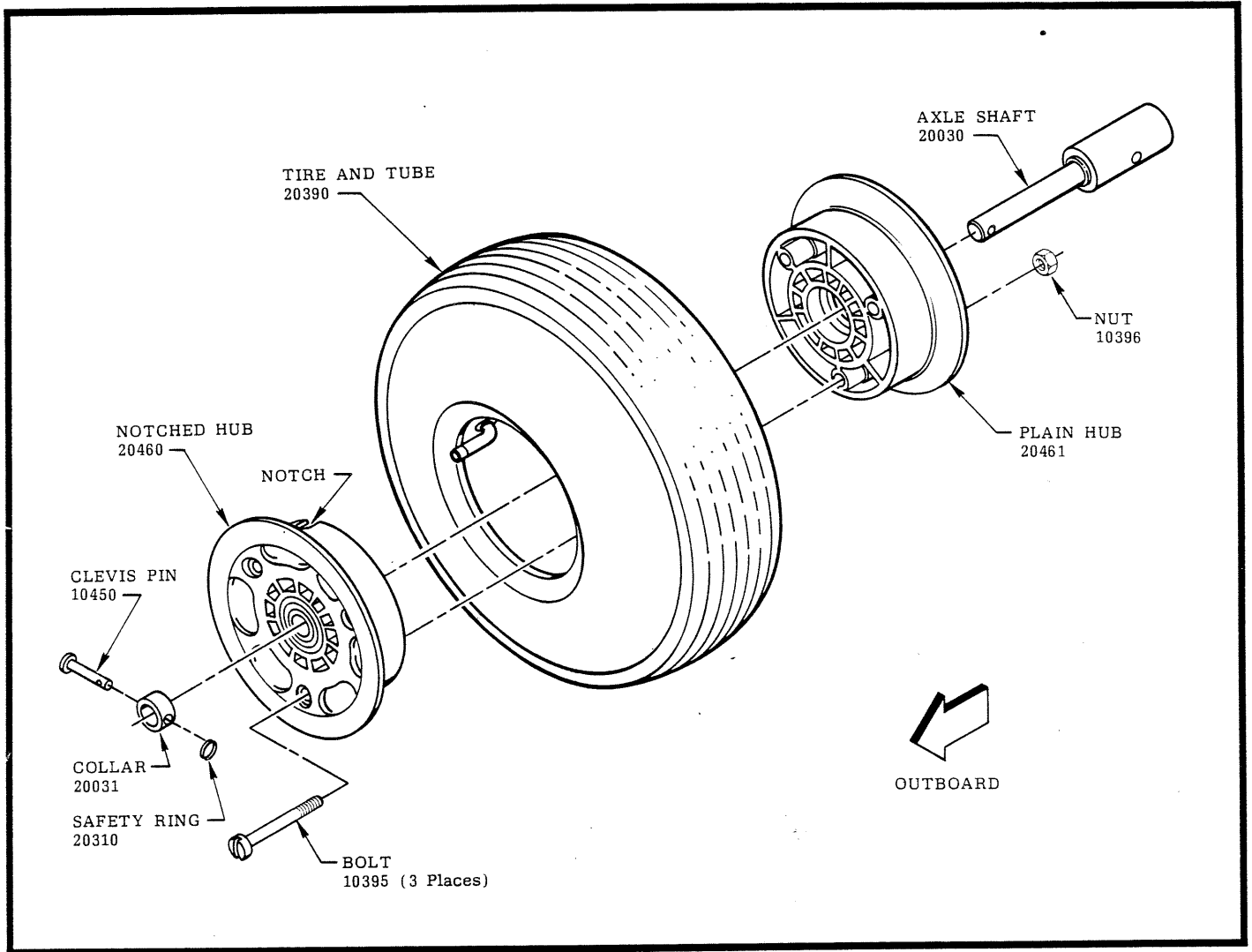


# QUICKSILVER MAX

THE ORIGINAL



## ASSEMBLY AND PARTS MANUAL

MANUAL 50250

QUALITY ASSURANCE ACCEPTED	
3/2/83	QUALITY ACCEPTED <i>[Signature]</i>
E.C.O. #	084 REV. A

## CONSTRUCTION NOTES

Assembly of your MX-Quicksilver can easily be accomplished in one weekend. You may wish to involve a friend to give you a helping hand on a few of the assembly procedures; such as lifting the tail section into position, alignment, or leveling some items, etc.

All the difficult fabrication details have been pre-finished at the factory including most drilling; anodizing; cable swaging; sewing of wing and the tail surfaces, etc.

Read thru this manual and familiarize yourself with the terminology, the use of assembly drawings and detail breakdown. For "AN" bolt sizes and dimensions, (use the bolt gauge on page 3)

Work slowly and carefully and follow these assembly procedures closely. Do not use substitute materials or initiate design changes. If you have any construction problems or questions do not hesitate to contact your dealer or the factory for assistance.

WHENEVER POSSIBLE, THE ASSEMBLY ILLUSTRATIONS ARE SHOWN IN THE RELATIVE POSITION THAT THE AIRPLANE WILL BE IN WHEN YOU WORK ON IT, SUCH AS NOSE DOWN, WING INVERTED OR UPRIGHT.

### Basic Tools Needed

One pair each; 3/8", 7/16", 1/2" 5/8", 11/16" and 10mm open end wrenches	Hammer
Torque Wrench (optional)	Tape measure and Marking pencil
Fine flat, and 1/2 round or rat tail files	Scissors
Hacksaw	Allen Wrenches 1/8", and 6mm
Electric drill (or hand drill) with 1/8", 3/16", 1/4" and 5/16" Drill Bits	Sail makers hot knife or a soldering iron with a blade edge
Pop Rivet Gun	"C" Clamps
Sharp knife	Lubricant (3 in 1 oil or equiv.)

TORQUE VALUES

3/16"	(AN 3)	-----10-20	inch/lbs
1/4"	(AN 4)	-----30-50	inch/lbs
5/16"	(AN 5)	-----60-80	inch/lbs

Self-locking nuts can be torqued to the standard values, with the exception of bolts that pass through tubes with no solid internal support. In this case tighten the bolt until the tube shows a slight distortion. Back off the nut 1/8 turn maximum. Be particularly careful when installing the bolt (coarse thread) in the main wing spars.

Where wing nuts are used, be sure to lock with safety "rings". Cotter keys or safety pins are not recommended.

After installing bolts, check that the "grip length" is correct. Use the correct number of washers as shown in the assembly drawings. At least one bolt thread should extend out of the nut. One or two washers may be used to prevent the bolt from bottoming out before producing a tight fit. (make sure you have used the proper bolt length). Eye bolts and fork bolts do not require a washer under the head. except where indicated.

Self-locking nuts should not be removed and reinstalled more than once. Generally they become less vibration resistant with each removal.

# THE GAUGE BELOW WILL HELP YOU DETERMINE THE DIAMETER AND THE LENGTH OF THE "AN" BOLTS

USE GAUGE FOR MEASURING BOLT SIZE.  
SEE EXAMPLE ON RIGHT.

WITH <sup>a</sup>  
AN3-15<sup>a</sup> MEANS NO SAFETY  
RING HOLE AT BOTTOM OF SHANK.

WITHOUT <sup>a</sup>  
AN3-15 MEANS THERE IS SAFETY  
RING HOLE AT BOTTOM OF SHANK.

AN3 MEANS 3/16" DIA. SHANK.  
AN4 MEANS 1/4" DIA. SHANK.  
AN5 MEANS 5/16" DIA. SHANK.

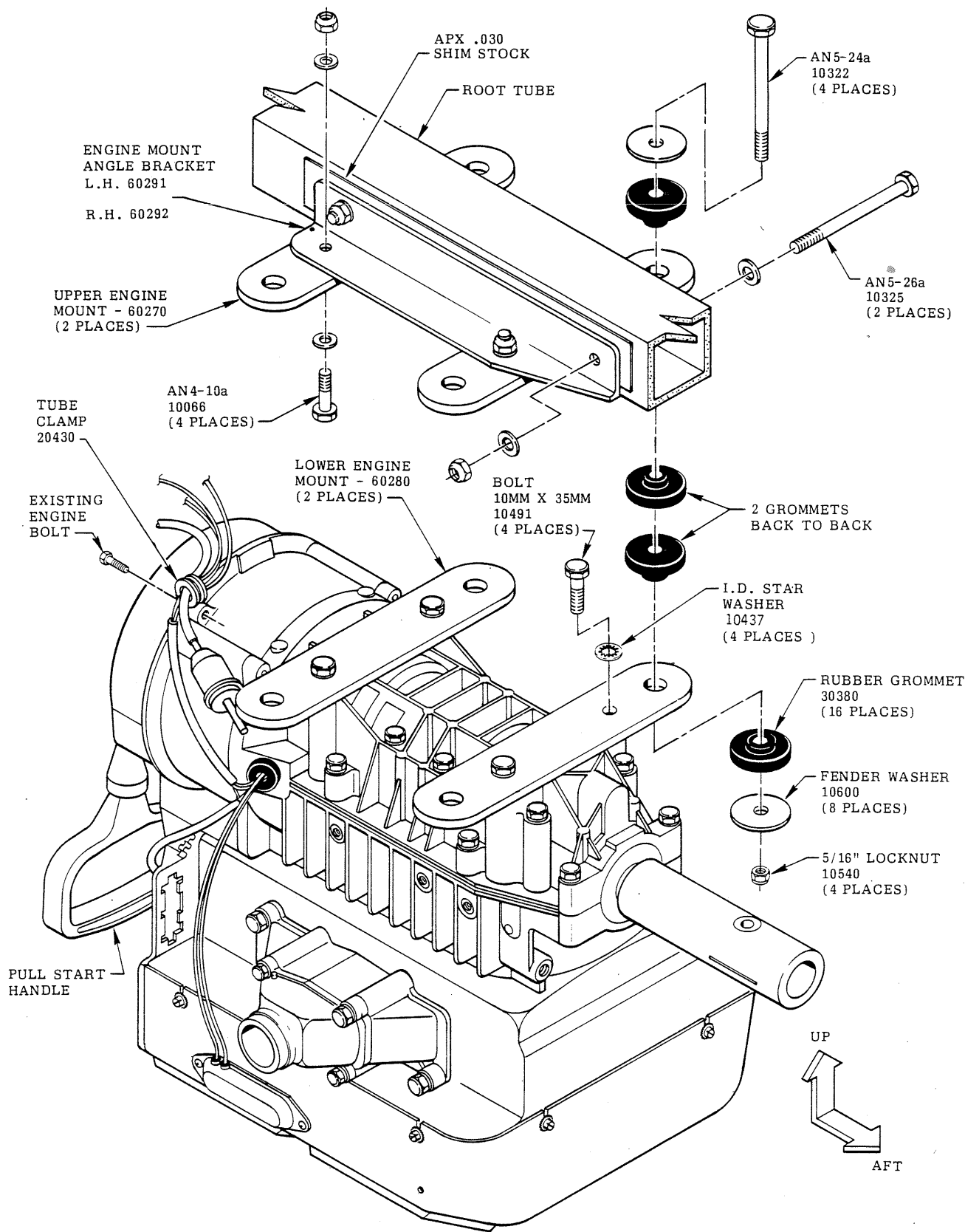
EXAMPLE: AN3-15 <sup>a</sup>	AN3	AN4	AN5
	3/16"	1/4"	5/16"
	3	3	4
	4	4	5
	5	5	6
	6	6	7
	7	7	10
	10	10	11
	11	11	12
	12	12	13
	13	13	14
	14	14	15
	15	15	16
	16	16	17
	17	17	20
	20	20	21
	21	21	22
	22	22	23
	23	23	24
	24	24	25
	25	25	26
	26	26	27
	27	27	30
	30	30	31
	31	31	32
	32	32	33
	33	33	34
	34	34	35
	35	35	36
	36	36	37
	37	37	40
	40	40	41
	41	41	42
	42	42	43
	43	43	44
	44	44	45
	45	45	46
	46	46	47
	47	47	50
	50	50	

## NOTICE:

The "AN" Bolts are used through-out the construction of the airplane for structural integrity.

Do not use substitutes. See your dealer for replacements if necessary.

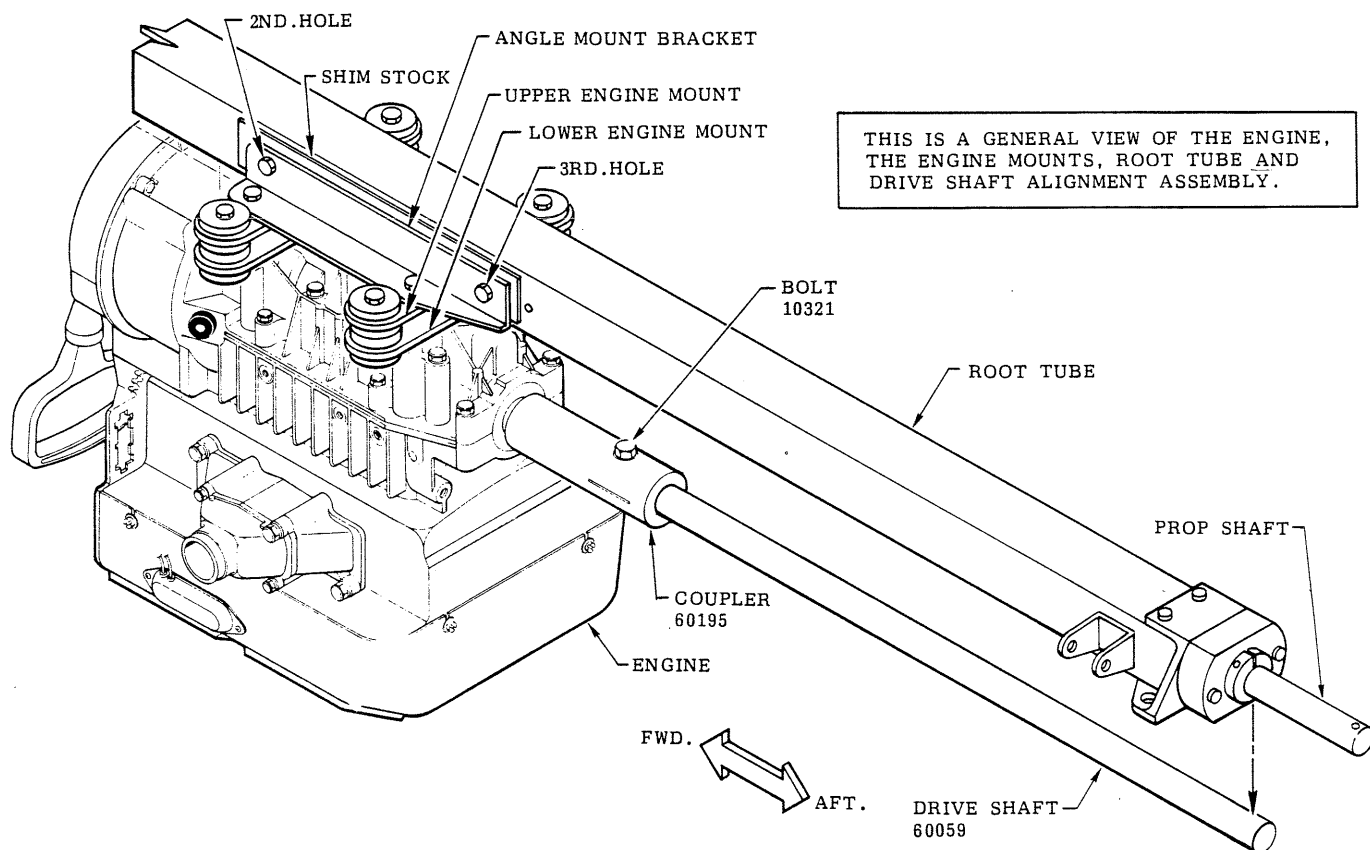
# SECTION ONE



BEFORE STARTING THIS ENGINE MOUNT BUILD-UP, STUDY THE ILLUSTRATIONS AND THE INSTRUCTIONS ON THIS AND THE FOLLOWING PAGE.

INSTALL A 1" TUBE CLAMP 20430 AS SHOWN TO KEEP THE WIRING AND FUEL LINE AWAY FROM THE PULL START HANDLE. NOTE: THE ATTACH HOLE IN THE TUBE CLAMP WILL HAVE TO BE ENLARGED WITH A RAT TAIL FILE TO ACCEPT THE EXISTING ENGINE BOLT.

## SECTION ONE



AT THIS STAGE YOUR CONCERN WILL BE TO BUILD UP THE ENGINE WITH ITS MOUNTING HARDWARE AND THE ALIGNMENT OF THE DRIVE SHAFT WITH RELATION TO THE ROOT TUBE AND PROP SHAFT. WHEN FINISHED IT WILL BE SET ASIDE TO BE INSTALLED ON THE PLANE AT A LATER TIME.

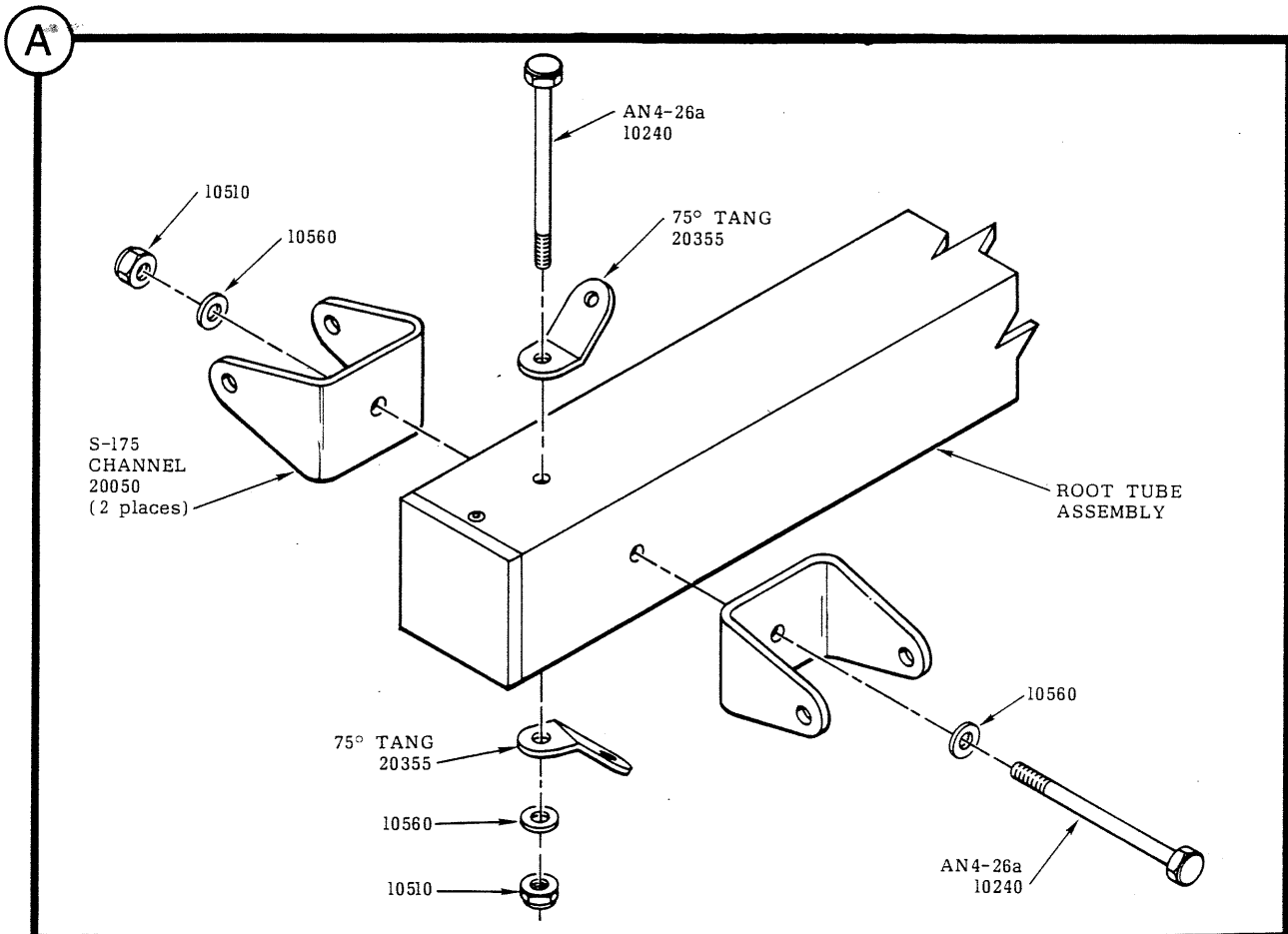
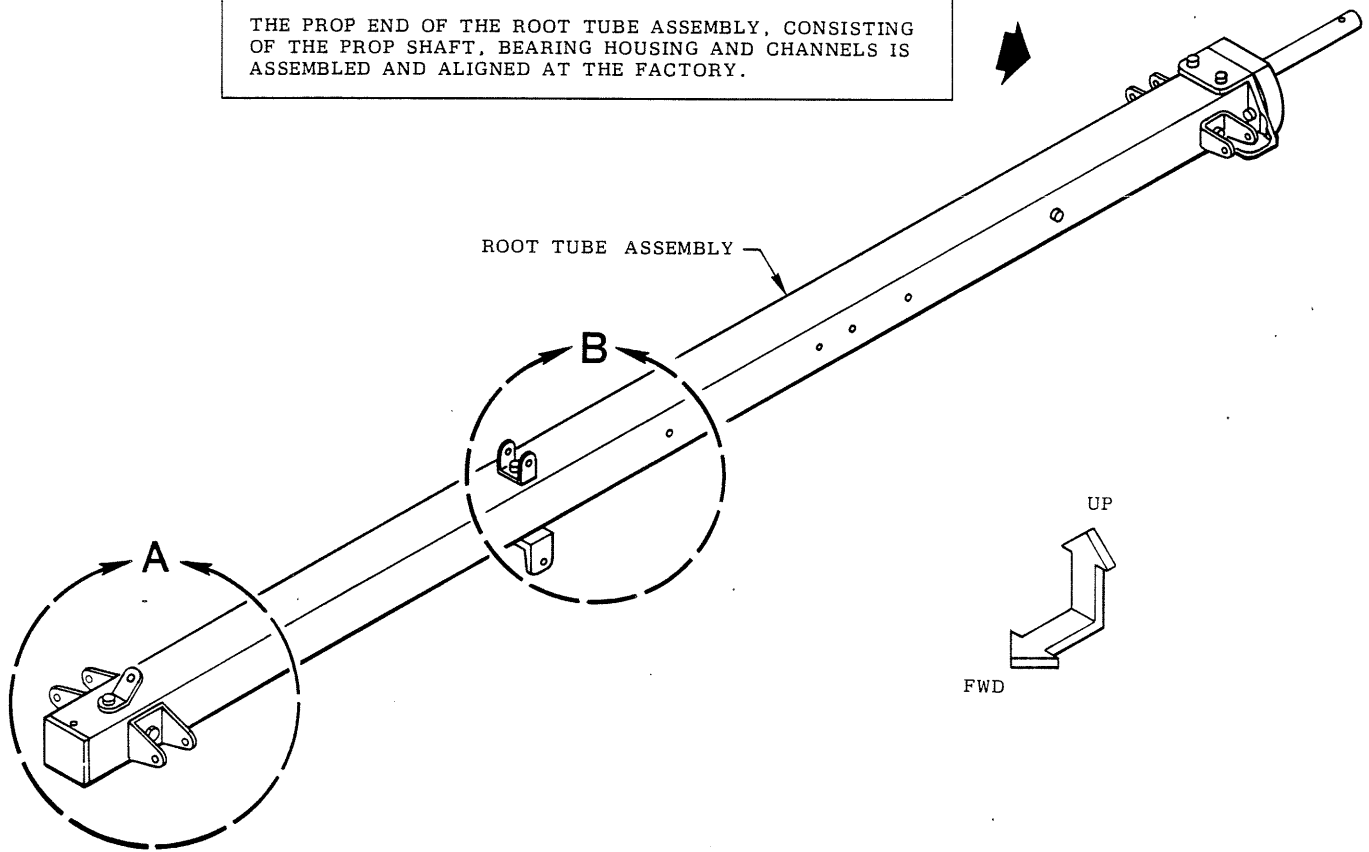
TO MAKE THE INSTALLATION OR REMOVAL OF THIS ASSEMBLY TO THE ROOT TUBE EASIER WITHOUT FORCING OR BINDING WHEN INSTALLED LATER. FOLLOW THE PROCEDURES LISTED BELOW ALONG WITH THE ILLUSTRATIONS ON THIS AND THE PRECEDING PAGE.

- ① THE ENGINE IS SECURED IN THE PACKING CRATE WITH 4 STUDS. REMOVE AND DISCARD THESE STUDS.
- ② START THE ASSEMBLY WITH THE TWO ANGLE MOUNT BRACKETS. USE THE 2ND AND 3RD "SIDE" HOLES FROM THE FRONT ON THE ROOT TUBE AND PROCEED AS FOLLOWS:
  - (a) PLACE ABOUT 6 SHEETS OF PAPER OR THIN CARDBOARD (APPROXIMATELY .030) BETWEEN THE ROOT TUBE AND THE ANGLE BRACKET (ONE SIDE ONLY). SECURE THE TWO BRACKETS TIGHTLY ON THE ROOT TUBE WITH ATTACH BOLTS 10328. NOTE: BE SURE YOU HAVE THE RIGHT AND LEFT HAND BRACKETS FACING FORWARD AND AFT. CORRECTLY.
- ③ ATTACH THE TWO "UPPER" ENGINE MOUNTS (60083) TO THE ANGLE BRACKETS BUT DO NOT TIGHTEN.
- ④ ATTACH THE TWO "LOWER" ENGINE MOUNTS (60082) TO THE ENGINE AS SHOWN BUT DO NOT TIGHTEN.
- ⑤ NOW TIE THE UPPER AND LOWER ENGINE MOUNTS TOGETHER (4 PLACES) AS ILLUSTRATED WITH THE GROMMETS, FENDER, WASHERS, ETC., BUT DO NOT TIGHTEN AT THIS TIME.
- ⑥ INSTALL THE DRIVE SHAFT 60059 IN THE DRIVE SHAFT COUPLER 60195 (MAKE SURE YOU HAVE THE CORRECT END OF THE DRIVE SHAFT WITH THE ATTACH HOLE THAT IS 3/4" FROM THE END OF THE SHAFT) SECURE TIGHTLY IN PLACE WITH BOLT 10321 AND NUT.
- ⑦ WITH THE TOTAL ASSEMBLY LOOSELY TIED TOGETHER, CENTER THE DRIVE SHAFT DIRECTLY UNDER THE PROP SHAFT AND TIGHTEN UP ALL ATTACH BOLTS ON THE TOTAL ASSEMBLY.
 

NOTE: THE RUBBER GROMMETS SHOULD BE SLIGHTLY COMPRESSED. THIS IS NORMALLY DONE WITH 1-1/2 THREADS SHOWING BELOW THE LOCKNUT ON ATTACH BOLT 10322.
- ⑧ NOW RECHECK THE DRIVE SHAFT ALIGNMENT AND IF IT IS OK REMOVE THE ROOT TUBE AND DISCARD THE SHIM STOCK. SET THE ASSEMBLY ASIDE, IT WILL BE INSTALLED ON THE PLANE LATER.

# SECTION ONE

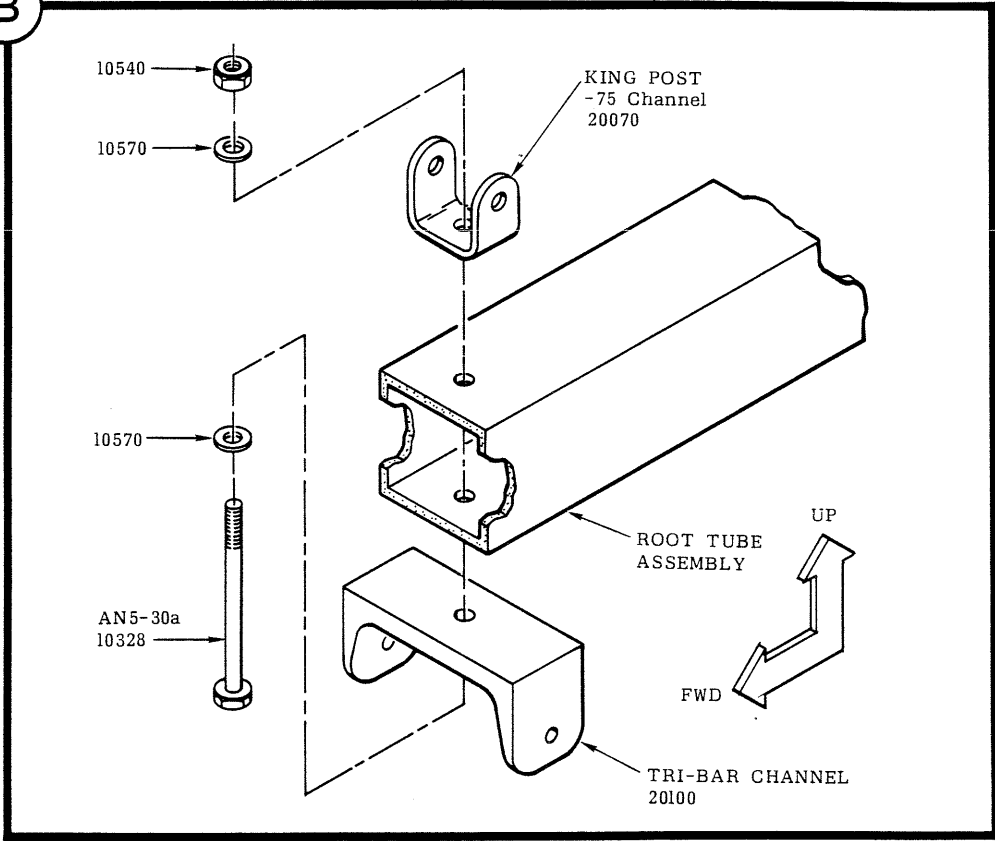
THE PROP END OF THE ROOT TUBE ASSEMBLY, CONSISTING OF THE PROP SHAFT, BEARING HOUSING AND CHANNELS IS ASSEMBLED AND ALIGNED AT THE FACTORY.



DETAILS CONTINUED NEXT PAGE

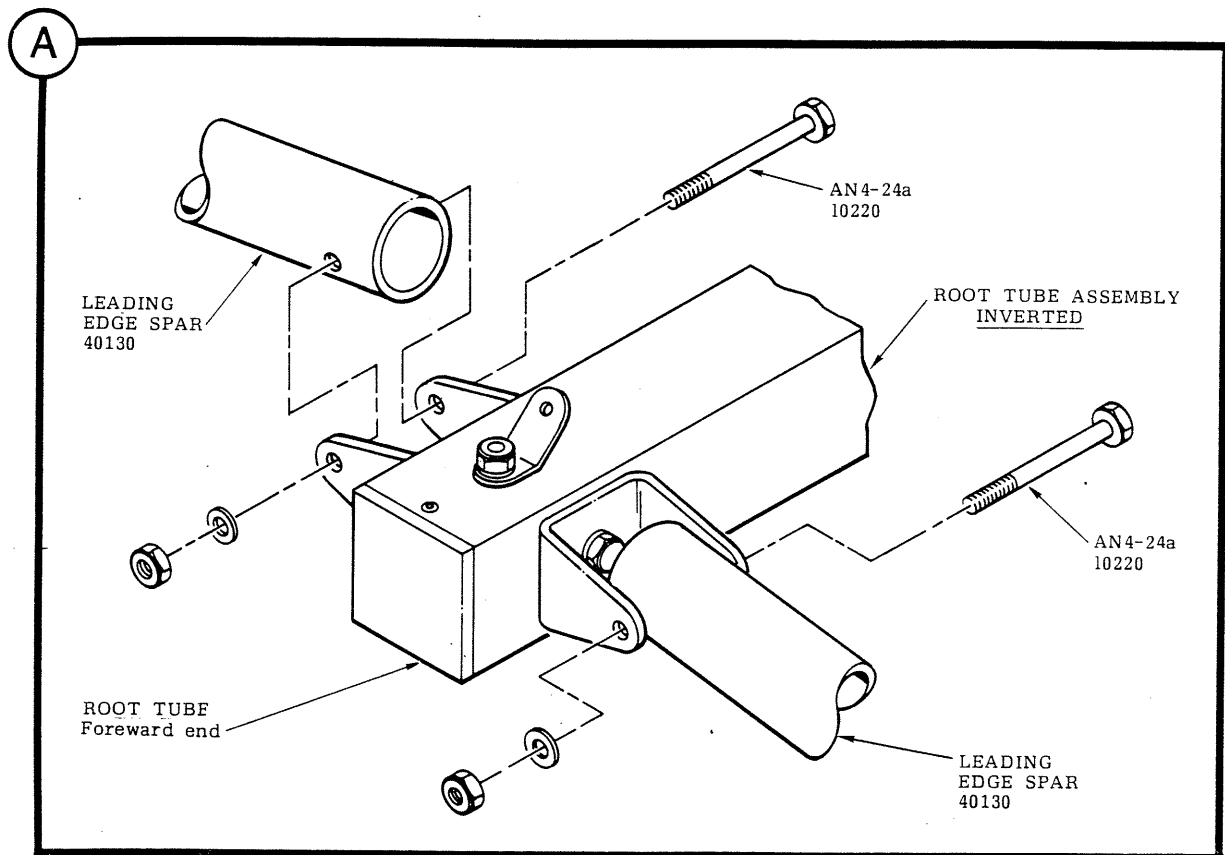
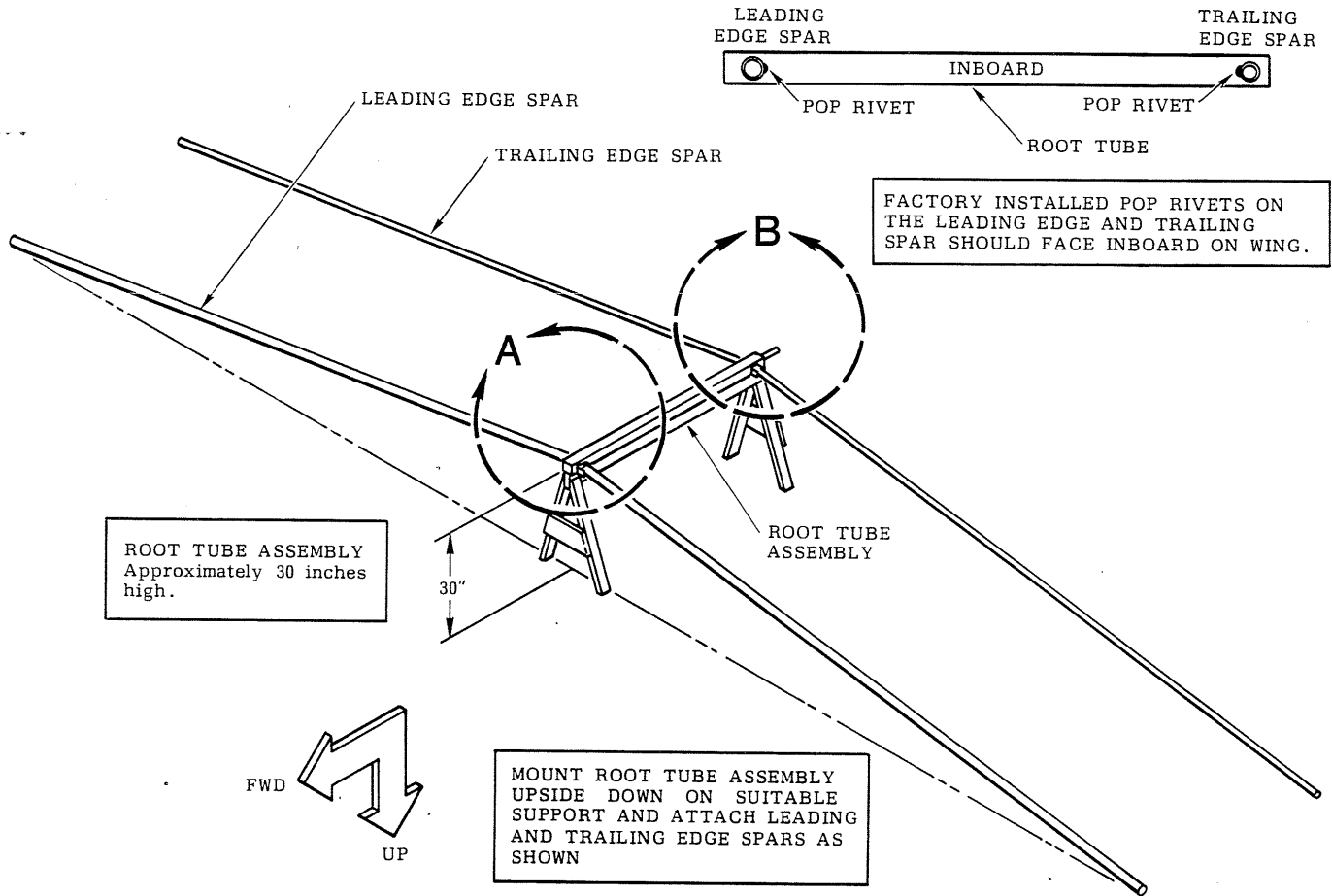
SECTION ONE

B





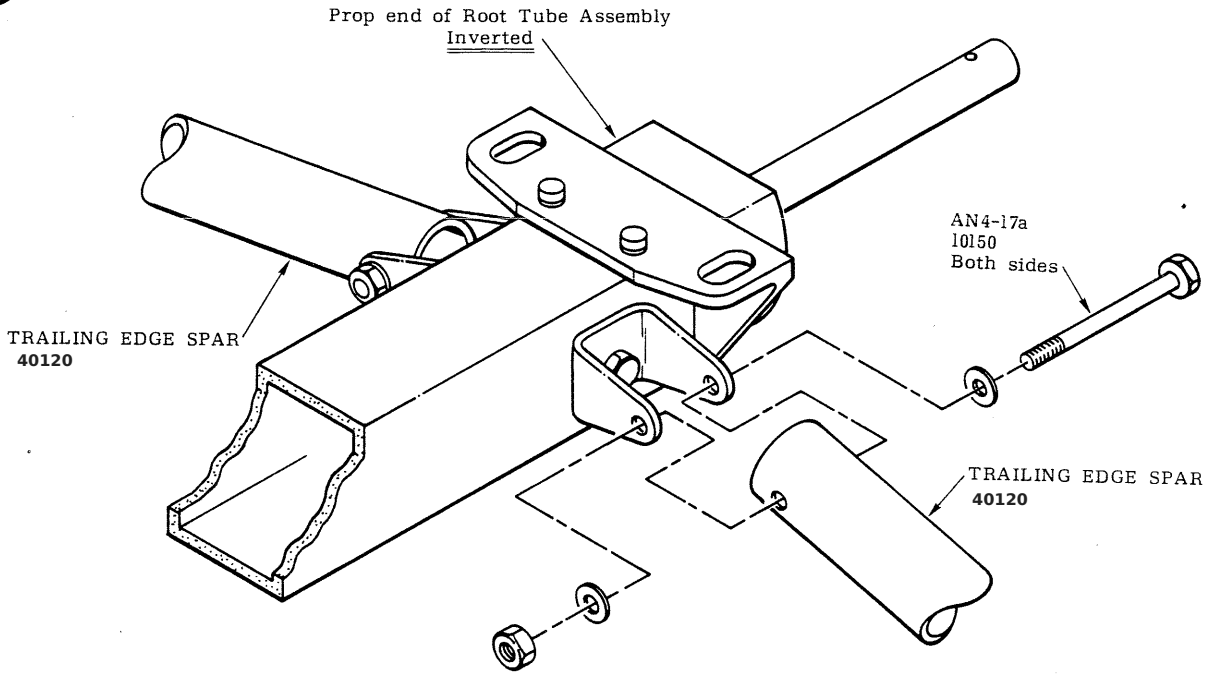
# SECTION ONE



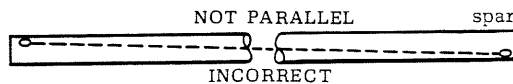
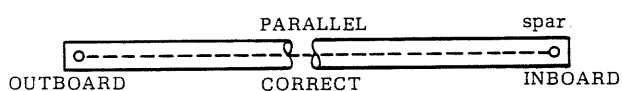
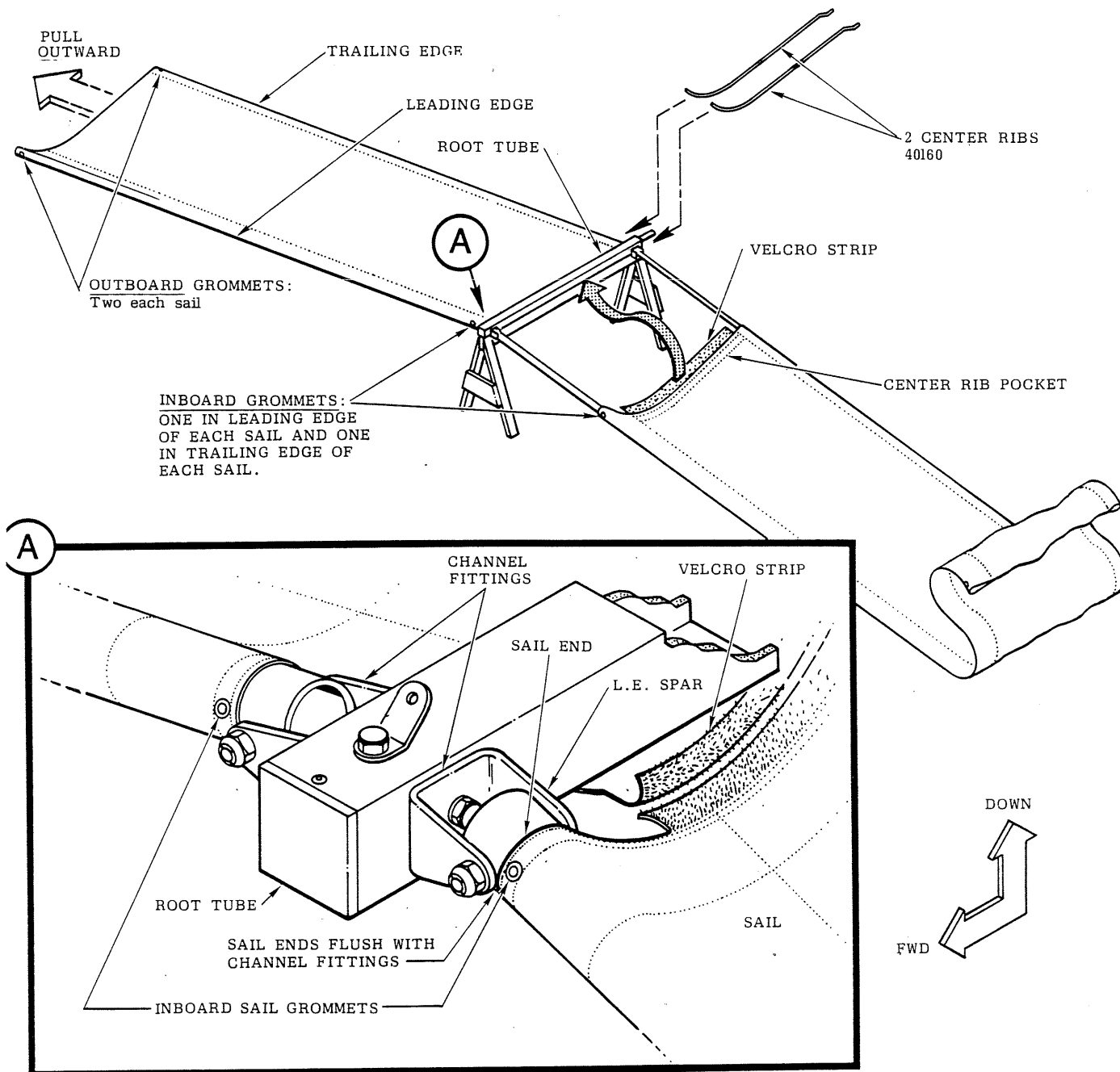
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SECTION ONE

B



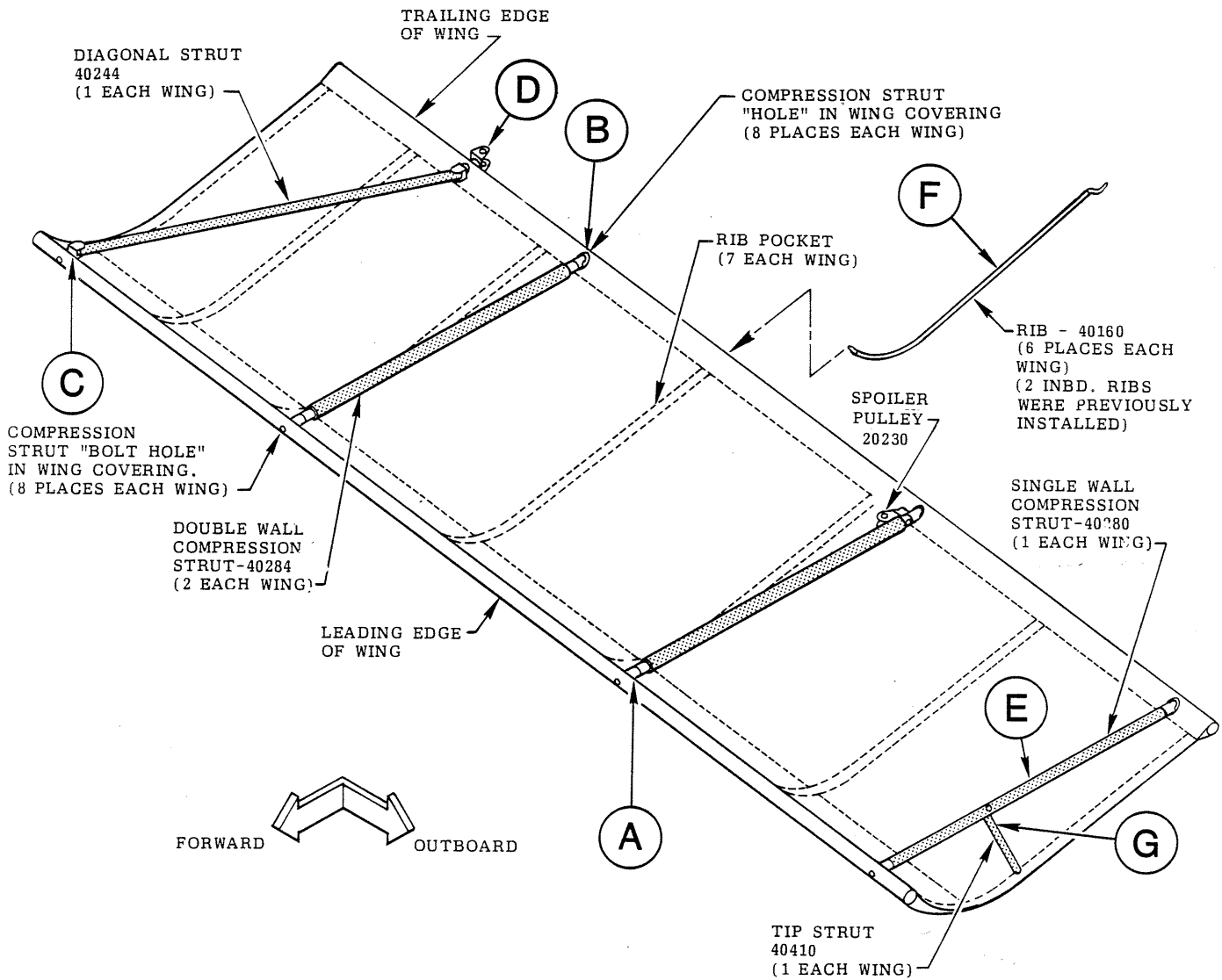
## SECTION TWO



- ① WITH ROOT TUBE AND SPAR ASSEMBLY INVERTED AND SUPPORTED AS SHOWN, SLIDE SAILS OVER SPARS AND ATTACH VELCRO STRIP.
- ② INSERT THE 2 CENTER RIBS IN RIB POCKETS. (ONE RIB IN EACH SAIL).
- ③ PULL INBOARD SAIL ENDS (4 PLACES) UP FLUSH WITH CHANNEL FITTINGS ON ROOT TUBE. (2 CHANNEL FITTINGS ON LEADING EDGE SPARS AND 2 CHANNEL FITTINGS ON TRAILING EDGE SPARS).
- ④ USING THE FACTORY INSTALLED SAIL GROMMETS, AS LOCATORS, DRILL FOUR 3/16" (4.8 mm) HOLES THRU GROMMET HOLES INTO THE INBOARD ENDS OF THE LEADING AND TRAILING EDGE SPARS. POP RIVET SAILS IN PLACE.
- ⑤ WITH THE FOUR INBOARD RIVETS SECURED (2 EACH SAIL) PULL SAIL ENDS OUTWARD APPROXIMATELY 30-40 LBS (13.63-18.8 kg) AND MARK OUTBOARD GROMMET LOCATION. (USE PENCIL OR SHARP POINTED SCRIBER THRU GROMMET HOLES) SLIDE BACK SAILS AND DRILL 3/16" (4.8 mm) HOLES IN SPARS WHERE INDICATED: NOTE: MAKE SURE THE INBOARD AND OUTBOARD GROMMET HOLES ALIGN PARALLEL ON SPARS (SEE DIAGRAM) POP RIVET SAILS INTO PLACE.

## SECTION THREE

STUDY THIS GENERAL WING ARRANGEMENT, THEN START ASSEMBLY WITH DETAIL "A".  
REMEMBER THE WING IS UPSIDE DOWN. DO NOT CONFUSE THE COMPRESSION STRUT  
"HOLES" WITH THE COMPRESSION STRUT "BOLT HOLES".

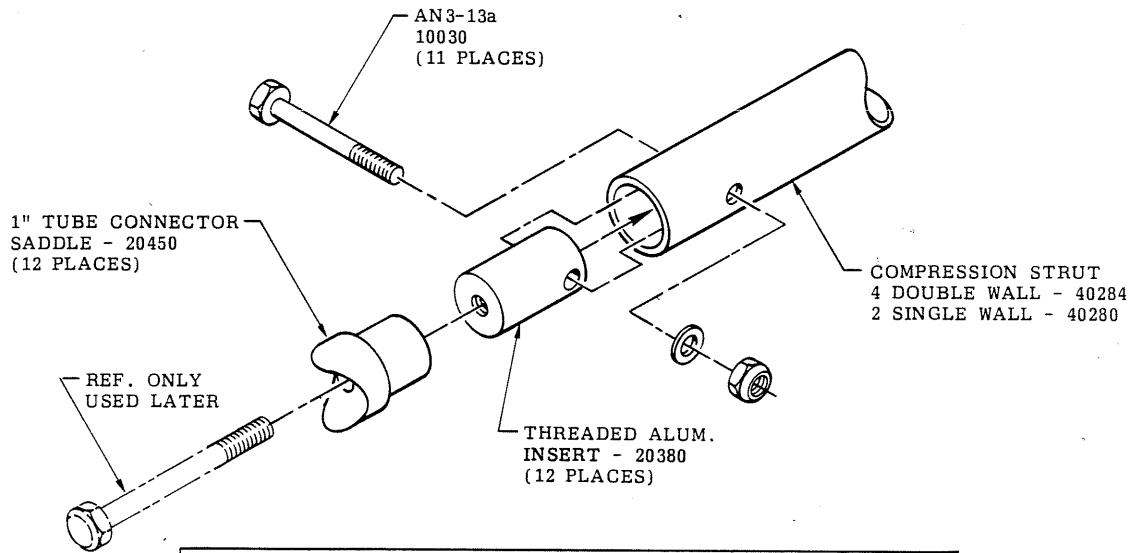


- YOUR AREA OF CONCERN WITH THIS SECTION IS AS FOLLOWS:
- ① ASSEMBLY OF THE COMPRESSION STRUTS. NOTE THE DIFFERENCE BETWEEN THE DOUBLE WALLED STRUTS AND THE SINGLE WALL OUTBOARD STRUT.
  - ② ATTACHMENT OF THE SPOILER PULLEY.
  - ③ INSTALLATION OF RIBS.
  - ④ CUTTING AND HEAT SEALING OF THE STRUT "HOLES" IN THE WING MATERIAL.
  - ⑤ INSTALLATION OF THE STRUTS (DIAGONAL AND COMPRESSION)
  - ⑥ INSTALLATION OF THE TIP STRUT
  - ⑦ CUTTING AND HEAT SEALING OF THE STRUT "BOLT HOLES"

DETAILS CONTINUED NEXT PAGE

### SECTION THREE

A

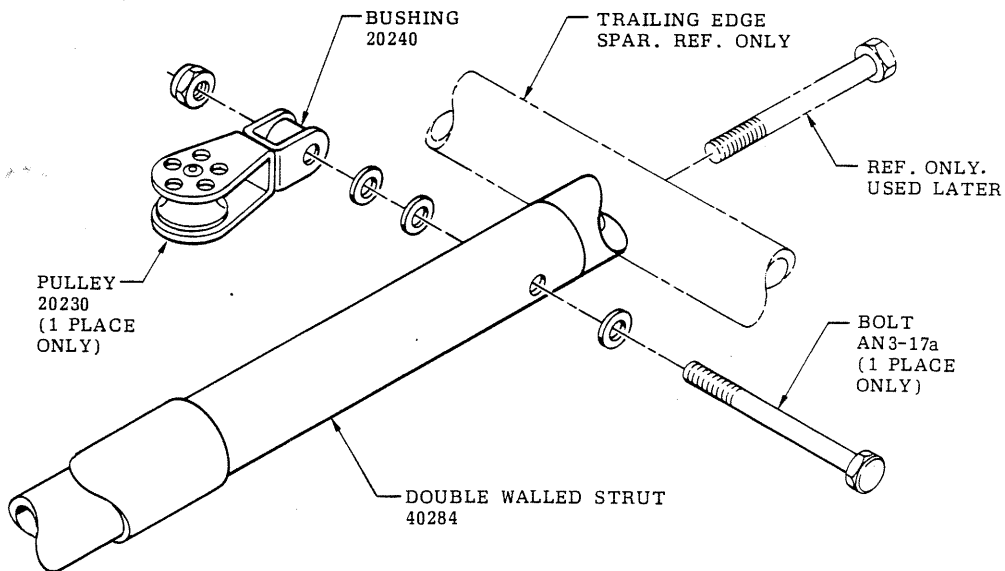


- ① ASSEMBLE 6 COMPRESSION STRUTS AS SHOWN (3 EACH WING) AND SET ASIDE FOR LATER INSTALLATION.

NOTE:  
 BOTH ENDS OF THE STRUTS HAVE THE SAME FITTINGS EXCEPT FOR ONE BOLT (AN3-17a) WHICH IS LONGER AND IS USED TO ATTACH THE PULLEY AS SHOWN BELOW.



- ② ATTACH THE PULLEY 20230 TO THE END OF ONE OF THE DOUBLE WALLED COMPRESSION STRUTS AS ILLUSTRATED.



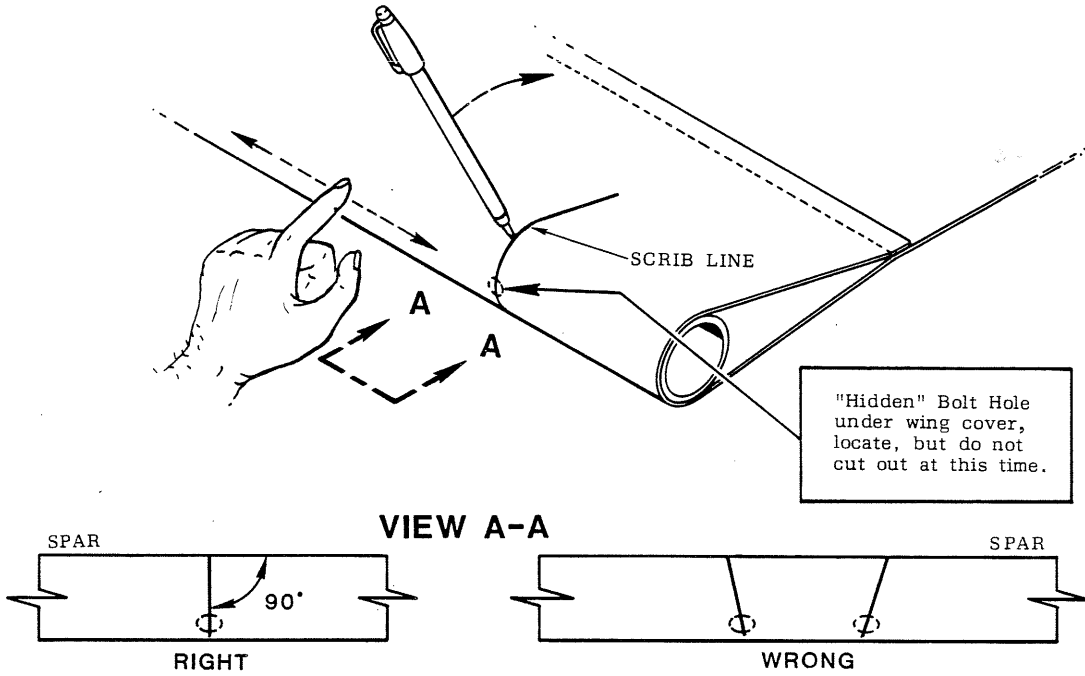
DETAILS CONTINUED

# SECTION THREE

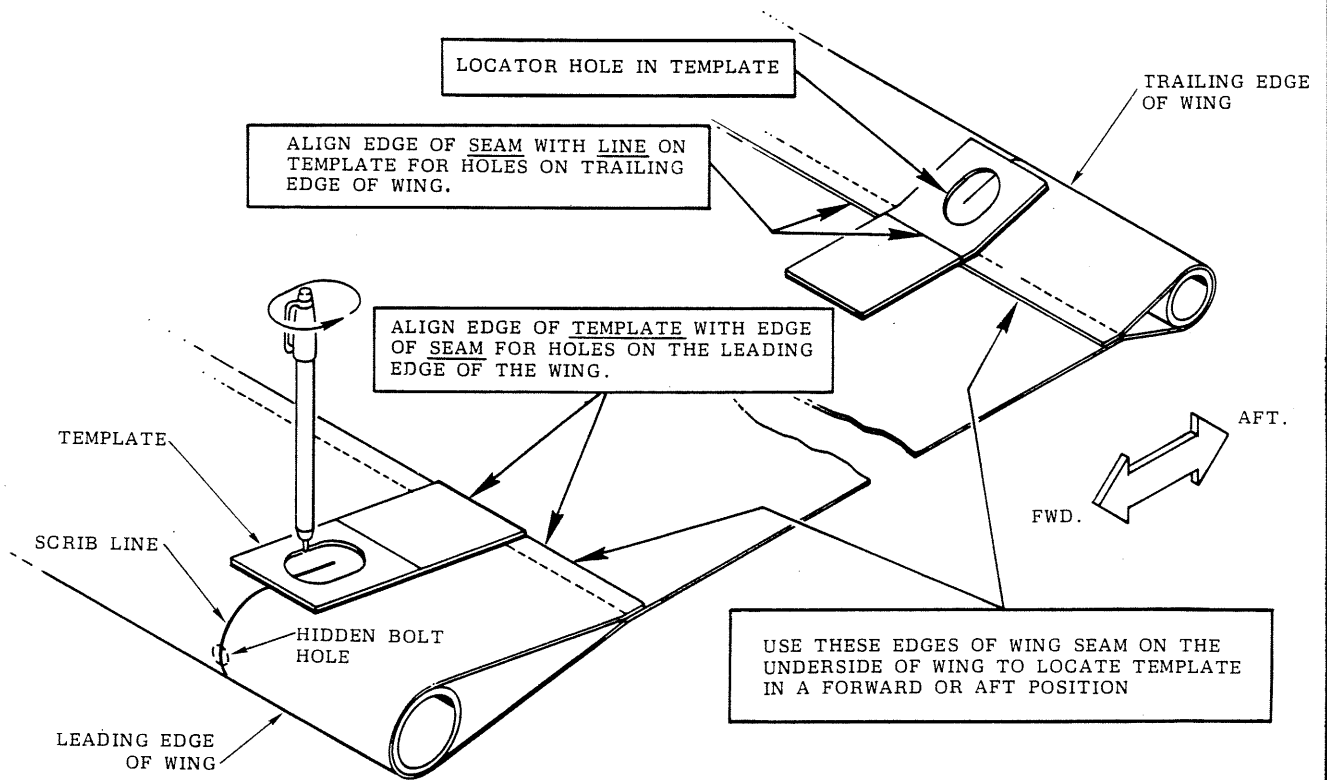
**B**

USE THE TEMPLATE PATTERN ON THE NEXT PAGE, DETAIL (B-CONTINUED), TO LOCATE THE HOLES IN THE WING COVER FOR THE DIAGONAL AND COMPRESSION STRUTS.

- ① LOCATE THE "HIDDEN" FACTORY PREDRILLED BOLT HOLES IN SPAR BY RUNNING FINGER OVER SPAR AS SHOWN.
- ② MARK THE CENTER OF THE "HIDDEN" BOLT HOLE AND SCRIB A LINE AT RIGHT ANGLE TO SPAR WITH A PENCIL. SEE VIEW "A-A" BELOW



- ③ CENTER THE LOCATOR HOLE IN THE TEMPLATE OVER THE SCRIBED LINE. MOVE THE TEMPLATE FORWARD OR AFT AS INDICATED BELOW AND MARK LOCATION ON THE WING COVER THRU HOLE IN THE TEMPLATE WITH A PENCIL. NOTICE THAT THE USE OF THE TEMPLATE IS DIFFERENT ON THE LEADING EDGE SPAR AND THE TRAILING EDGE SPAR. REPEAT AT 8 PLACES ON EACH WING.

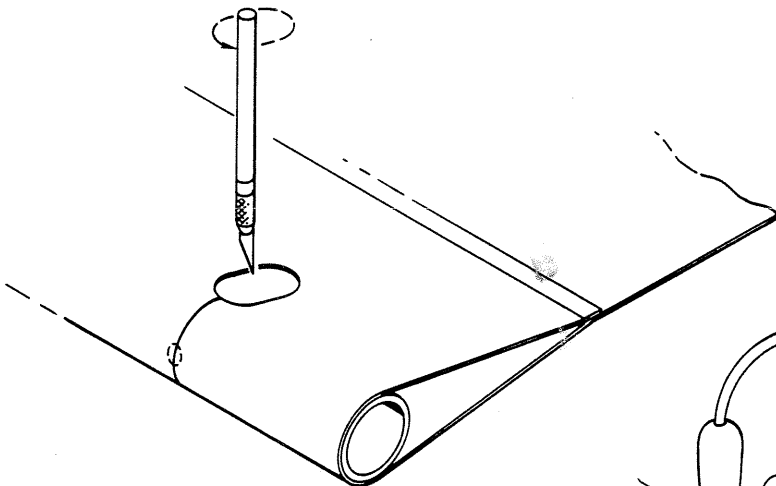


DETAILS CONTINUED NEXT PAGE

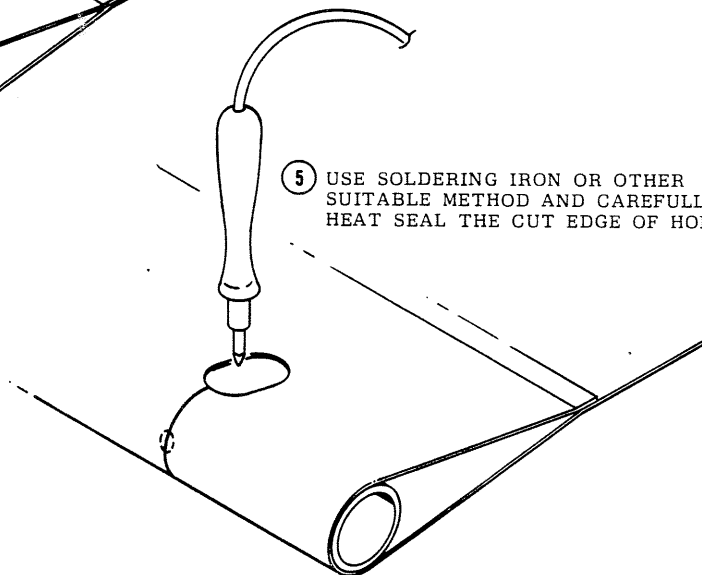
# SECTION THREE

B

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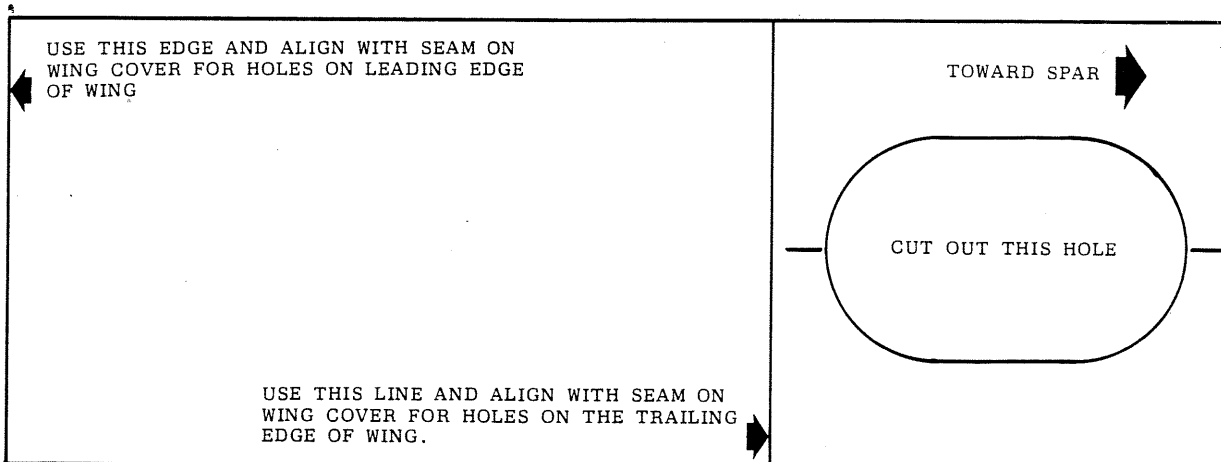
④ CUT OUT HOLE IN WING COVER



⑤ USE SOLDERING IRON OR OTHER SUITABLE METHOD AND CAREFULLY HEAT SEAL THE CUT EDGE OF HOLE.

REPEAT THE ABOVE OPERATIONS 8 PLACES ON EACH WING

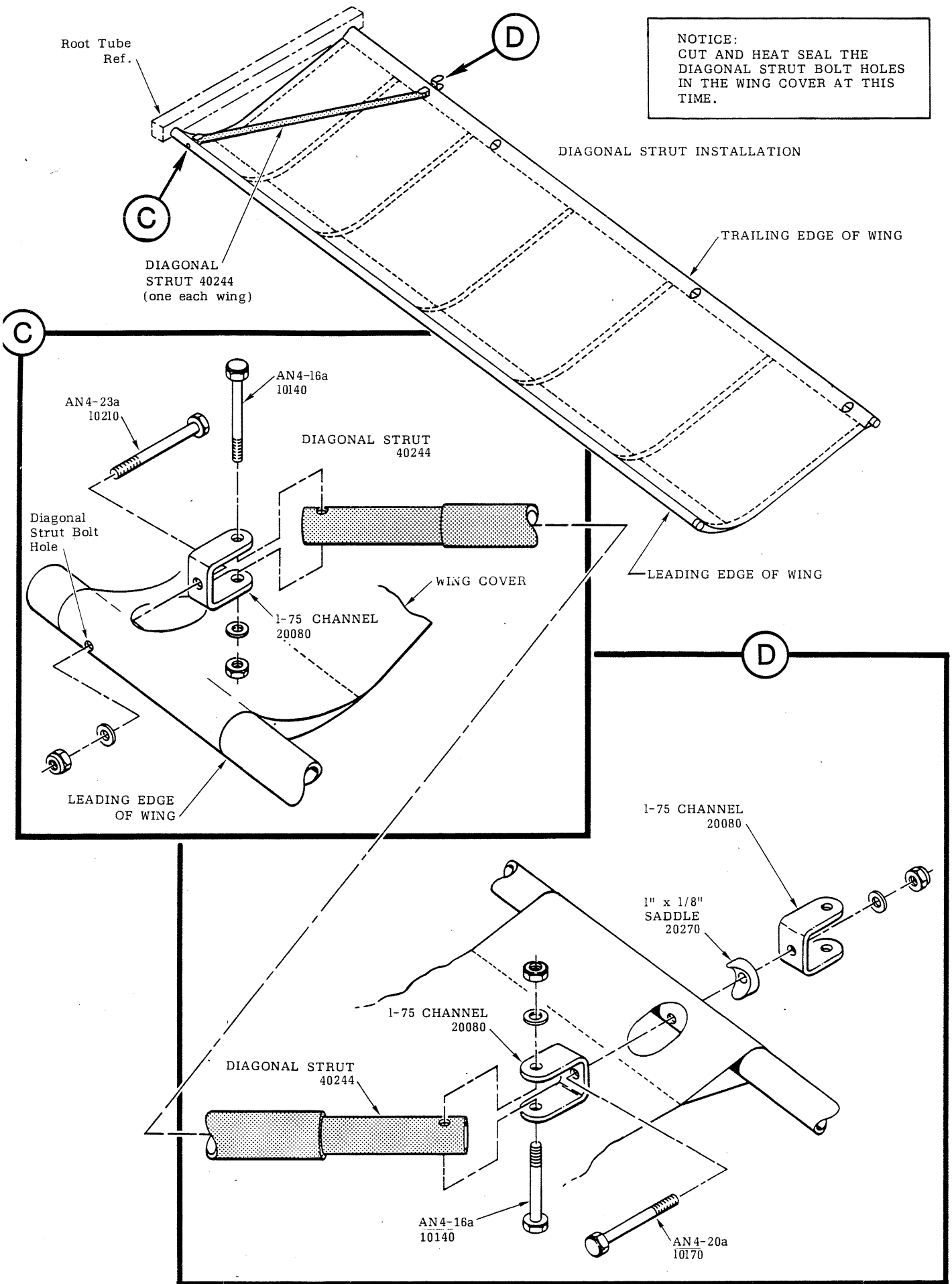
TRACE THIS TEMPLATE ON HARD THIN CARDBOARD AND CUT OUT



DETAILS CONTINUED NEXT PAGE

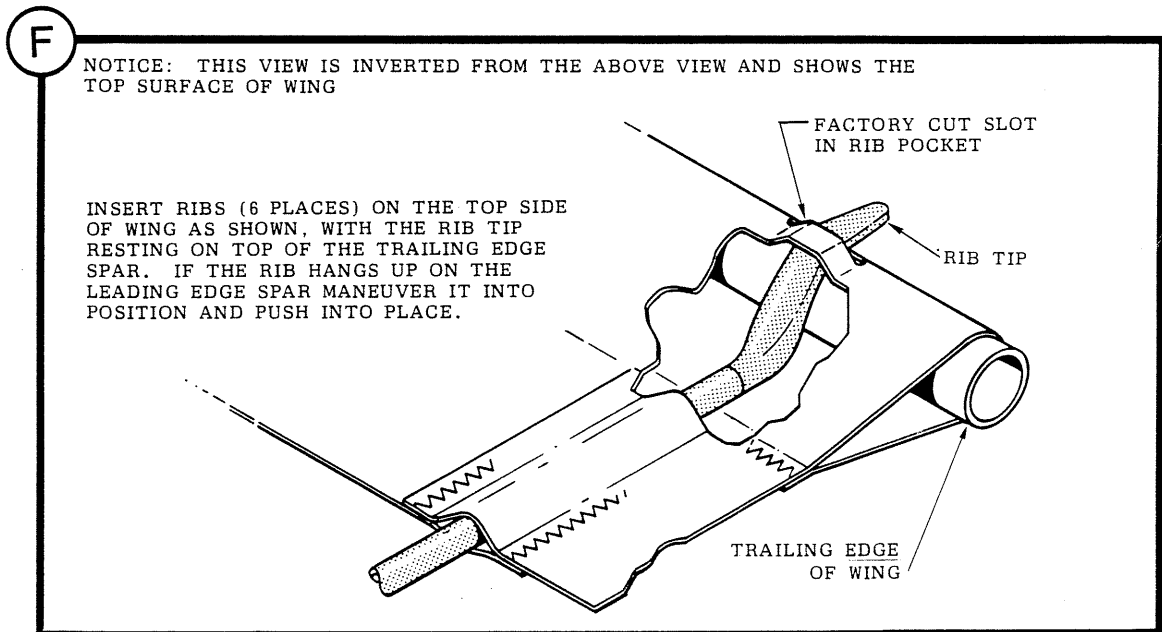
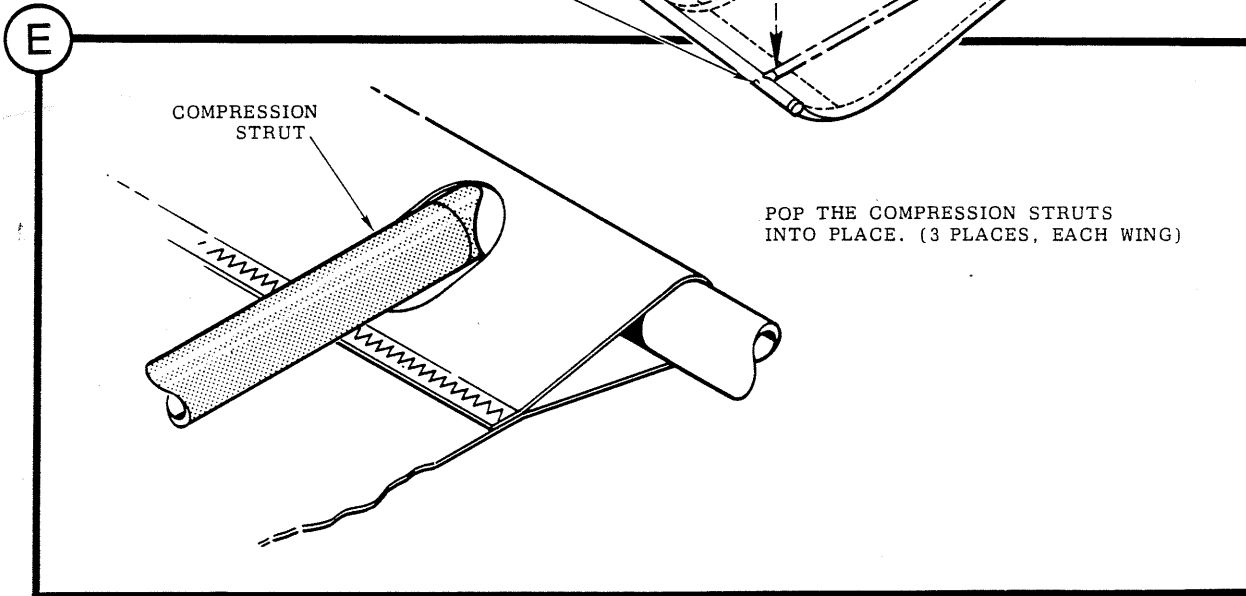
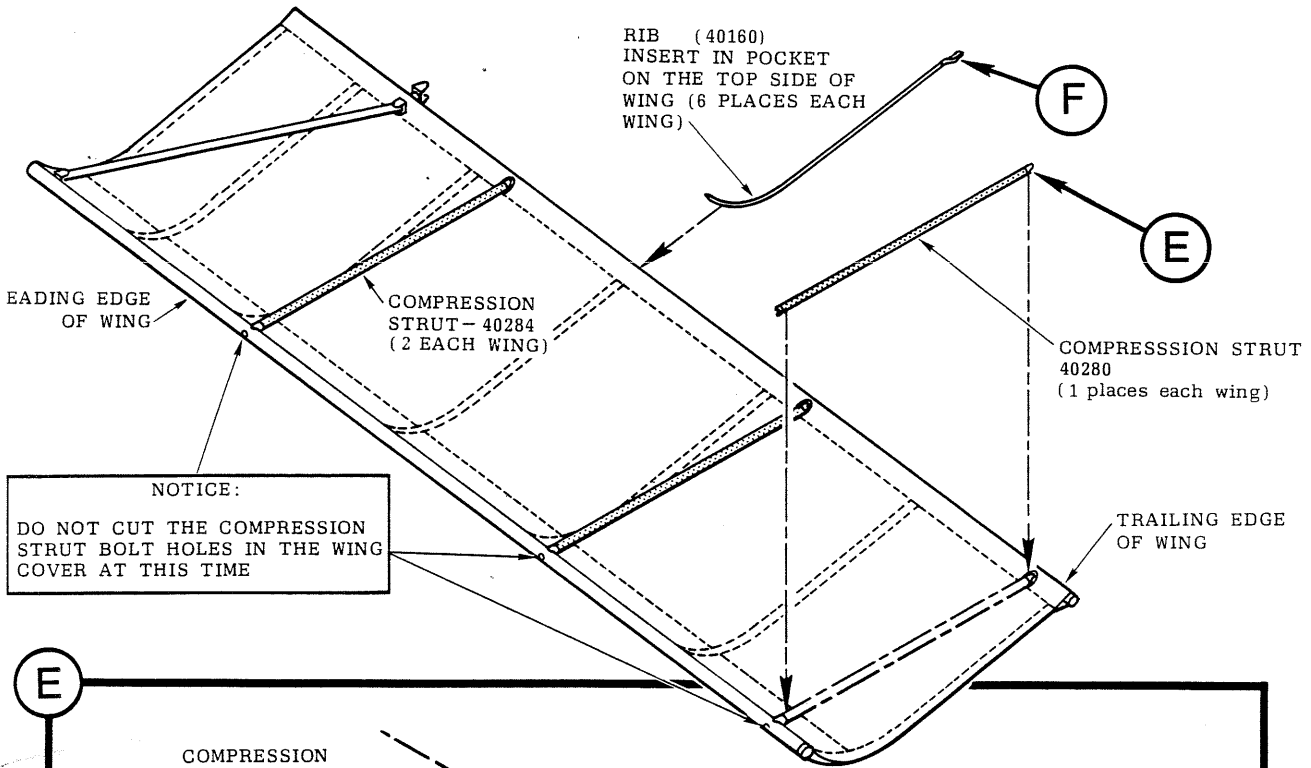
# SECTION THREE

NOTICE:  
CUT AND HEAT SEAL THE  
DIAGONAL STRUT BOLT HOLES  
IN THE WING COVER AT THIS  
TIME.





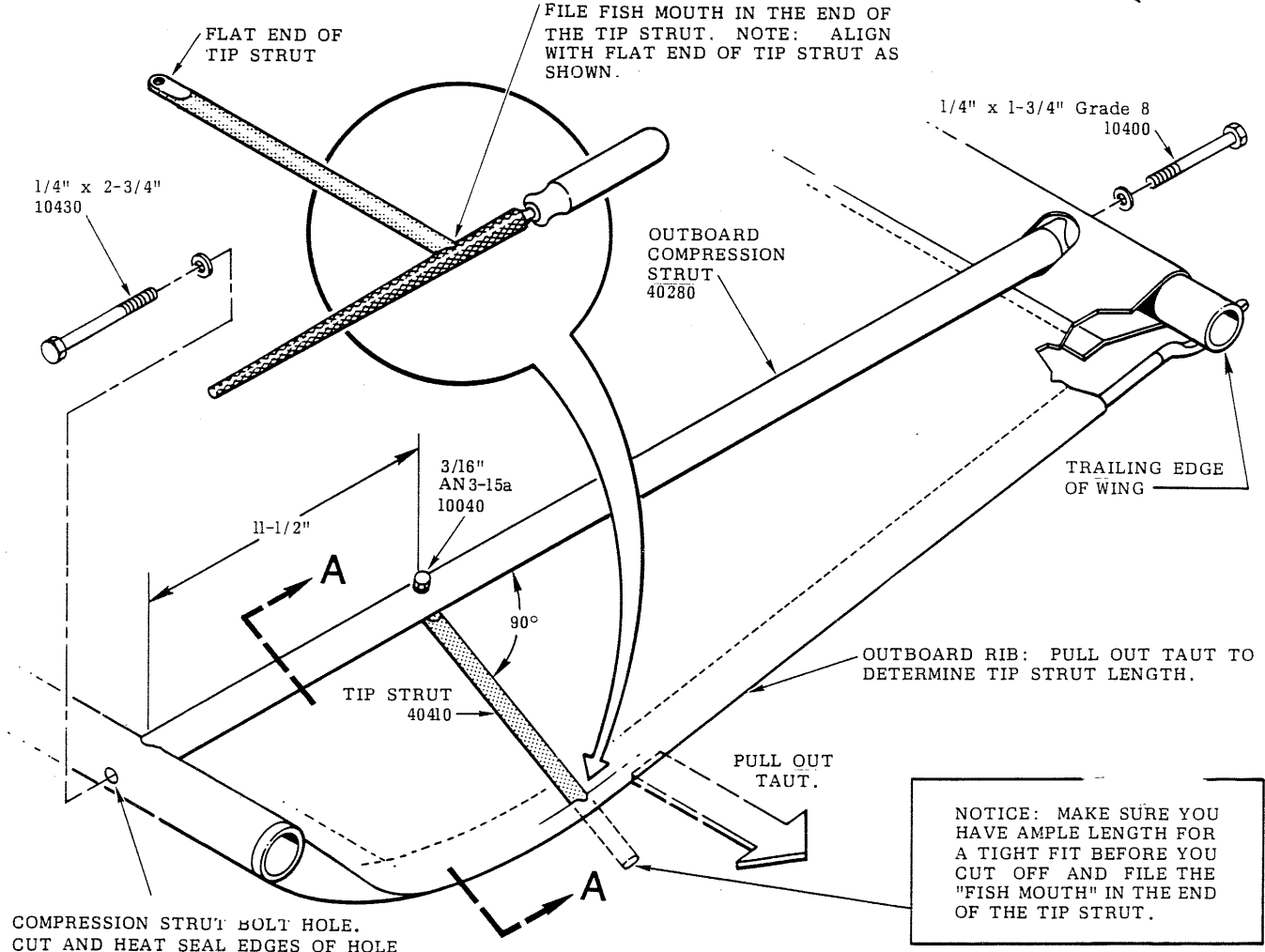
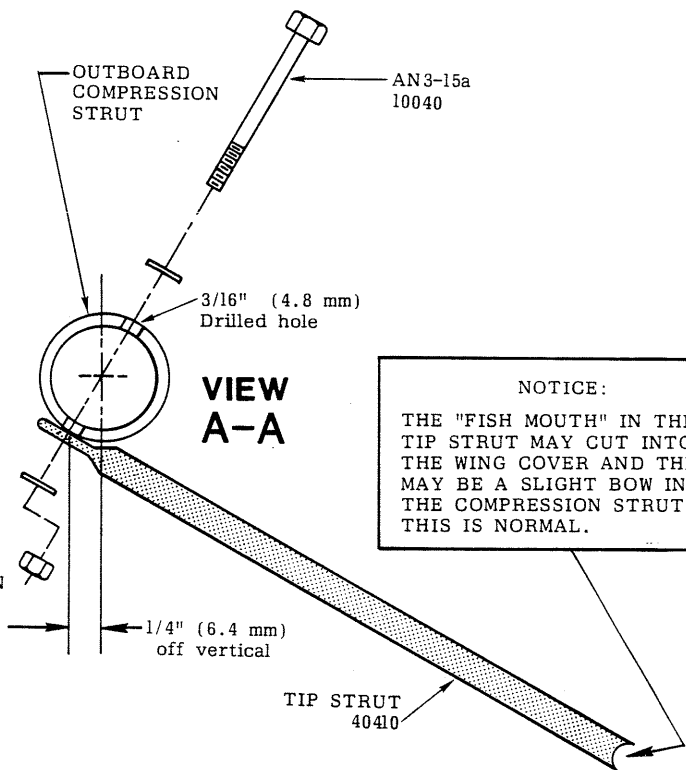
### SECTION THREE



# SECTION THREE

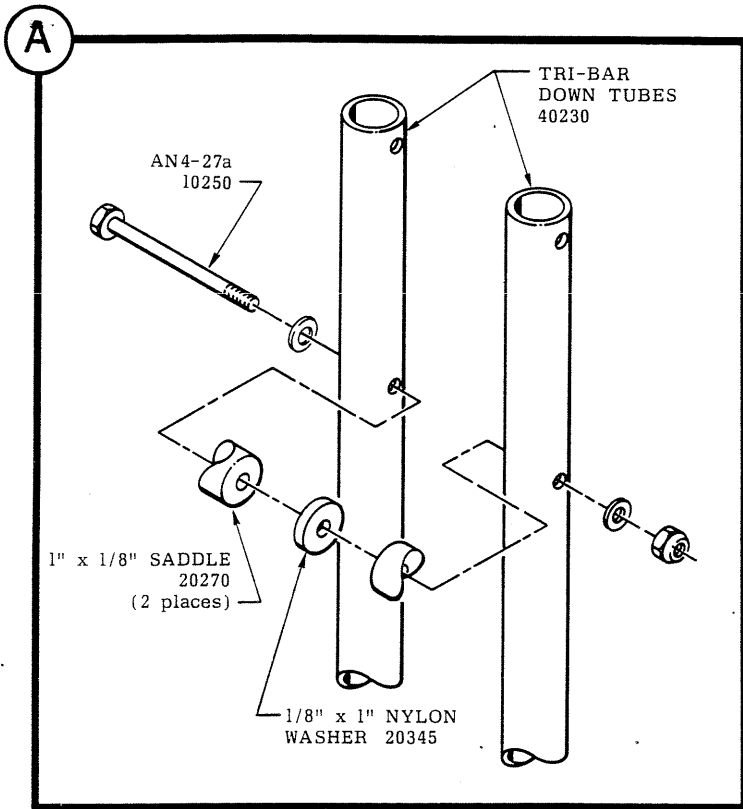
G

- ① CUT COMPRESSION STRUT BOLT HOLES IN THE WING COVER FOR THE OUTBOARD STRUT ONLY.
- ② SECURE OUTBOARD STRUT WITH BOLTS AND WASHERS AS SHOWN.
- ③ DRILL A 3/16" HOLE IN THE OUTBOARD COMPRESSION STRUT, 11-1/2" FROM THE FWD END AND 1/4" OFF VERTICAL AS SHOWN IN VIEW "A-A" AND DETAIL BELOW.
- ④ ATTACH TIP STRUT TO OUTBOARD COMPRESSION STRUT.
- ⑤ THE TIP STRUT HAS EXCESSIVE LENGTH. TO DETERMINE THE PROPER LENGTH, PULL THE OUTBD RIB OUT TAUT AS SHOWN AND MARK.
- ⑥ CUT OFF EXCESSIVE LENGTH AND USE A RAT TAIL FILE TO FORM A "FISH MOUTH" ON THE END OF THE TIP STRUT. NOTE: FILE IN THE SAME PLANE AS THE FLAT ON THE OTHER END OF THE TIP STRUT.
- ⑦ REINSTALL THE TIP STRUT ON THE COMPRESSION STRUT AND SADDLE THE "FISH MOUTH" ON THE OUTBOARD RIB AT A 90° ANGLE TO THE OUTBD. COMPRESSION STRUT AS SHOWN BELOW. (TENSION WILL HOLD IN PLACE)
- ⑧ CUT AND SEAL AND ATTACH REMAINING STRUTS.

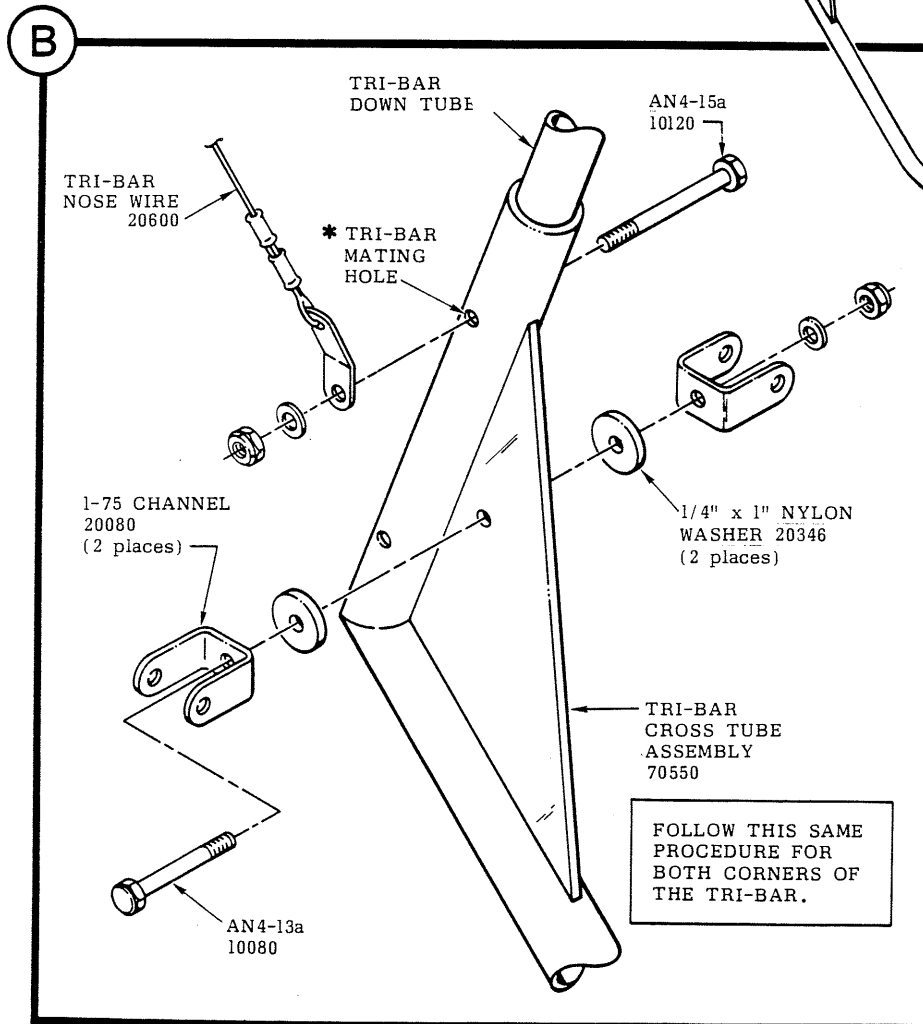
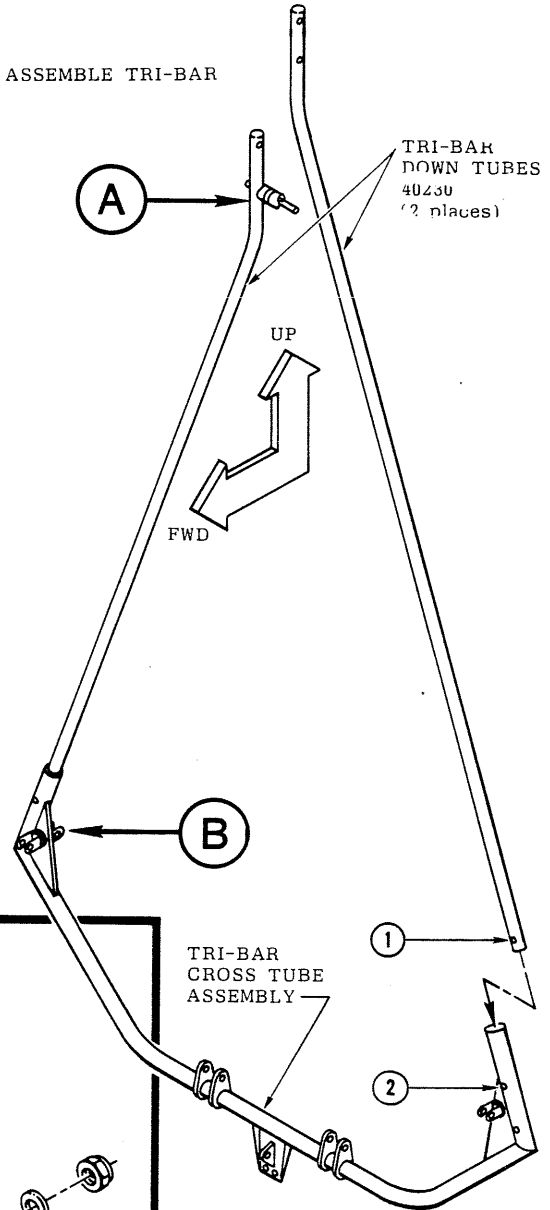


COMPRESSION STRUT BOLT HOLE.  
CUT AND HEAT SEAL EDGES OF HOLE

# SECTION FOUR



ASSEMBLE TRI-BAR



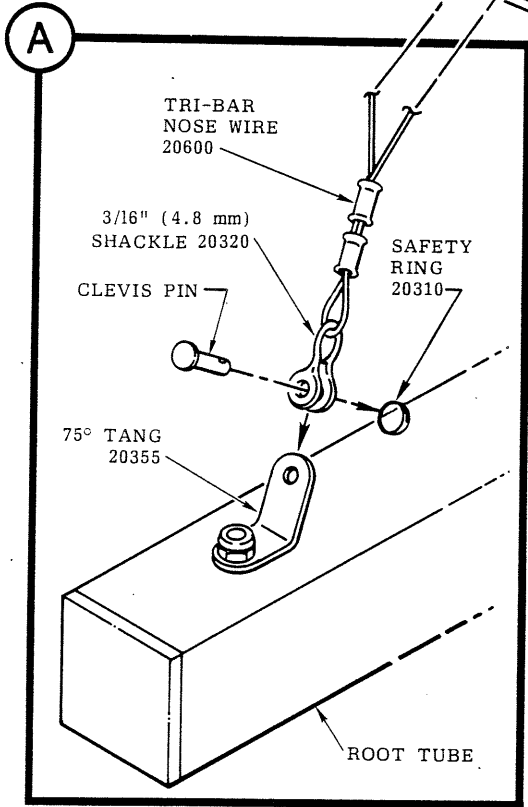
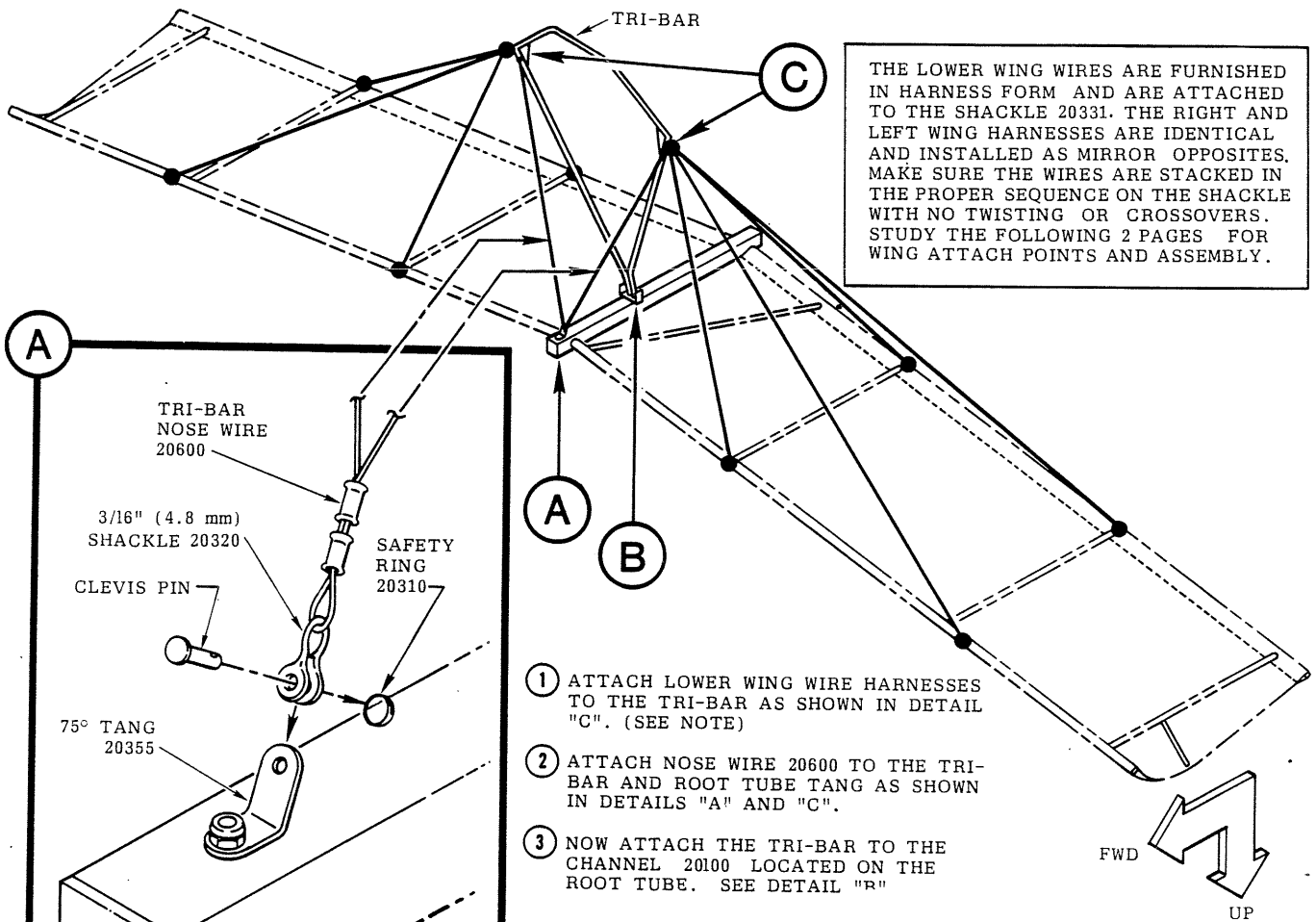
NOTICE: \*

MATE HOLE ① WITH HOLE ②

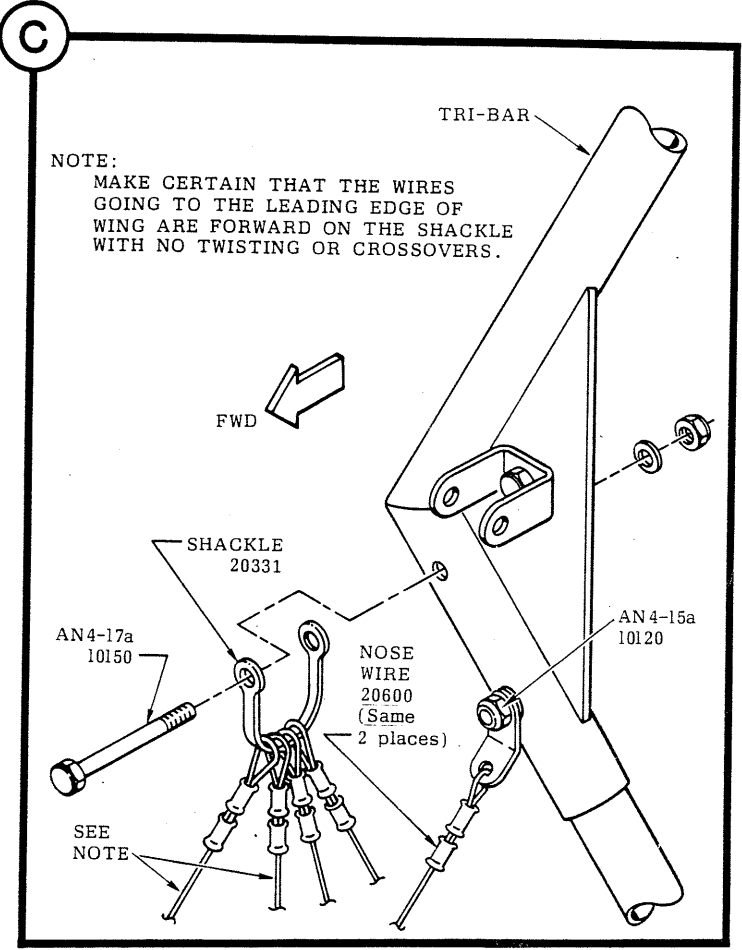
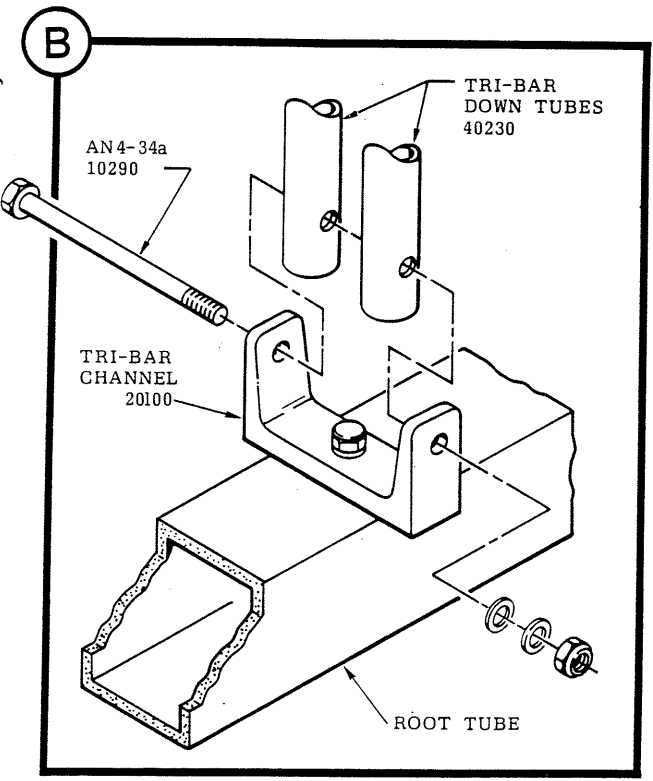
MAKE SURE THE TOP OF THE TRI-BAR DOWN TUBES ARE ORIENTED CORRECTLY TO ATTACH TO ROOT TUBE CHANNEL LATER.

FOLLOW THIS SAME  
PROCEDURE FOR  
BOTH CORNERS OF  
THE TRI-BAR.

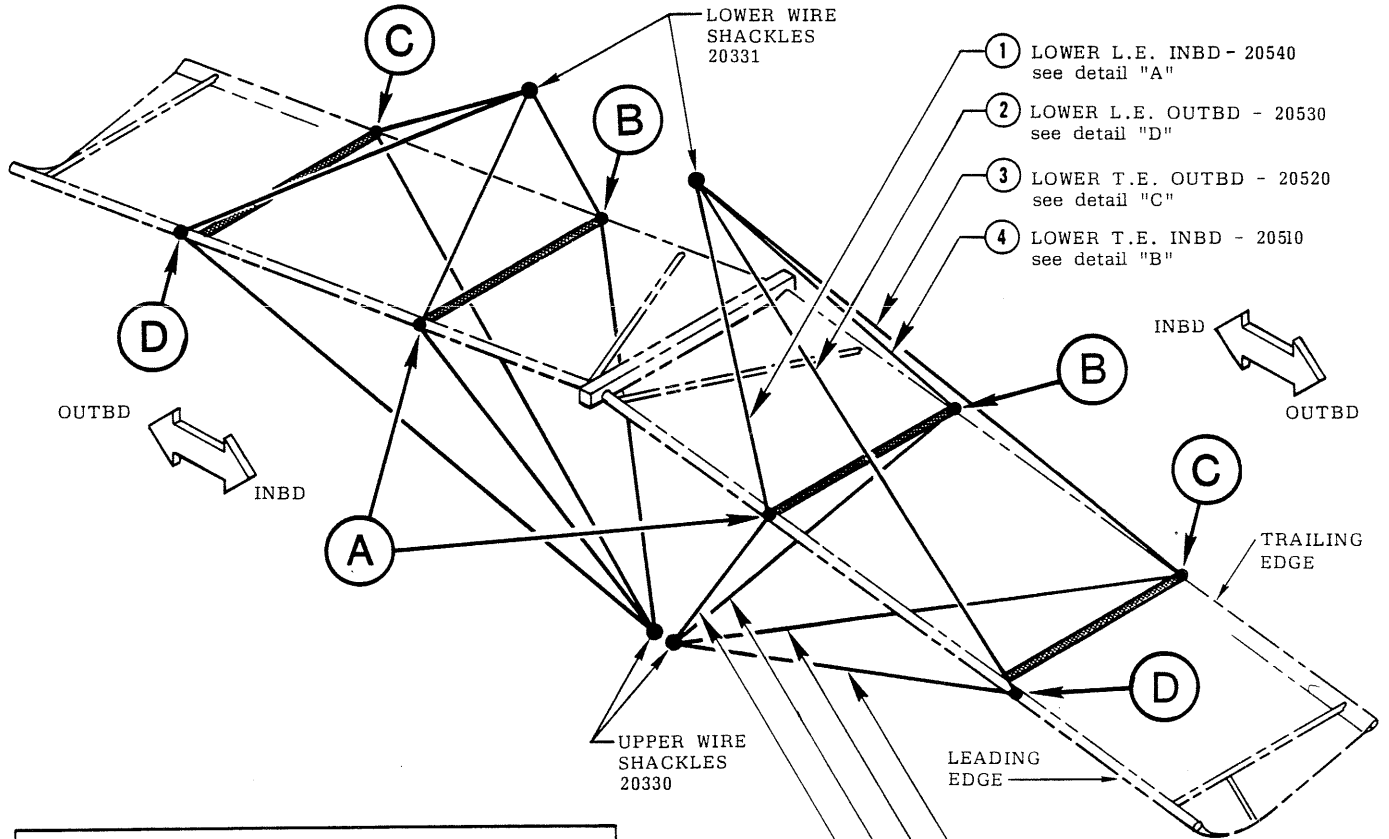
# SECTION FOUR



- 1 ATTACH LOWER WING WIRE HARNESSES TO THE TRI-BAR AS SHOWN IN DETAIL "C". (SEE NOTE)
- 2 ATTACH NOSE WIRE 20600 TO THE TRI-BAR AND ROOT TUBE TANG AS SHOWN IN DETAILS "A" AND "C".
- 3 NOW ATTACH THE TRI-BAR TO THE CHANNEL 20100 LOCATED ON THE ROOT TUBE. SEE DETAIL "B"



# SECTION FOUR



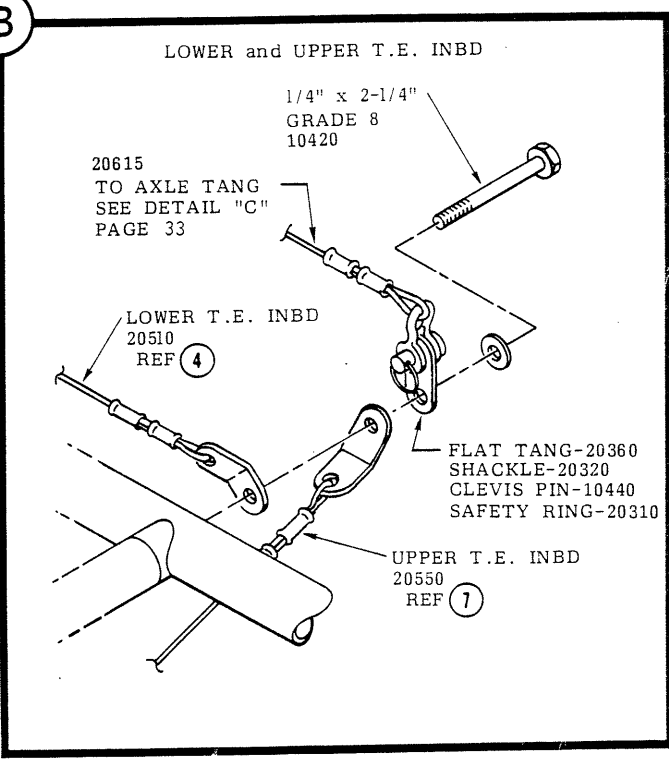
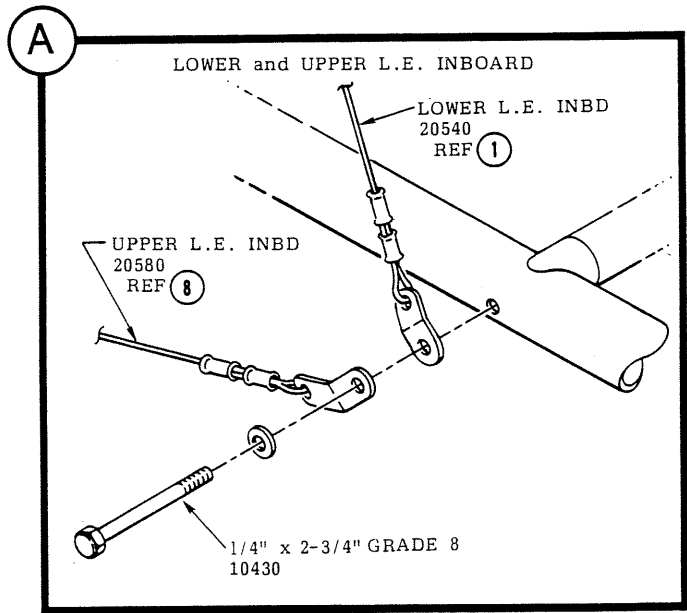
THIS ILLUSTRATION SHOWS THE ATTACHING POINTS AND HARDWARE FOR BOTH THE UPPER AND LOWER WING WIRES. STUDY IT THOROUGHLY AND BECOME FAMILIAR WITH THE TERMINOLOGY SUCH AS "UPPER LEADING EDGE INBOARD" "LOWER TRAILING EDGE OUTBOARD ETC."

WIRES ARE ATTACHED AS MIRROR OPPOSITES ON BOTH SIDES OF WING.

EACH WIRE CARRIES A SLEEVE THAT INDICATES ITS PART NUMBER. DO NOT REMOVE THIS SLEEVE.

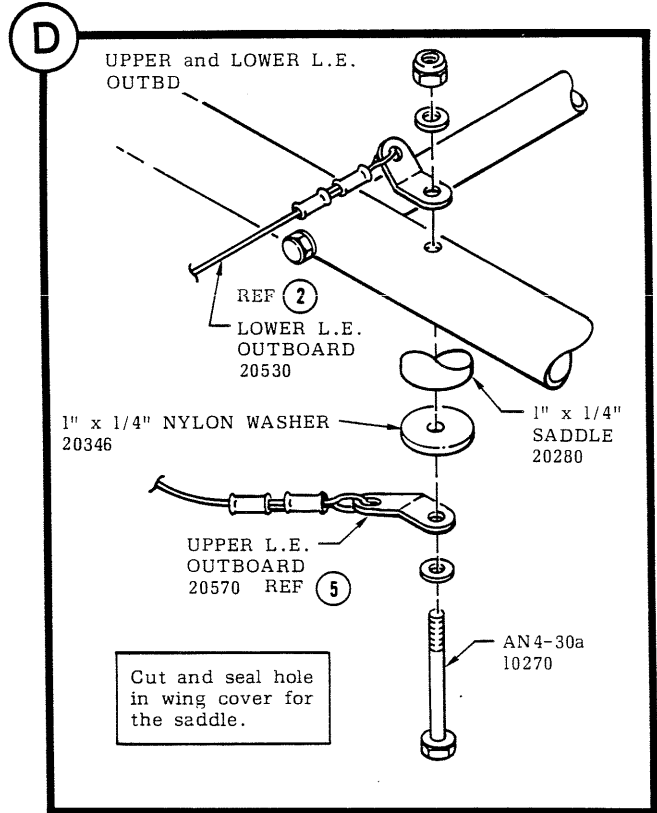
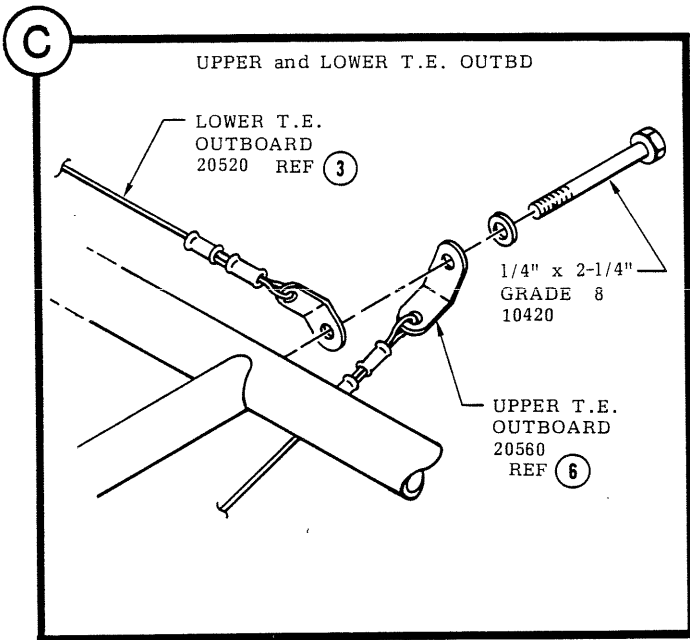
- ① LOWER L.E. INBD - 20540 see detail "A"
- ② LOWER L.E. OUTBD - 20530 see detail "D"
- ③ LOWER T.E. OUTBD - 20520 see detail "C"
- ④ LOWER T.E. INBD - 20510 see detail "B"

- ⑤ UPPER L.E. OUTBD - 20570 see detail "D"
- ⑥ UPPER T.E. OUTBD - 20560 see detail "C"
- ⑦ UPPER T.E. INBD - 20550 see detail "B"
- ⑧ UPPER L.E. INBD - 20580 see detail "A"



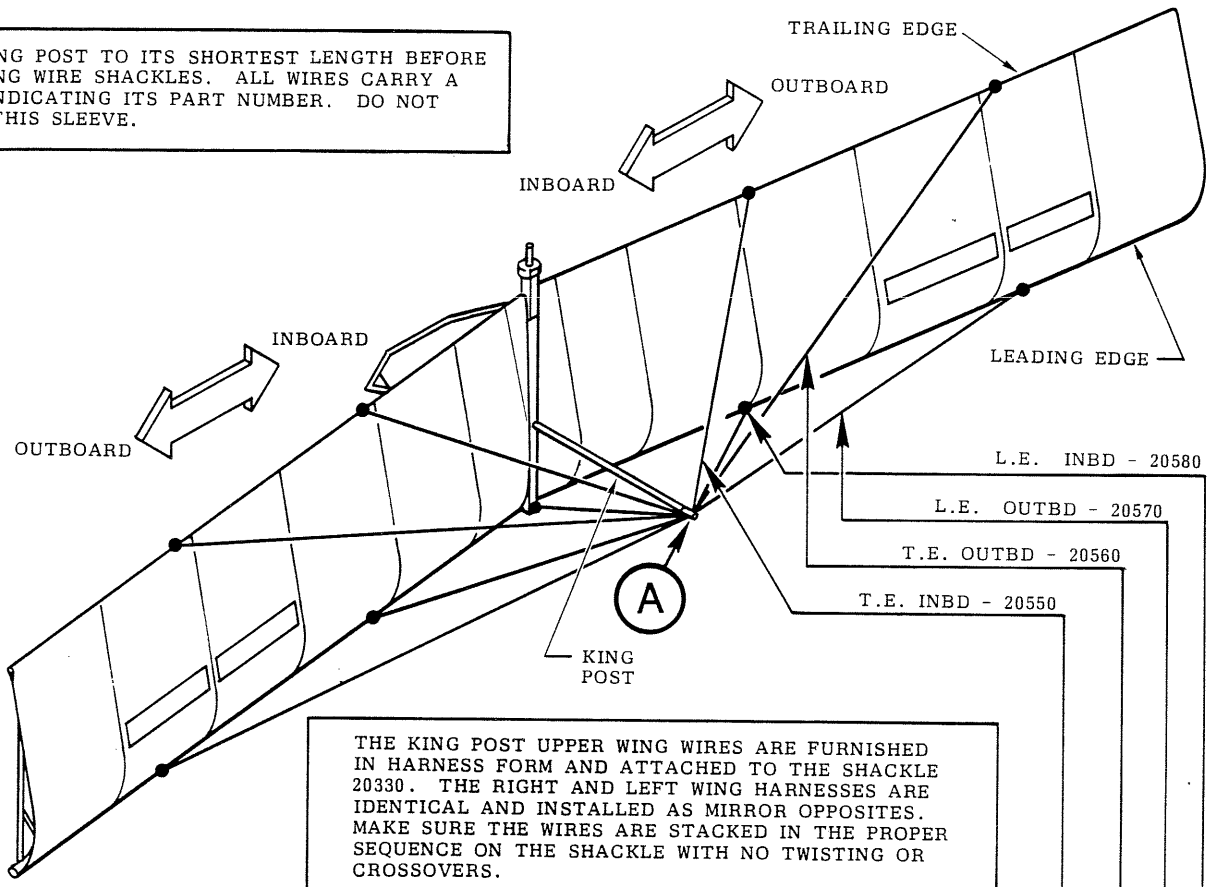
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# SECTION FOUR

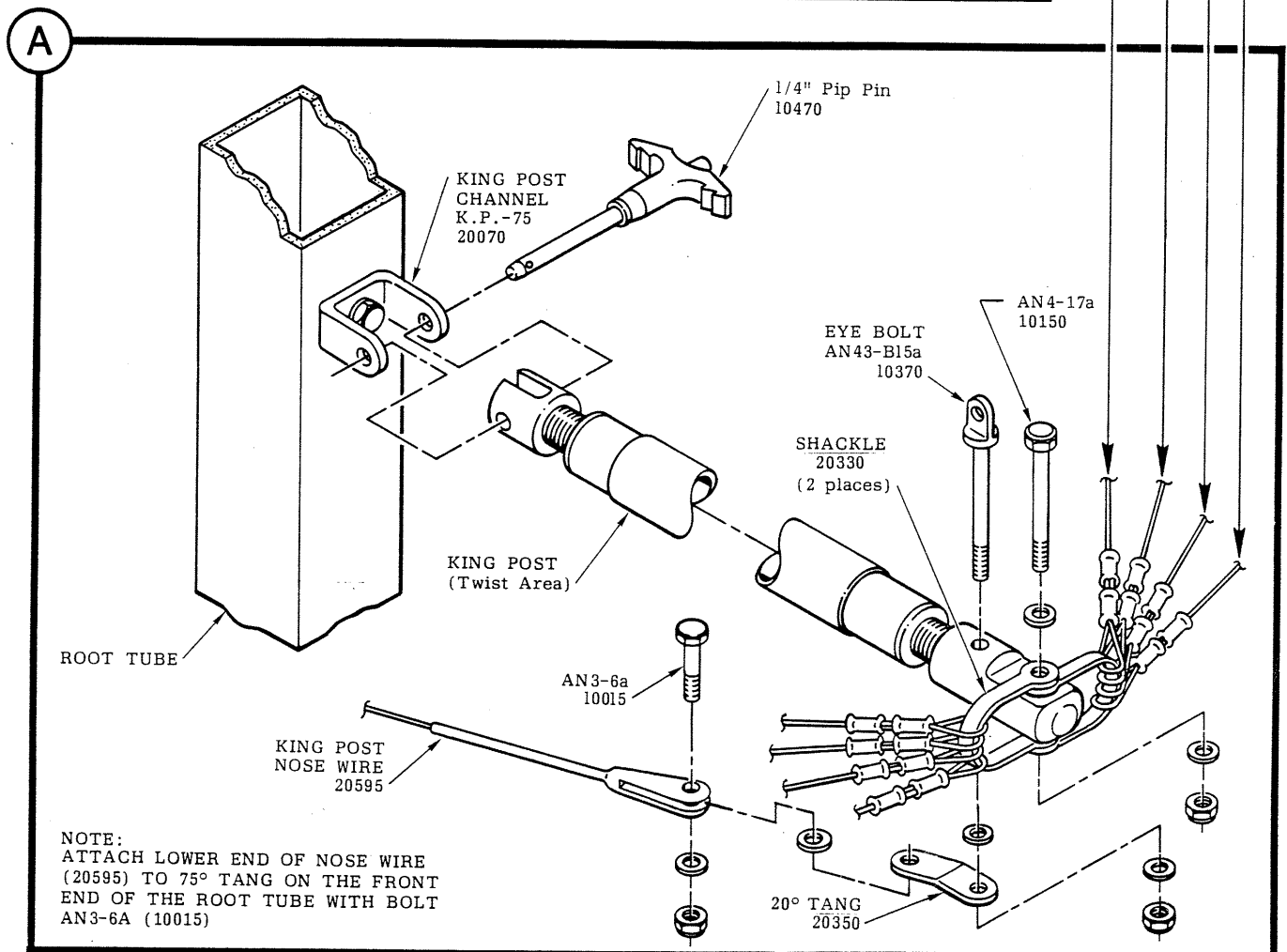


# SECTION FIVE

TWIST KING POST TO ITS SHORTEST LENGTH BEFORE ATTACHING WIRE SHACKLES. ALL WIRES CARRY A SLEEVE INDICATING ITS PART NUMBER. DO NOT REMOVE THIS SLEEVE.



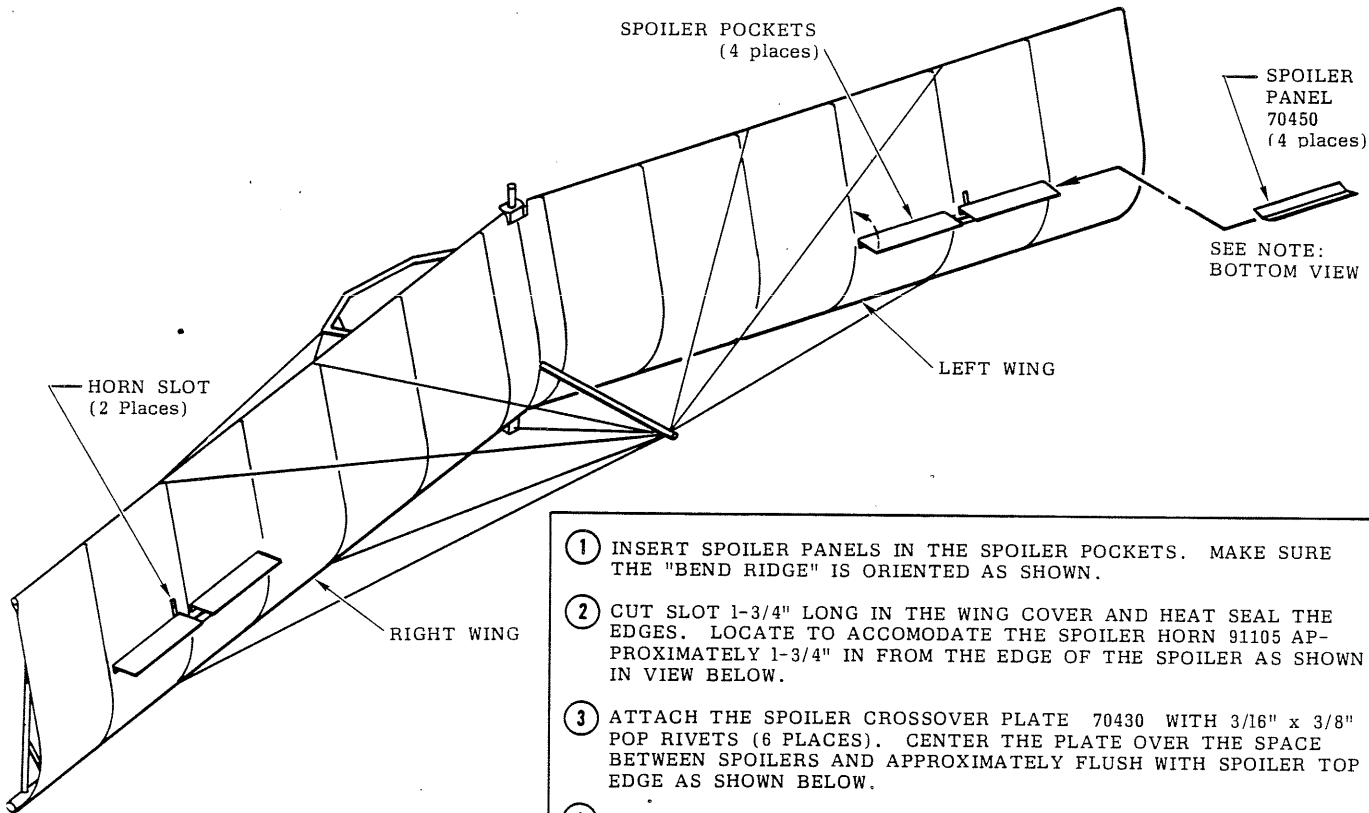
THE KING POST UPPER WING WIRES ARE FURNISHED IN HARNESS FORM AND ATTACHED TO THE SHACKLE 20330. THE RIGHT AND LEFT WING HARNESSES ARE IDENTICAL AND INSTALLED AS MIRROR OPPOSITES. MAKE SURE THE WIRES ARE STACKED IN THE PROPER SEQUENCE ON THE SHACKLE WITH NO TWISTING OR CROSSOVERS.



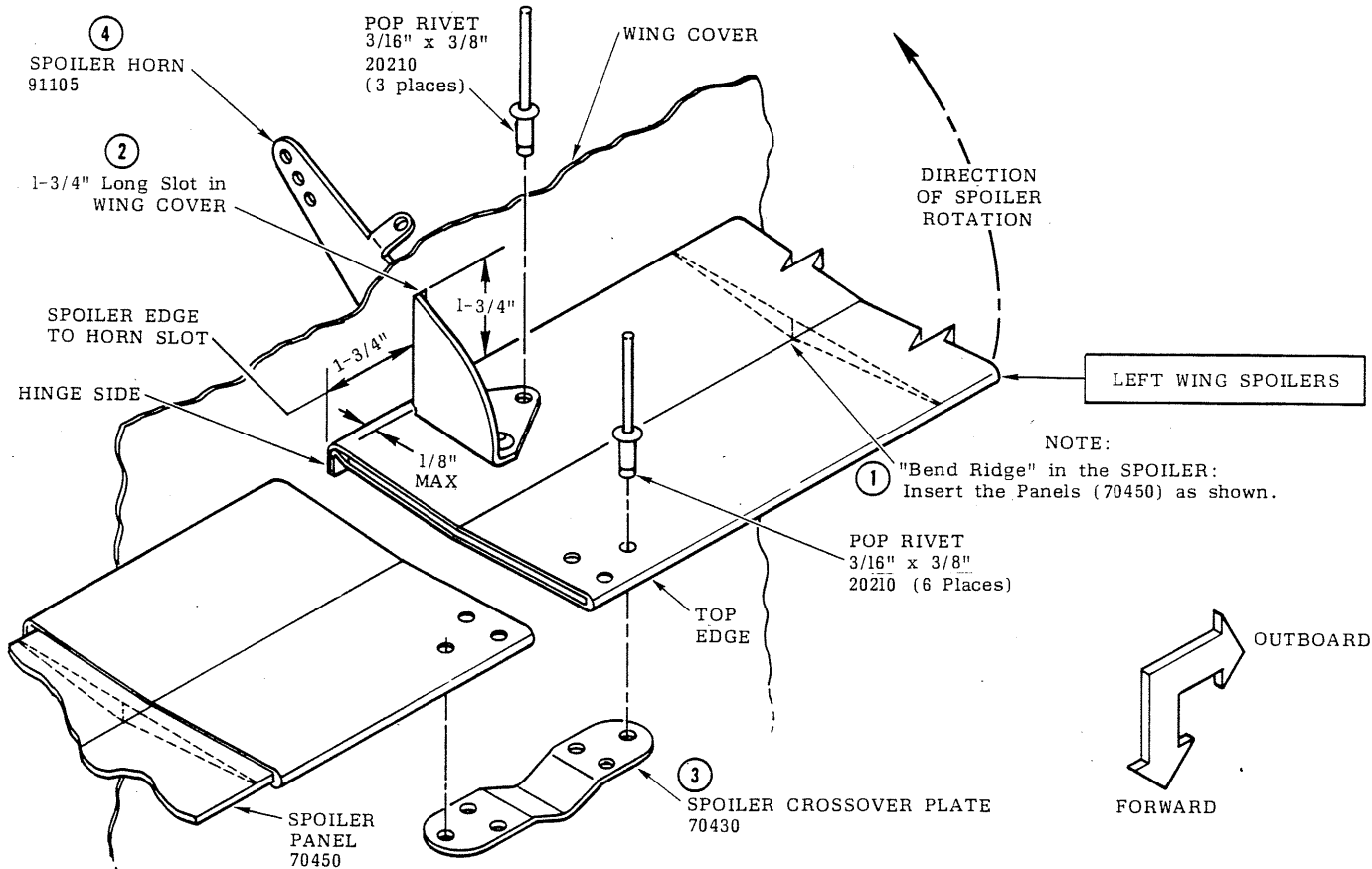
NOTE:  
ATTACH LOWER END OF NOSE WIRE (20595) TO 75° TANG ON THE FRONT END OF THE ROOT TUBE WITH BOLT AN3-6A (10015)

DETAILS CONTINUED NEXT PAGE

# SECTION FIVE



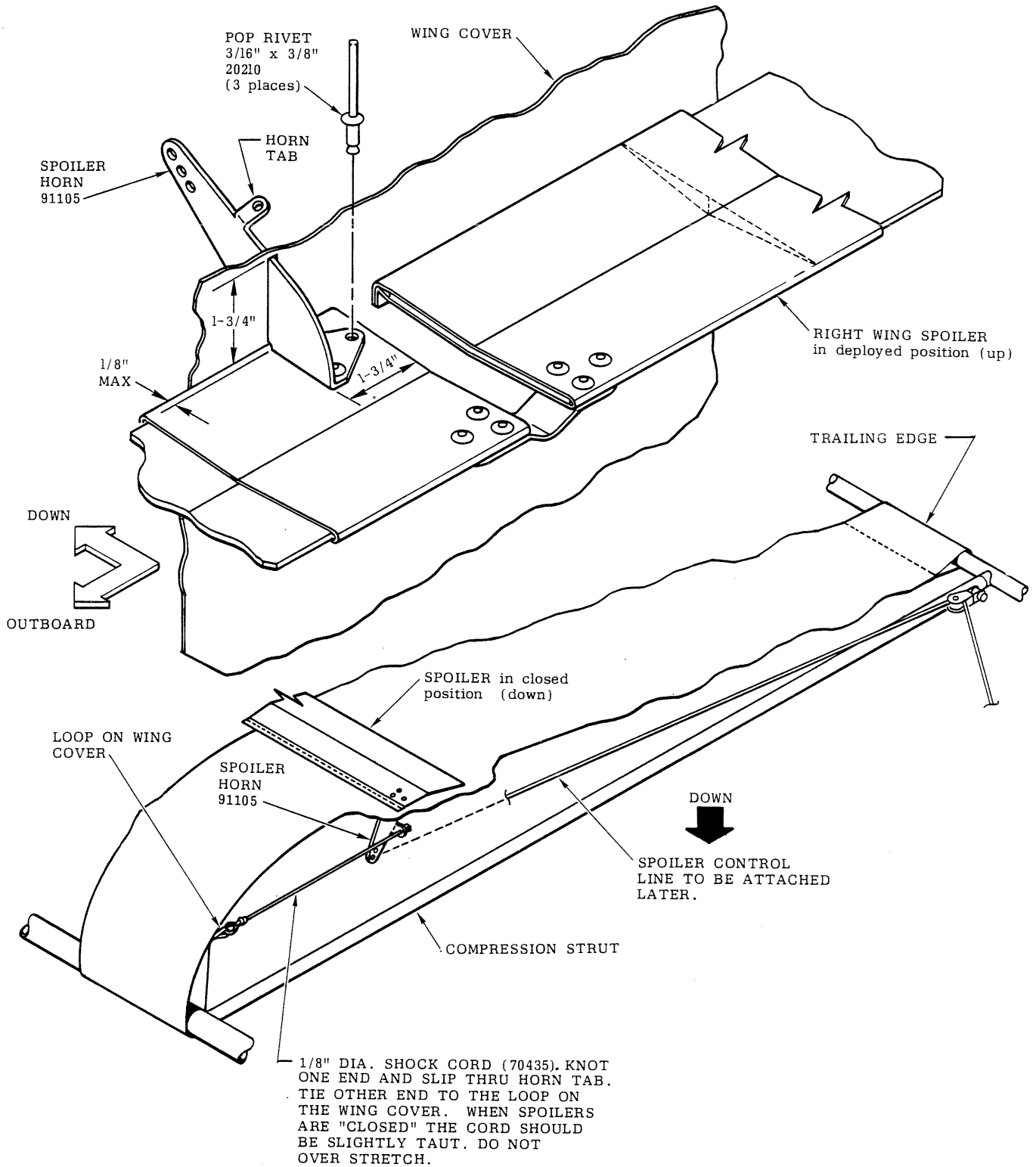
- ① INSERT SPOILER PANELS IN THE SPOILER POCKETS. MAKE SURE THE "BEND RIDGE" IS ORIENTED AS SHOWN.
- ② CUT SLOT 1-3/4" LONG IN THE WING COVER AND HEAT SEAL THE EDGES. LOCATE TO ACCOMODATE THE SPOILER HORN 91105 APPROXIMATELY 1-3/4" IN FROM THE EDGE OF THE SPOILER AS SHOWN IN VIEW BELOW.
- ③ ATTACH THE SPOILER CROSSOVER PLATE 70430 WITH 3/16" x 3/8" POP RIVETS (6 PLACES). CENTER THE PLATE OVER THE SPACE BETWEEN SPOILERS AND APPROXIMATELY FLUSH WITH SPOILER TOP EDGE AS SHOWN BELOW.
- ④ INSERT SPOILER HORN 91105 IN THE SLOT IN THE WING COVER AND LOCATE ON THE SPOILER AS PER DEMENSIONS SHOWN. POP RIVET TO SPOILER (3 PLACES). SEE NEXT PAGE FOR HORN INSTALLATION ON RIGHT WING SPOILERS.



DETAILS CONTINUED ON NEXT PAGE



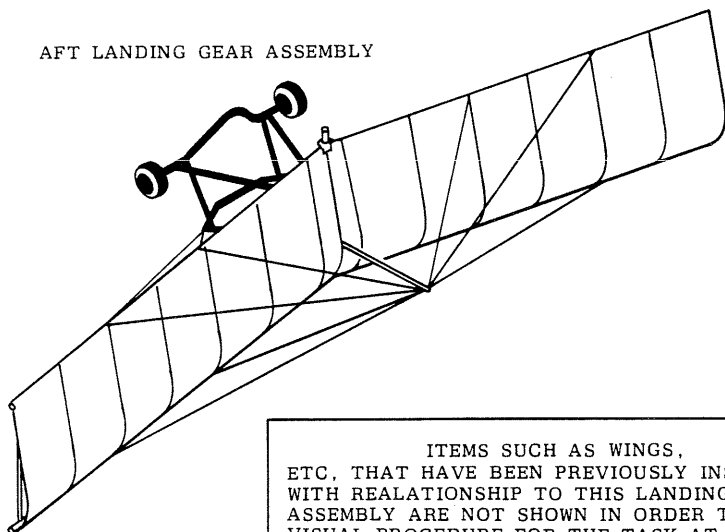
# SECTION FIVE



ASSEMBLE RIGHT WING SPOILERS THE SAME AS THE LEFT WING SPOILERS EXCEPT FOR THE SPOILER HORN (91105). THE ATTACHING RIVET HOLE LOCATION WILL BE DIFFERENT AS NOTED DUE TO THE HORNS NOT BEING BENT IN RIGHT AND LEFT HAND PAIRS.  
NOTE: WHEN ATTACHING HORN AND CROSSOVER PLATES IT IS ADVISABLE TO DRILL AND RIVET ONE HOLE AND ALIGN UNITS BEFORE INSTALLING THE REMAINING RIVETS.

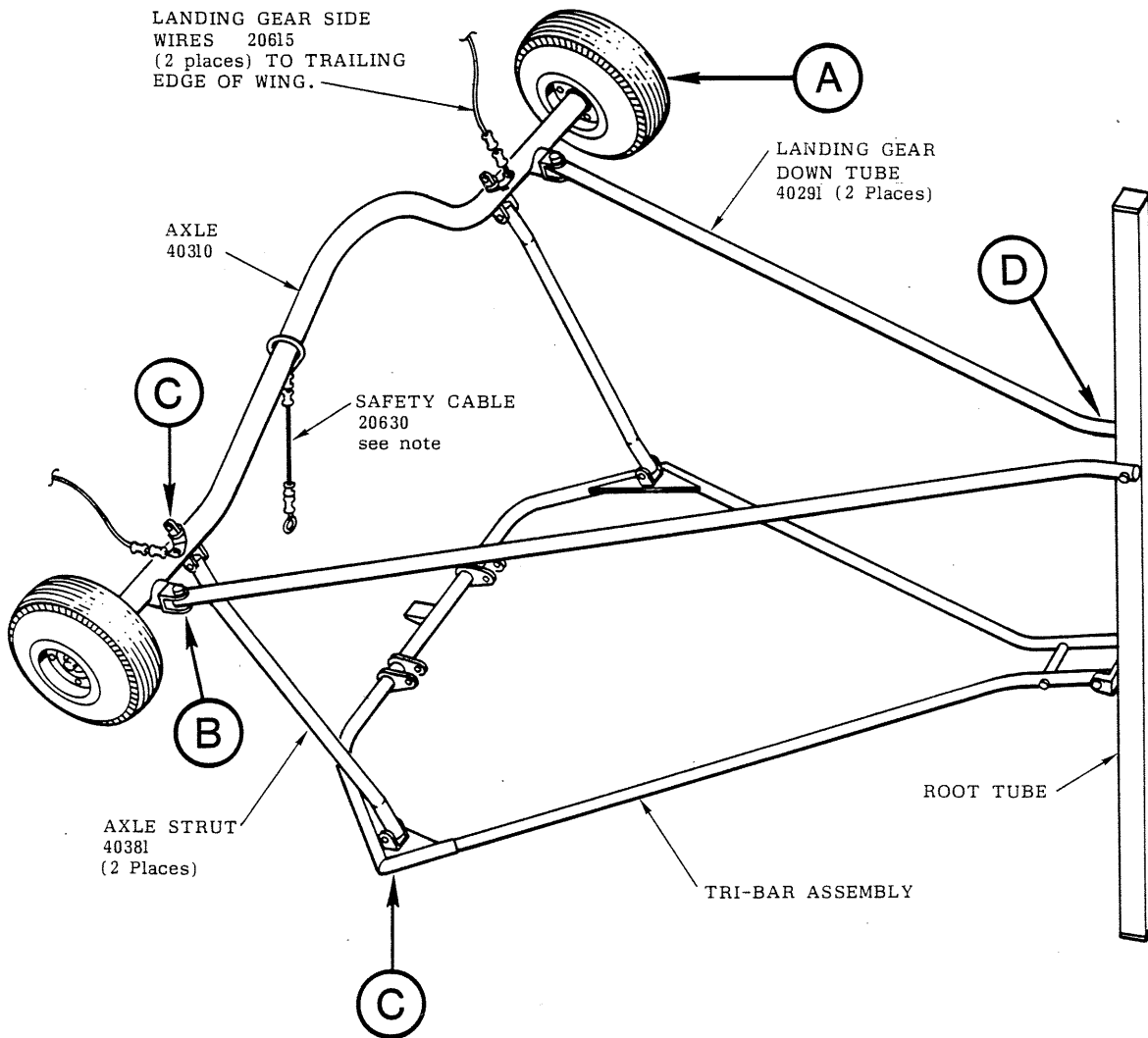
# SECTION SIX

AFT LANDING GEAR ASSEMBLY



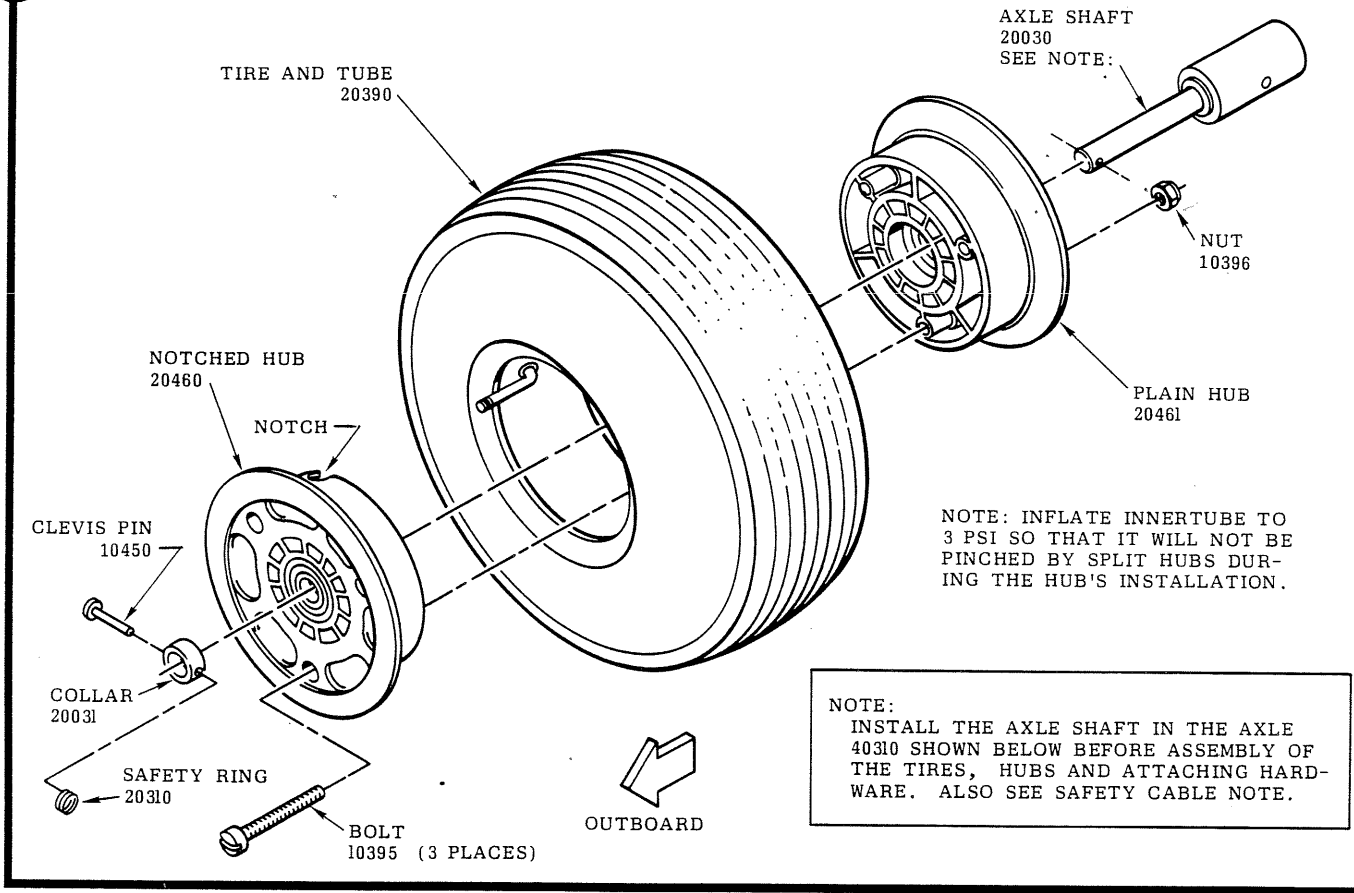
NOTE:  
 SLIP THE SAFETY CABLE 20630  
 ON THE AXLE 40310 BEFORE  
 STARTING ANY OF THE OTHER  
 ASSEMBLIES

ITEMS SUCH AS WINGS,  
 ETC. THAT HAVE BEEN PREVIOUSLY INSTALLED  
 WITH REALATIONSHIP TO THIS LANDING GEAR  
 ASSEMBLY ARE NOT SHOWN IN ORDER TO SIMPLIFY  
 VISUAL PROCEDURE FOR THE TASK AT HAND.

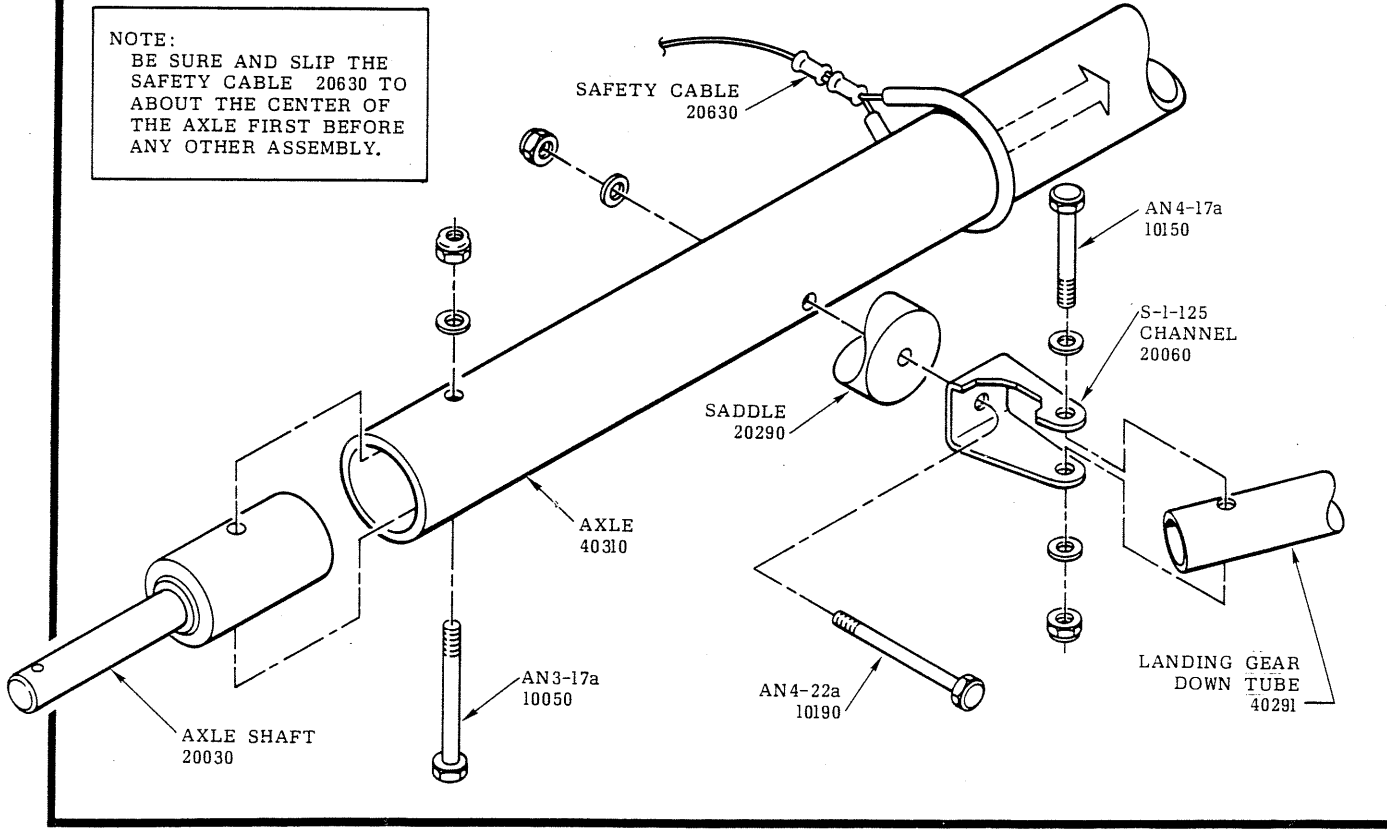


SECTION SIX

A

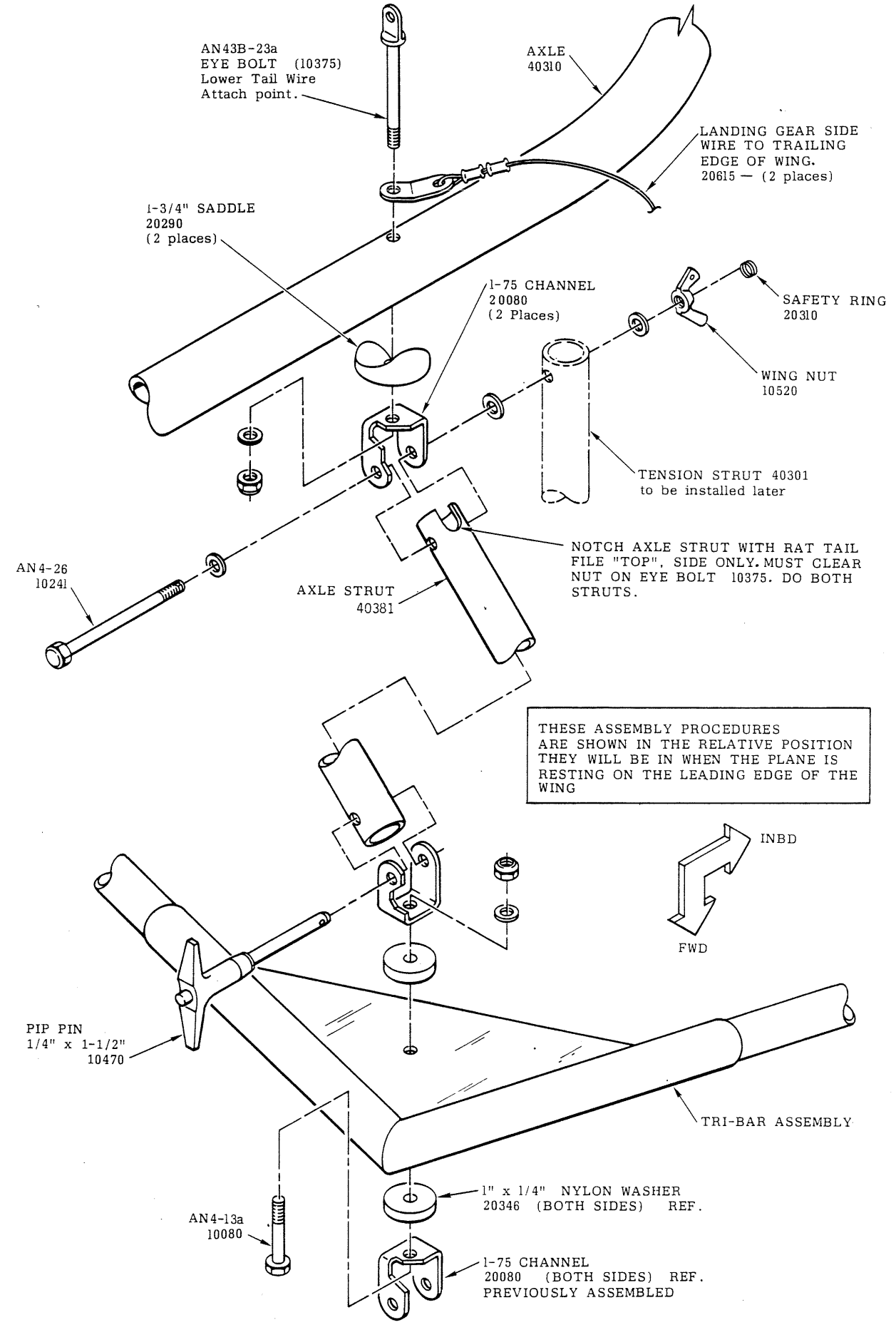


B



# SECTION SIX

C



# SECTION SIX

D

LOCATE DOWN TUBES IN THE FIRST HOLE AFT OF THE ENGINE MOUNT HOLE

LANDING GEAR  
DOWN TUBES  
40291

REAM HOLE TO 5/16"  
IN BOTH SADDLES

1" x 1/8" SADDLE  
20270

SAFETY  
RING  
20310

WING NUT  
10525

1" x 1/8" SADDLE  
20270

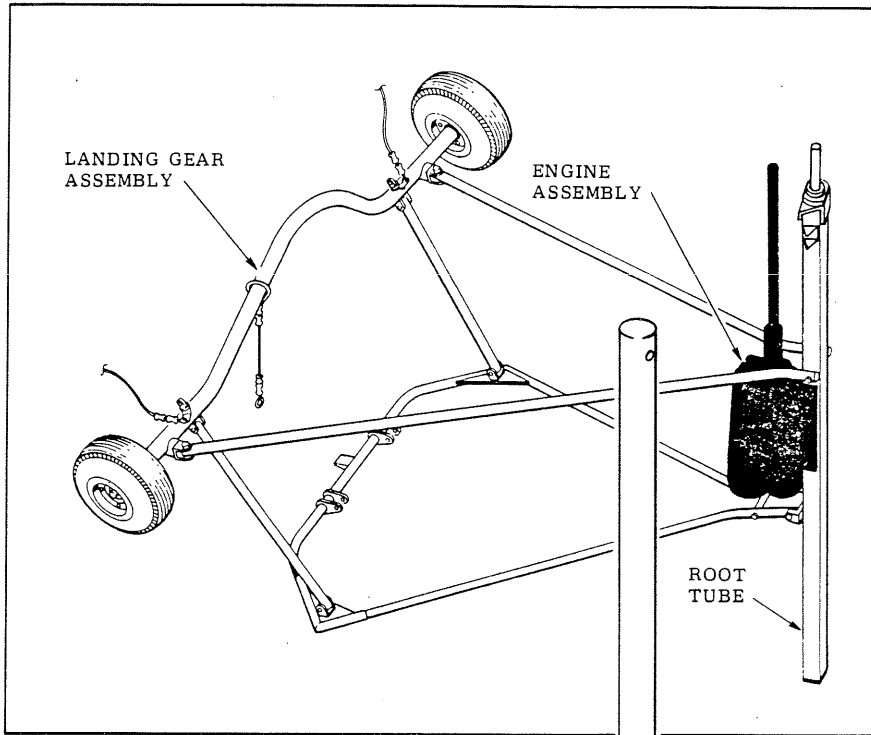
AN5-46  
10345

AFT ENGINE  
MOUNT HOLE

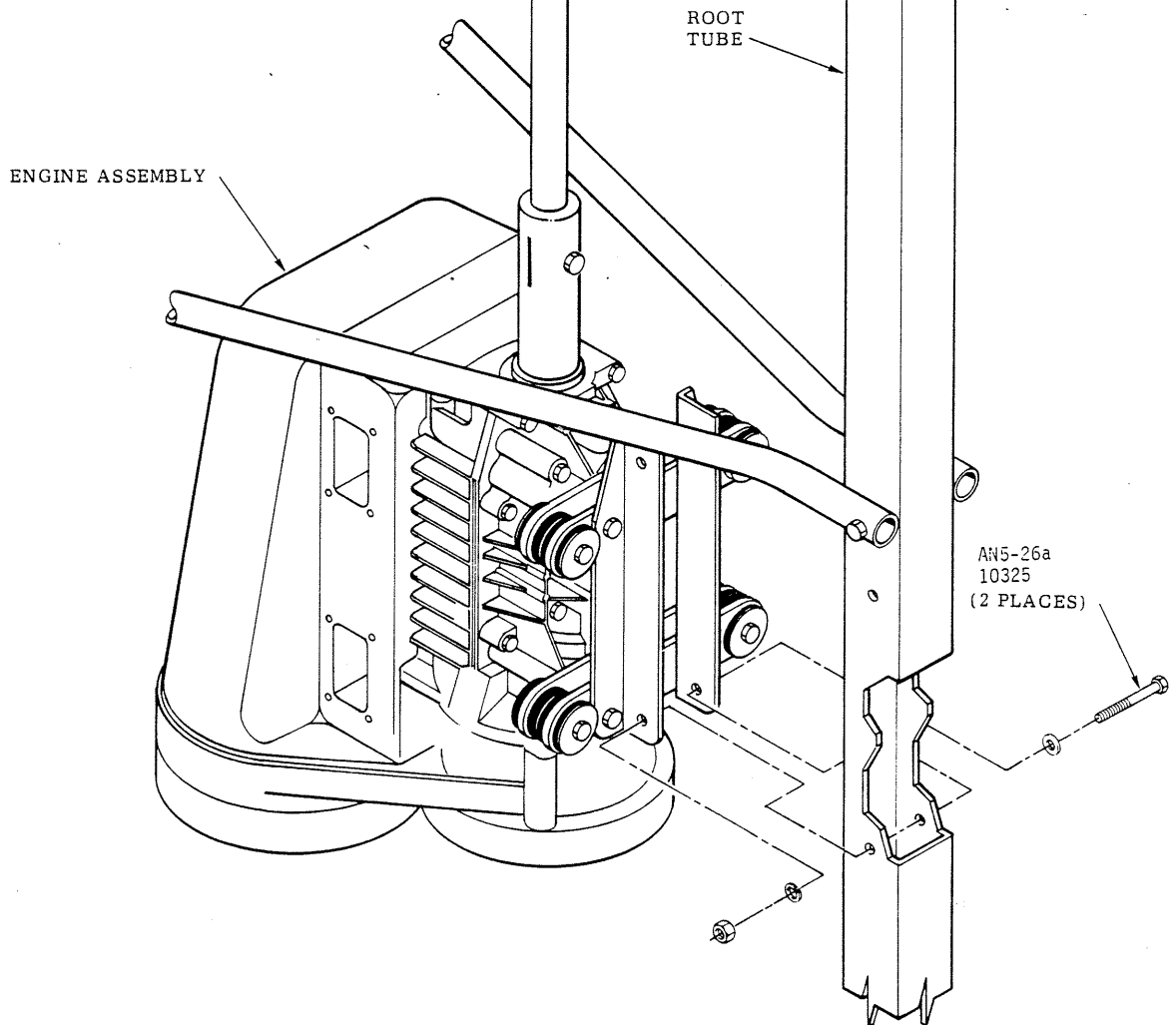
ROOT TUBE



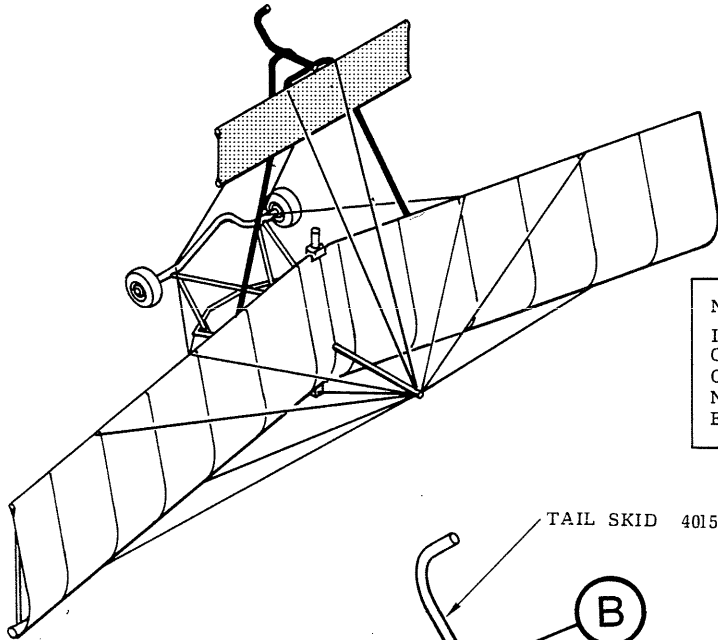
SECTION SIX



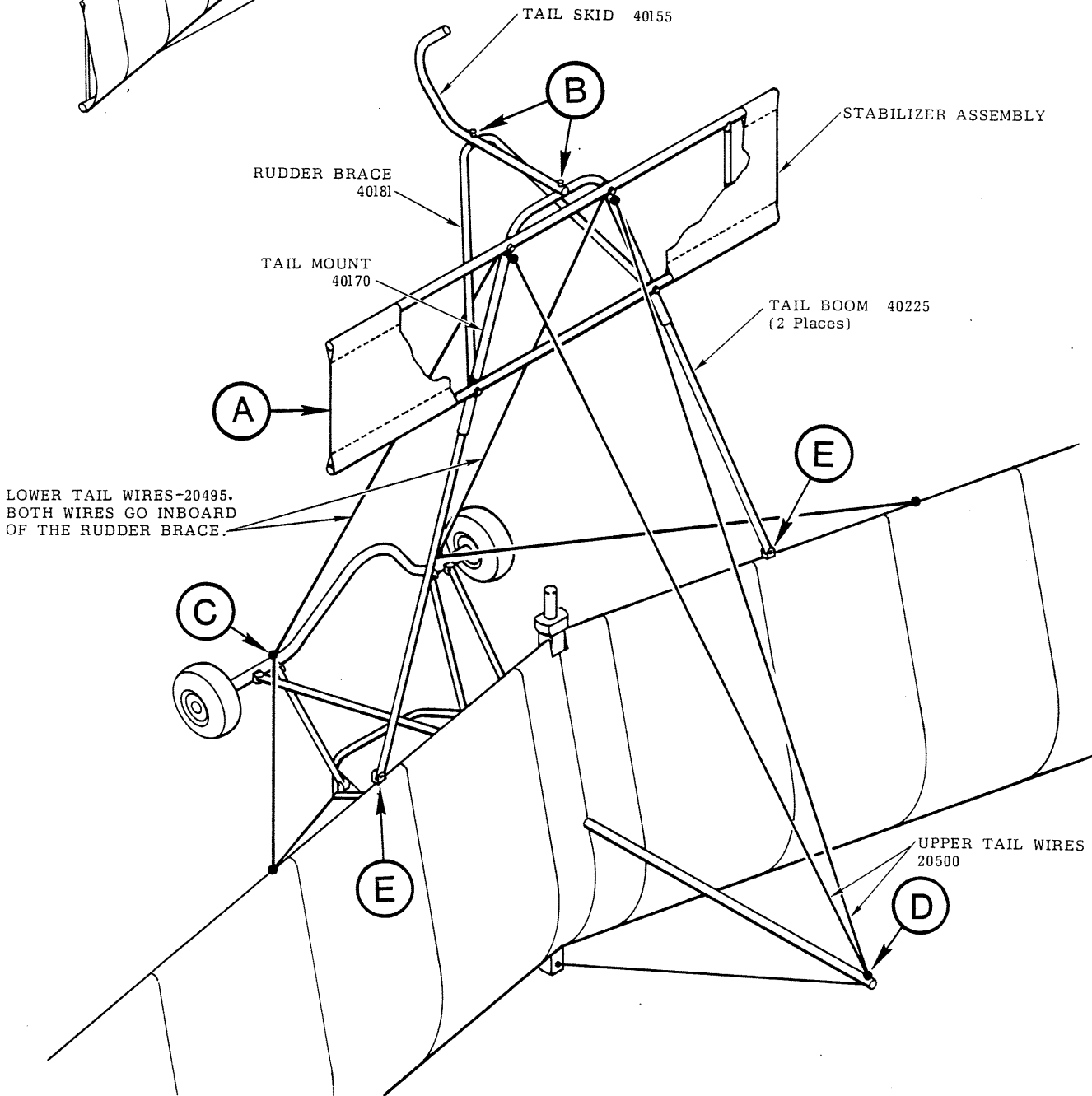
INSTALL ENGINE ASSEMBLY AS SHOWN.



# SECTION SEVEN



NOTE:  
 IN ORDER TO VISUALLY CONCENTRATE ONLY ON THE ASSEMBLIES IN THIS SECTION, SOME OF THE PREVIOUSLY INSTALLED UNITS ARE NOT ILLUSTRATED: SUCH AS SOME WIRING ETC.

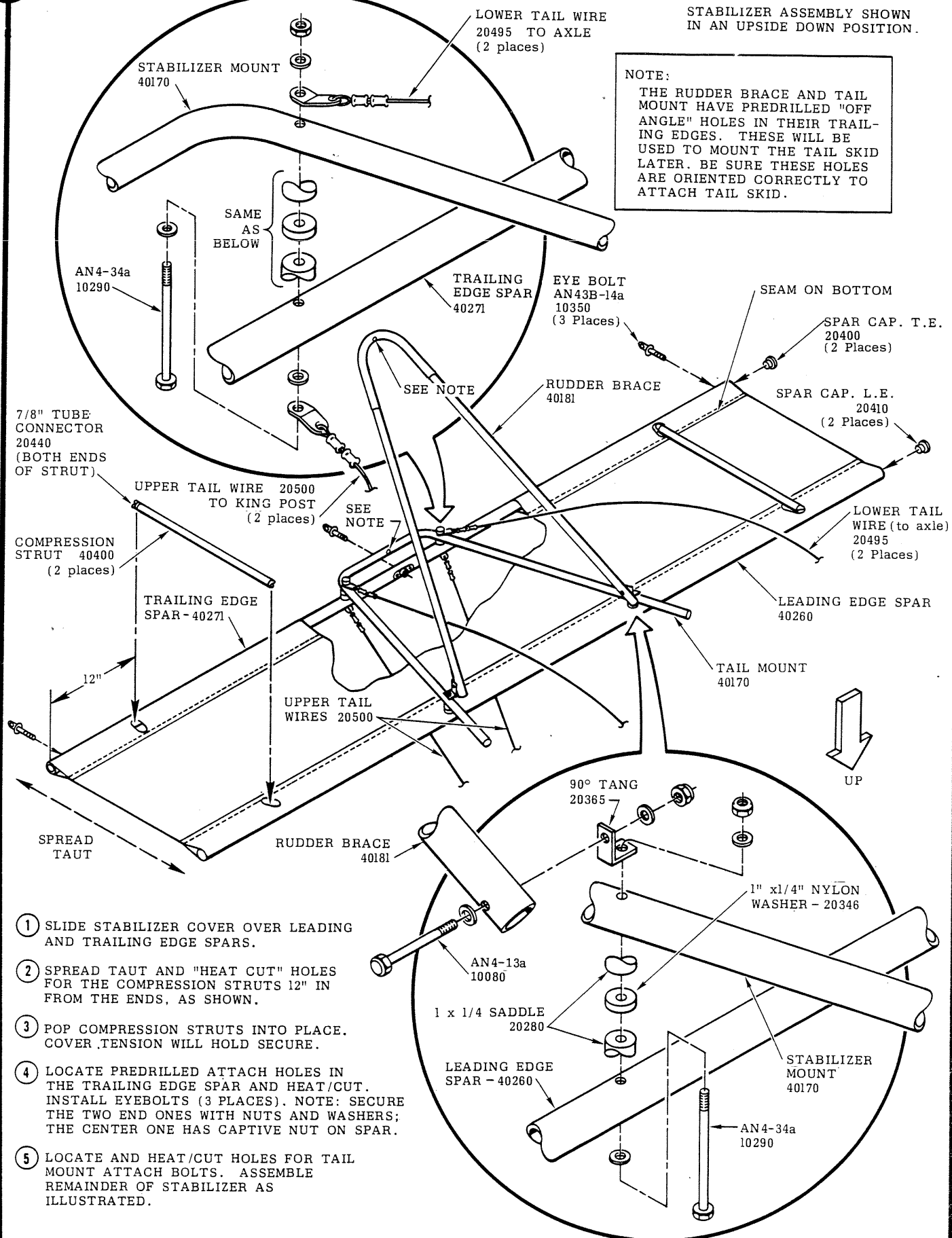


A

STABILIZER ASSEMBLY SHOWN  
IN AN UPSIDE DOWN POSITION.

## NOTE:

THE RUDDER BRACE AND TAIL MOUNT HAVE PREDRILLED "OFF ANGLE" HOLES IN THEIR TRAILING EDGES. THESE WILL BE USED TO MOUNT THE TAIL SKID LATER. BE SURE THESE HOLES ARE ORIENTED CORRECTLY TO ATTACH TAIL SKID.

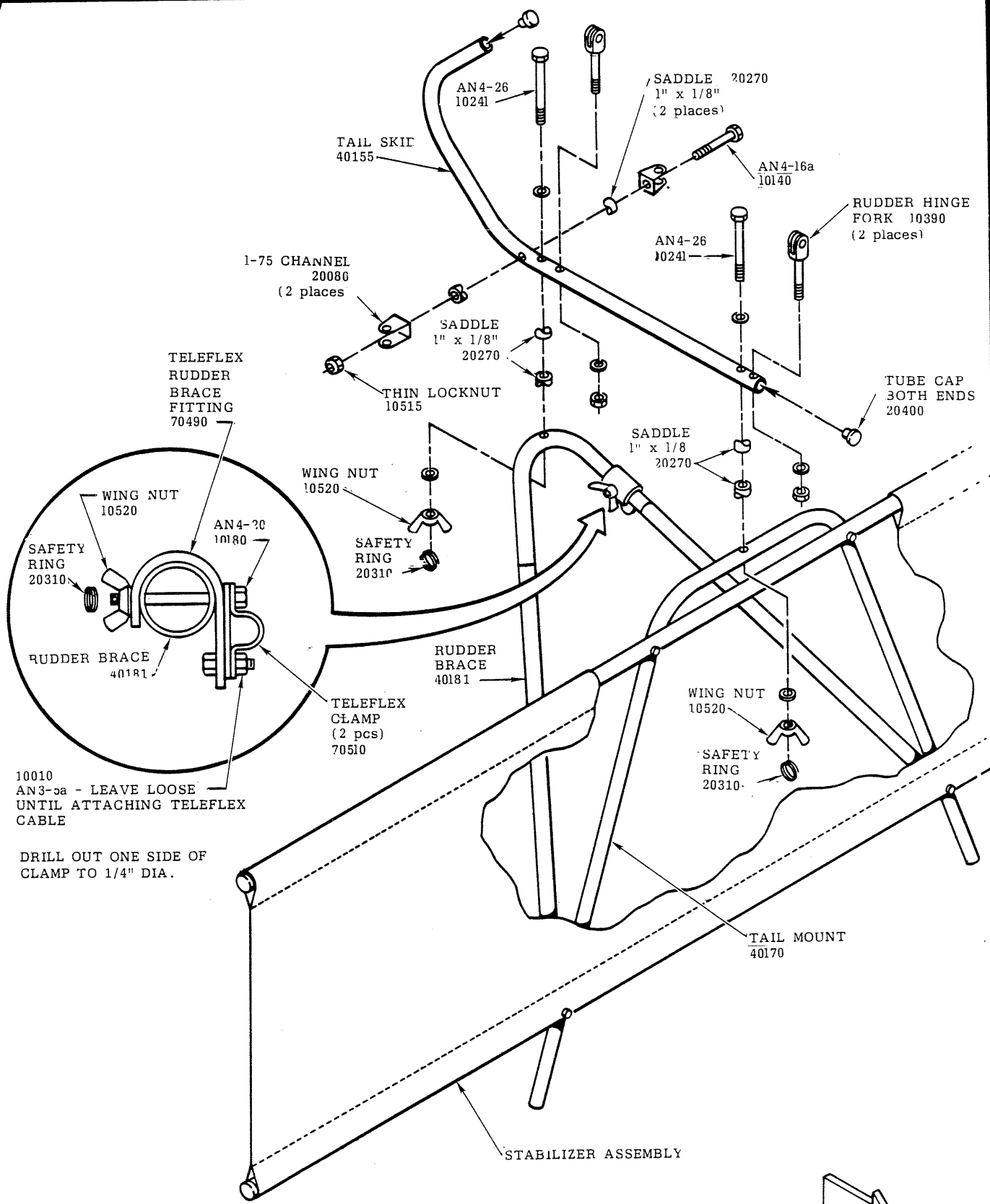


- ① SLIDE STABILIZER COVER OVER LEADING AND TRAILING EDGE SPARS.
- ② SPREAD TAUT AND "HEAT CUT" HOLES FOR THE COMPRESSION STRUTS 12" IN FROM THE ENDS, AS SHOWN.
- ③ POP COMPRESSION STRUTS INTO PLACE. COVER TENSION WILL HOLD SECURE.
- ④ LOCATE PREDRILLED ATTACH HOLES IN THE TRAILING EDGE SPAR AND HEAT/CUT. INSTALL EYEBOLTS (3 PLACES). NOTE: SECURE THE TWO END ONES WITH NUTS AND WASHERS; THE CENTER ONE HAS CAPTIVE NUT ON SPAR.
- ⑤ LOCATE AND HEAT/CUT HOLES FOR TAIL MOUNT ATTACH BOLTS. ASSEMBLE REMAINDER OF STABILIZER AS ILLUSTRATED.



SECTION SEVEN

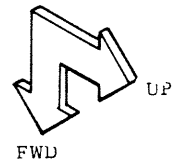
B



10010  
AN3-3a - LEAVE LOOSE  
UNTIL ATTACHING TELEFLEX  
CABLE

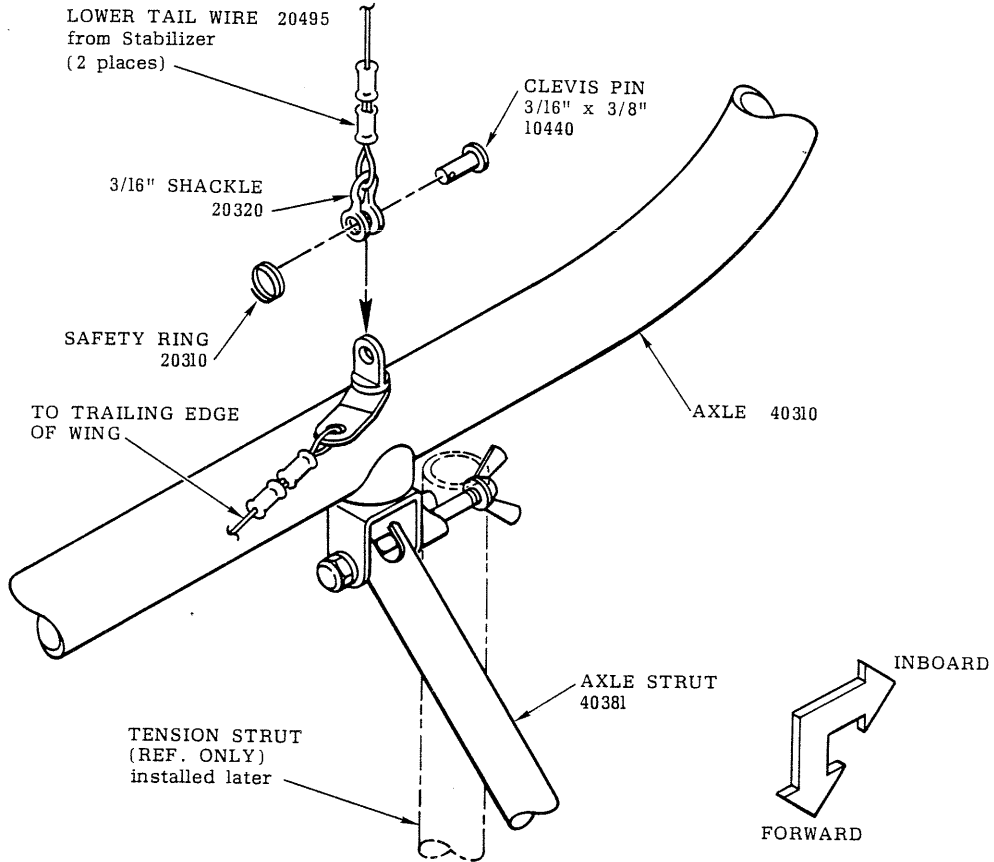
DRILL OUT ONE SIDE OF  
CLAMP TO 1/4" DIA.

KING POST WIRES AND THE LOWER TAIL WIRES  
PREVIOUSLY INSTALLED ARE NOT SHOWN TO  
SIMPLIFY THIS ILLUSTRATION.

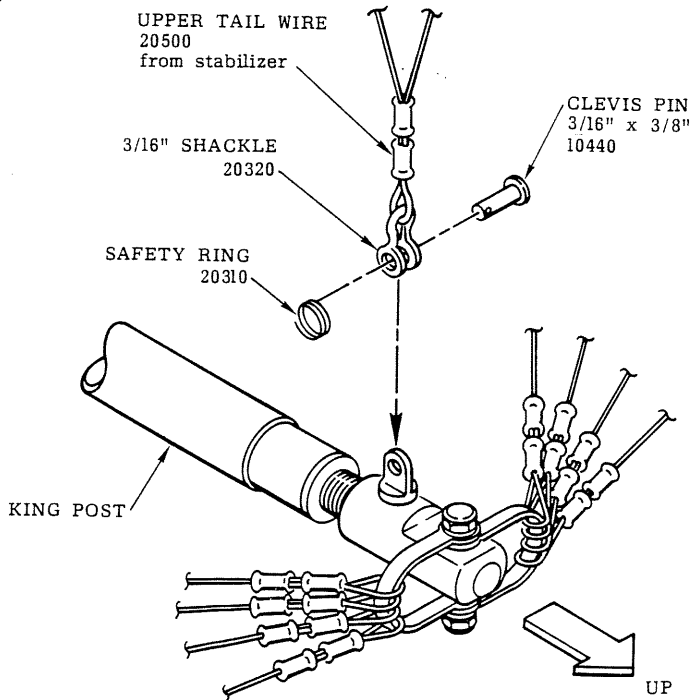


# SECTION SEVEN

C

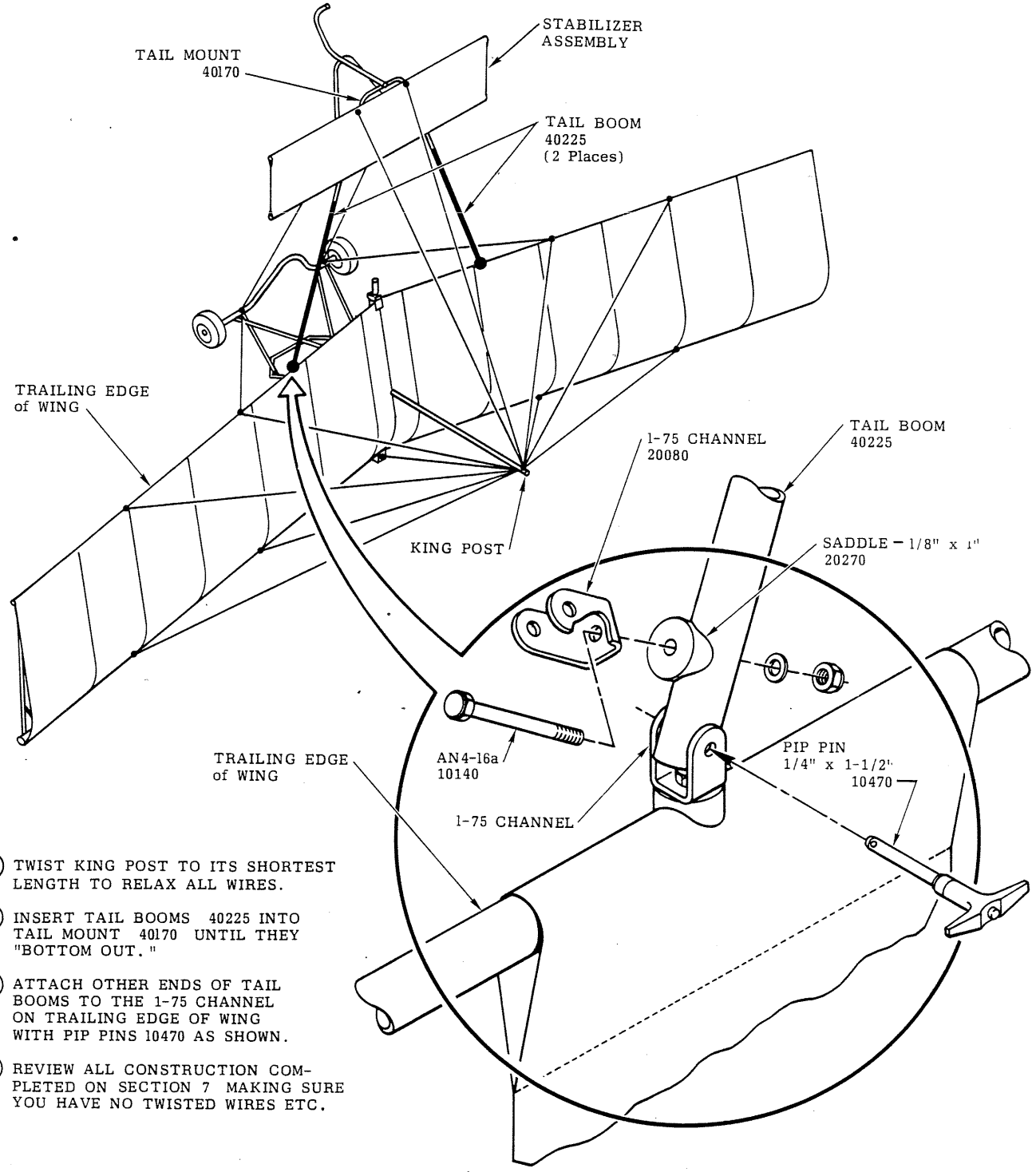


D



E

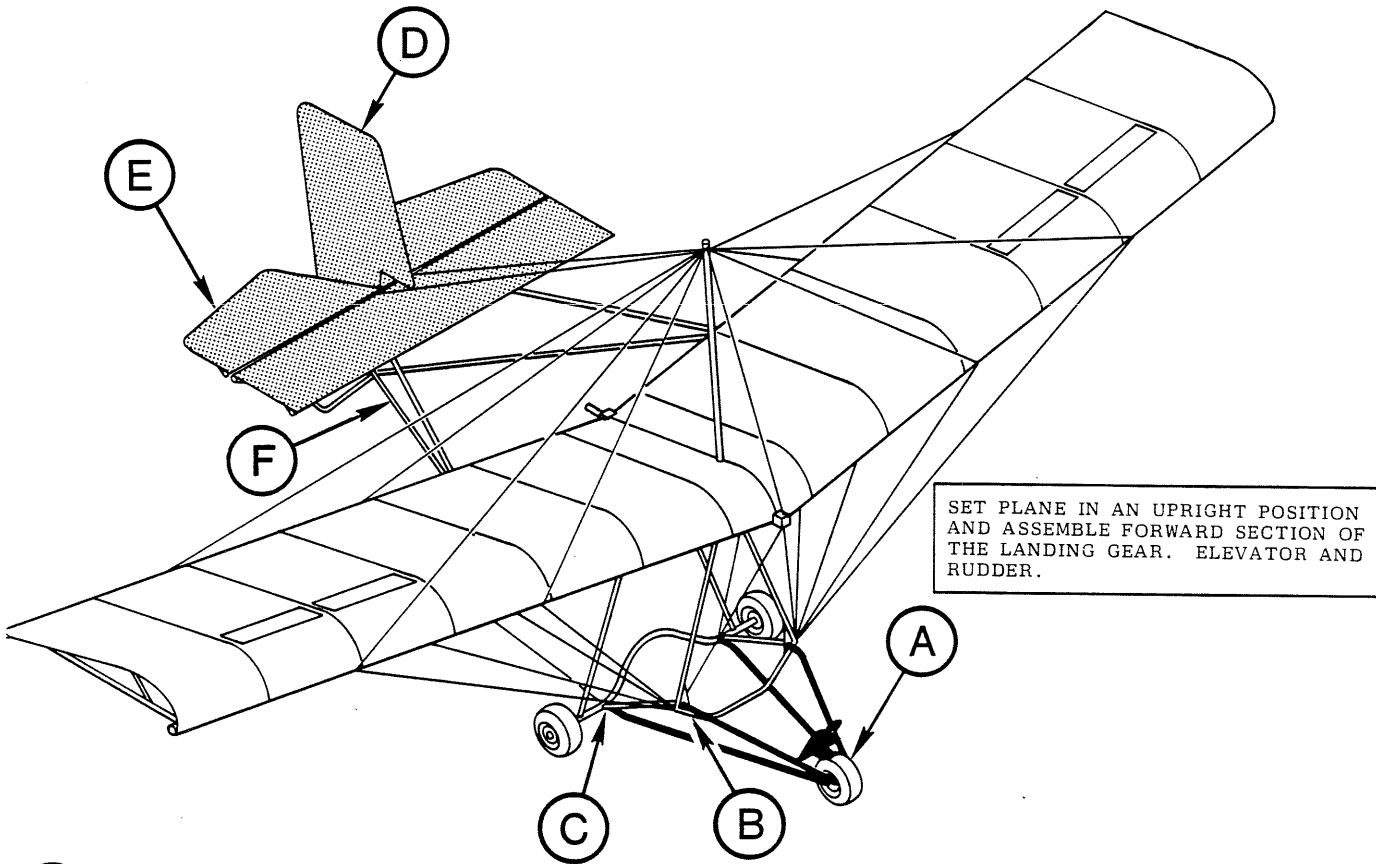
# SECTION SEVEN



- ① TWIST KING POST TO ITS SHORTEST LENGTH TO RELAX ALL WIRES.
- ② INSERT TAIL BOOMS 40225 INTO TAIL MOUNT 40170 UNTIL THEY "BOTTOM OUT."
- ③ ATTACH OTHER ENDS OF TAIL BOOMS TO THE 1-75 CHANNEL ON TRAILING EDGE OF WING WITH PIP PINS 10470 AS SHOWN.
- ④ REVIEW ALL CONSTRUCTION COMPLETED ON SECTION 7 MAKING SURE YOU HAVE NO TWISTED WIRES ETC.

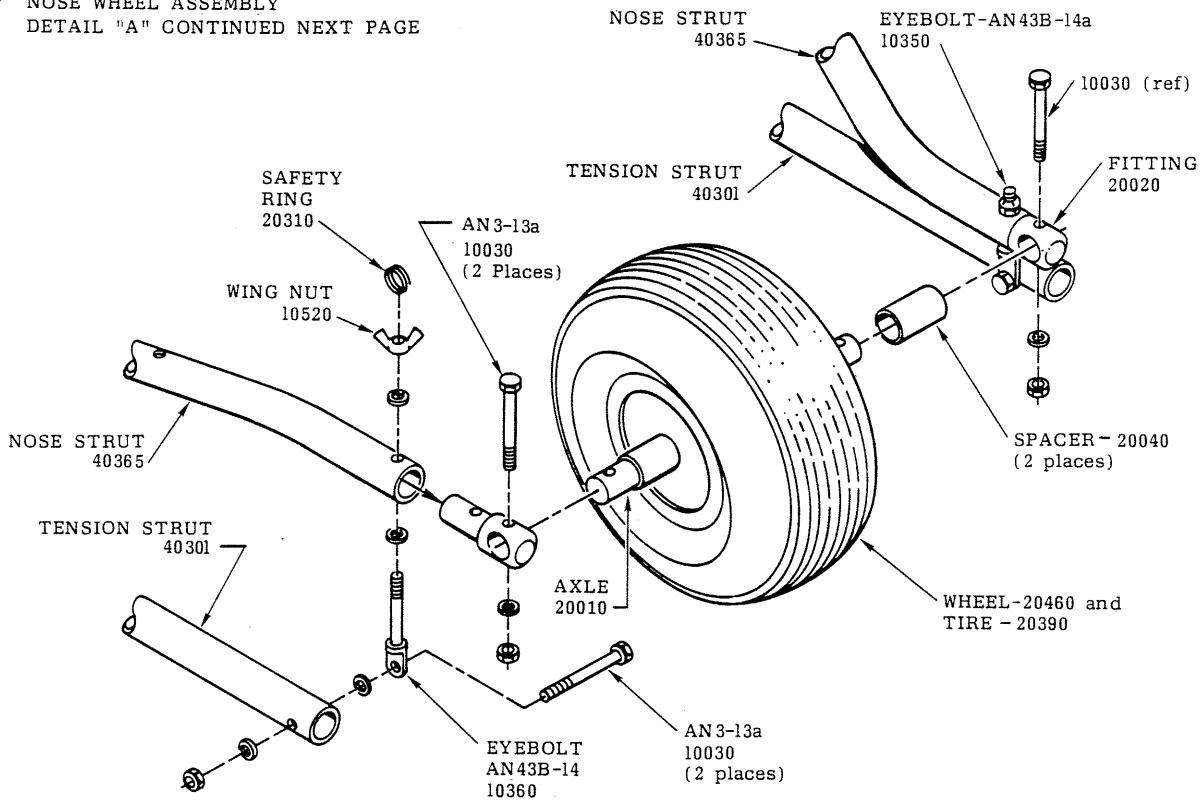
AT THIS STAGE OF ASSEMBLY YOU MAY NEED A FRIEND TO GIVE YOU A HELPING HAND TO LIFT, LOCATE AND ATTACH THE STABILIZER ASSEMBLY AND TAIL BOOMS TO THE TRAILING EDGE OF WING.

# SECTION EIGHT



A

NOSE WHEEL ASSEMBLY  
DETAIL "A" CONTINUED NEXT PAGE



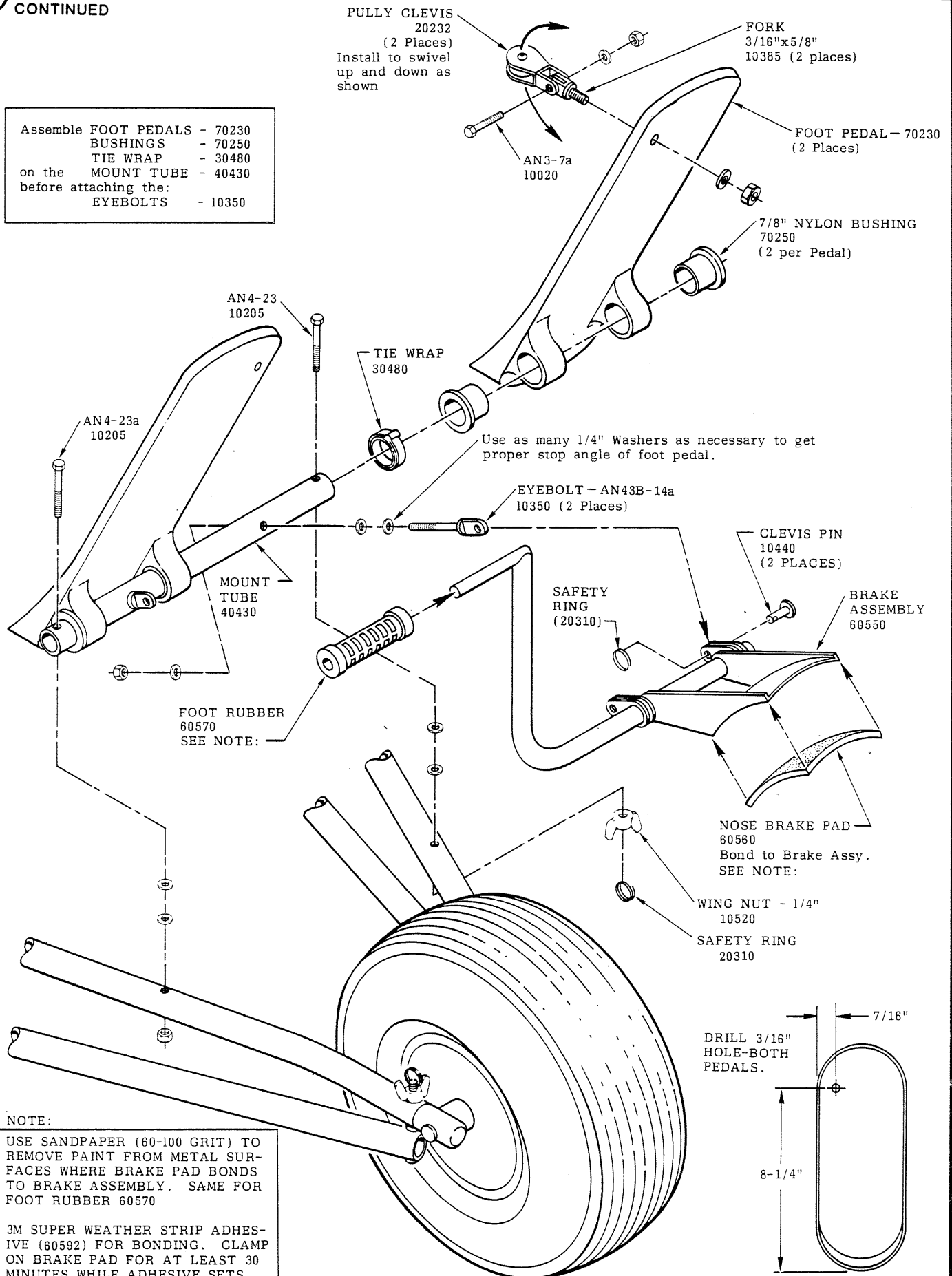
NOTICE THE DIFFERENCE IN THE EYBOLTS. USE 10360 WITH WING NUT AND SAFETY RING, ON ONE SIDE ONLY. (FOR TRANSPORTATION BREAKDOWN)

# SECTION EIGHT

A

CONTINUED

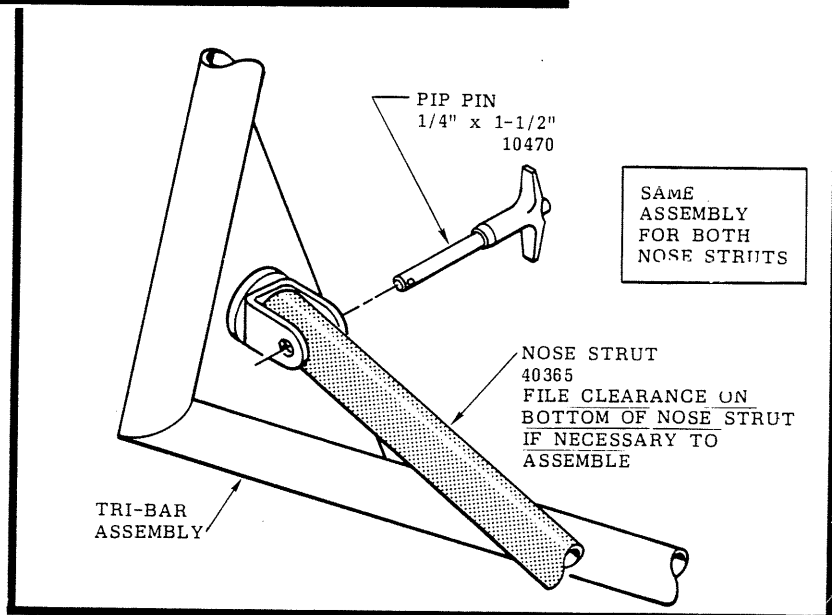
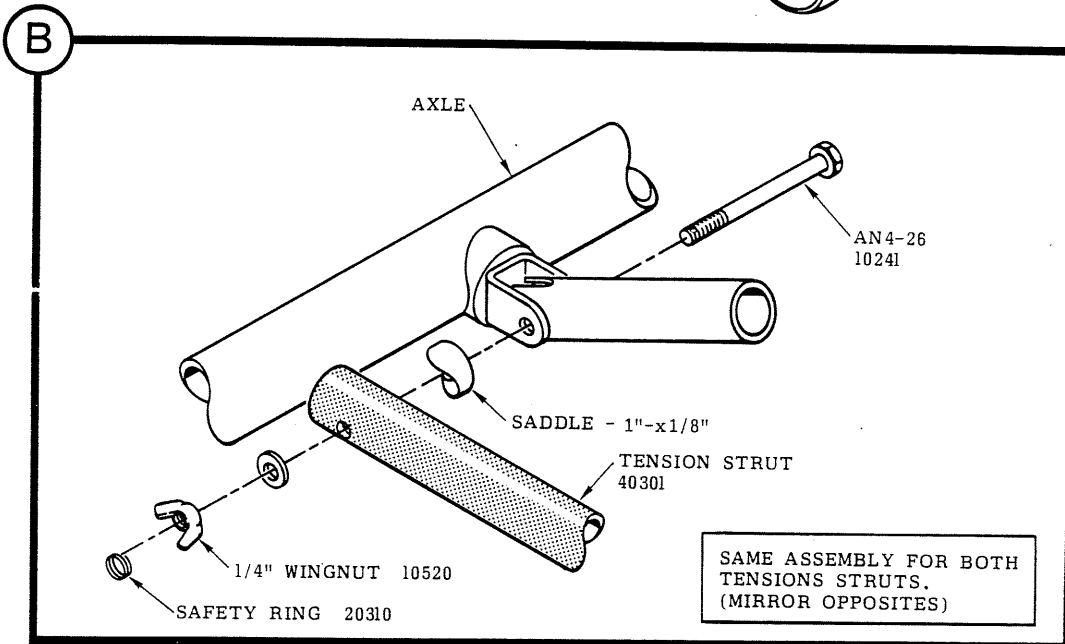
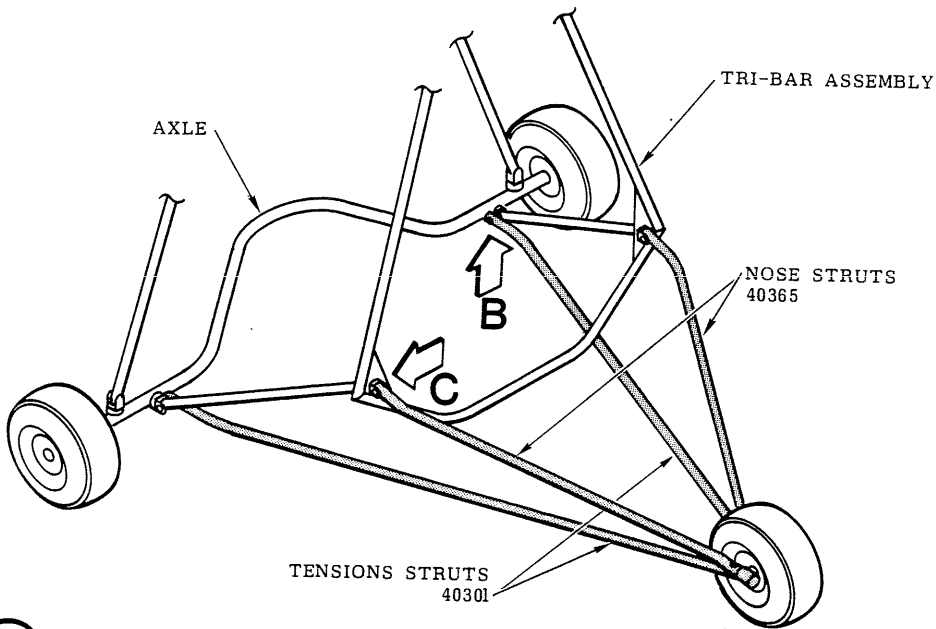
Assemble FOOT PEDALS - 70230  
 BUSHINGS - 70250  
 TIE WRAP - 30480  
 on the MOUNT TUBE - 40430  
 before attaching the:  
 EYEBOLTS - 10350



NOTE:  
 USE SANDPAPER (60-100 GRIT) TO REMOVE PAINT FROM METAL SURFACES WHERE BRAKE PAD BONDS TO BRAKE ASSEMBLY. SAME FOR FOOT RUBBER 60570

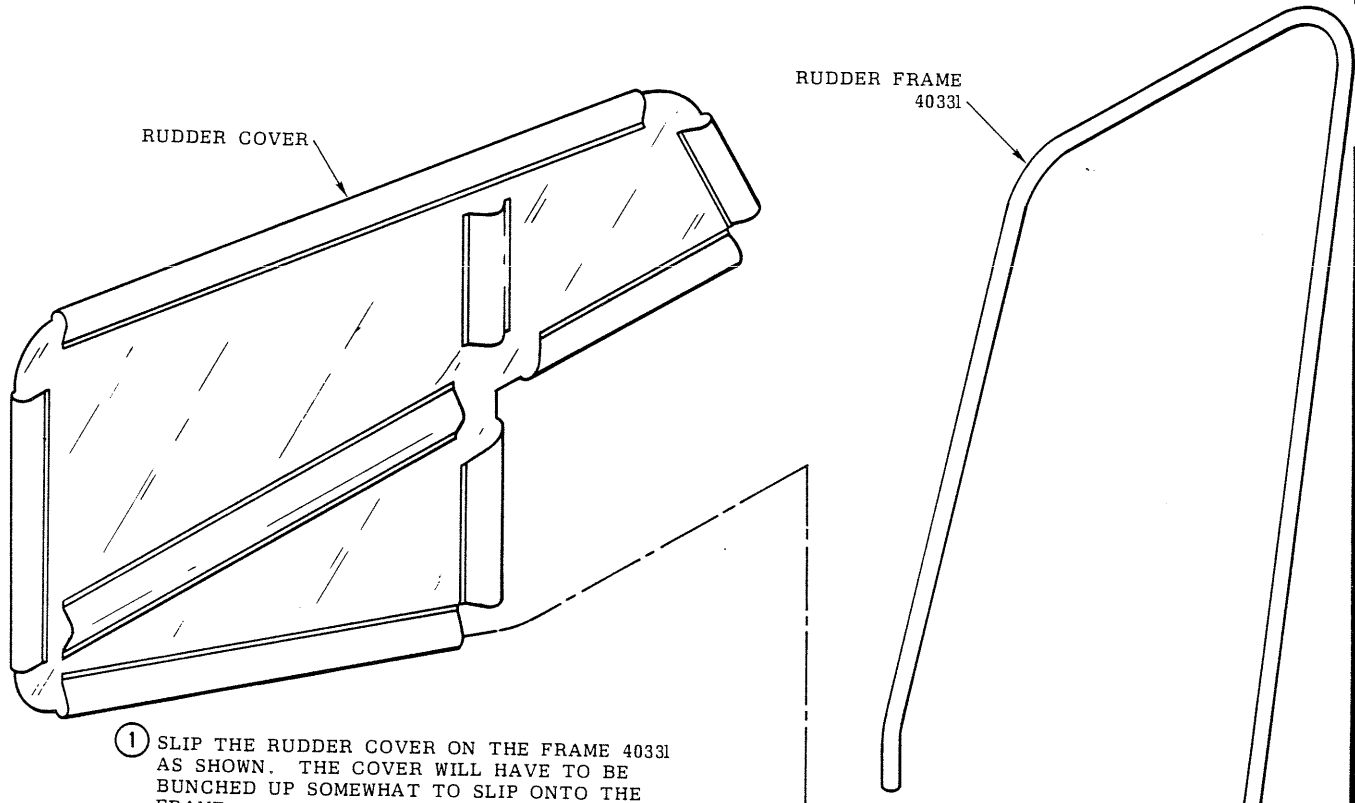
3M SUPER WEATHER STRIP ADHESIVE (60592) FOR BONDING. CLAMP ON BRAKE PAD FOR AT LEAST 30 MINUTES WHILE ADHESIVE SETS.

# SECTION EIGHT



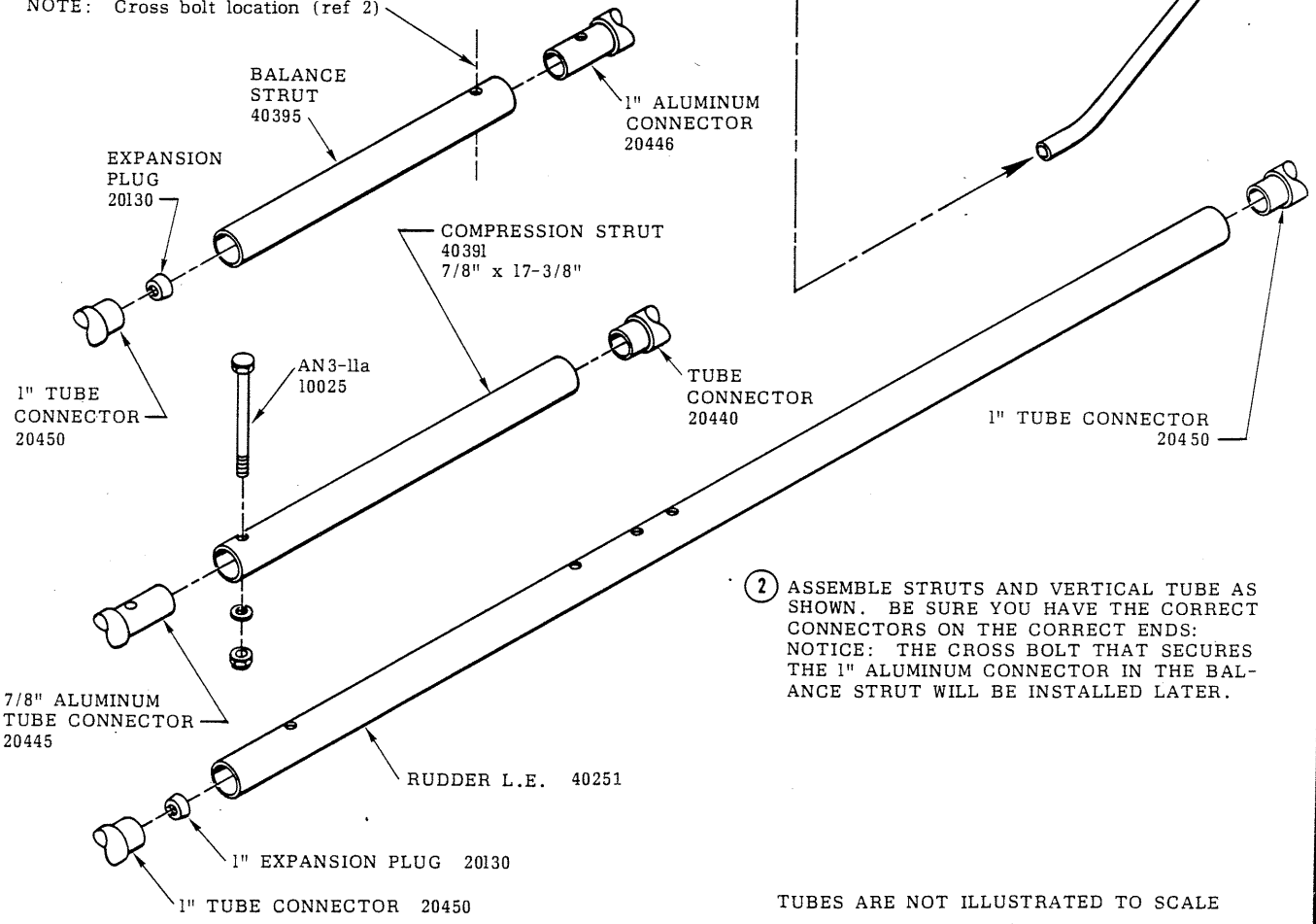
D

# SECTION EIGHT



① SLIP THE RUDDER COVER ON THE FRAME 40331 AS SHOWN. THE COVER WILL HAVE TO BE BUNCHED UP SOMEWHAT TO SLIP ONTO THE FRAME.

NOTE: Cross bolt location (ref 2)



② ASSEMBLE STRUTS AND VERTICAL TUBE AS SHOWN. BE SURE YOU HAVE THE CORRECT CONNECTORS ON THE CORRECT ENDS: NOTICE: THE CROSS BOLT THAT SECURES THE 1" ALUMINUM CONNECTOR IN THE BALANCE STRUT WILL BE INSTALLED LATER.

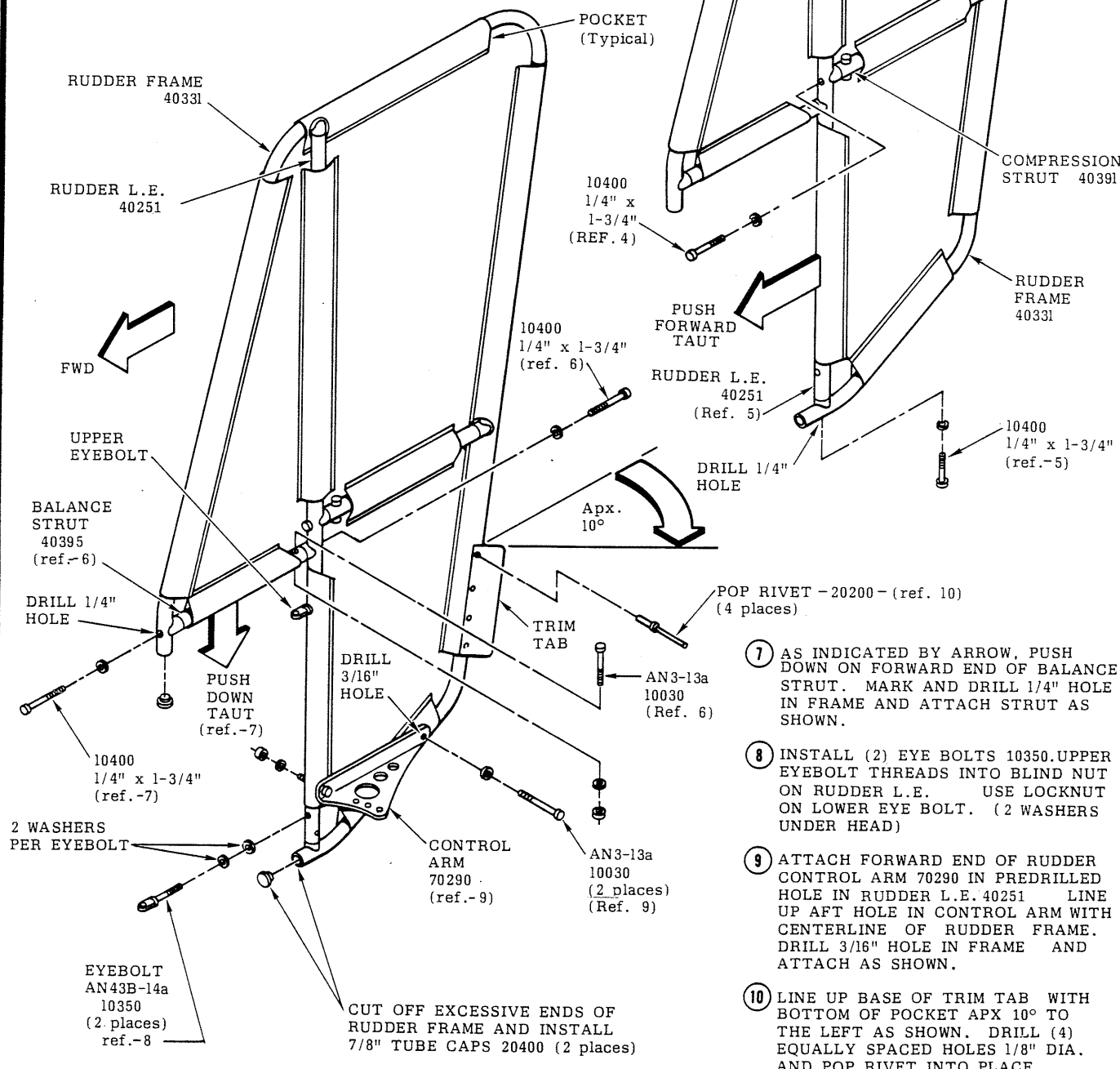
TUBES ARE NOT ILLUSTRATED TO SCALE

SECTION EIGHT

D

CONTINUED

- 3 SLIP RUDDER L.E. 40251 INTO POCKET WITH EYEBOLT HOLES AT BOTTOM.
- 4 INSERT COMPRESSION STRUT 40391 INTO POCKET AND ATTACH FORWARD END AS SHOWN WITH BOLT 10400
- 5 PUSH BOTTOM END OF RUDDER L.E. 40251 FORWARD (TAUT) AS INDICATED BY ARROW AND MARK LOCATION FOR THE ATTACH BOLT 10400. DRILL 1/4" DIA. HOLE IN THE RUDDER FRAME AND ATTACH BOTTOM END OF RUDDER L.E. 40251 WITH BOLT 10400.
- 6 INSERT BALANCE STRUT 40395 IN POCKET AND ATTACH AFT END THRU PREDRILLED HOLE IN VERTICAL TUBE AS SHOWN. CUT AND HEAT-SEAL BOLT HOLE IN COVER ON THE UNDER SIDE OF BALANCE STRUT, AND INSTALL BOLT 10030 THRU TUBE CONNECTOR 20446. (SEE PREVIOUS PAGE)

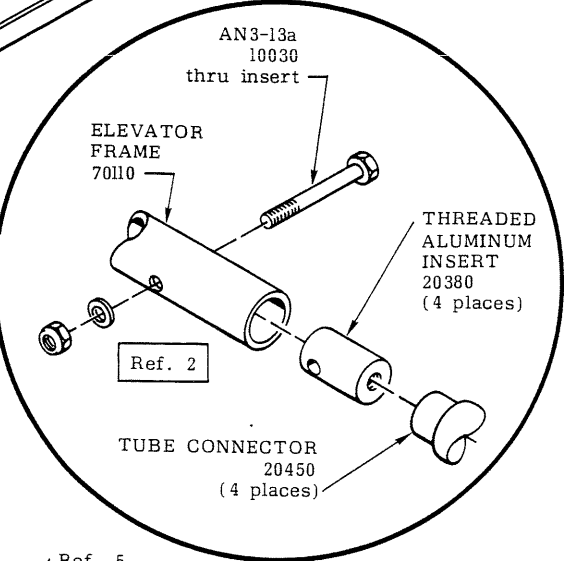
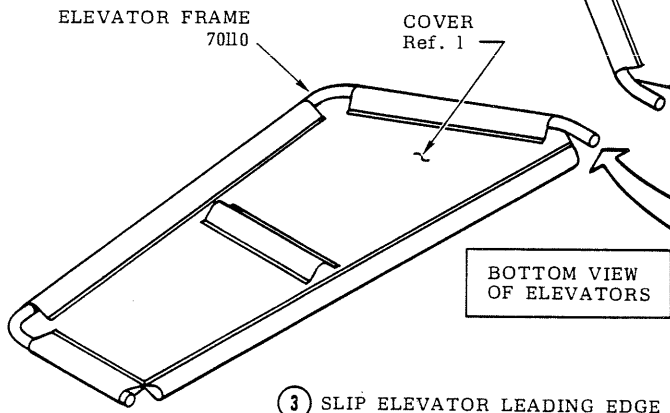




E

SECTION EIGHT

- ① SLIP COVERS ON BOTH ELEVATOR FRAMES - 70110.
- ② INSTALL THE INSERTS - 20380 AND CONNECTORS 20450 IN THE ENDS OF THE FRAMES AS SHOWN. (2 PLACES EACH FRAME)



- ③ SLIP ELEVATOR LEADING EDGE TUBE - 70130 INTO POCKET AND ATTACH 4 PLACES AS SHOWN
- ④ INSERT TUBE CONNECTORS - 20440 IN TWO COMPRESSION STRUTS 70090 (2 each strut)
- ⑤ CUT AND "HEAT SEAL" HOLES IN COVERS FOR THE ENDS OF THE STRUTS (4 places)
- ⑥ SLIP STRUTS INTO POCKETS AND POP INTO PLACE.

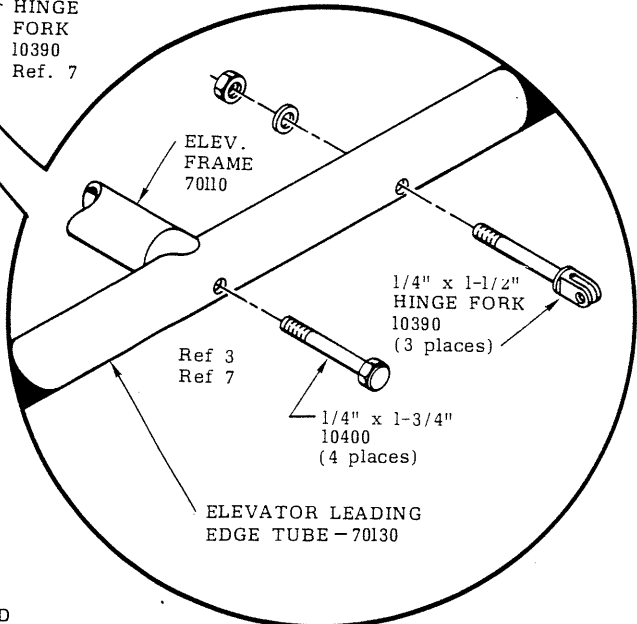
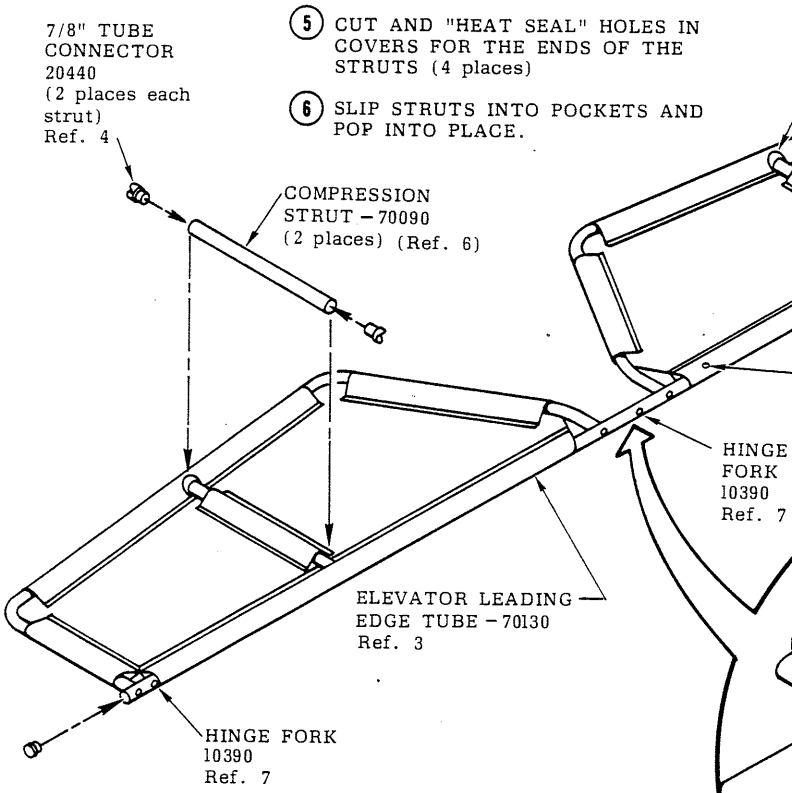
7/8" TUBE CONNECTOR 20440 (2 places each strut) Ref. 4

COMPRESSION STRUT - 70090 (2 places) (Ref. 6)

Ref. 5 Cut and heat seal

7/8" TUBE CAP - 20400 Ref. 8

HINGE FORK 10390 Ref. 7



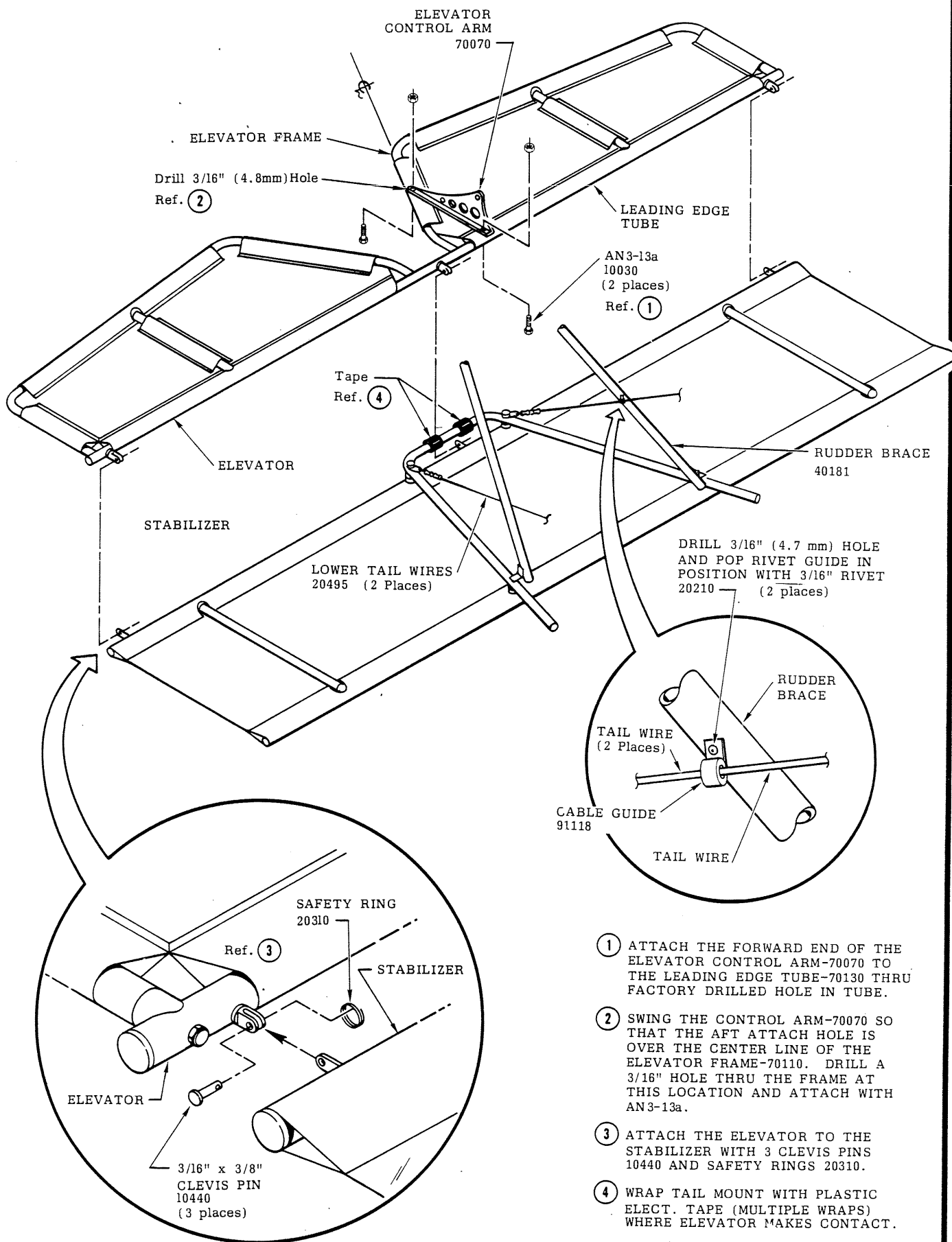
- ⑦ ATTACH HINGE FORKS - 10390 TO THE LEADING EDGE TUBE IN 3 PLACES AS SHOWN
- ⑧ PRESS TUBE CAPS - 20400 INTO EACH END OF LEADING EDGE TUBE 70130

DETAIL "E" CONTINUED

E

CONTINUED

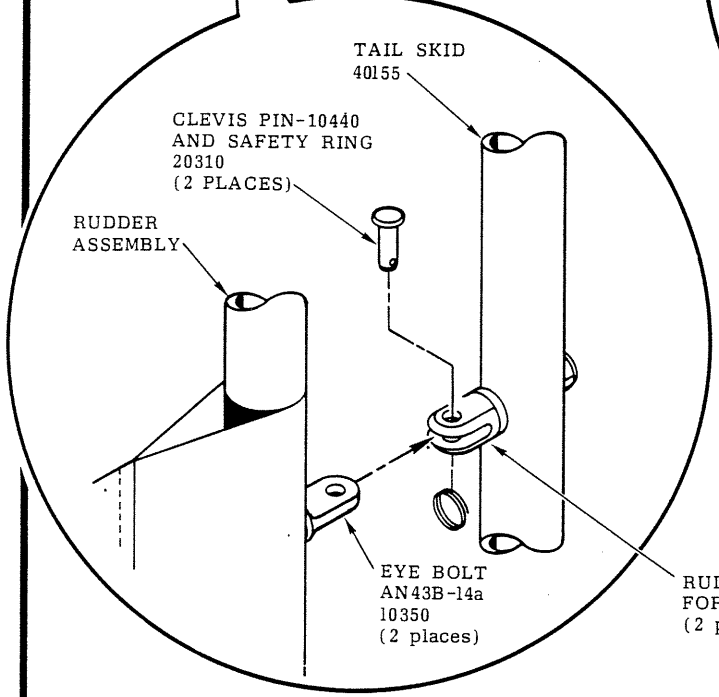
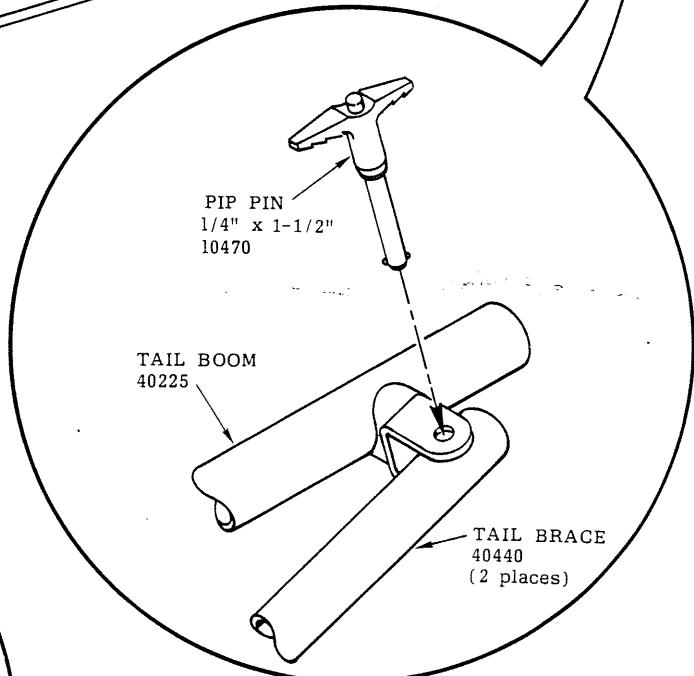
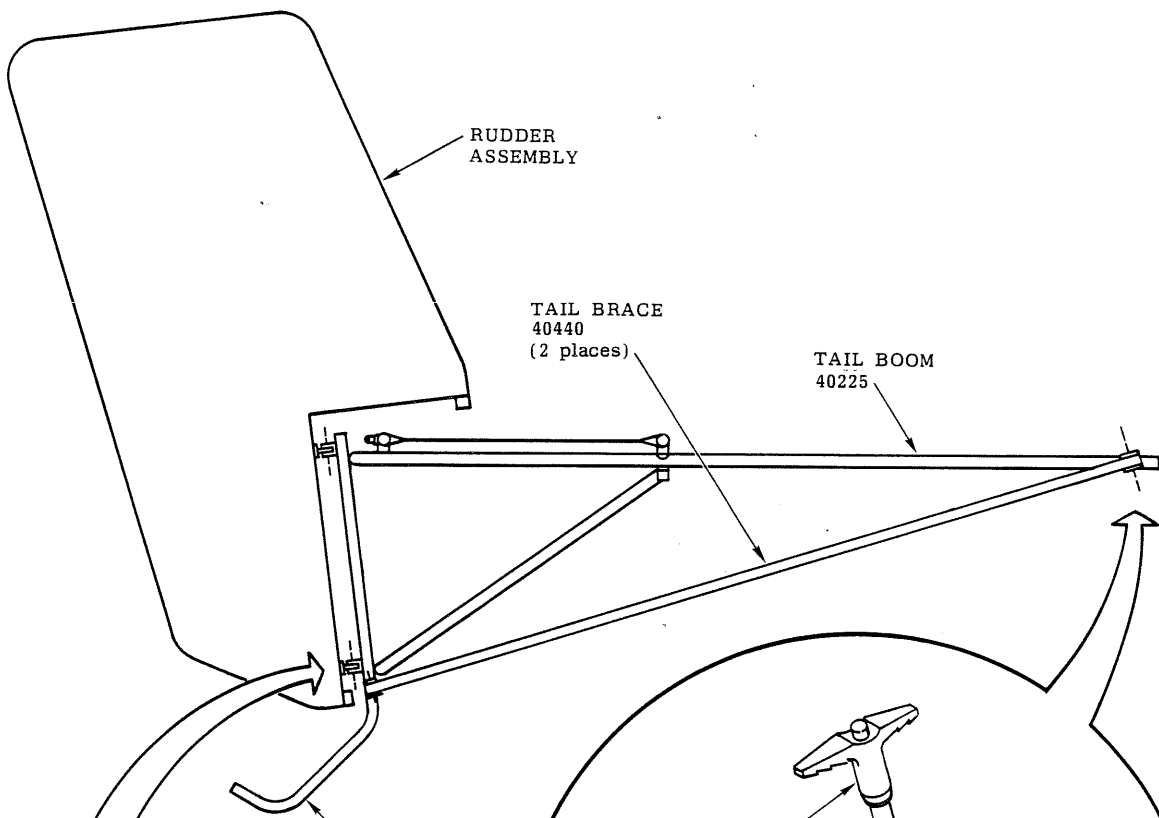
## SECTION EIGHT



- ① ATTACH THE FORWARD END OF THE ELEVATOR CONTROL ARM-70070 TO THE LEADING EDGE TUBE-70130 THRU FACTORY DRILLED HOLE IN TUBE.
- ② SWING THE CONTROL ARM-70070 SO THAT THE AFT ATTACH HOLE IS OVER THE CENTER LINE OF THE ELEVATOR FRAME-70110. DRILL A 3/16" HOLE THRU THE FRAME AT THIS LOCATION AND ATTACH WITH AN3-13a.
- ③ ATTACH THE ELEVATOR TO THE STABILIZER WITH 3 CLEVIS PINS 10440 AND SAFETY RINGS 20310.
- ④ WRAP TAIL MOUNT WITH PLASTIC ELECT. TAPE (MULTIPLE WRAPS) WHERE ELEVATOR MAKES CONTACT.

SECTION EIGHT

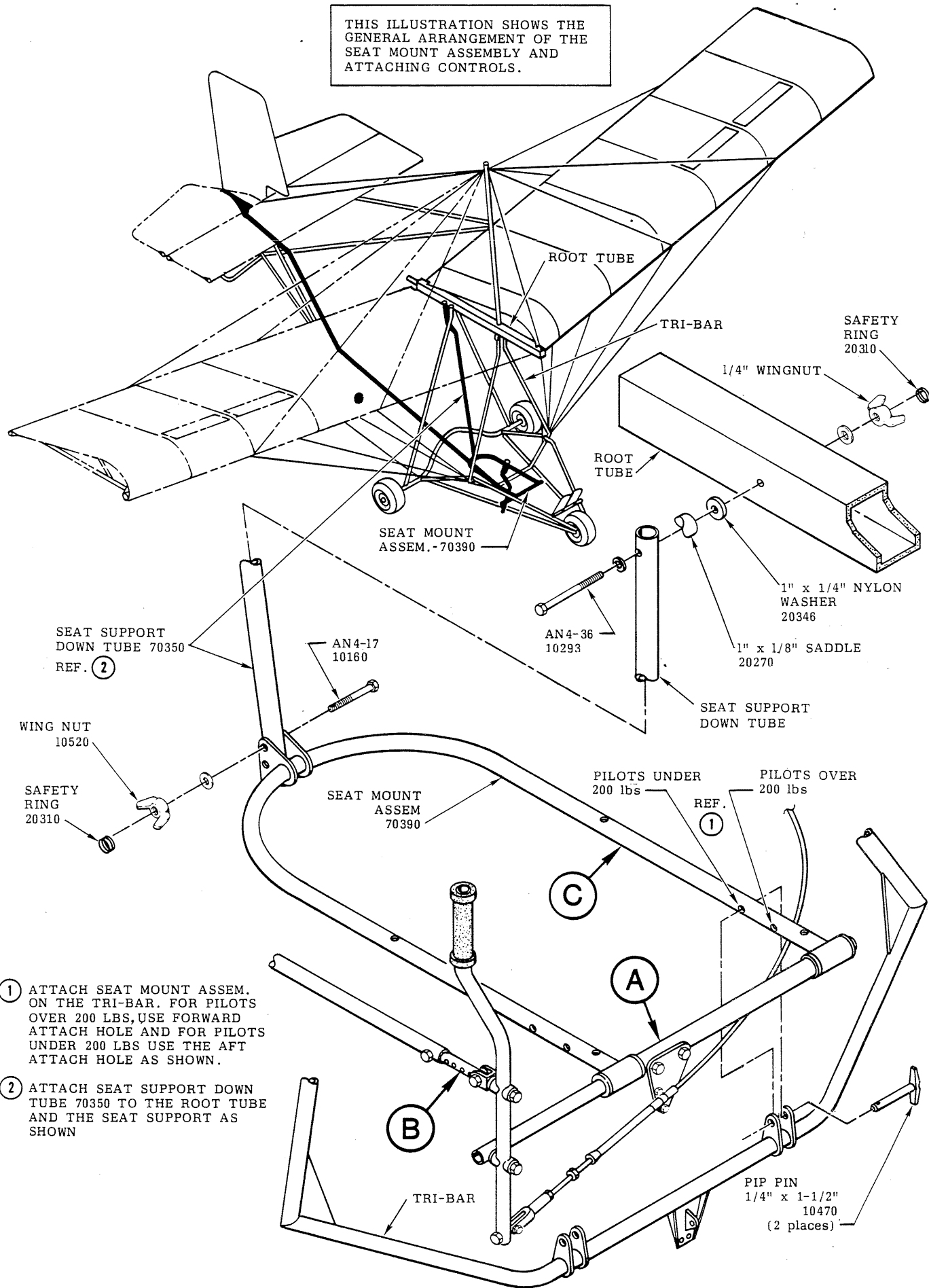
F



- ① ATTACH TWO TAIL BRACES AS SHOWN WITH FOUR PIP PINS 10470
- ② ATTACH RUDDER ASSEMBLY AS SHOWN WITH TWO PIP PINS 10460

# SECTION NINE

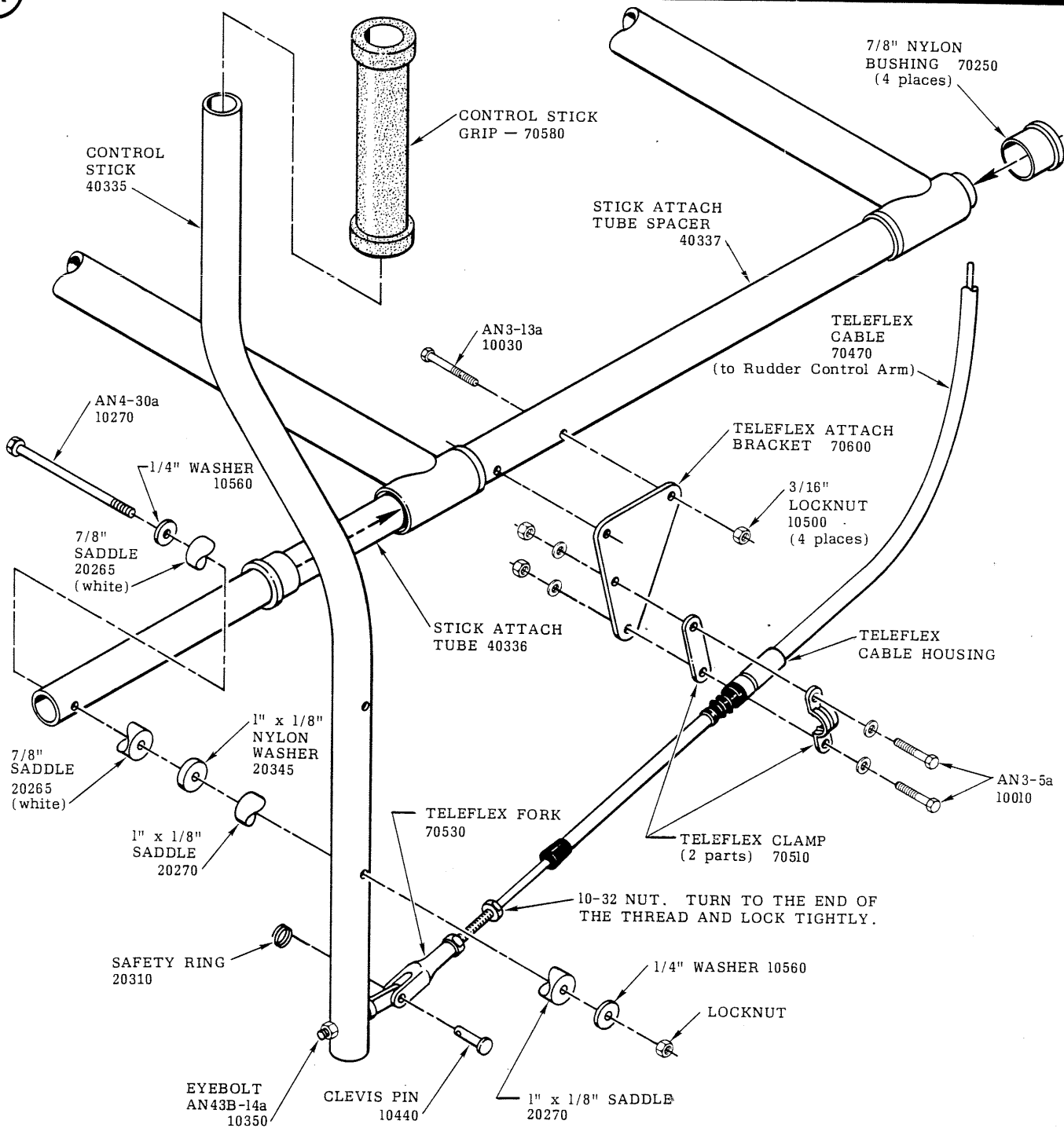
THIS ILLUSTRATION SHOWS THE GENERAL ARRANGEMENT OF THE SEAT MOUNT ASSEMBLY AND ATTACHING CONTROLS.



- ① ATTACH SEAT MOUNT ASSEM. ON THE TRI-BAR. FOR PILOTS OVER 200 LBS, USE FORWARD ATTACH HOLE AND FOR PILOTS UNDER 200 LBS USE THE AFT ATTACH HOLE AS SHOWN.
- ② ATTACH SEAT SUPPORT DOWN TUBE 70350 TO THE ROOT TUBE AND THE SEAT SUPPORT AS SHOWN

# SECTION NINE

A



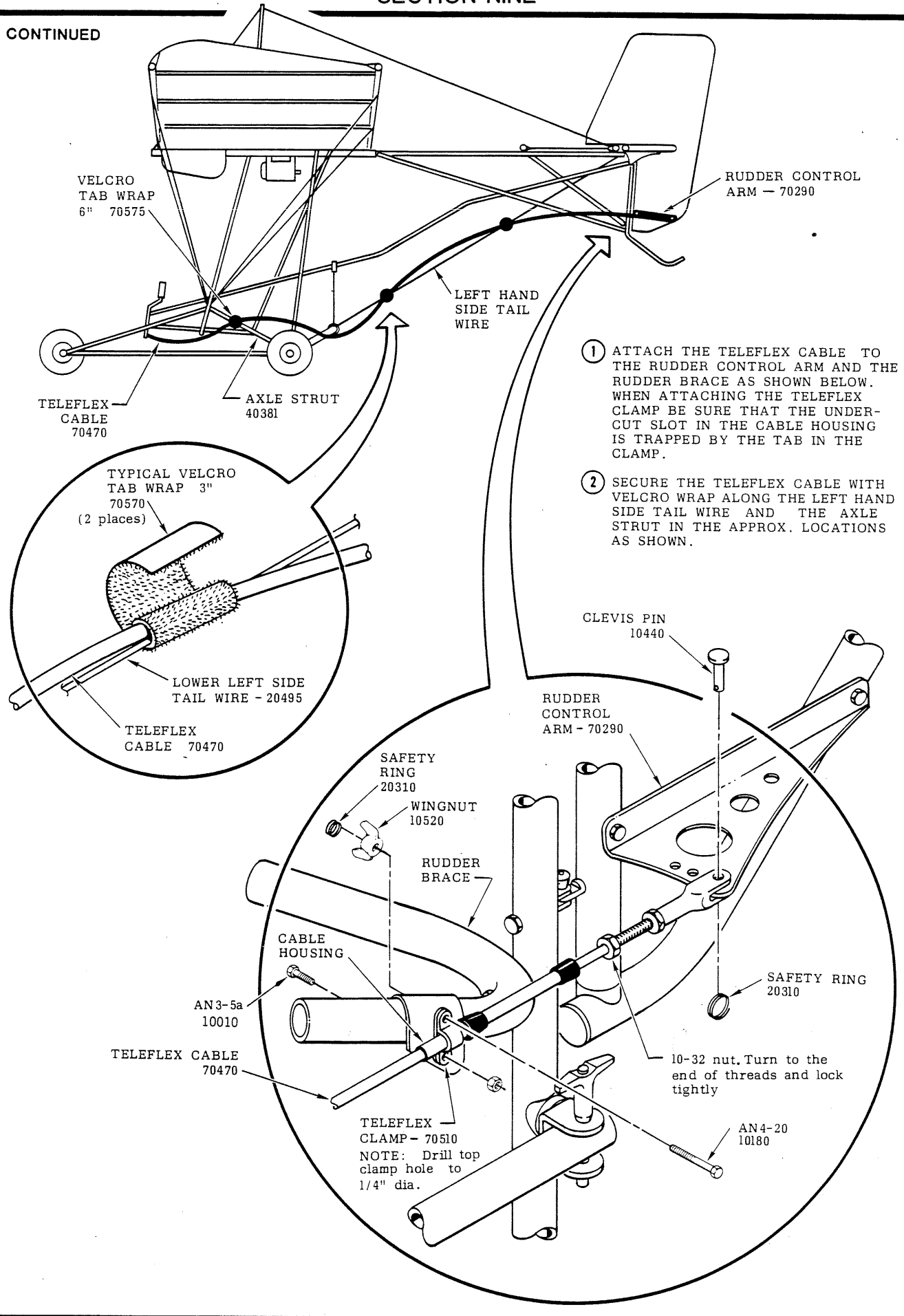
- ① INSTALL THE STICK ATTACH TUBE 40336, NYLON BUSHINGS 70250 AND THE STICK ATTACH TUBE SPACER 40337. APPLY DRY LUBE SO THAT THE TUBE TURNS FREELY IN THE BUSHINGS. GLUE THE TWO END BUSHINGS IN PLACE, THE TWO INSIDE BUSHINGS ARE LOCKED IN PLACE BY THE SPACER 40337.
- ② BE SURE THAT THE TAB IN THE TELEFLEX CLAMP 70510 SEATS IN THE UNDERCUT GROOVE IN THE TELEFLEX CABLE HOUSING

DETAIL "A" CONTINUED NEXT PAGE

# SECTION NINE

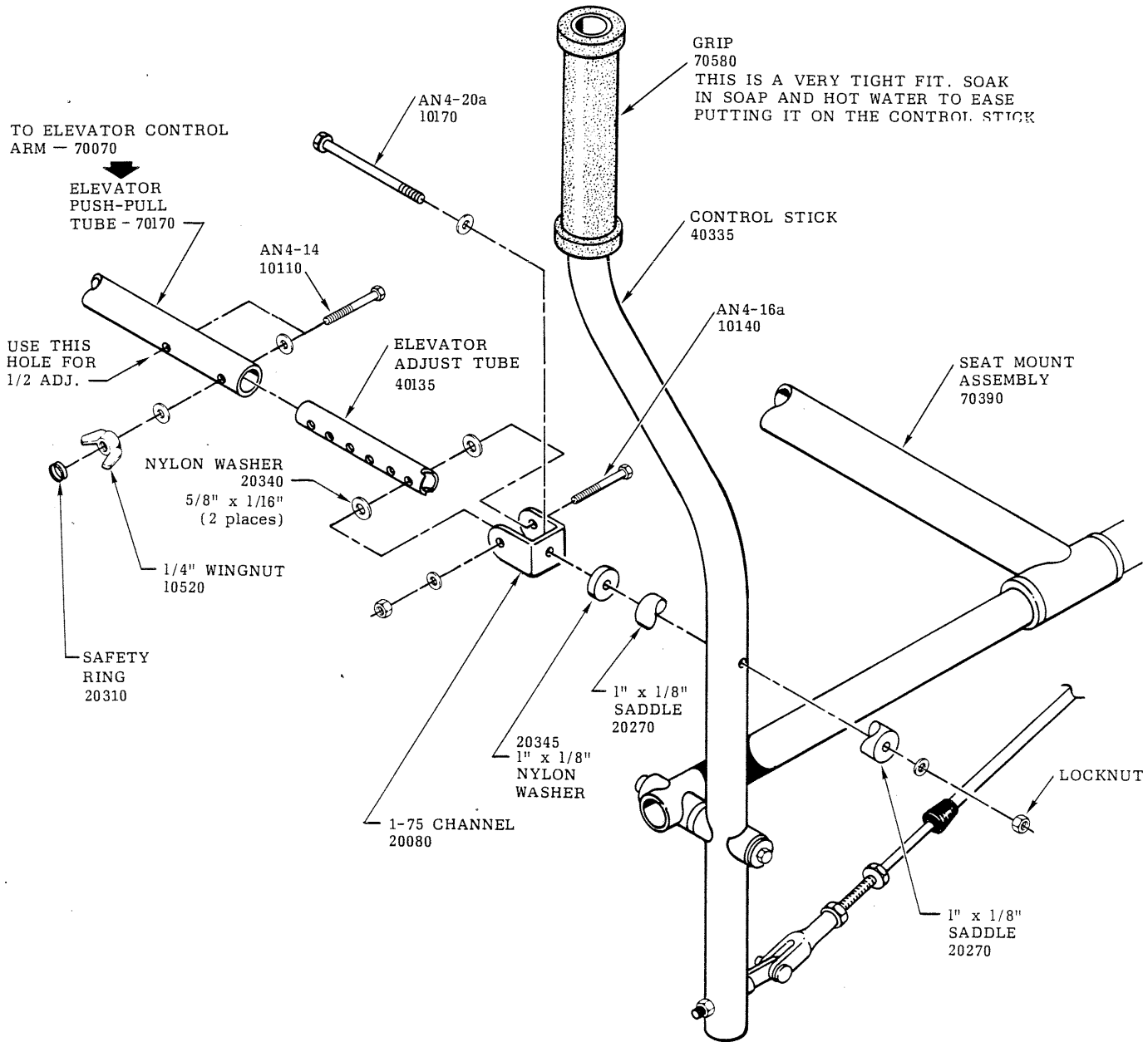
A

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SECTION NINE

B



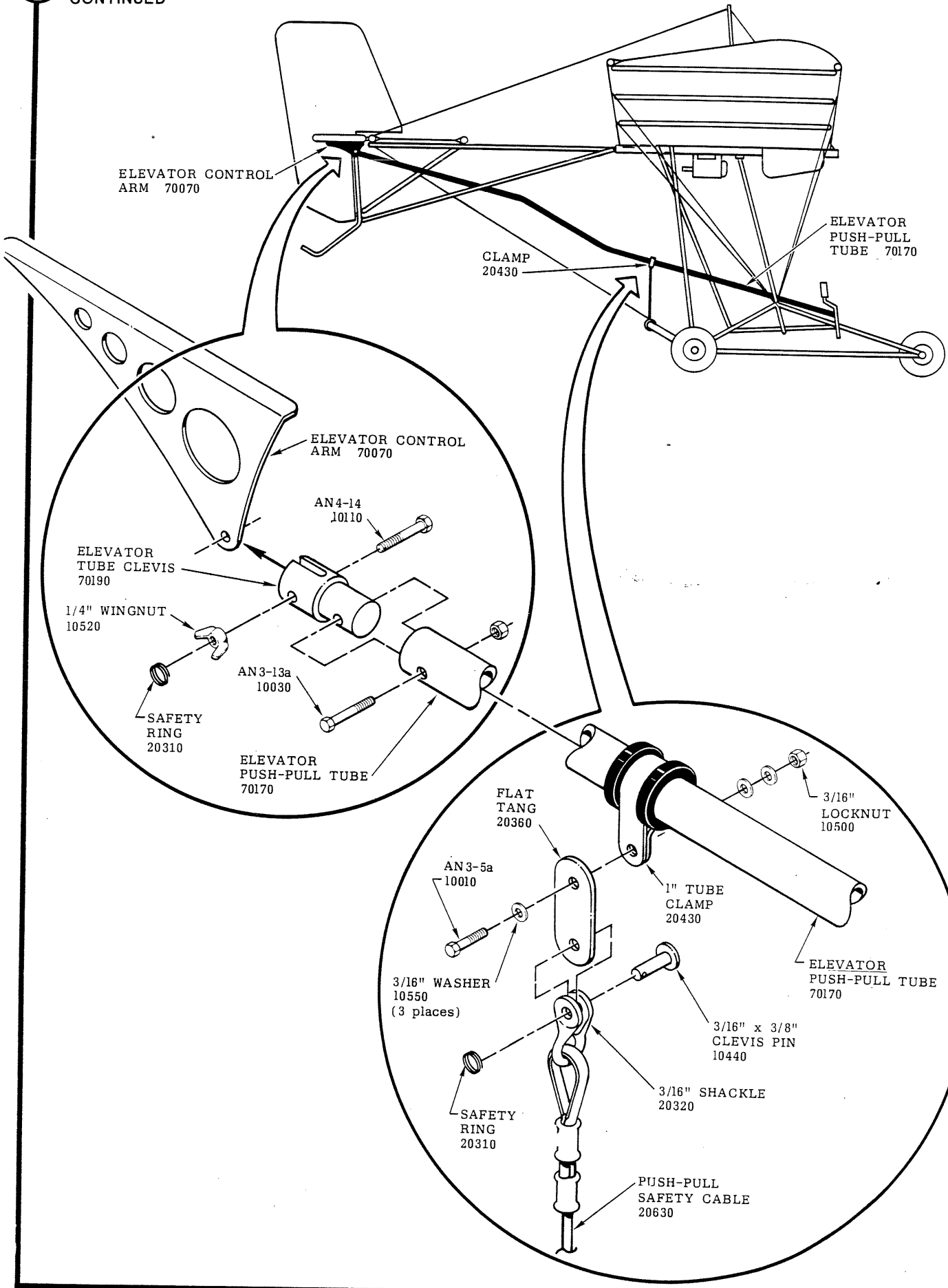
NOTE: FISH MOUTH FRONT END OF THE ELEVATOR ADJUST TUBE 40135 IN ORDER TO CLEAR THE 1-75 CHANNEL MOUNTING BOLT. THIS WILL ALLOW FULL TRAVEL OF THE ELEVATOR CONTROL ARM. (USE A RAT TAIL FILE).

DETAIL "B" CONTINUED NEXT PAGE

B

SECTION NINE

CONTINUED

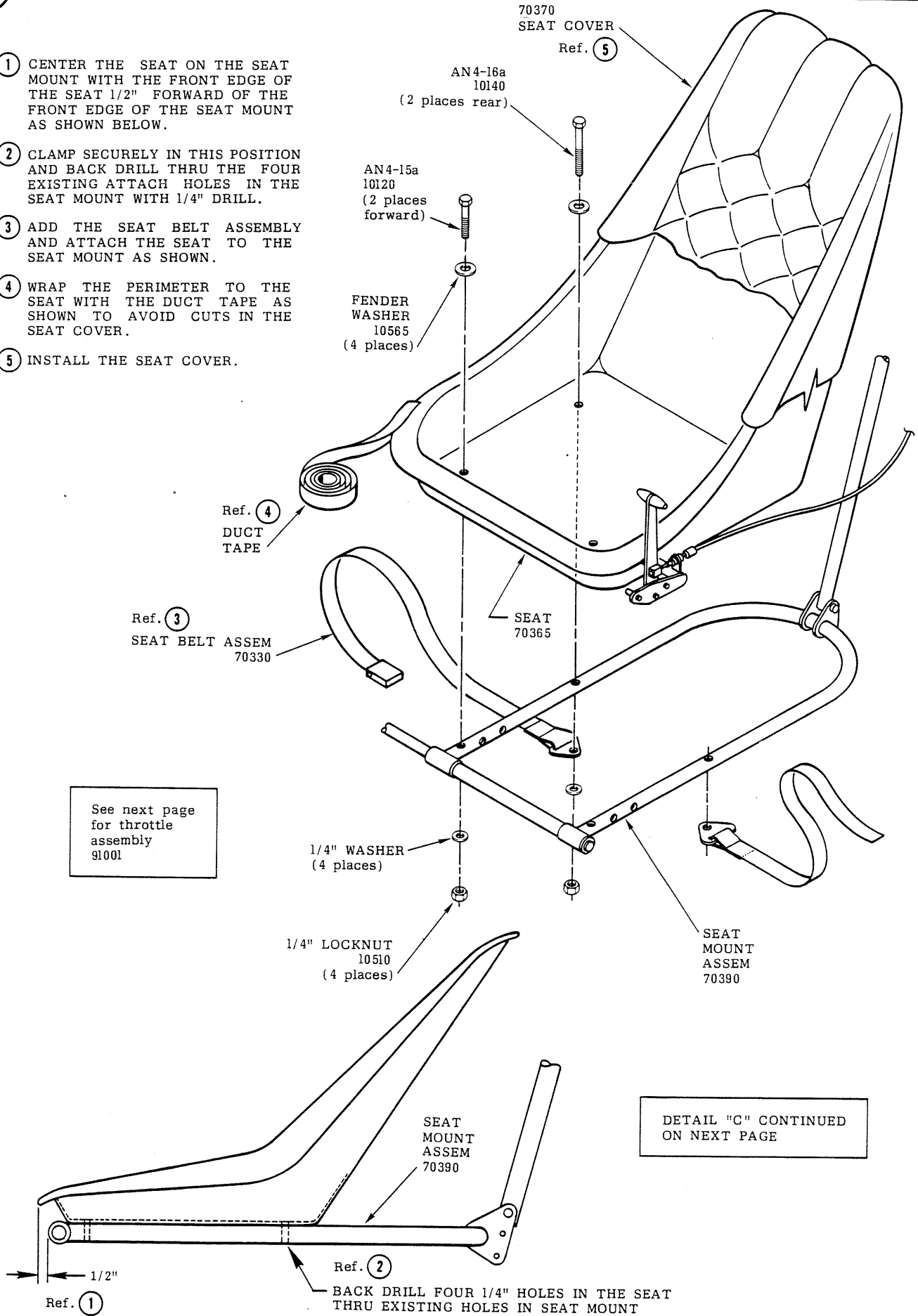




C

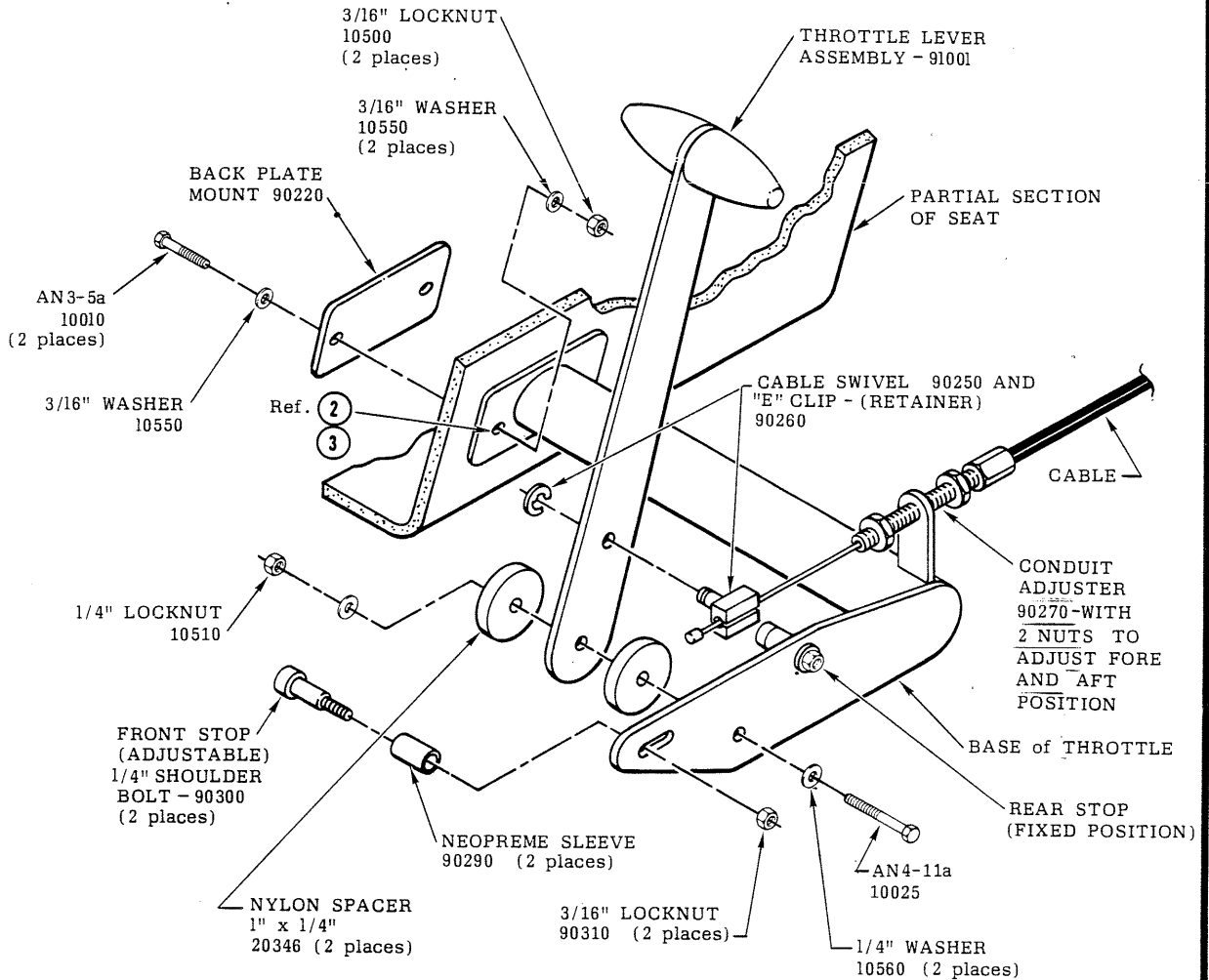
# SECTION NINE

- ① CENTER THE SEAT ON THE SEAT MOUNT WITH THE FRONT EDGE OF THE SEAT 1/2" FORWARD OF THE FRONT EDGE OF THE SEAT MOUNT AS SHOWN BELOW.
- ② CLAMP SECURELY IN THIS POSITION AND BACK DRILL THRU THE FOUR EXISTING ATTACH HOLES IN THE SEAT MOUNT WITH 1/4" DRILL.
- ③ ADD THE SEAT BELT ASSEMBLY AND ATTACH THE SEAT TO THE SEAT MOUNT AS SHOWN.
- ④ WRAP THE PERIMETER TO THE SEAT WITH THE DUCT TAPE AS SHOWN TO AVOID CUTS IN THE SEAT COVER.
- ⑤ INSTALL THE SEAT COVER.



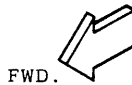
See next page for throttle assembly 91001

DETAIL "C" CONTINUED ON NEXT PAGE



TO ATTACH THE THROTTLE ASSEMBLY TO THE SEAT:

- ① DRILL ONE 3/16" HOLE IN THE SEAT (FORWARD HOLE) TO THE DIMENSIONS SHOWN BELOW.
- ② ATTACH THE THROTTLE THRU THIS HOLE AND ALIGN THE BASE OF THE THROTTLE PARALLEL TO THE BOTTOM OF THE SEAT.
- ③ NOW DRILL THE SECOND 3/16" HOLE (REAR) BY BACK DRILLING THRU THE EXISTING ATTACH HOLE IN THE THROTTLE MOUNTING PLATE.
- ④ SECURELY ATTACH THE THROTTLE ASSEMBLY.

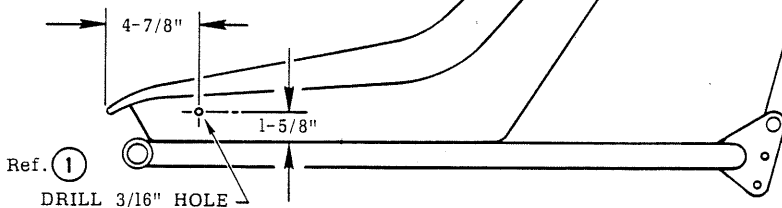
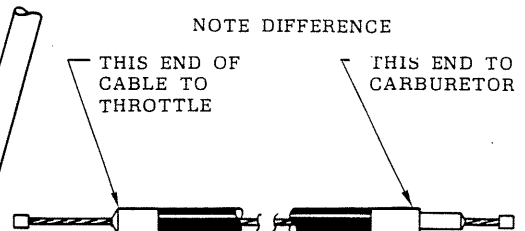


NOTE:

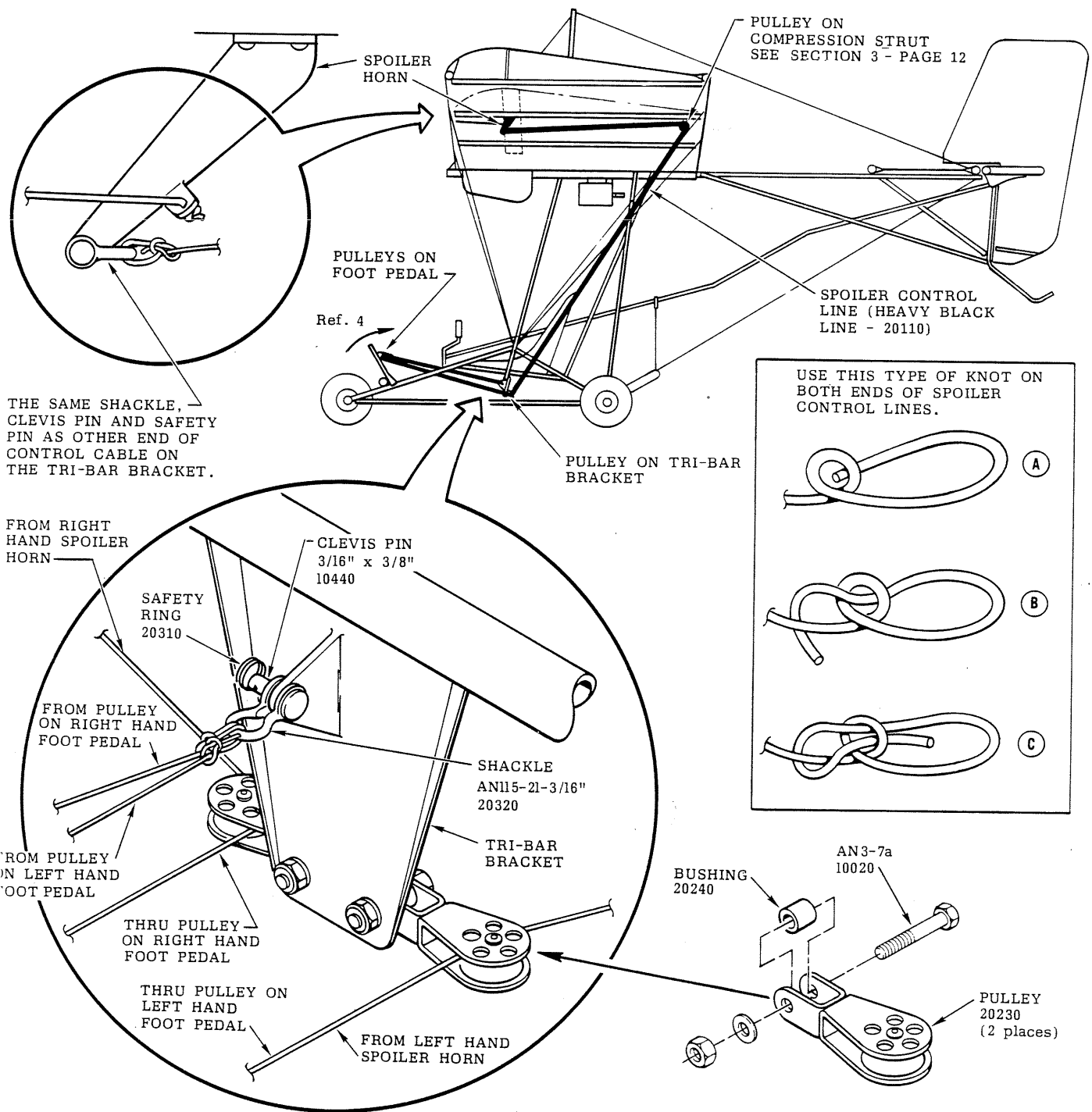
AFTER ASSEMBLY IS COMPLETED, ADJUST THE CABLE AS FOLLOWS:

PULL THE THROTTLE LEVER FULLY AFT. NOW PULL THE CONDUIT ADJUSTER AFT UNTIL THE CABLE WIRE IS TAUT. NOW LOCK THE ADJUSTER IN PLACE WITH THE 2 ADJUSTING NUTS. PUSH LEVER FORWARD AS FAR AS THE CABLE WILL GO, ADJUST AND LOCK FRONT STOP TO THIS LEVER POSITION

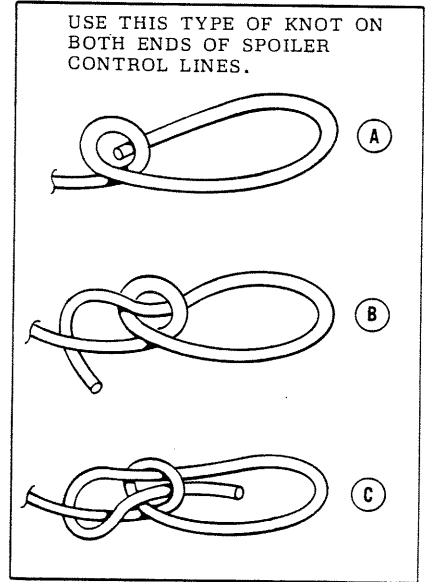
NOTE DIFFERENCE



# SECTION TEN

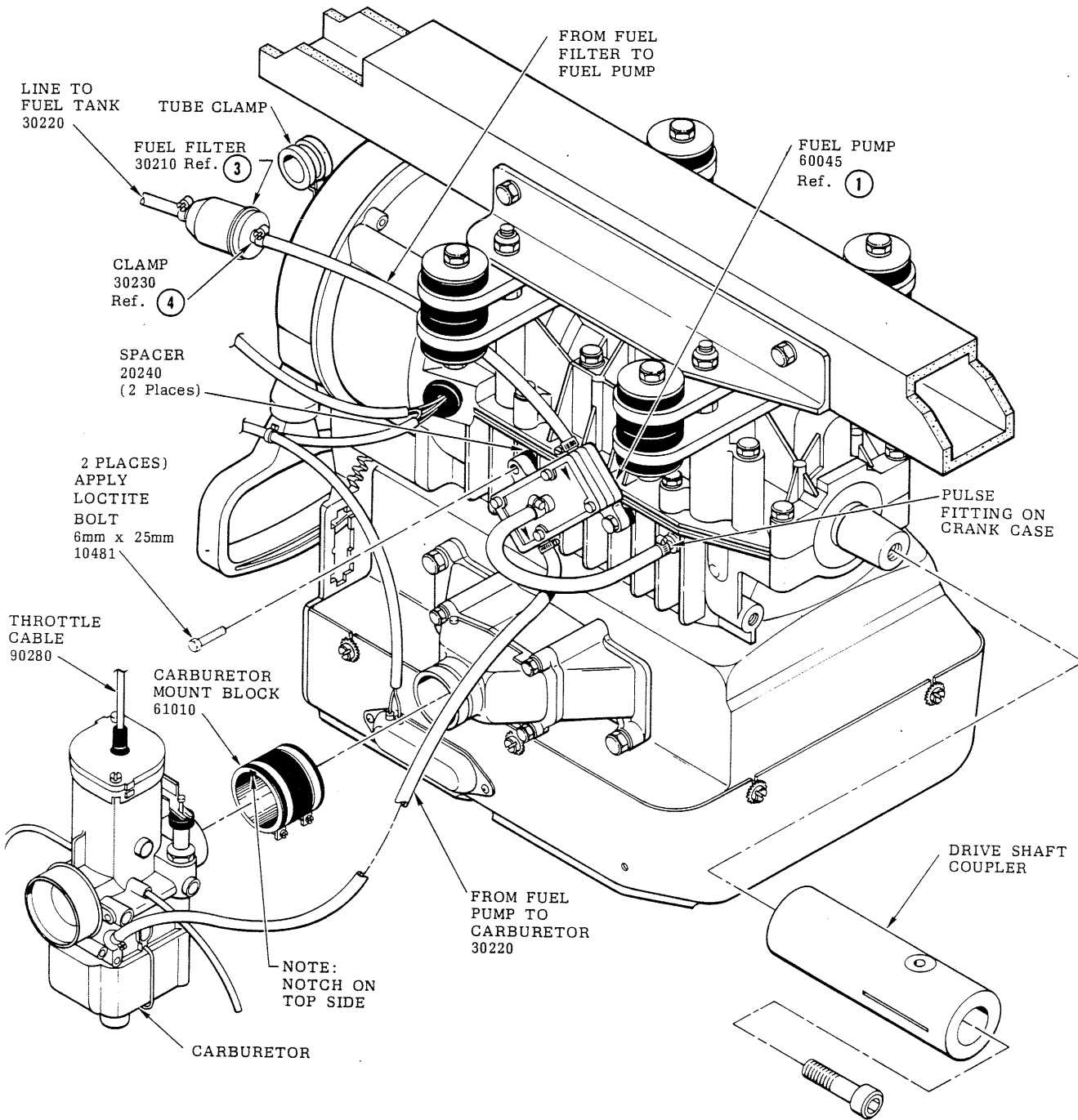


THE SAME SHACKLE, CLEVIS PIN AND SAFETY PIN AS OTHER END OF CONTROL CABLE ON THE TRI-BAR BRACKET.



- ① TIE ONE END OF THE SPOILER CONTROL CABLE (LINE) TO THE SHACKLE ON THE SPOILER HORN.
- ② ROUTE THE LINE THRU THE PULLEY ON THE COMPRESSION STRUT. (SEE SECTION 5 - PAGE 24)
- ③ NOW RUN THE LINE DIRECTLY DOWN AND INBOARD THRU THE PULLEY ON THE TRI-BAR BRACKET. FROM THIS POINT TAKE THE LINE FORWARD THRU THE PULLEY ON THE FOOT PEDAL AND BACK TO THE SHACKLE ON THE TRI-BAR BRACKET.
- ④ WITH THE TIP OF THE FOOT PEDAL AS FAR BACK AS THE STOP ALLOWS, TAKE ALL THE SLACK OUT OF THE LINE AND TIE THE END OF THE LINE TO THE SHACKLE ON THE TRI-BAR BRACKET.
- ⑤ ATTACH BOTH RIGHT AND LEFT HAND SPOILER LINES IN THIS SAME MANNER.

## SECTION TEN



- ① ATTACH THE CARBURETOR ASSEMBLY AND FUEL PUMP AS SHOWN, WHEN MOUNTING THE FUEL PUMP BE SURE THE FUEL FLOW DIRECTION IS CORRECT AS INDICATED BY THE ARROWS ON TOP OF THE PUMP.
- ② ROUTE THE FILTER FUEL LINE AND ELECTRICAL WIRES THRU THE TUBE CLAMP AS SHOWN BACK ON PAGE FOUR.
- ③ INSTALL THE FUEL FILTER WITH THE TAPERED END TOWARDS THE FUEL TANK AND BE SURE ALL FUEL LINE ENDS ARE SECURED WITH CLAMPS 30230.
- ④ THE DRIVE SHAFT COUPLER IS INSTALLED AT THE FACTORY. IF FOR ANY REASON IT HAS TO BE REMOVED AT A LATER DATE FOR REPLACEMENT, ETC., BE SURE AND USE A SHAFT PULLER. DO NOT PRY AGAINST THE SHAFT, ENGINE FACE OR BEARING SEAL AS DAMAGE MAY OCCUR.

# SECTION TEN

MUFFLER  
ATTACH  
STRAP  
61042

ATTACH MUFFLER TO  
ENGINE AND ROOT TUBE

A

MUFFLER  
61041

ROOT TUBE

B

61046  
EXHAUST HEADER  
PIPE

61043  
EXHAUST  
GASKET

BOLT  
8mm-x 1-1/8 LONG

ROOT  
TUBE

A

10185  
AN4-21a

10250  
AN4-27a

1" X 1/8" NYLON WASHER  
BETWEEN ROOT TUBE  
AND STRAP (2 PLACES)  
20345

B

EXHAUST HEADER  
PIPE - 61046

REMOVE TIPS  
FROM GROM-  
METS (2 per  
side)

MUFFLER  
ATTACH  
STRAP  
61042

RUBBER SHOCK  
GROMMET  
(4 Places) EACH SIDE  
30380

5/16 FENDER WASHER  
(2 Places) EACH SIDE  
10600

HEADER  
TAB

SPRING  
60120  
(2 places)

STAINLESS STEEL  
SAFETY WIRE

WHEN ATTACHING SPRINGS, THREAD THE  
SAFETY WIRE THRU THE CENTER OF THE  
SPRING AS SHOWN AND SECURE AROUND  
HEADER TABS. BE SURE THERE IS AMPLE  
PLAY IN THE WIRE AS NOT TO INTERFERE  
WITH THE NORMAL FUNCTION OF THE  
SPRING.

## SECTION TEN

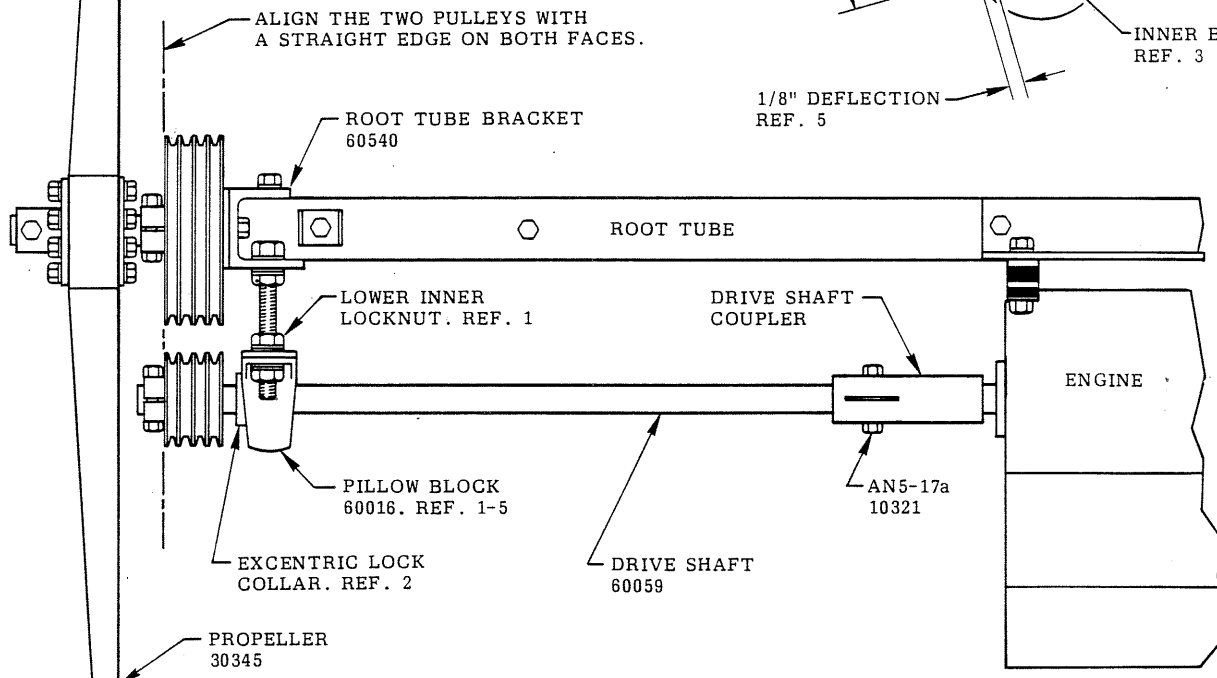
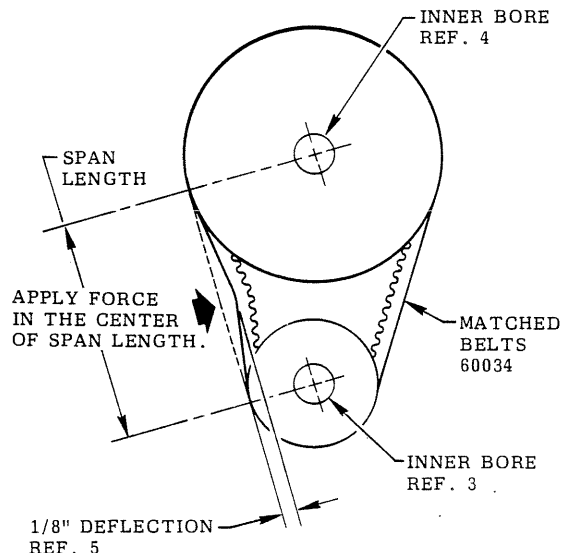
STUDY THIS GENERAL ASSEMBLY ELEMENT THEN PROCEED WITH THE INSTRUCTIONS ON THIS AND THE FOLLOWING 2 PAGES.

NOTE: MARK THE BELTS IN SEQUENCE (1-2-3-4) AND ALWAYS RE-INSTALL IN THE SAME ORDER.

RECOMMENDED BELT TENSION:  
 DAYCO--3VX250 "Y" BELTS  
 8 LBS. INITIAL 30 MIN. BREAK-IN  
 5-6 LBS. AFTER BREAK-IN

GATES--3VX250 "V" BELTS  
 7 LBS. INITIAL 30 MIN. BREAK-IN  
 4-1/2 to 5-1/2 LBS. AFTER BREAK-IN

NOTE: THE BELTS COME IN MATCHED SETS. IF DAMAGED REPLACE ALL FOUR BELTS.

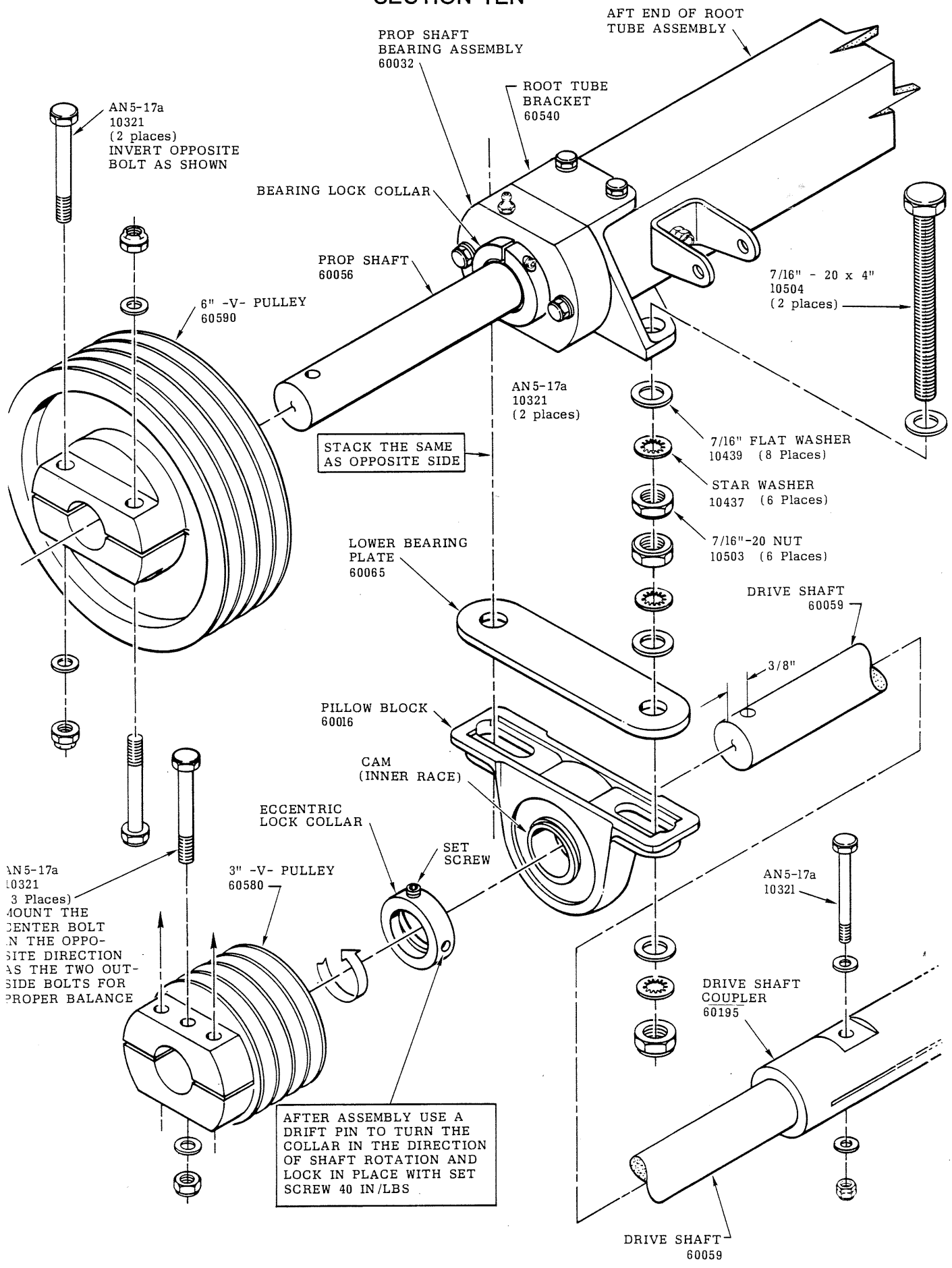


USE THESE INSTRUCTIONS WITH THE BREAKDOWN VIEW ON THE NEXT PAGE.

- ① SLIP THE PILLOW BLOCK 60016 ON THE DRIVE SHAFT AND SECURE IN PLACE WITH ALL ATTACHING HARDWARE AS SHOWN. LEAVE LOWER INNER LOCKNUT LOOSE UNTIL BELTS ARE ATTACHED.
- ② SLIDE THE ECCENTRIC LOCK COLLAR ON THE DRIVE SHAFT TO THE POSITION WHERE IT ENGAGES THE CAM ON THE PILLOW BLOCK INNER RACE. ROTATE THE COLLAR UNTIL IT SLIDES OVER THE CAMMED END OF THE INNER RACE. LOCK COLLAR BY TAPPING LIGHTLY WITH A DRIFT PIN IN THE DIRECTION OF SHAFT ROTATION AND TIGHTEN SET SCREW.
- ③ APPLY LOCTITE TO INNER BORE OF THE 3" PULLEY AND SLIDE IT ON THE DRIVE SHAFT. SECURE WITH 3 BOLTS: MOUNT THE CENTER BOLT IN THE OPPOSITE DIRECTION AS THE OUTSIDE BOLTS FOR PROPER BALANCE. TORQUE TO 140 INCH LBS.
- ④ APPLY LOCKTITE TO THE INNER BORE OF THE 6" PULLEY AND SLIDE IT ONTO THE PROP SHAFT. MOUNT BELTS AND ALIGN THE 2 PULLEYS WITH A STRAIGHT EDGE AS SHOWN. ATTACH 6" PULLEY WITH 2 BOLTS MOUNTED IN OPPOSITE DIRECTIONS (FOR BALANCE) AND TORQUE TO 140 INCH LBS.
- ⑤ ADJUST BELT TENSION AND LOCK PILLOW BLOCK IN PLACE.

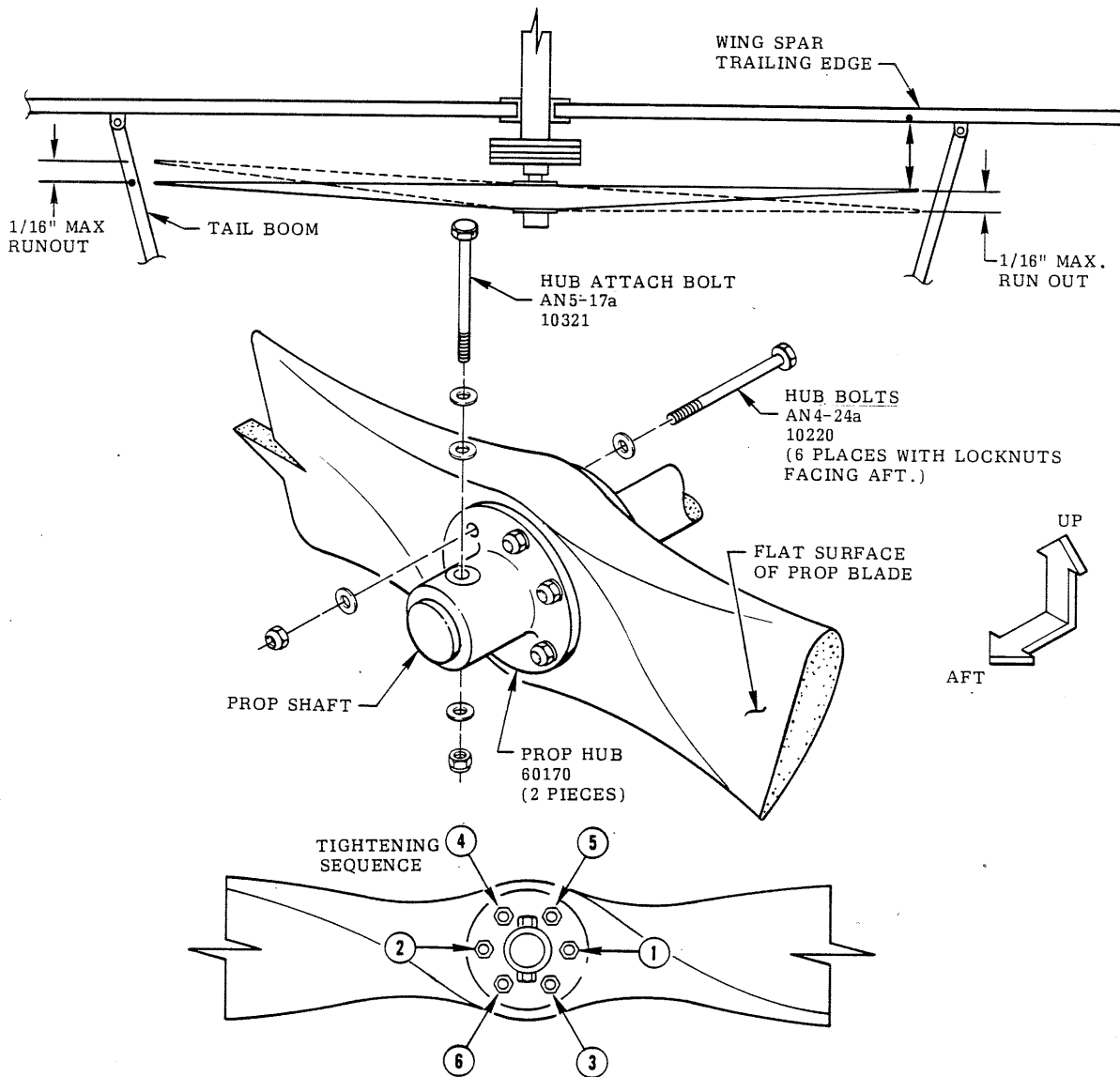
CONTINUED ON NEXT PAGE.

# SECTION TEN



## SECTION TEN

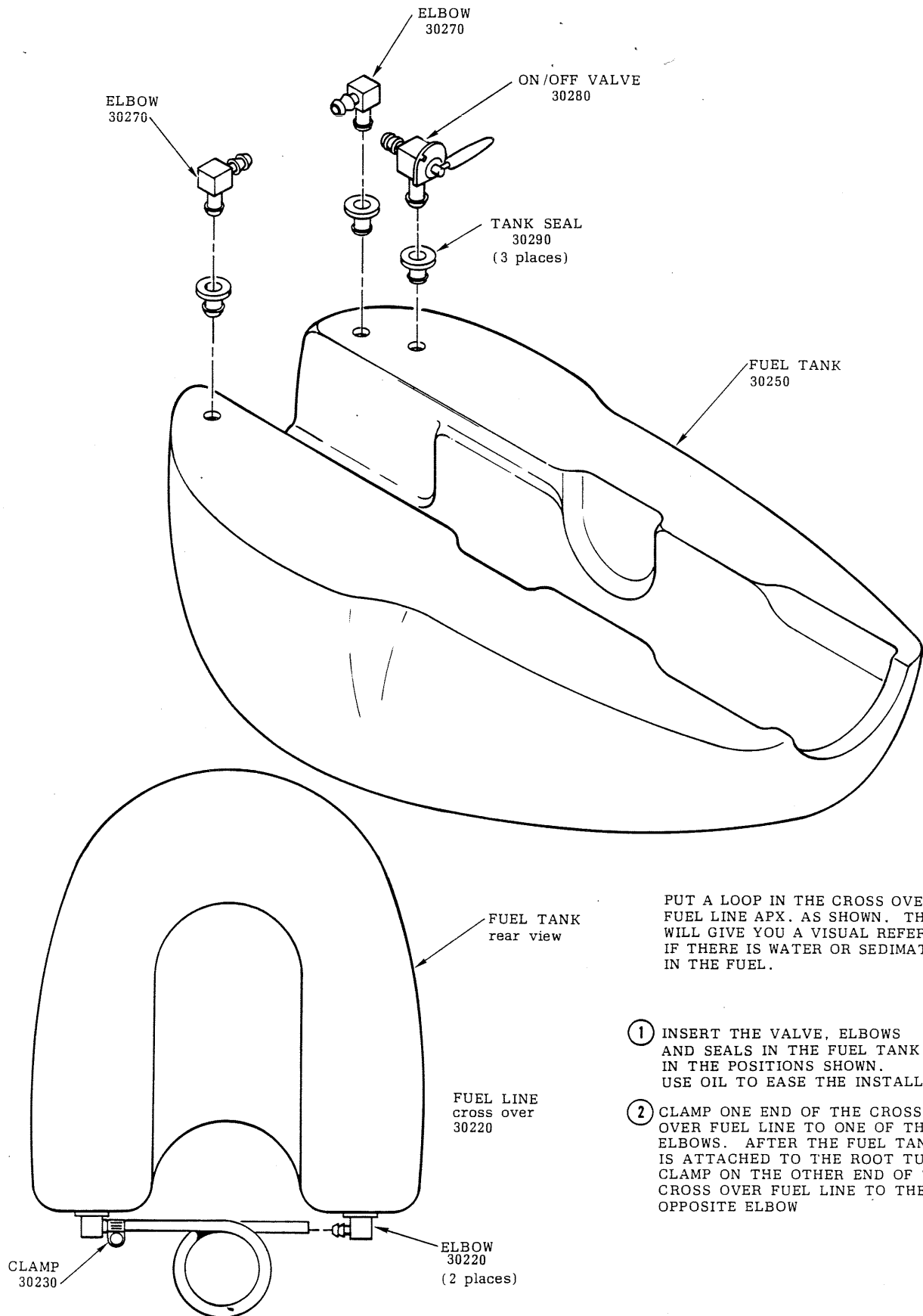
TO CHECK THE RUNOUT ON THE PROP, MEASURE FROM A FIXED POINT ON THE TRAILING EDGE SPAR OR THE TAIL BOOM.



- ① ASSEMBLE THE PROP AND PROP HUB (2 PIECES) AS SHOWN AND MOUNT ON THE PROP SHAFT. BE SURE YOU HAVE THE FLAT SURFACE OF THE PROP BLADE FACING AFT.
- ② TORQUE THE HUB BOLTS, 10220 TO 30-50 IN. LBS. (6 PLACES)  
TORQUE THE HUB ATTACH BOLT, 10321, TO 140 - 150 IN. LBS.  
USE THE PROPER SEQUENCE, 1 THRU 6 AS SHOWN ABOVE WHEN TIGHTENING THE PROP BOLTS.  
IF FOR ANY REASON YOU HAVE TO REMOVE THE HUB FROM THE SHAFT AT A LATER TIME, REPLACE THE LOCKNUT ON THE ATTACH BOLT 10321 WITH A NEW LOCKNUT.
- ③ IF THE PROPELLOR HAS EXCESSIVE RUNOUT, TIGHTEN 3 BOLTS (10220 TOWARDS ONE TIP OR THE OTHER TO BRING BOTH TIPS INTO PROPER TRACK. USE A FIXED MARK ON THE WING SPAR OR TAIL BOOM TO MEASURE RUNOUT.
- ④ NOTE:  
AFTER THE PROP HUB HAS HAD A CHANCE TO "SEAT" ITSELF (24 HRS. OR MORE) RETIGHTEN THE HUB BOLTS 10220 WITH THE SAME PROCEDURE AS ABOVE.



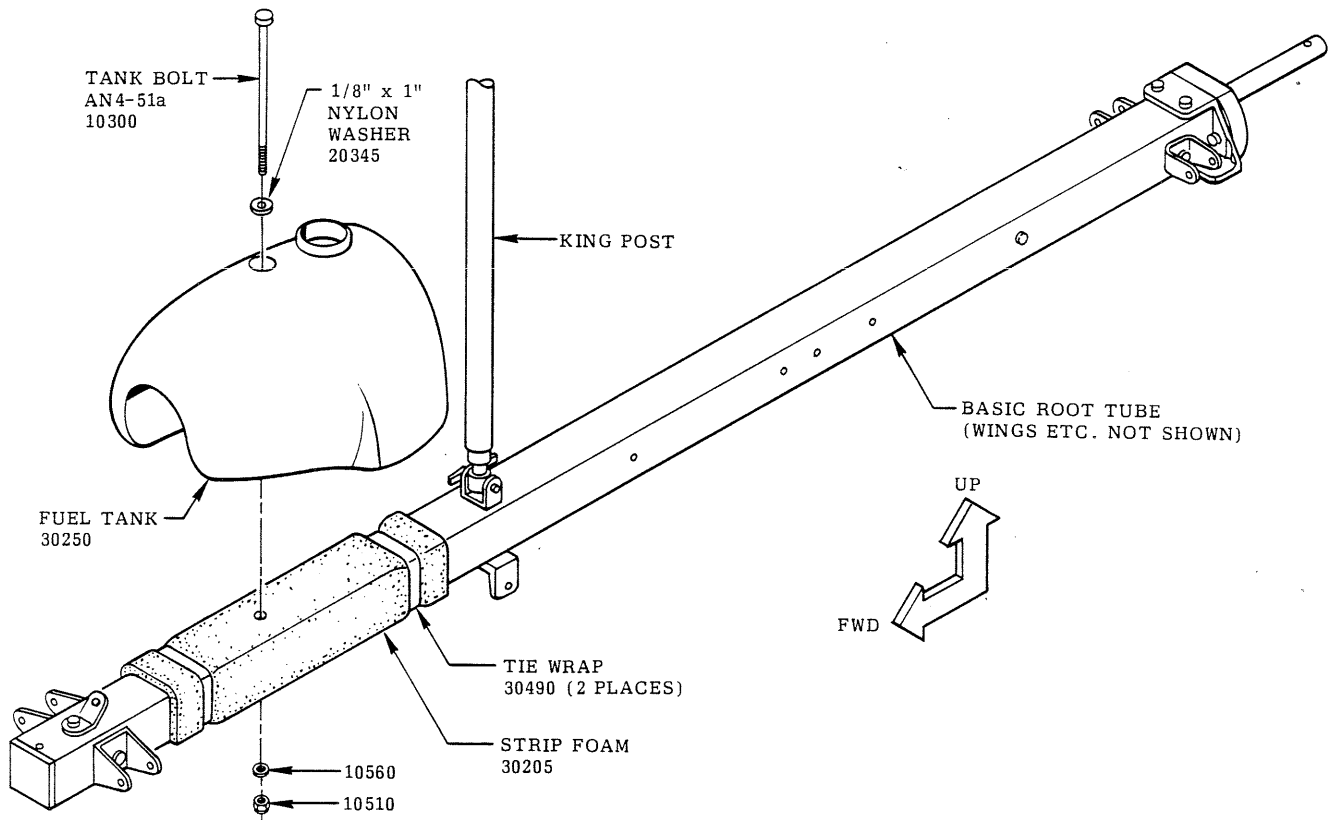
# SECTION TEN



PUT A LOOP IN THE CROSS OVER FUEL LINE APX. AS SHOWN. THIS WILL GIVE YOU A VISUAL REFERENCE IF THERE IS WATER OR SEDIMATE IN THE FUEL.

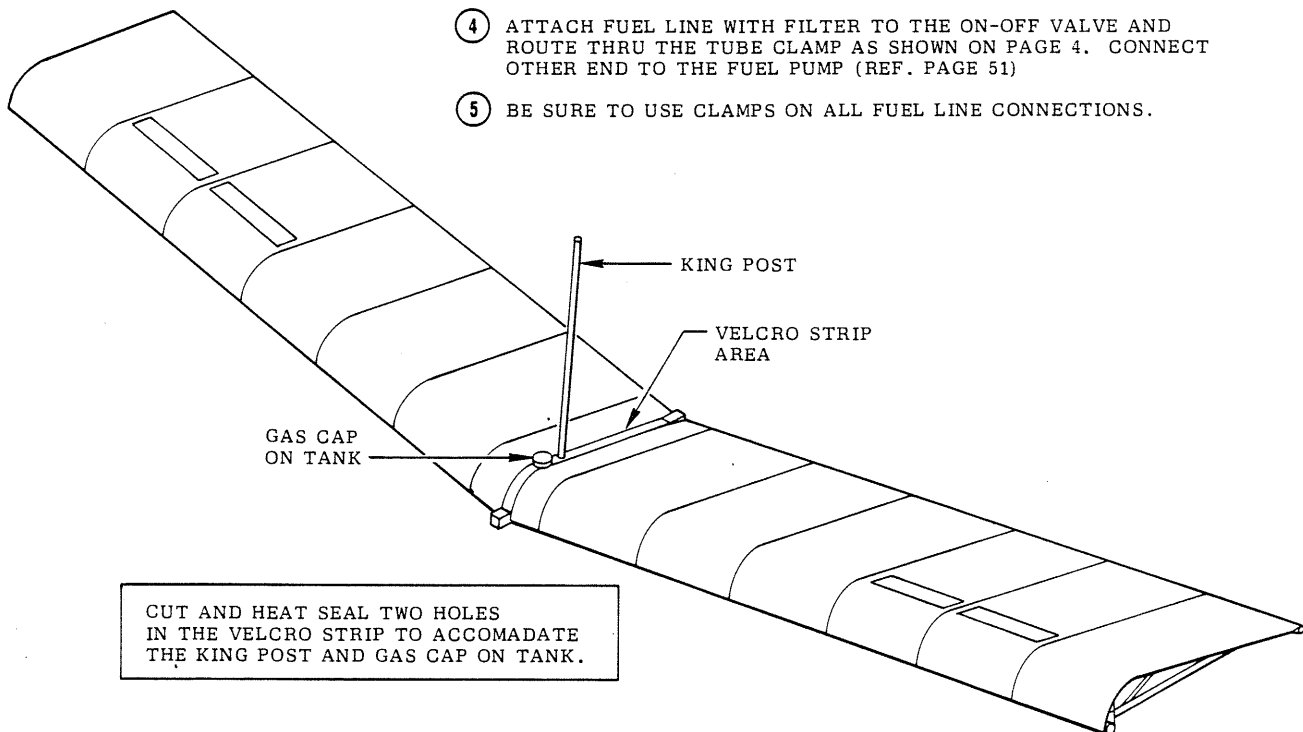
- ① INSERT THE VALVE, ELBOWS AND SEALS IN THE FUEL TANK IN THE POSITIONS SHOWN. USE OIL TO EASE THE INSTALLATION.
- ② CLAMP ONE END OF THE CROSS OVER FUEL LINE TO ONE OF THE ELBOWS. AFTER THE FUEL TANK IS ATTACHED TO THE ROOT TUBE CLAMP ON THE OTHER END OF THE CROSS OVER FUEL LINE TO THE OPPOSITE ELBOW

## SECTION TEN



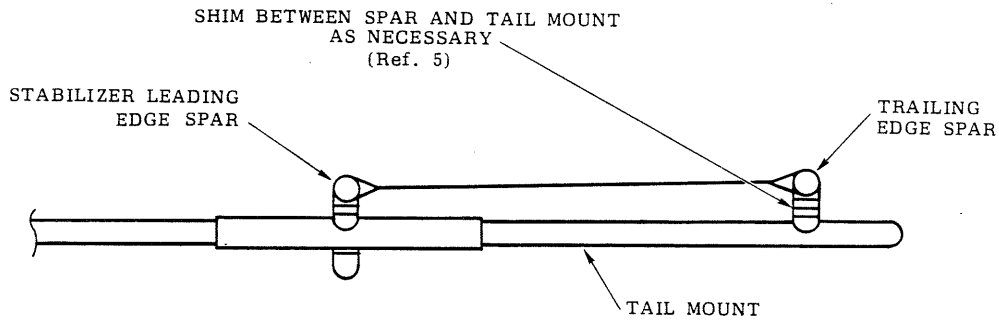
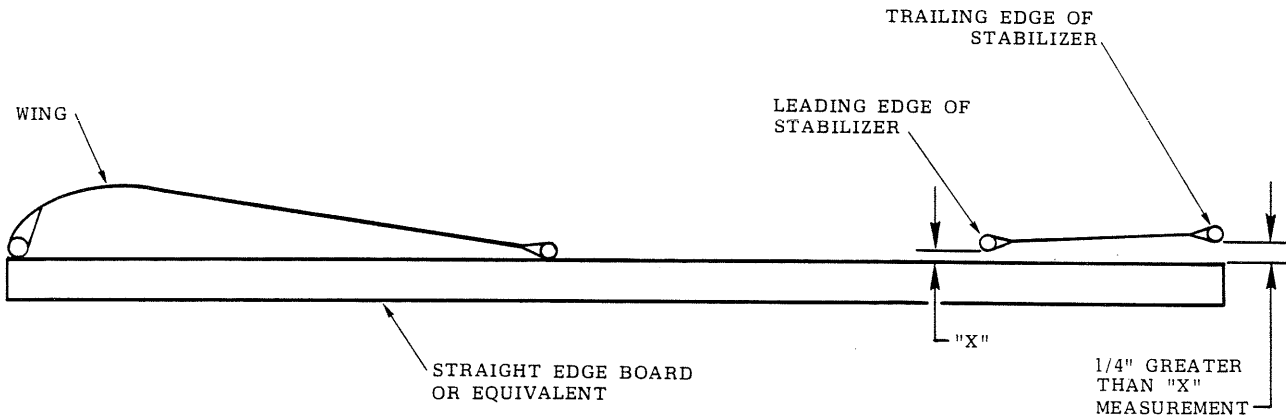
TO VISUALLY SIMPLIFY THE INSTALLATION OF THE GAS TANK, THE WINGS ETC ARE NOT SHOWN IN THE ABOVE ILLUSTRATION.

- ① WRAP STRIP FOAM ON THE ROOT TUBE AS SHOWN AND SECURE WITH TWO TIE WRAPS.
- ② CUT A HOLE IN THE STRIP FOAM TO ACCEPT THE TANK BOLT.
- ③ ATTACH TANK AS SHOWN AND CONNECT THE LOOSE END OF THE CROSS OVER FUEL LINE AS INDICATED ON PRECEDING PAGE.
- ④ ATTACH FUEL LINE WITH FILTER TO THE ON-OFF VALVE AND ROUTE THRU THE TUBE CLAMP AS SHOWN ON PAGE 4. CONNECT OTHER END TO THE FUEL PUMP (REF. PAGE 51)
- ⑤ BE SURE TO USE CLAMPS ON ALL FUEL LINE CONNECTIONS.



# SECTION TEN

## WING/STABILIZER INCIDENCE



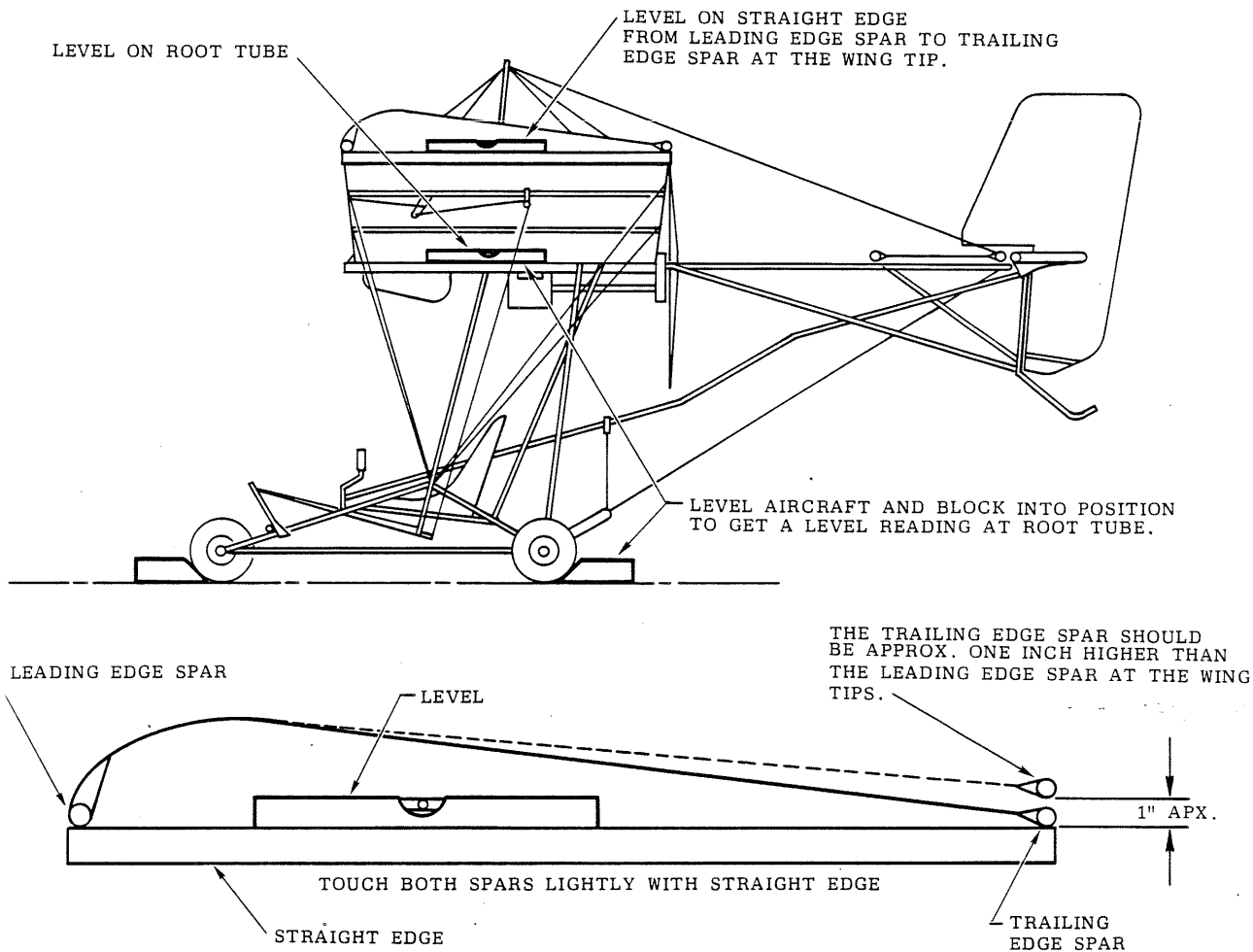
- ① TO MEASURE THE INCIDENCE, WEIGHT THE NOSE WHEEL TO THE GROUND SO THAT THE UPPER TAIL WIRES ARE TAUT.
- ② MAKE SURE THE KING POST IS ADJUSTED TO REMOVE ALL SLACK FROM WIRES.
- ③ PLACE A STRAIGHT EDGE ACROSS THE BOTTOM OF THE WING SPARS NEAR THE ROOT OF THE WING. THE STRAIGHT EDGE SHOULD LIGHTLY TOUCH BOTH SPARS AND CONTINUE BACK UNDER BOTH STABILIZER SPARS. (2 PEOPLE ON THIS OPERATION.)
- ④ STABILIZER TRAILING EDGE SHOULD BE 1/4" HIGHER THAN THE STABILIZER LEADING EDGE.
- ⑤ IF YOU DO NOT GET THE PROPER DIFFERENCE, IT WILL BE NECESSARY TO SHIM THE STABILIZER SPARS WITH WASHERS TO ACHIEVE THE PROPER ANGLE.
- ⑥ LONGER BOLTS (AN-40a) AND EXTRA 1/4" NYLON WASHERS ARE PROVIDED IN KIT FOR THIS.

### NOTE:

DO NOT NEGLECT THIS PROCEDURE. IT HAS AN EFFECT ON FLIGHT PERFORMANCE.

## SECTION TEN

### WING WASHOUT



① LEVEL AND BLOCK THE AIRCRAFT AS SHOWN ABOVE TO GET A LEVEL READING ACROSS THE ROOT TUBE FORWARD AND AFT.

② USE SAME LEVEL ON A STRAIGHT EDGE TO GET READING AT WING TIPS FORWARD AND AFT. AS SHOWN ABOVE.

CORRECT WING WASHOUT IS AN IMPORTANT FACTOR IN THE STALLING CHARACTERISTICS AND LOW SPEED HANDLING OF YOUR AIRCRAFT. WASHOUT IS SET AT THE FACTORY THROUGH PRECISE WIRE LENGTHS; HOWEVER, IT SHOULD BE CHECKED BEFORE FLIGHT TO BE CERTAIN THAT THE ANGLES ARE WITHIN FACTORY SPECIFICATIONS.

③ MAKE SURE THE KING POST IS ADJUSTED AND ALL THE SLACK IS OUT OF THE WIRES.

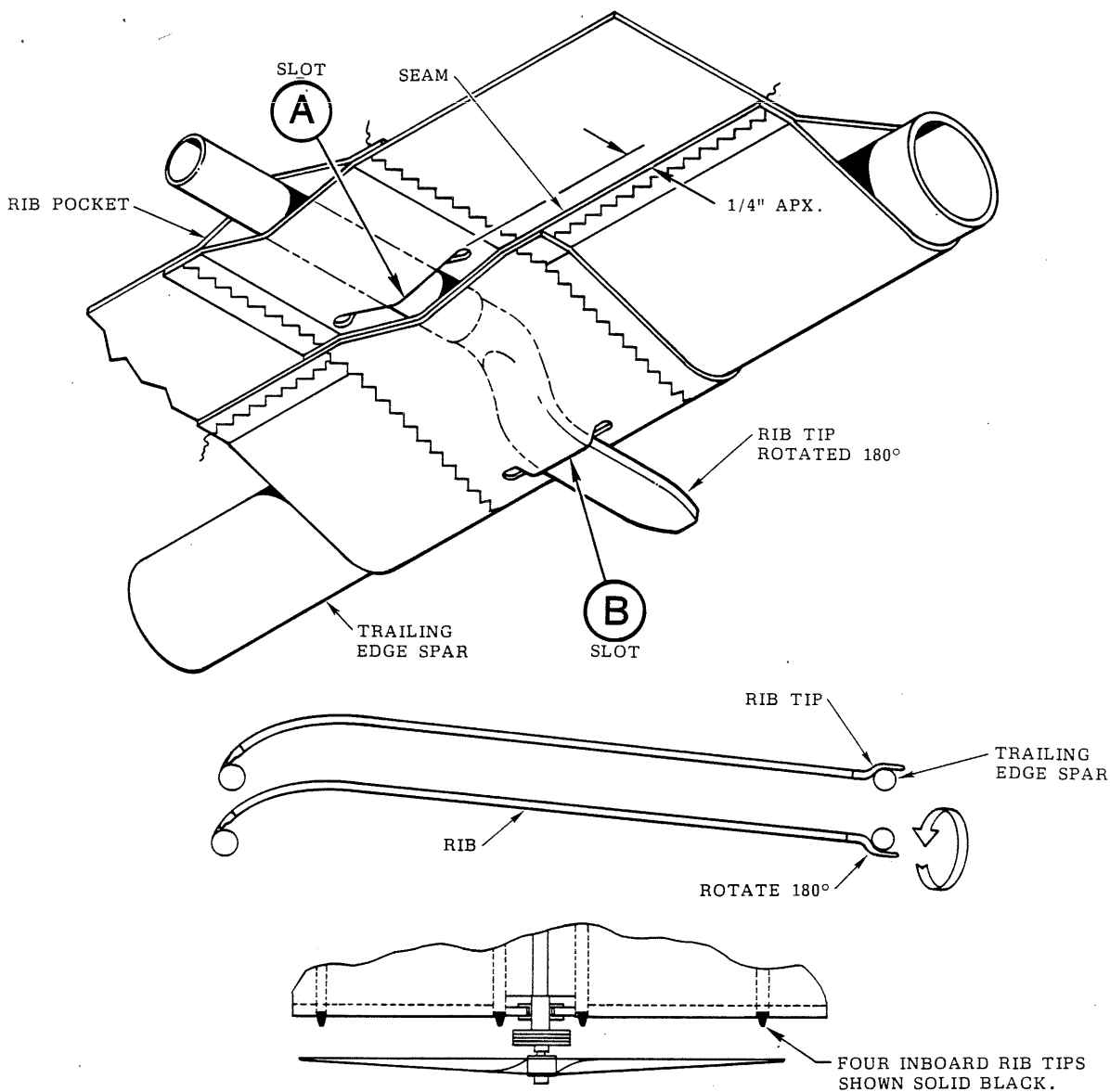
④ CHECK ALL WIRES FOR IMPROPER LOCATION, TWIST ETC.

WASHOUT AT THE TRAILING EDGE APX. 1"

IF PROBLEMS OCCUR FEEL FREE TO CONTACT YOUR DEALER.

## SECTION TEN

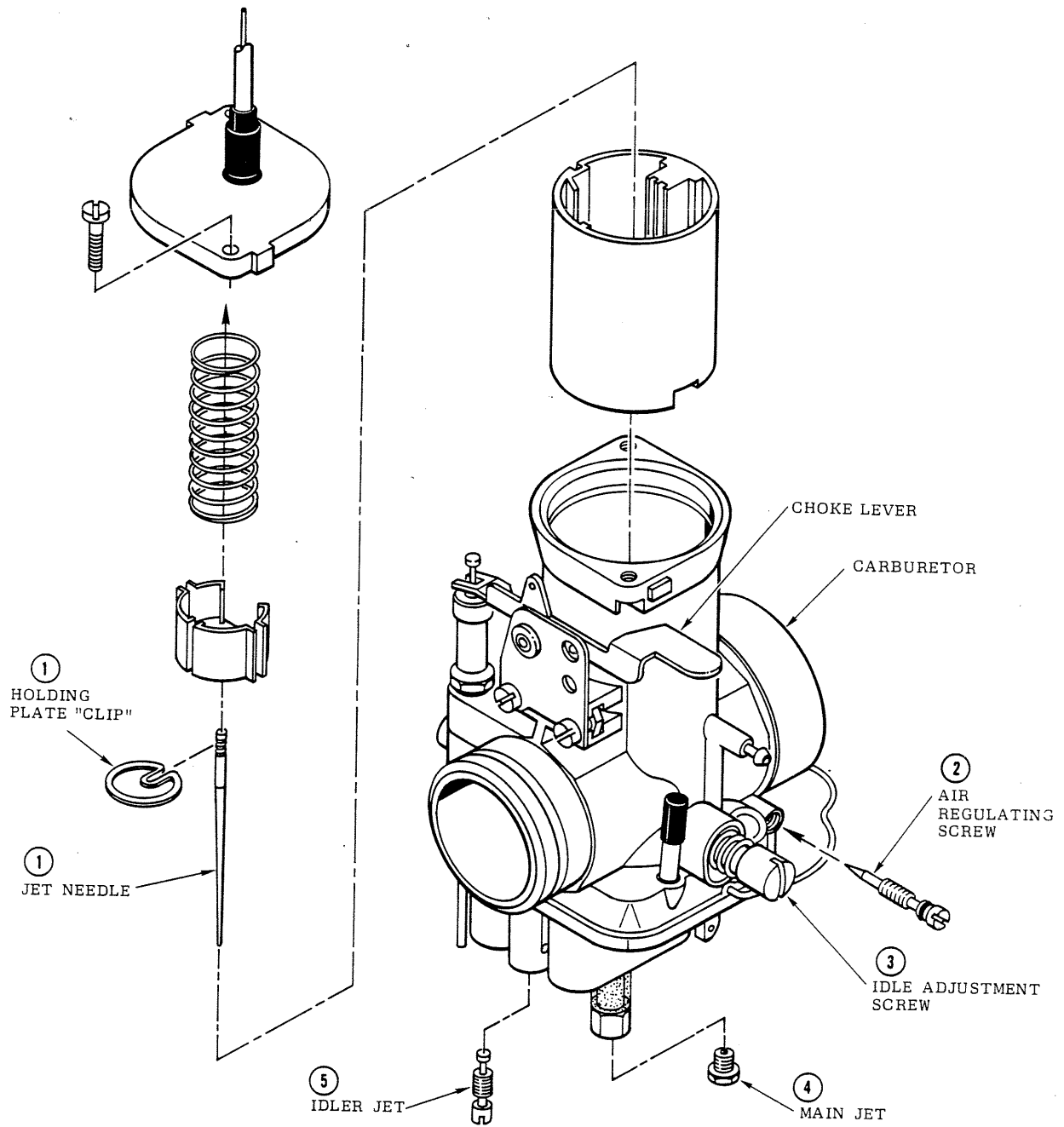
### UNDERSIDE VIEW OF RIB POCKET



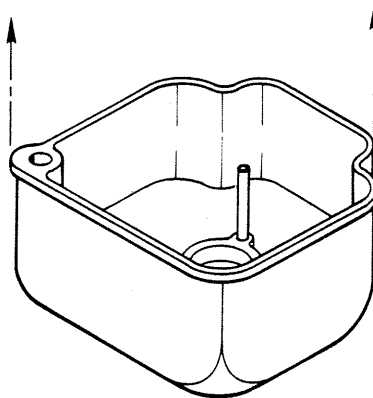
- WITH RIB INSERTED IN RIB POCKET ON TOP SIDE OF WING, CUT AND HEAT SEAL TWO SLOTS IN THE RIB POCKET ON THE UNDERSIDE OF WING AS FOLLOWS.
- ① CUT "A" THRU ONE LAYER OF CLOTH ONLY, APPROXIMATELY 1/4" FORWARD OF THE SEAM. CUT SLOT "B" 180° OPPOSITE ORIGINAL SLOT ON TOP SIDE OF SPAR, THRU TWO LAYERS OF CLOTH.
  - ② REMOVE RIB FROM POCKET AND TURN THE RIB TIP 180° AS SHOWN.
  - ③ RE-INSTALL RIB THRU THE TWO NEW SLOTS SO THAT THE RIB TIP NOW RESTS ON THE BOTTOM OF THE TRAILING EDGE SPAR.
  - ④ REPEAT THIS PROCEDURE ON THE 4 INBOARD RIBS.

THIS OPERATION WILL HELP TO KEEP THE 4 INBOARD RIBS FROM VIBRATING OUT OF THE RIB POCKETS AND INTO THE PROPELLAR. ANOTHER METHOD IS TO DRILL A SMALL HOLE IN THE TIP END AND SAFETY WIRE IT TO THE TRAILING EDGE SPAR.

# SECTION TEN



SEE "ENGINE START UP AND TUNING PROCEDURE" PAGES 58 AND 59.



## SECTION TEN

### ENGINE START UP AND TUNING PROCEDURE

To tune the carburetor you will be concerned with 5 adjustments:

1. Main Jet
2. Idler Jet
3. Idler Adjustment Screw
4. Air Regulating Screw
5. Jet Needle and Clip

The main jet in the carburetor will vary in size depending on altitude and atmospheric conditions in your local area. Contact your dealer regarding normal main jet size for your location.

#### START UP

Close the throttle and depress the choke lever. Start the engine and as it warms up release the choke.

Let the engine warm up for approximately 5 minutes then run at full throttle for about 15 seconds to "clean out engine".

Back off the throttle and adjust the idle adjustment screw to a fast idle, approximately 1200 R.P.M. not so fast; however, that the plane wants to taxi away.

Now adjust the air regulating screw to get a smooth idle.

If the idle runs rough, it is either too "rich" or too "lean". Too rich a mixture will cause heavy smoking and a too lean mixture will cause the engine to want to die out. To correct this, turn your attention to the idler jet. For a too "rich" mixture (smoking) install a smaller numbered idler jet. If the engine runs "lean" install a larger numbered jet.

Now turn to full throttle and mid-range tuning.

Your concern here will be the "main jet". This jet is similar to the idler jet with regards to running too rich or too lean. Generally, use the largest main jet that the engine will run smoothly on. It is advised that a head temperature gauge be used and with the engine at full throttle or at mid-range (1/2 to 3/4 throttle). The temperature should not exceed 400° F. in a 4-5 minute run up.

If the temperature exceeds 400° F. during this run up procedure change the holding plate "clip" on the jet needle to a lower groove on the jet needle.

If at full throttle the engine "4 cycles" (fires every other time) or emits heavy blue or black smoke or stutters, change the main jet to a smaller size. If the engine R.P.M. increases when the throttle is backed off slightly from full throttle, the main jet is too small. This causes overheating and could lead to piston seizure.

If at full throttle the engine R.P.M. drops when the throttle is backed off slightly, the main jet is correct or slightly large. This is acceptable.

## SECTION TEN

### ENGINE START UP AND PROCEDURE CONTINUED

If the engine runs smooth and strong at full throttle, but stutters in the mid-range area, the holding plate "clip" should be raised to allow smooth running and fast acceleration. The normal setting for this clip is in the center groove on the jet needle.

Now recheck the idle adjustment. Back off the throttle and turn the idle adjustment screw in as far as it will go.- (bottom out on spring) now back it out about 1/2 a turn or until you get a slow idle. Turn the air regulating screw in or out until you get a smooth idle.

Feel free to contact your dealer or the factory, if you have need for additional assistance or information.



## SECTION TEN

### BEARING LUBRICATION

BOTH THE DRIVE SHAFT AND THE PROPELLAR SHAFT MUST BE PERIODICALLY RE-LUBRICATED TO ASSURE LONG LIFE. THE BEARINGS SHOULD BE LUBRICATED EVERY 50 HOURS OF OPERATION OR EVERY 30 HOURS IF OPERATED IN EXTREME DIRT/DUST ENVIRONMENT.

- ① REMOVE THE PROPELLAR AND BELTS.
- ② TURN THE PROPELLAR SHAFT BY HAND AND LISTEN FOR ANY UNUSUAL SOUNDS SUCH AS GRINDING, CLICKING ETC. IF ANY ABNORMAL SOUNDS ARE HEARD THE BEARING MUST BE REPLACED. CONTACT YOUR DEALER.
- ③ IF SHAFT RUNS SMOOTHLY, REPLACE AND ADJUST THE BELTS.
- ④ WIPE ALL SURFACES CLEAN.
- ⑤ START THE ENGINE AND RUN AT IDLE SPEED (DO NOT REV. UP)
- ⑥ FEED THE SPECIFIED LUBRICANT INTO THE BEARING SLOWLY UNTIL A SLIGHT BEAD OF LUBRICANT FORMS AROUND THE SEAL..
- ⑦ REPLACE THE PROPELLAR AND ALIGN AS PER PAGE 54.
- ⑧ USE ONLY A LUBRICANT CONFORMING TO A NLGI GRADE TWO CONSISTENCY. IDEALLY A LITHIUM BASED LUBRICANT.

## SECTION TEN

Be sure the throttle cable, gas lines and ignition wires are secured with tie tabs and/or velcro strips to a suitable anchor (down tubes, frame, etc.) to eliminate excessive movement.

Check all gas lines and connections for signs of leakage before flight. Make sure that all pip pins are bottomed out and that all wing nuts and safety bolts have safety rings or pins.

Before engine start-up be certain you read the engine owners manual. Pay particular attention to the break-in procedures and fuel mixtures.

Remember your Quicksilver MX is not an acrobatic aircraft. Abrupt maneuvers and undo stresses put on the plane should always be avoided.

Before your first flight, go through the pre-flight check list found in your owners manual. This is very important and should become a ritual before each flight thereafter.

Our interest in your flying pleasure and experiences is an ongoing thing, so let us hear from you if we can be of any further assistance.