

CHAPTER 8

✓ BOOM ASSEMBLY

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Section 1

Forward Boom Assembly

Figures BA-1 & BA-2

NOTE: Position the boom tube (1) between two saw horses as shown in Figure BA-1. Note that there are two pre-drilled holes 3/16" on the top and bottom of the boom tube. Located between the fwd. wing channel and the center upright holes. If the OPTIONAL FLAP QUADRANT PLATE has been acquired, it will be attached here. Review the flap quadrant assembly instructions, Chapter 15, Section 1, Figure FQ-1.

1. Figure BA-2 ATTACHING THE WING CHANNELS TO THE BOOM TUBE

- a) Position the boom as pictured in Figure BA-2 and insert the two wing bushings (6) into the holes as shown. They will extend out from the boom.

- b) Begin with the forward folding wing channel (4) by placing three washers (3) on bolt (2). Referring to the figure for proper positioning, add the first folding channel (4) and the large plastic saddle (5) to the bolt. [Note that the forward folding channel (4) is stainless steel and is the channel for the wing folding system.] Insert the bolt through the wing bushing (6) extending from the boom. Add the second plastic saddle (5), the folding wing channel (4), two more washers (3) and secure with locknut (7).

- c) To complete the rear set of channels, place washer (3) on bolt (2). Referring to Figure BA-2 for proper positioning, add wing channel (8) and plastic saddle (5) to bolt. Insert bolt through the wing bushing (6) extending from the boom. Add the second plastic saddle (5) and wing channel (8), washer (3), and secure with locknut (7).

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Section 1

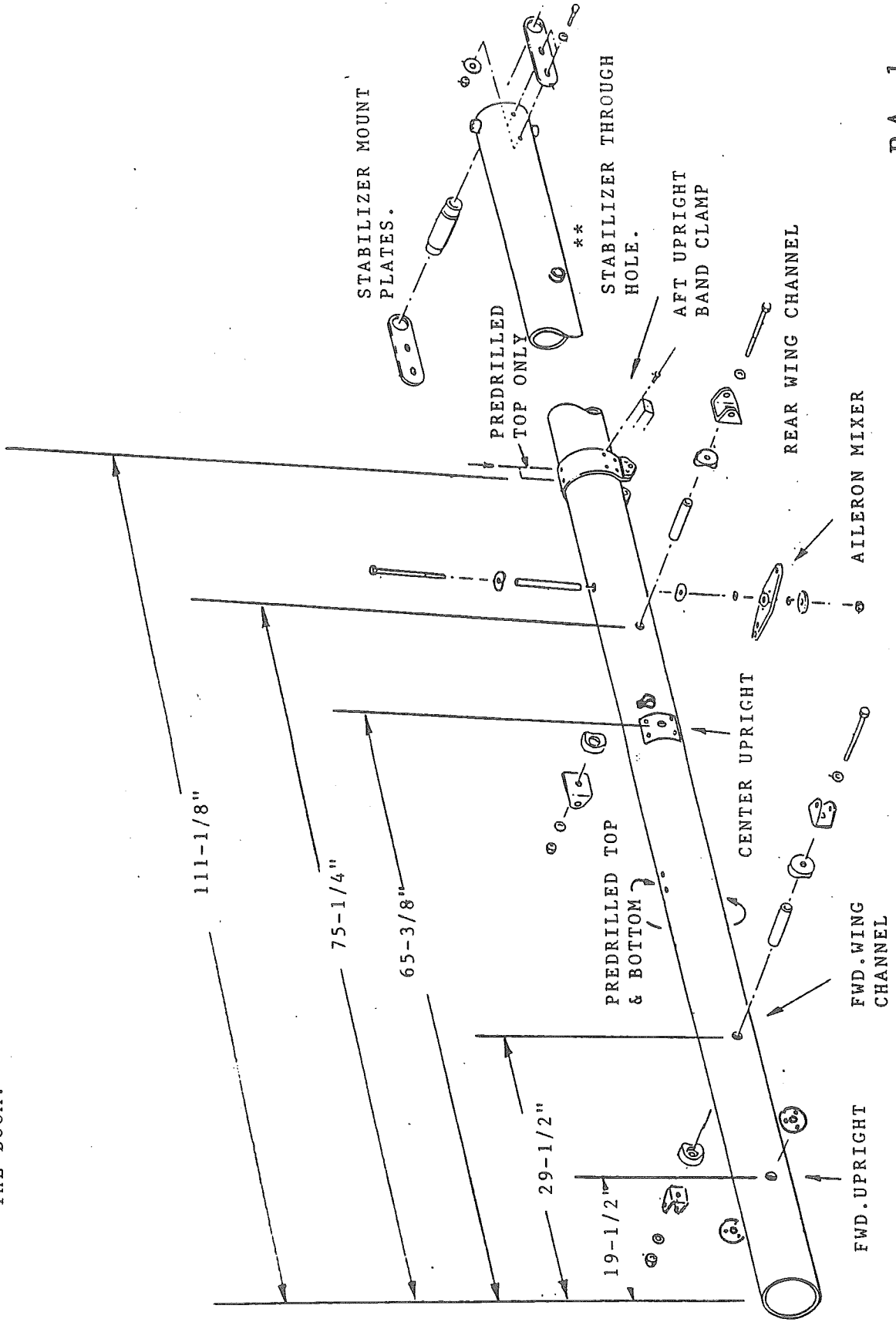
Forward Boom Assembly Parts List

Figures BA-1 & BA-2

INDEX#	PART #	QTY	DESCRIPTION
1.	B-280	1	BOOM TUBE
2.	AN5-65A	2	5/16" BOLT
3.	AN960-516	7	5/16" WASHER
4.	W-315	2	FOLDING CHANNEL
5.	B-17	4	5" RADIUS PLASTIC SADDLE
6.	B-96	2	7/16 WING BUSHING 5.7" LONG
7.	AN365-524	2	5/16" LOCKNUT
8.	B-12	2	WING CHANNEL

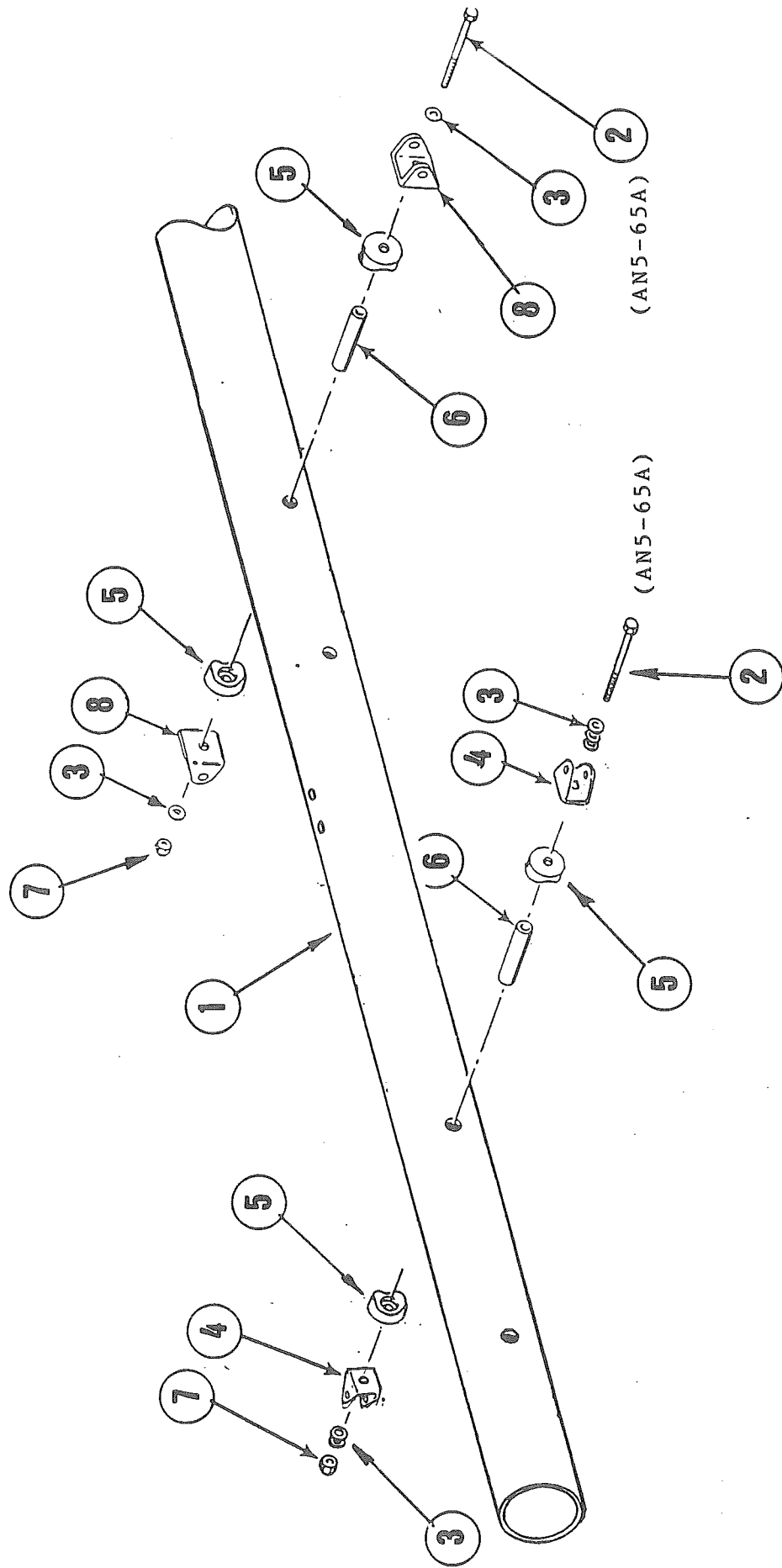
FLIGHTSTAR II & IISL - Assembly Manual

THE OVERALL LENGTH OF THE BOOM IS SHOWN IN FRAGMENTS. PLEASE USE THIS DRAWING FOR REFERENCE ONLY. NOTE THAT THE STABILIZER THROUGH HOLE IS ON THE BOTTOM OF THE BOOM. **



BA-1

FLIGHTSTAR



ATTACHING THE WING CHANNELS TO THE BOOM

✓ Chapter 8 SECTION 2 MIXER PLATE ASSEMBLY AND ATTACHMENT

Section 2
Mixer Plate Assembly & Attachment
Figure BA-3

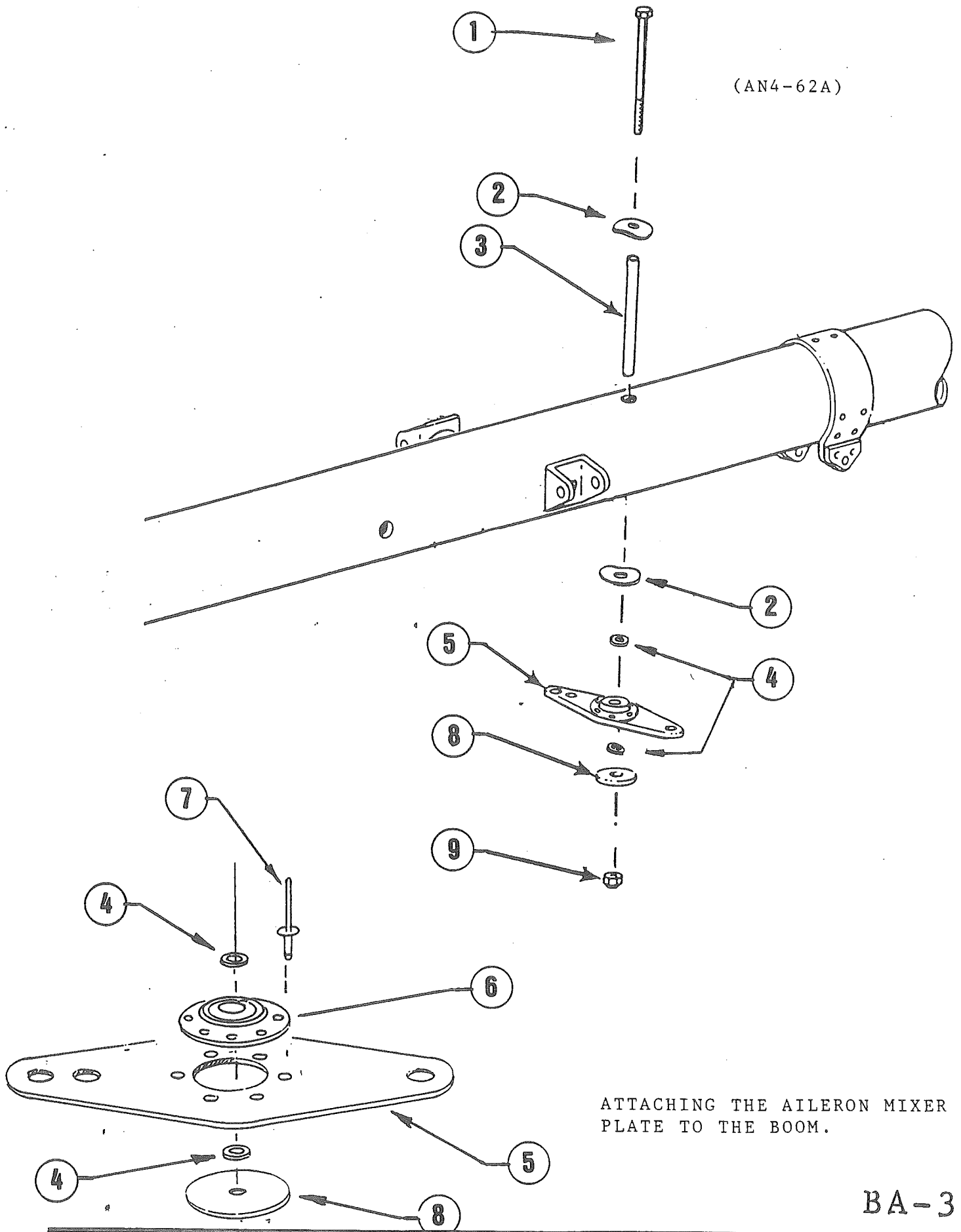
1. Figure BA-3 ASSEMBLING THE AILERON MIXER PLATE
Attach the bell crank bearing (6) to the aileron mixer plate (5) using six equally spaced pop-rivets (7). Drill out the attachment holes using an 1/8" drill, using the holes in the bell crank bearing as a guide.
2. Figure BA-3 ATTACHING THE MIXER PLATE ASSEMBLY TO THE BOOM
Begin attachment of the aileron mixer plate assembly to the boom, by placing curved fender washer curved side down (2) on bolt (1). Insert mixer plate bushing (3) into hole as pictured in Figure BA-3. Slide the bolt with washer into the bushing. Add a second fender washer (2), curved side up, washer (4) positioned with the flat side up, the mixer plate assembly, a second washer with the flat side down (4), flat fender washer (8) and secure with locknut (9). The placement of the smooth and flat sides on the standard washer is important to allow the mixer bearing to pivot freely.

✓ Chapter 8
Section 2

Mixer Plate Assembly & Attachment Parts List
Figure BA-3

INDEX#	PART #	QTY	DESCRIPTION
1.	AN4-62A	1	1/4" BOLT
2.	C-250	2	1/4" CURVED FENDER WASHER
3.	B-285	1	3/8" X 5" MIXER PLATE BUSHING
4.	AN960-416	2	1/4" WASHER
5.	CS-291	1	AILERON MIXER PLATE 7/8" HOLE
6.	CS-288	1	BELL CRANK BEARING
7.	SS44	6	POP-RIVET, 1/8"
8.	AN970-4	1	1/4" FENDER WASHER
9.	AN365-428	1	1/4" LOCKNUT

? where



(AN4-62A)

ATTACHING THE AILERON MIXER
PLATE TO THE BOOM.

✓ Chapter 8 SECTION 3 CENTER BOOM ASSEMBLY

Section 3 Center Boom Assembly Figure BA-4

1. Figure BA-4 ATTACHING THE BOOM REINFORCEMENT PLATES TO THE BOOM
 - a) Drill out the center (1/4" hole) on the boom reinforcement plates (2) to a diameter of 5/16".

NOTE: BE CERTAIN TO ATTACH REINFORCEMENT PLATES TO THE MIDDLE 7/16" HOLE IN THE BOOM. REFER TO FIG. BA-1 FOR REFERENCE.

- b) To attach the two boom reinforcement plates (2) to the boom at the center upright location, use one of the AN5-76A bolts as a guide. Insert steel bushing (1) into the middle 7/16" hole in the boom, making certain the bushing is flush on the both sides of the boom tube. Center boom reinforcement (2) plate over the hole and temporarily insert the AN5-76A bolt through it and into the bushing. Add second boom reinforcement plate (2) on the opposite side. Verify that the bushing, bolt, and boom reinforcement plates are correctly aligned and seated on the boom. Securely tape or clamp both plates. Re-check the assembly prior to drilling.
 - c) Drill one of the four holes located on the boom reinforcement plate using a 3/16" drill. Attach the boom reinforcement plate using pop-rievet (3). Repeat this procedure, drilling and pop-rieveting one hole at a time on all but the top rear hole on the left side reinforcement plate, which should be drilled last. After drilling that hole, position the Adell clamp (6) over it, aligning holes. Pop rivet through both. (The Adell clamp will be used later to hold the fuel line). Remove tape or clamps.
2. Figure BA6 ATTACHING THE BOOM REINFORCMENT WASHERS
 - a) Install the boom reinforcement washer (10) on to each side of the boom tube at the location of the forward upright 7/16" hole. Insert steel bushing (1) and Pop-rivet the plates using rivets (3) into position using the same procedure as the reinforcement plates in step 1. Refer to Ba-1 and BA-6 for the location.

Figure BA-4 ATTACHING THE BAND CLAMP TO BOOM

- a) Position the band clamp reinforcement plates (5) on the each side of the band clamp (4). Insert bolt (7) in the 1/4" hole of the first reinforcement plate and then the band clamp for temporary alignment. Add the second reinforcement plate, washer (8) and a finger tightened locknut (9).
- b) Using two pop-rivets (3), pop rivet the first reinforcement plate (5) to the clamp as shown. Pop-rivet the second plate, making sure that the plate is flat against the band clamp. Remove bolt (7) for attachment to the boom.

- c) Position the band clamp (4) over the two pre-drilled holes located on the top of the boom, as pictured in Figure BA-1.

Verify that the band clamp (4) is in correct alignment with the two pre-drilled holes on the top of the boom tube. Reattach bolt (5). Be certain that the temporary bolt is tightened and that the band clamp is tight up against the boom tube. (Use an additional clamp, if necessary.) Attach the band clamp to the boom tube with two pop-rivets (3) through the predrilled holes on top of the boom tube.

- d) Locate the remaining holes in the band clamp, and drill them out with a 3/16" drill. Install four pop-rivets (3) on each side.

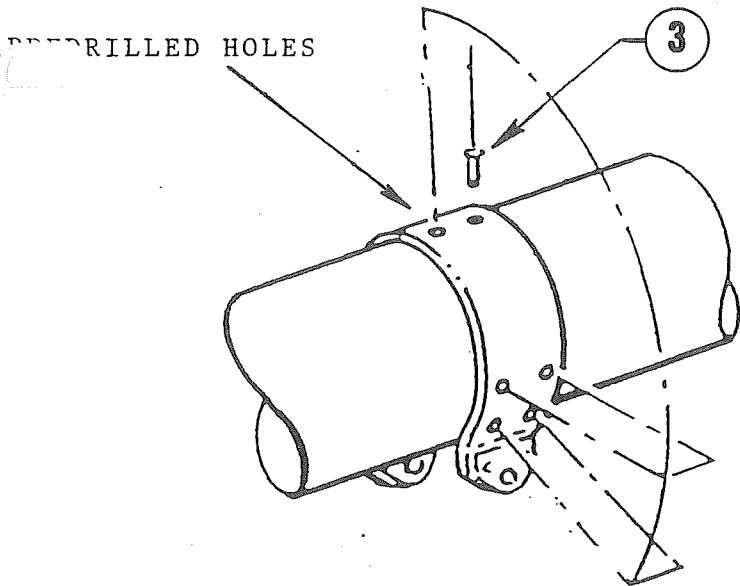
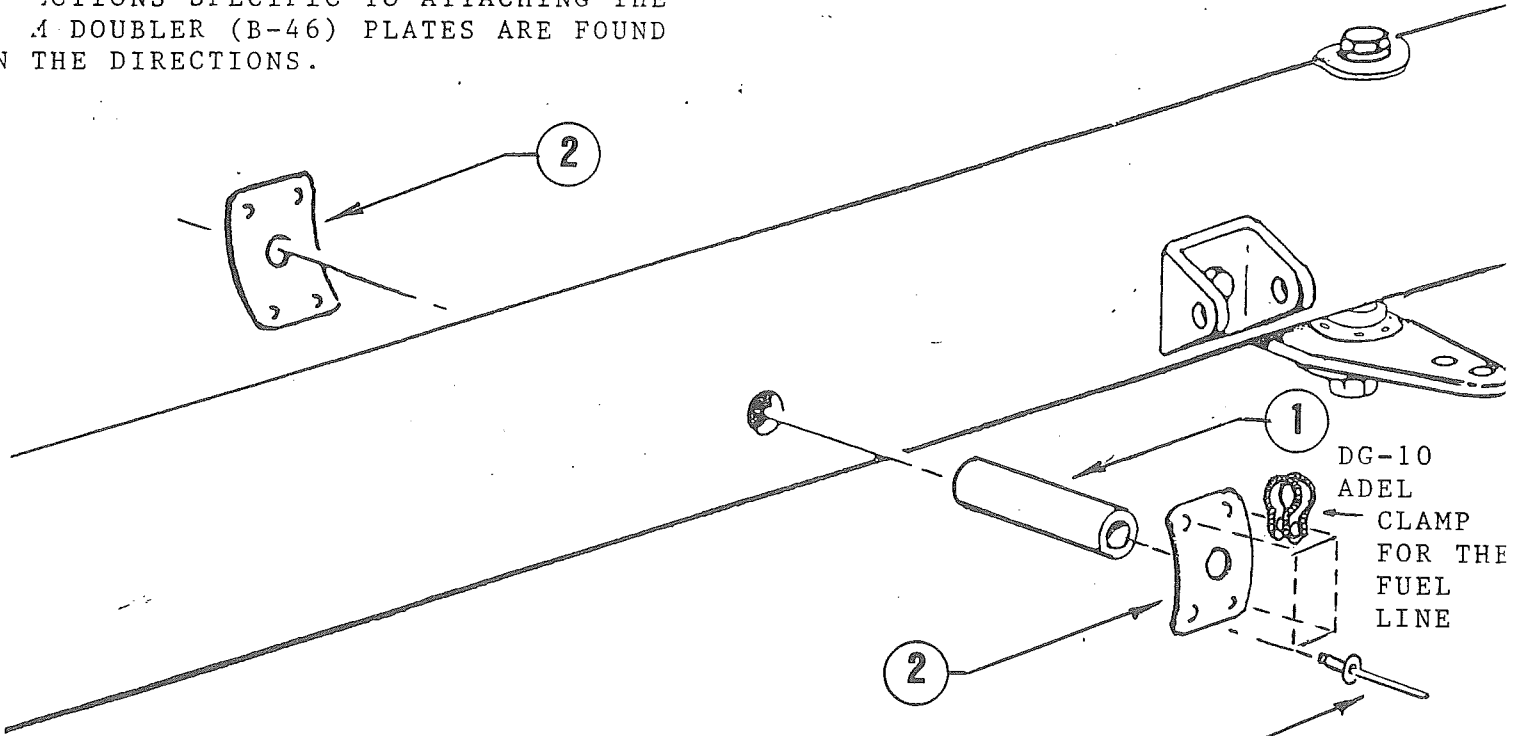
✓ Chapter 8

Section 3

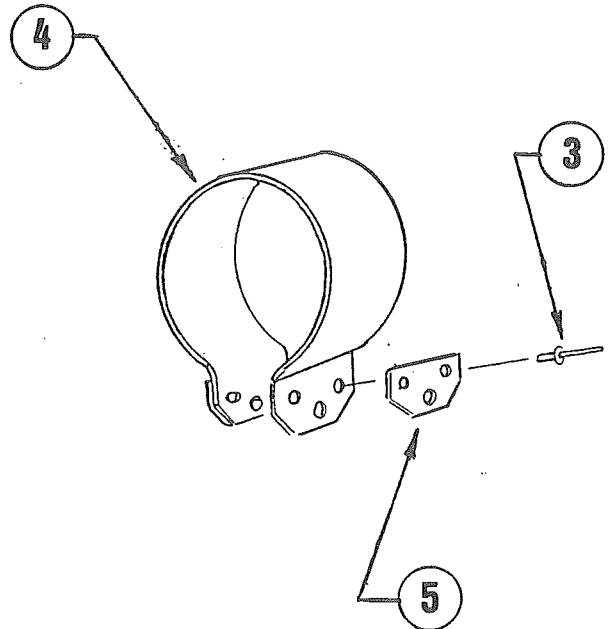
Center Boom Assembly Parts List Figure BA-4, BA-6

INDEX#	PART #	QTY	DESCRIPTION
1.	B-96-1	2	7/16" STEEL BUSHING 5" LONG
2.	B-146	2	BOOM REINFORCEMENT PLATE
3.	SS64	28	POP-RIVET 3/16" X 1/4"
4.	B-6	1	BAND CLAMP
5.	B-129	2	BAND CLAMP REINFORCEMENT PLATE
6.	MS-21919-DG-10	1	ADELL CLAMP
7.	AN4-30A	1	1/4" BOLT
8.	AN960-416	2	1/4" WASHER
9.	AN365-428	1	1/4" LOCKNUT
10.	B-374	2	BOOM REINFORCEMENT WASHER

DIRECTIONS SPECIFIC TO ATTACHING THE
 A DOUBLER (B-46) PLATES ARE FOUND
 IN THE DIRECTIONS.



THESE HOLES NEED TO BE DRILLED
 WITH A 3/16" DRILL AFTER POSITIONING
 THE BAND CLAMP, SEE THE DIRECTIONS.



ATTACHING THE BOOM REINFORCEMENT PLATE
 AND BAND CLAMP TO THE BOOM.

BA-4

✓ Chapter 8 SECTION 4 AFT BOOM ASSEMBLY

Section 4
Aft Boom Assembly
Figure BA-5

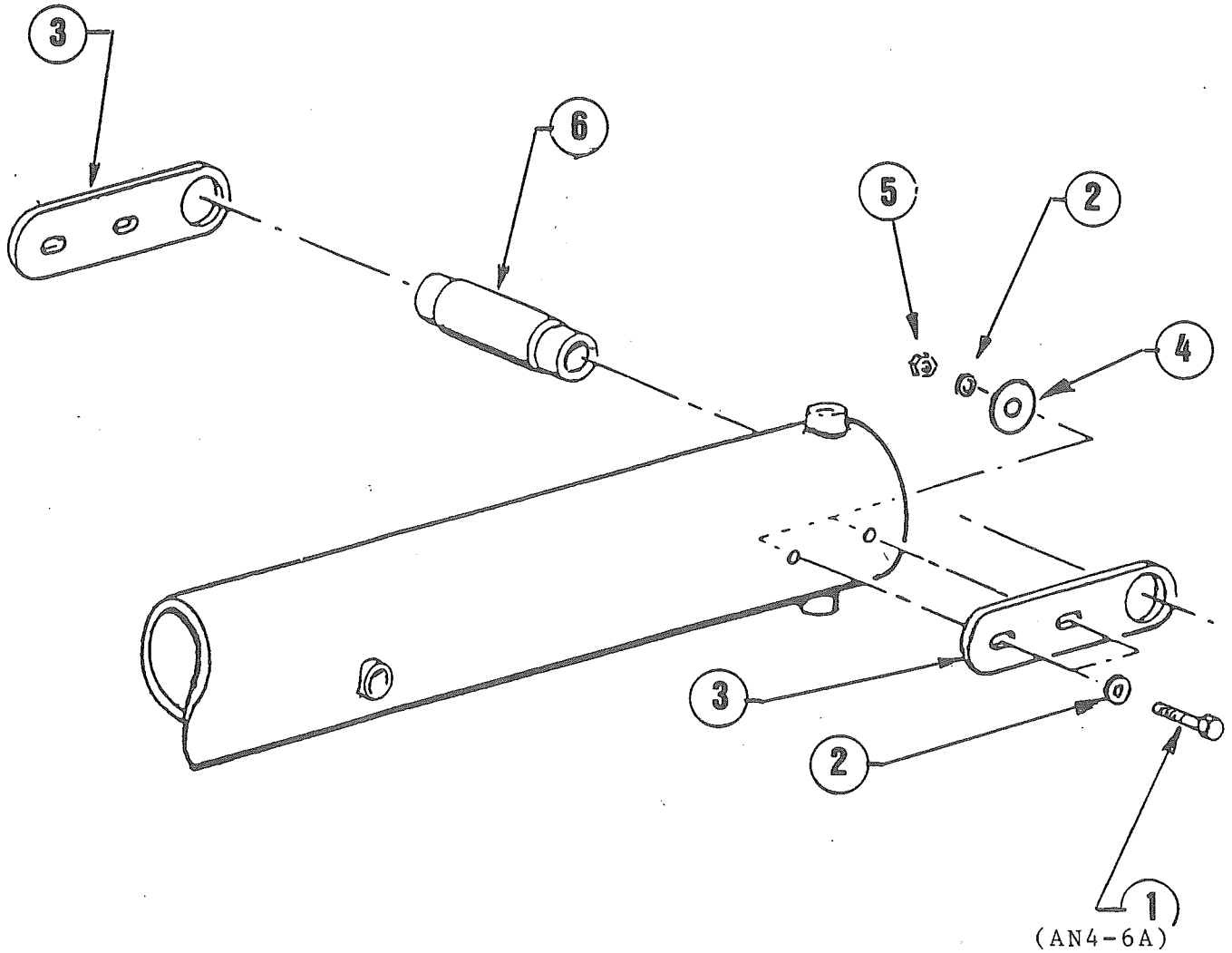
1. **Figure BA-5 ATTACHING STABILIZER MOUNT PLATES / T-23 CARRY THRU TO BOOM**
 - a) Note position of stabilizer mount plates (3) on the boom tube in Figure BA-1. To attach the stabilizer mount plates (3), begin by placing washers (2) on four bolts (1). Position the first stabilizer mount plate over the correct pre-drilled holes and insert the front bolt. Reach inside the tube to add fender washer (4), washer (2), and finger tightened locknut. Repeat with second bolt on same side. Insert the horizontal stabilizer carry through tube (6) into the large hole on the attached mounting plate.
 - b) Attach the second stabilizer mount plate, using the two bolts, fender washers (4), washers (2), and finger tightened locknuts as described above. The entire assembly should be left loose, for later adjustment during assembly of the horizontal stabilizers.

DO NOT FORGET TO TIGHTEN THE STABILIZER MOUNT PLATE BOLTS AFTER TRIAL ASSEMBLY OF THE TAIL

✓ Chapter 8 SECTION 4 AFT BOOM ASSEMBLY

Section 4
Aft Boom Assembly Parts List
Figure BA-5

INDEX#	PART #	QTY	DESCRIPTION
1.	AN4-6A	4	1/4" BOLT
2.	AN960-416	8	1/4" WASHER
3.	B-31	2	STABILIZER MOUNT PLATE
4.	AN970-4	4	1/4" FENDER WASHER
5.	AN365-428	4	1/4" LOCKNUT
6.	T-123	1	HORIZONTAL STABILIZER CARRY THRU



ATTACHING THE STABILIZER MOUNT PLATES

BA-5

✓ **Chapter 8** SECTION 5 ATTACHMENT OF BOOM TO CAGE
 Section 5
 Attachment Of Boom To Cage / Uprights
 Figure BA-6

NOTE: IT IS VERY IMPORTANT TO FIRST CHOCK THE WHEELS SO THAT THE CAGE WILL NOT MOVE. THE ENTIRE ASSEMBLY IS BEST DONE WITH ASSISTANCE. SUPPORT THE BOOM FROM FORWARD AND AFT MOVEMENT BY A SLING STRAPPING THE BOOM IN TWO PLACES FROM THE CEILING OR BY USING A STEP LADDER UNDER THE TAIL END OF THE BOOM.

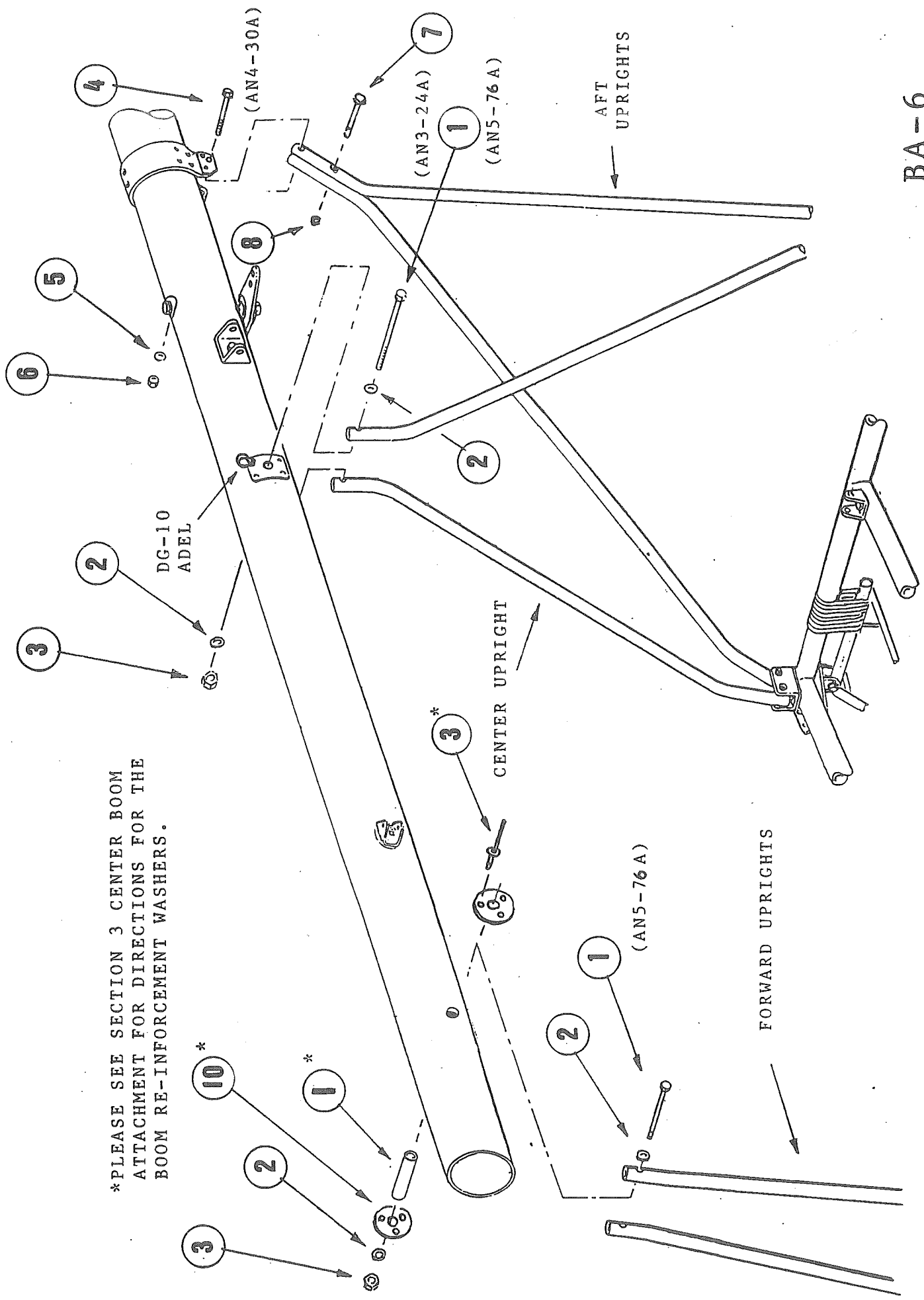
1. Figure BA-6 ATTACHING THE BOOM TO THE UPRIGHTS

- a) Place the boom in the Center Uprights as shown in Figure BA-6. Insert bolt (1) through the first center upright, the boom, and the second upright. Add washer (2) and a finger tightened locknut (3).
- b) To attach the forward uprights to the boom, position the uprights near the stainless re-enforcement plates shown in Figure BA-6. Place a washer (2) on bolt (1) and insert through the first forward upright, the steel bushing (7) in the boom, and the second upright. Add one more washer (2) and a finger tightened locknut (3).
- c) To attach the rear uprights to the previously installed band clamp, insert bolt (4) through band clamp, through the top hole of both rear uprights, and through the other side of the band clamp. Add washer (5) and secure with locknut (6). Insert bolt (7) through the lower hole in both rear uprights and secure with locknut (8).

Tighten the center upright locknut. DO NOT TIGHTEN THE FORWARD UPRIGHT LOCKNUT, LEAVE THAT LOCKNUT HAND TIGHT. The forward upright locknut will have to be removed later, when installing the front fairing.

Section 5
 Attachment Of Boom To Cage Parts List
 Figure BA-6

INDEX#	PART #	QTY	DESCRIPTION
1.	AN5-76A	2	5/16" BOLT
2.	AN960-516	4	5/16" WASHER
3.	AN365-524	4	5/16" LOCKNUT
4.	AN4-30A	1	1/4" BOLT
5.	AN365-428	1	1/4" WASHER <i>locknut</i>
6.	AN970-4	5	1/4" FENDER WASHER
7.	AN3-24A	1	3/16" BOLT
8.	AN365-1032	1	3/16" LOCKNUT



*PLEASE SEE SECTION 3 CENTER BOOM ATTACHMENT FOR DIRECTIONS FOR THE BOOM RE-INFORCEMENT WASHERS.

ATTACHING THE BOOM/UPRIGHTS. YOU WILL NEED HELP OR A STEP LADDER FOR THIS OPERATION.

