



AIRWORTHINESS BULLETIN

Cessna 177 Stabilator
Balance Weight Arm - Bracket

AWB 27-014 **Issue :** 1
Date : 17 August 2012

1. Applicability

All Cessna 177 Series aeroplanes with aluminium stabilator balance weight arm brackets installed.

2. Purpose

Alert operators and maintainers regarding cracking in the aluminium balance weight arm attachment brackets. Failure of the stabilator balance weight brackets could lead to loss of control.

3. Background

CASA has received a defect report of cracking in all four of the aluminium stabilator balance weight attachment brackets.

Cessna issued Single Engine Service Bulletin SEB 89-1 following reports of small cracks in the aluminium brackets in a limited number of aircraft owned by one operator in 1989.

Apparently, reports of cracking increased following the issue of SEB 89-1, which identified the possibility of cracking at 2000 hours flight time since new.

Cessna advanced SEB 89-1 to Revision 3, reducing the initial crack inspection threshold from 5000 hours to 2000 hours and maintaining the 200 hour/12 month inspection until replaced with stronger steel brackets which are listed in the SEB.

4. References

Cessna Single Engine Service Bulletin SEB 89-1 Rev. 3 (Attached)

5. Recommendations

CASA strongly recommends that Operators:

1. Determine if, where aluminium brackets are installed, that they are inspected in accordance with the requirements of SEB 89-1 Rev.3 (or later revision).
2. Consider replacing the aluminium stabilator balance weight brackets with steel brackets.

6. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link e-mail address:

AirworthinessBulletin@casa.gov.au

or in writing, to:

Airworthiness & Engineering Branch
Civil Aviation Safety Authority
GPO Box 2005, Canberra, ACT, 2601

Service Bulletin

R December 21, 1990
R

SEB89-1
Revision 3

TITLE

STABILATOR BALANCE WEIGHT ARM BRACKET INSPECTION/REPLACEMENT

EFFECTIVITY

1968 thru 1978 Cardinal and Cardinal RG Series Airplanes

MODEL

SERIAL NUMBERS

177	17700001 thru 17702752
177RG	177RG0001 thru 177RG1366
F177RG	F177RG0001 thru F177RG0177

PURPOSE

Service experience indicates the possibility of crack(s) developing in the aluminum stabilator balance weight arm brackets at approximately 2000 hours. To assist in preventing loss of the control surface balance weight, it is recommended the brackets be inspected and replaced with new steel brackets as detailed in this Service Bulletin.

COMPLIANCE

Recommended, the aluminum 1732010-3 and -4 and 1732031-3 and -4 brackets should be inspected initially at 2000 hours bracket time in service or within the next 200 hours of operation for airplanes which have accumulated over 2000 hours on the brackets.

This inspection should be repeated every 200 hours or annually until the aluminum brackets are replaced with 1732063-1 and -2 and 1732064-1 and -2 steel brackets.

- R **NOTE:** Compliance with Revision 1, and Revision 2 of this Service Bulletin is required for all airplanes.
- R If SEB89-1 Revision 1 or SEB89-1 Revision 2 has previously been accomplished, compliance
- R with SEB89-1 Revision 3 is not required if the correct part numbers were previously installed
- R as shown in Revision 3.

Orig. Issue: Feb. 3, 1989

Rev. 1 Issue: Oct. 12, 1990

R Rev. 2 Issue: Oct. 26., 1990

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To obtain satisfactory results, procedures specified in this publication must be accomplished in accordance with accepted methods and prevailing government regulations. The Cessna Aircraft Company cannot be responsible for the quality of work performed in accomplishing the requirements of this publication.

The Cessna Aircraft Company, Customer Services, P.O. Box 7704, Wichita, Kansas 67277, U.S.A. (316) 946-7550, Telex 4319022, Facsimile (316) 942-9006

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Revision Transmittal

December 21, 1990

TO: CESSNA DISTRIBUTORS AND SINGLE ENGINE SERVICE STATIONS

SUBJECT: Service Bulletin SEB89-1 Revision 3, Stabilator Balance Weight Arm Bracket Inspection/Replacement.

REASON FOR REVISION

To correct various part number callouts within the illustrations of the Attachment Instructions.
Miscellaneous changes to other sections as required.

REQUIRED ACTION

Please replace your copy of SEB89-1 Revision 2 with the attached copy of SEB89-1 Revision 3 which is printed in its entirety.

NOTE: If SEB89-1 Revision 1 or Revision 2 has previously been accomplished, compliance with SEB89-1 Revision 3 is not required if the correct part numbers were previously installed as shown in Revision 3.

LOG OF EFFECTIVE PAGES

Page No.	Date
1	December 21, 1990
2	December 21, 1990
3	December 21, 1990

Page 1 of 1

APPROVAL

FAA approval has been obtained on technical data in this publication that affects airplane type design.

For Reims Aviation airplanes: DGAC approval has been obtained on technical data in this publication that affects airplane type design.

MAN-HOURS

Estimated 20.0 man-hours per airplane.

MATERIAL

If required, the following parts are available from the Cessna Supply Division thru an appropriate Cessna Service Station for the suggested list price shown.

Eddy current inspection materials are to be obtained locally.

PART NUMBER	DESCRIPTION	QTY./AIRPLANE	PRICE
HL18PB6-4	Bolt	8	\$.91 (PS) ea. MQ25
HL18PB6-5	Bolt	8	\$.68 (PS) ea.
HL70-6	Collar	16	\$.36 (PS) ea. MQ50
MS20470AD5-7	Rivet	4	\$ 14.80 (PS) lb.
MS21042L4	Nut	1	\$.21 (PS) ea. MQ100
MS21042L5	Nut	1	\$.84 (PS) ea. MQ25
1732063-1	Bracket-LH	1	\$ 49.80 (S) ea.
1732063-2	Bracket-RH	1	\$ 49.80 (S) ea.
1732064-1	Bracket-LH	1	\$ 49.80 (S) ea.
1732064-2	Bracket-RH	1	\$ 49.80 (S) ea.

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

ACCOMPLISHMENT INSTRUCTIONS

R Revised Stabilator Balance Weight Arm Brackets Inspection And Replacement instructions are attached.

CREDIT

Not applicable.

OWNER NOTIFICATION

- A. On February 17, 1989, the following Owner Advisory message was sent to applicable owners of record in SEB89-1A.

An inspection of the stabilator balance weight arm brackets should be accomplished on your airplane to assist in preventing loss of the control surface balance weight.

Compliance is recommended, should be accomplished upon reaching 5000 hours time in service on the brackets and each 200 hours thereafter until the brackets are replaced.

Please contact your Cessna Single Engine Service Station and arrange to have this inspection accomplished when due.

- B. On October 26, 1990, the following Owner Advisory message was sent to applicable owners of record in SEB89-1AR1.

An inspection of the aluminum stabilator balance weight arm brackets should be accomplished on your airplane to assist in preventing loss of the control surface balance weight.

Compliance is recommended, should be accomplished upon reaching 2000 hours time in service on the brackets and each 200 hours or annually thereafter until the aluminum brackets are replaced with brackets made from steel.

NOTE: Compliance with Service Bulletin SEB89-1 Revision 1 is required for all airplanes.

Please contact your Cessna Single Engine Service Station for details and arrange to have this inspection accomplished on your airplane.

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TITLE 177 STABILATOR BALANCE WEIGHT ARM BRACKETS INSPECTION AND REPLACEMENT**EFFECTIVITY****MODEL(S)****SERIAL NUMBERS**177
177RG
F177RG17700001 thru 17702752
177RG0001 thru 177RG1366
F177RG0001 thru F177RG0177**DESCRIPTION**

The following procedure provides instructions to inspect and replace stabilator balance weight arm brackets.

APPROVAL

FAA approval has been obtained on technical data in this publication that affects airplane type design.

For Reims Aviation airplanes: DGAC approval has been obtained on technical data in this publication that affects airplane type design.

CHANGE IN WEIGHT AND BALANCE

WEIGHT CHANGE Negligible

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To obtain satisfactory results, procedures specified in this publication must be accomplished in accordance with accepted industry maintenance practices and prevailing government regulations. The Cessna Aircraft Company is not responsible for the quality of work performed in complying with the requirements herein.

The Cessna Aircraft Company, Aircraft Marketing Division Customer Services, P.O. Box 7704, Wichita, Kansas 67277, U.S.A. (316) 946-7550, Telex 4319022, Telefax (316) 942-9006

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ATTACHMENT TO SERVICE BULLETIN

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MATERIAL INFORMATION

PART NUMBER	QUANTITY	DESCRIPTION
HL18PB6-4	8	Bolt
HL18PB6-5	8	Bolt
HL70-6	16	Collar
MS20470AD5-7	4	Rivet
MS21042L4	1	Nut
MS21042L5	1	Nut
1732063-1	1	Bracket-LH
1732063-2	1	Bracket-RH
1732064-1	1	Bracket-LH
1732064-2	1	Bracket-RH
	1	Instructions
Inspection Materials:		
EC-5000	1	Eddy Current Instrument
VM100PSS-3	1	Probe
		Parker Research Corp.
		Dunedin, Florida

NOTE: Equivalent substitutes may be used for inspection items listed above.

ACCOMPLISHMENT INSTRUCTIONS

- A. Stabilator balance weight arm brackets inspection and replacement.
1. Remove stabilator (1) from airplane per appropriate Service Manual (refer to Figure 1, Sheet 1).
 2. Remove balance arm (3) from stabilator by removing bolts, washers and nuts (4 & 10), retain balance arm, bolts and washers, discard nuts (refer to Figure 1, Sheets 2 & 3).
 3. Visually inspect RH & LH brackets (5 & 11) for cracks, especially near the radius under the bolt hole. If no cracks are visible, use Eddy Current inspection to verify no small cracks have started.
 4. If no cracks are detected, reinstall balance arm (3) on stabilator with retained hardware and new nuts. Reinstall stabilator and rerig control cables per appropriate Service Manual. Proceed to step B.
 5. If a crack or cracks are detected, proceed as follows.
 6. (Refer to Figure 1, Detail A, View B-B, C-C & D-D, Sheets 1 thru 4) With the balance arm removed, drill out existing rivets in location (7 & 12) on both RH & LH brackets (5). Remove and discard brackets.
 7. Drill out existing rivets in location (9) on both RH & LH brackets (11). Remove and discard brackets.

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8. Deburr and clean all holes.
 9. Place new RH bracket (11) in position and match existing holes in bulkhead (8). Match holes (7, 9 & 12) thru bracket (11) and cleco bracket in place.
 10. Place new LH bracket (11) in position, install bolt (10) thru LH bracket (11) and RH bracket (11) for proper alignment. Using existing holes in bulkhead (8), match holes (7 & 9) thru LH bracket (11) and cleco in place. Ream holes (12) to 0.1875 for Hi-Lock bolts.
 11. Deburr and clean holes reamed in Step 10.
 12. Secure brackets (11) using rivets (9) and Hi-Lock bolts and collars (12). Reverse Hi-Lock bolt head (14) as shown in View D-D, Sheet 4, to clear control arm attach bolt head (10).
 13. Repeat steps 9., 10., 11., & 12. For brackets (5) using Hi-Lock bolts (7) and reversing Hi-Lock fastener in the same location as the aft bracket (11) to clear forward control arm attach bolt head.
 14. With brackets (5 & 11) secured in place, install balance arm (3) and secure with retained bolts and washers and new nuts (4 & 10). Refinish area as required.
 15. Reinstall stabilator on airplane with retained hardware and rerig control cables per appropriate Service Manual.
- B. Make an entry in the airplane logbook stating compliance with this service bulletin and method of compliance.

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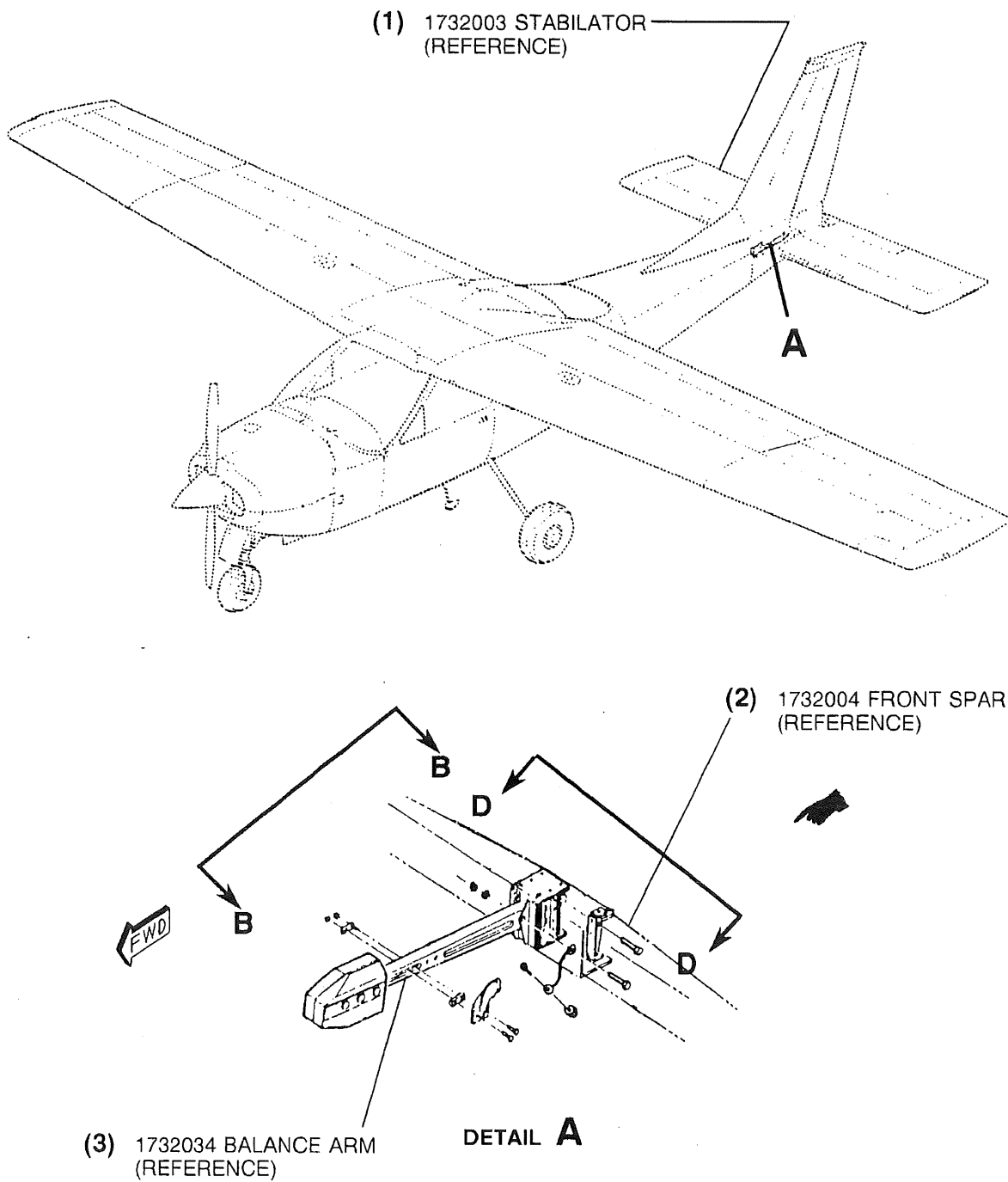
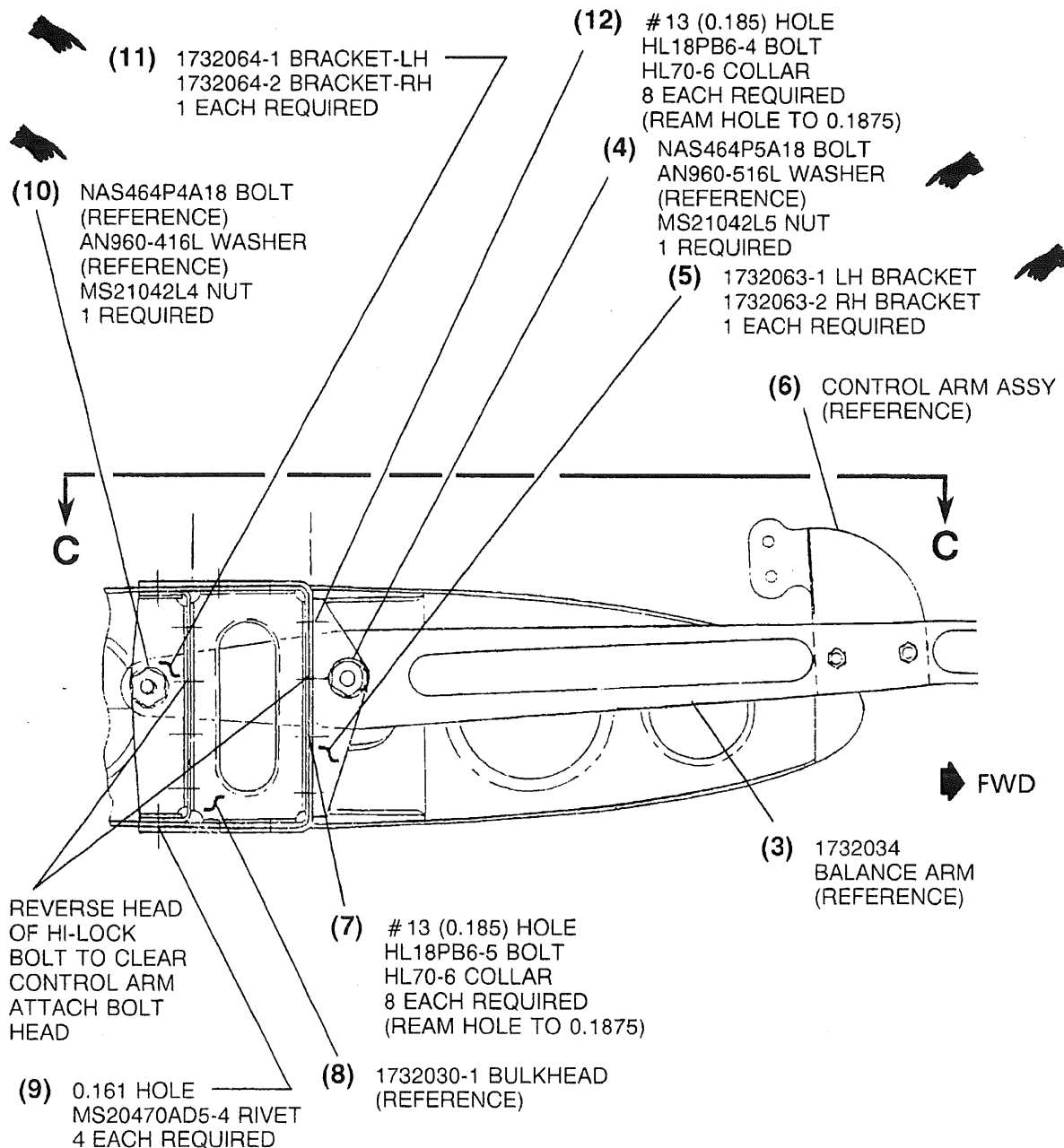


Figure 1. Stabilator Balance Weight Arm Brackets Inspection & Replacement (Sheet 1 of 4)

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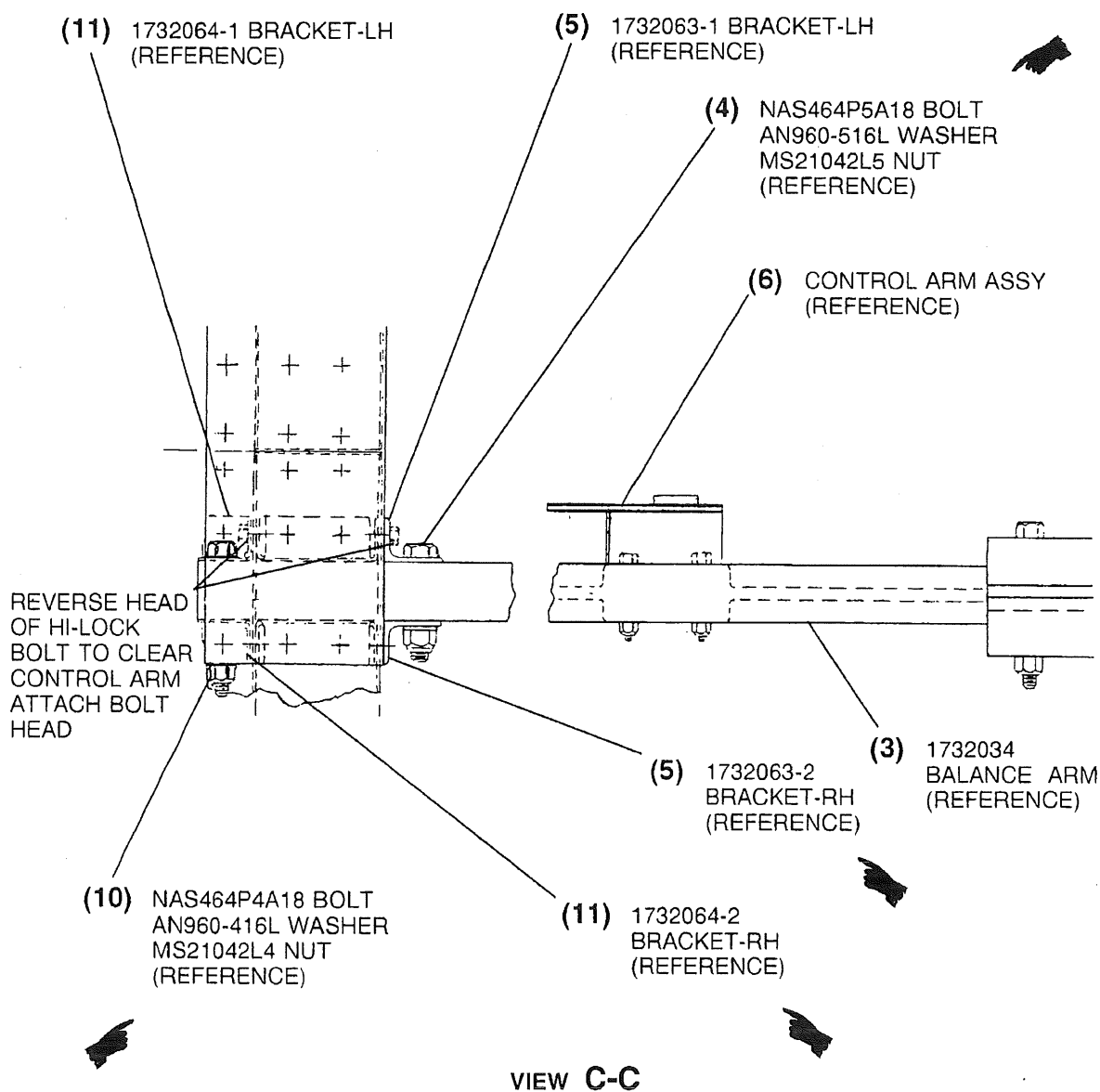
VIEW B-B

(VIEW LOOKING INBD FROM RH SIDE OF STABILATOR)

Figure 1. Stabilator Balance Weight Arm Brackets Inspection & Replacement (Sheet 2)

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(VIEW LOOKING DOWN ON BALANCE ARM ASSY.)

Figure 1. Stabilator Balance Weight Arm Brackets Inspection & Replacement (Sheet 3)

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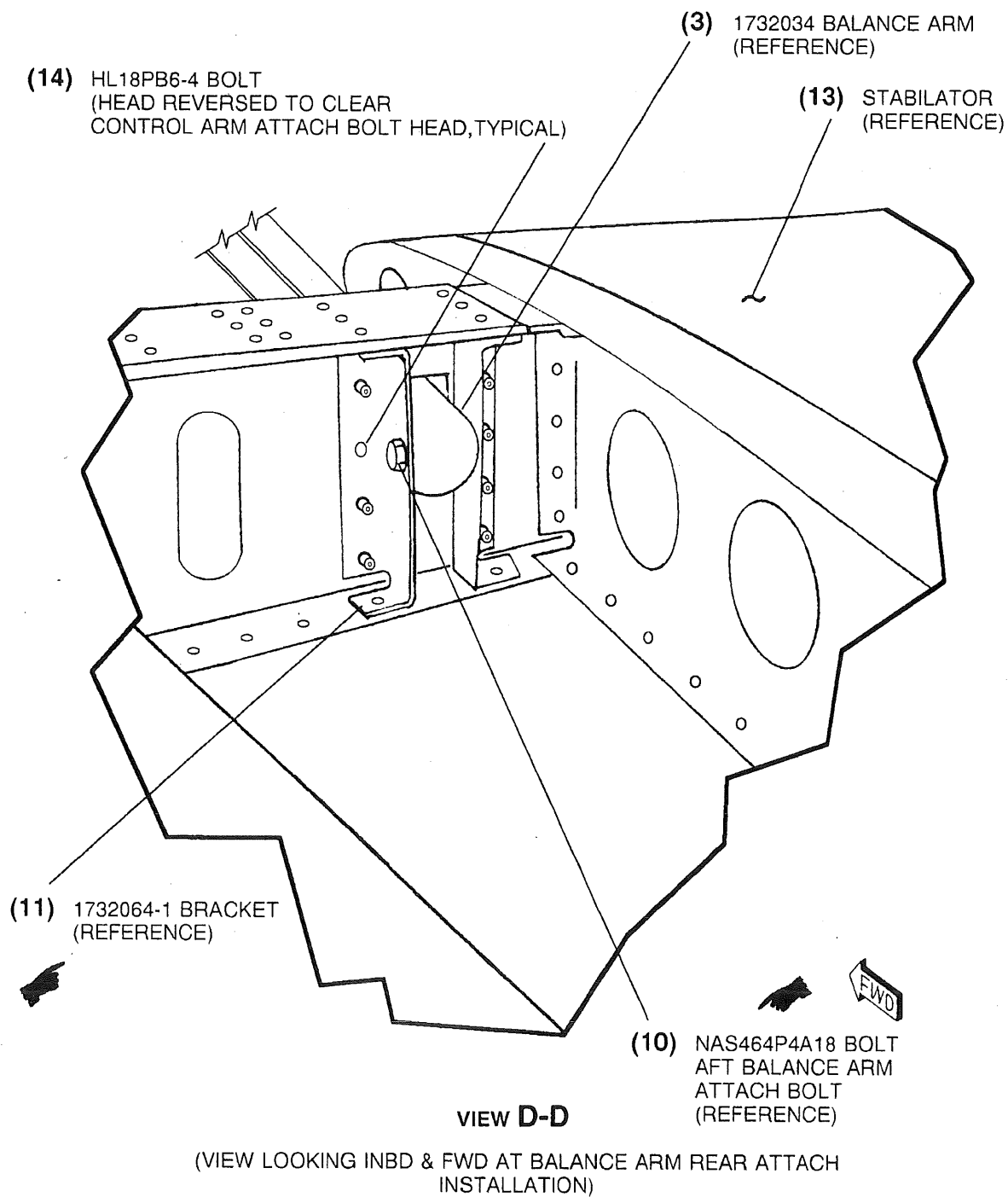


Figure 1. Stabilator Balance Weight Arm Brackets Inspection & Replacement (Sheet 4)