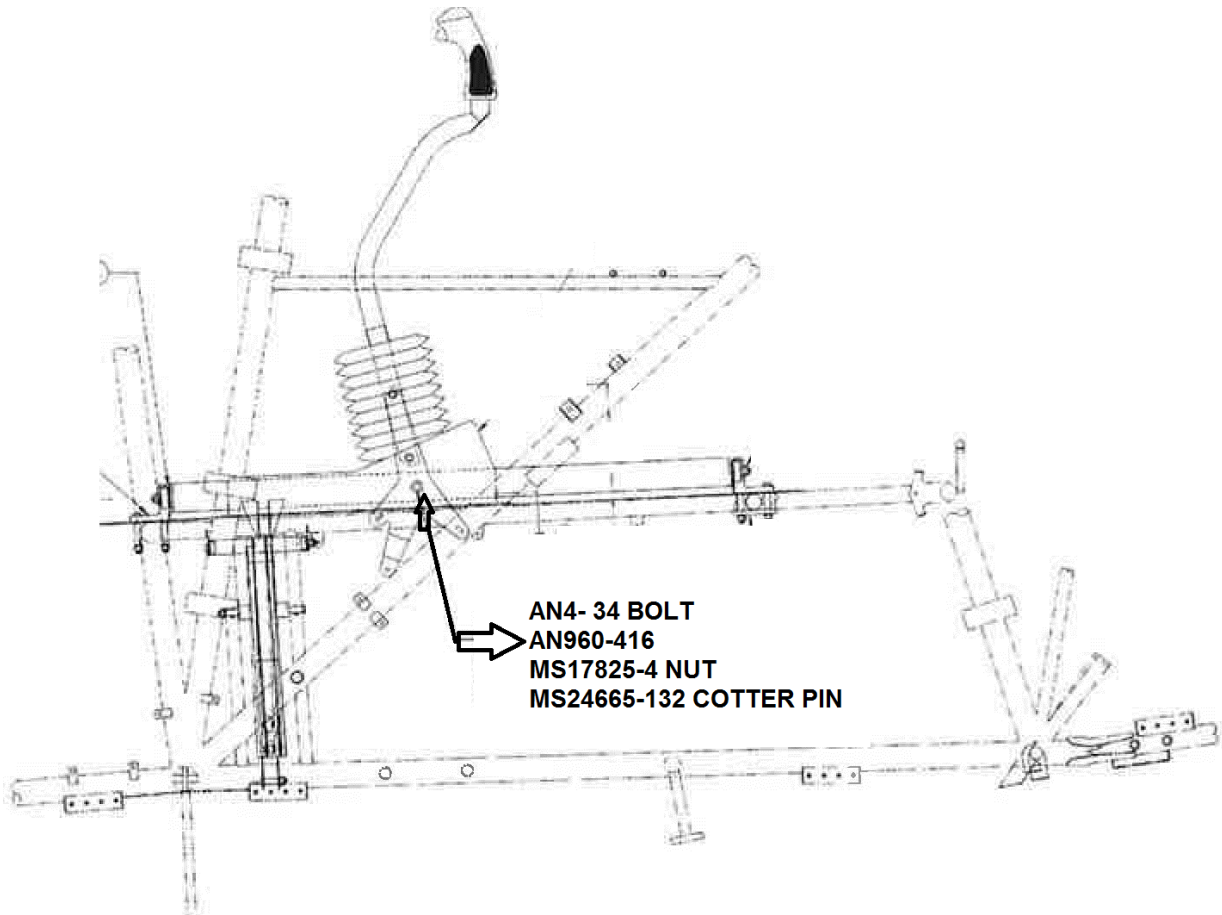
**FIGURE 58-28**

***VIEW LOOKING FWD FROM BENEATH THE COCKPIT  
TYPICAL ALL MODELS***



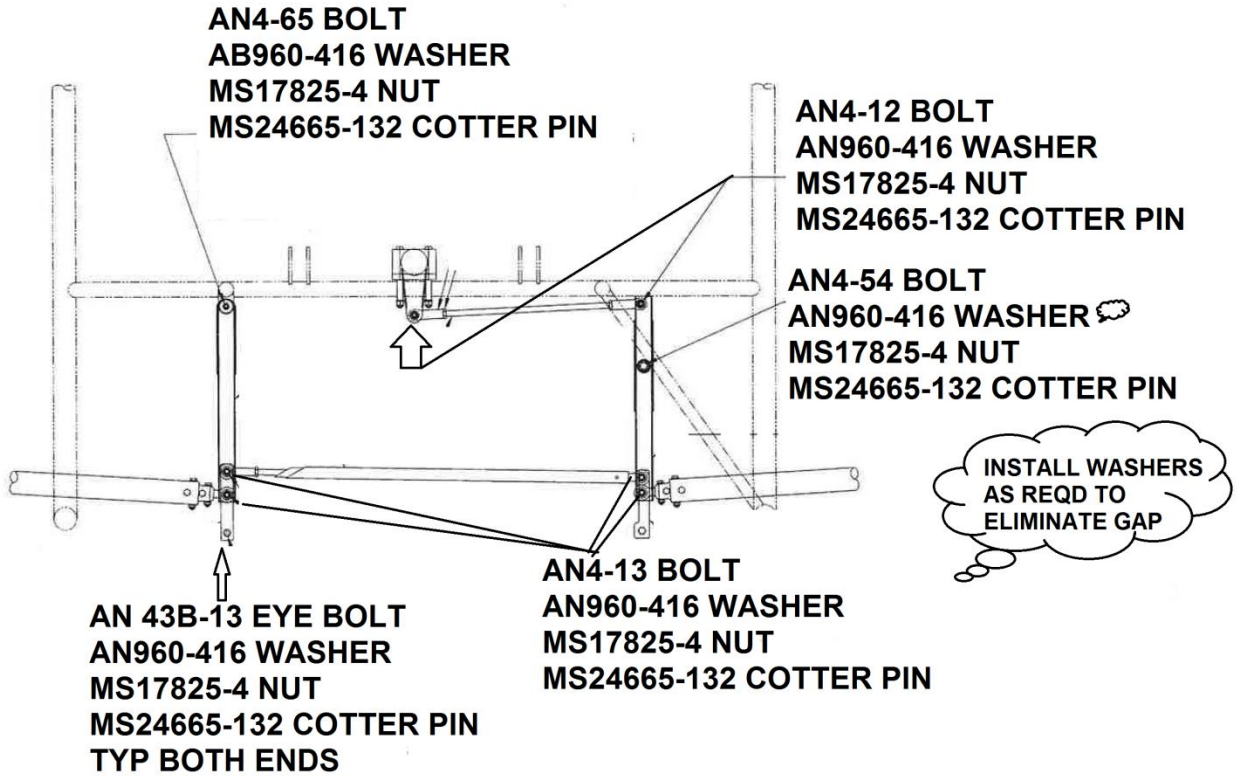
**FIGURE 58-29**

**TOP VIEW OF RIGHT AILERON AND WING  
TYPICAL ALL MODELS EXCEPT T660**



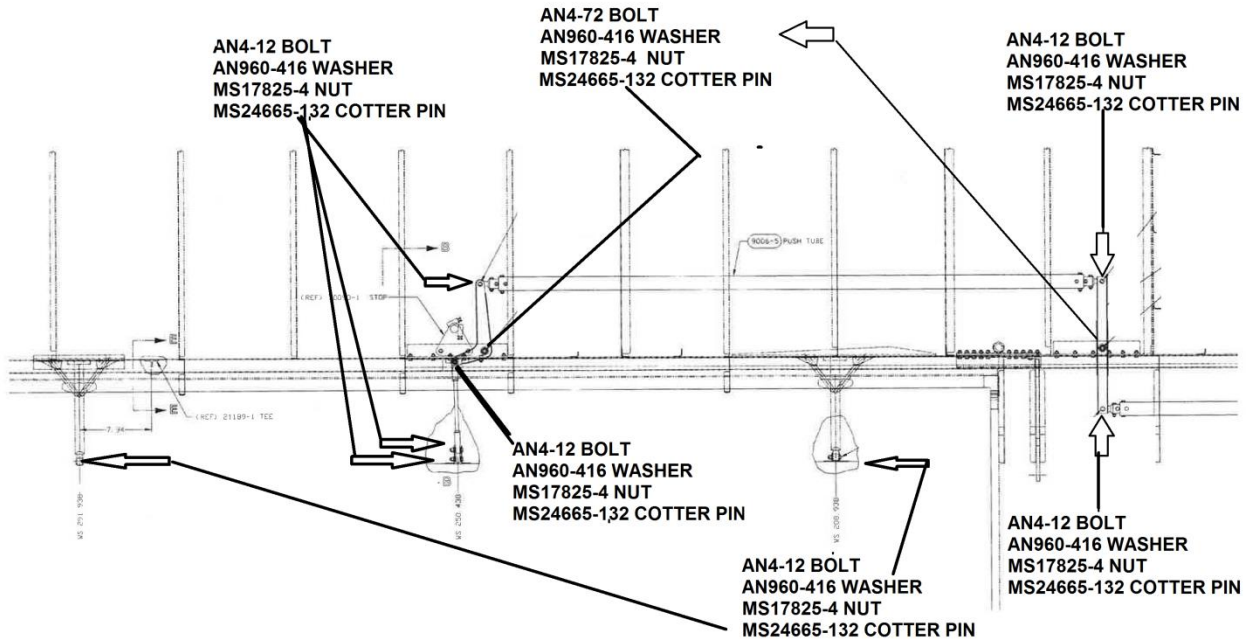
**FIGURE 58-30**

***VIEW LOOKING INBOARD FROM L/H SIDE FWD FUSELAGE  
T660  
2 PLACES FOR DUAL COCKPIT DUAL CONTROL***



**FIGURE 58-31**

**VIEW LOOKING FWD FROM BENEATH THE COCKPIT  
T660**



**FIGURE 58-32**

**TOP VIEW OF LEFT AILERON AND WING  
T660**

## 6.4 REPLACE SKINS

The estimated time to replace skins is 2 hours.

## 7. PARTS REQUIRED

BOLT	QUANTITY
AN3-4	14
AN3-5	7
AN3-6	7
AN3-7	6
AN3-10	6
AN3C-31	2
AN4C-7	7
AN4-12	10
AN4-13	9
AN4-14	2
AN4-35	2
AN4-43	4
AN4-36	1
AN4-50	1
AN4-53	1
AN4-65	1
AN4-72	2
AN8-30	6
AN43B-13	2

WASHER	QUANTITY
AN960-10	48
AN960C-10	4
AN960-416	49
AN960-416L	8
AN960C-416	4
AN960-816	6
NUT	QUANTITY
MS17825-3	32
MS17825-4	51
MS17825-8	6
COTTER PIN	QUANTITY
AN380-2-2	18
MS24665-132	93
MS24665-298	6

## 8. RECORD OF COMPLIANCE

Make appropriate entry in airplane maintenance records as follows:

“Thrush Service Bulletin SB-AG-58 Rev. A complied with at \_\_\_\_\_ total  
hours on aircraft. Modification accomplished by:

\_\_\_\_\_.  
(NAME & CERTIFICATE #)

(DATE)

## 9. RESPONSE CARD

The final step in compliance with this Service Bulletin is to complete and return the compliance card on the next page. It may be mailed, Faxed, or scanned and e-mailed.

FAX to: Ed Rusk 229-439-9790

E-mail to: Ed Rusk [erusk@thrushaircraft.com](mailto:erusk@thrushaircraft.com)



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**Service Bulletin SB-AG-58 Rev. A Compliance Report**

Aircraft S/N:	_____	Aircraft Owner:	_____
Aircraft Registration #	_____	Address of Owner:	_____
Airframe total time:	_____	City & State:	_____
Engine total time:	_____	Physical location:	_____
Date of Compliance	_____		_____
Complied with by:	_____	Certificate #:	_____
Signature:	_____		

**PLEASE RETURN THIS REPORT ONLY AFTER REPAIR IS MADE**

This response card may be mailed, Faxed to (229) 439-9790, or e-mailed to [erusk@thrushaircraft.com](mailto:erusk@thrushaircraft.com).

Fold, Tape & Mail (Do Not Staple) **Don't forget postage**

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Return Address

**THRUSH AIRCRAFT INC.**  
Attn: Ed Rusk  
300 Old Pretoria Road  
Albany, Ga 31721