CHAPTER 25
REVISION LIST

The following list of revisions will allow you to update the Lancair IV construction manual chapter listed above.

Under the "Action" column, "R&R" directs you to remove and replace the pages affected by the revision. "Add" directs you to insert the pages shown and "R" to remove the pages.

Page(s) affected	Current Rev.#	Action	Description
25-1	0	None	
25-7	PC8	R&R	Fig.25:B:2 Revised
25-9	PC13	R&R	Edited Fig. 25:B:4.
25-11	PC12	R&R	Edited text.
25-12	PC11	R&R	Edited Fig. 25:C:2.
25-13	PC13	R&R	Edited part numbers.

CHAPTER 25
SEATS

REVISIONS

From time to time, revisions to this assembly manual may be deemed necessary. When such revisions are made, you should immediately replace all outdated pages with the revised pages. Discard the out dated pages. Note that on the lower right corner of each page is a "revision date". Initial printings will have the number "0" printed and the printing date. All subsequent revisions will have the revision number followed by the date of that revision. When such revisions are made, a "table of revisions" page will also be issued. This page (or pages) should be inserted in front of the opening page (this page) of each affected chapter. A new "table of revisions" page will accompany any revision made to a chapter.

ARROWS

Most drawings will have arrows to show which direction the parts are facing, unless the drawing itself makes that very obvious. **"A/C UP"** refers to the direction that would be up if the part were installed in a plane sitting in the upright position. In most cases the part shown will be oriented in the same position as the part itself will be placed during that assembly step. However, time goes on and changes are made, so careful attention should be paid to the orientation arrows.

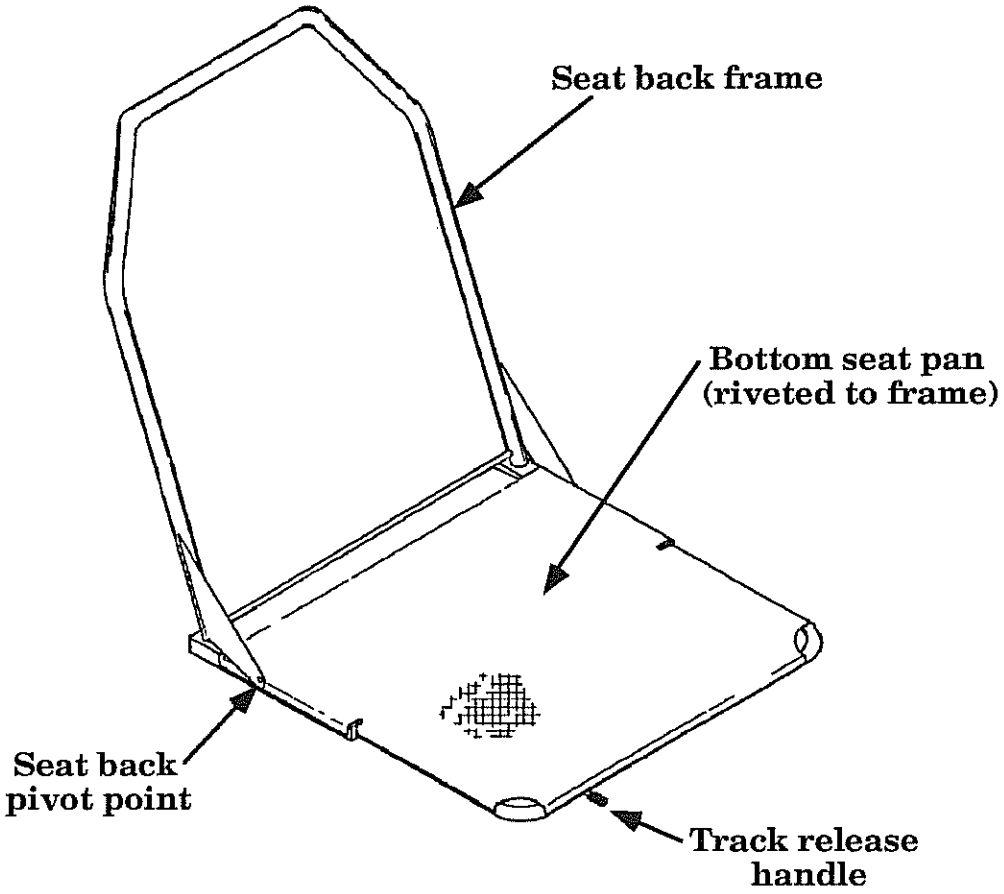
CONTENTS

1. INTRODUCTION

The front two seats of the Lancair IV are of standard tubular steel design. They incorporate slider mechanisms to make both short and long legged pilots happy. The backs of these seats fold forward to ease entry and exit from the rear bench seat.

This chapter will only deal with the two forward seats. The rear bench seat is formed by the aft bulkhead and gear box, and will be described in a later chapter.

Pilot and co-pilot seats
Figure 25:i:1



2. PARTS

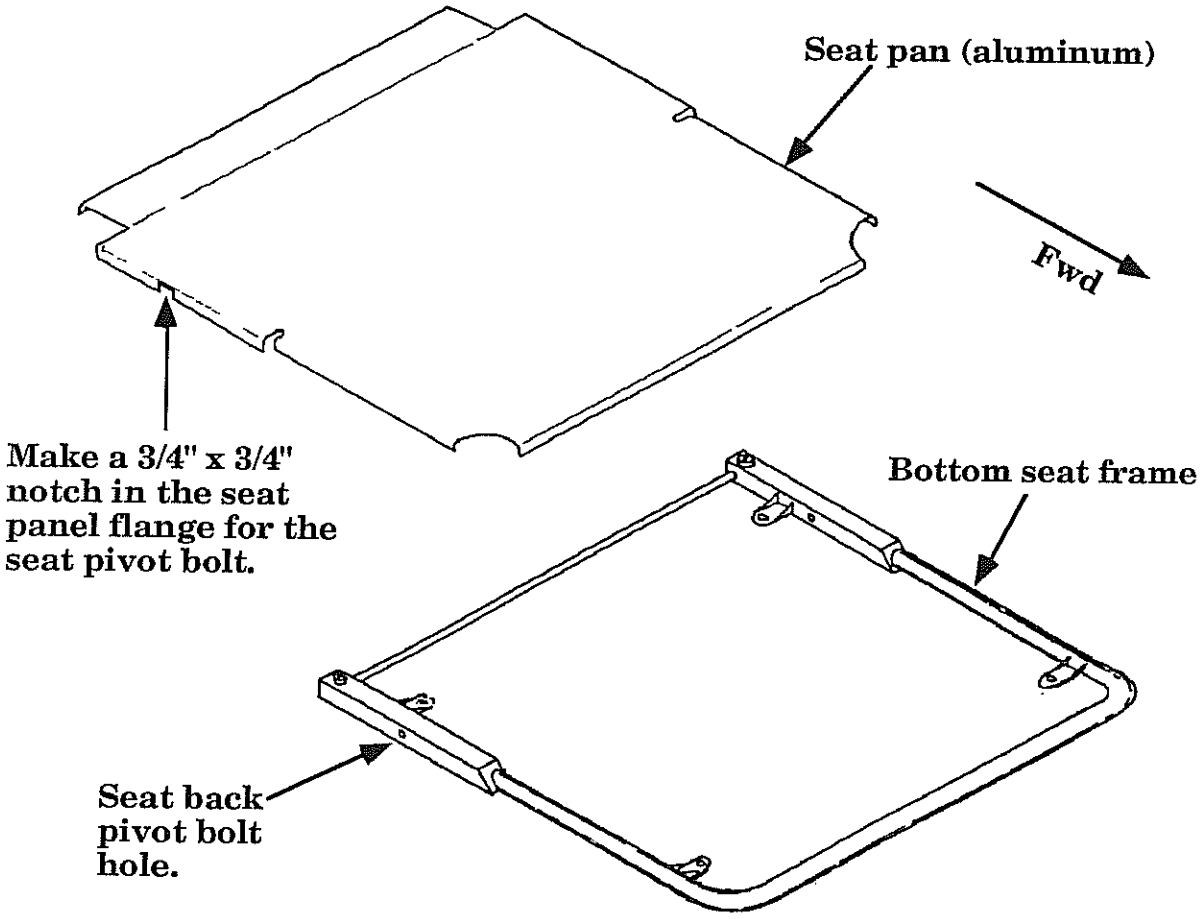
2 Seat bottoms (tube steel)
2 Seat backs (tube steel)
2 Seat pans (aluminum)
2 Slider mechanisms (right, with handle)
2 Slider mechanisms (left, no handle)

3. CONSTRUCTION PROCEDURE

A. SEAT PAN INSTALLATION

On each front seat, an aluminum seat pan is mounted to protect the slider mechanism from interference. There is no aluminum support on the seat back. Your upholstery shop will probably string webs around the seat back for support, much like a lawn chair. This is lighter than an aluminum back.

Seat pan
Figure 25:A:1

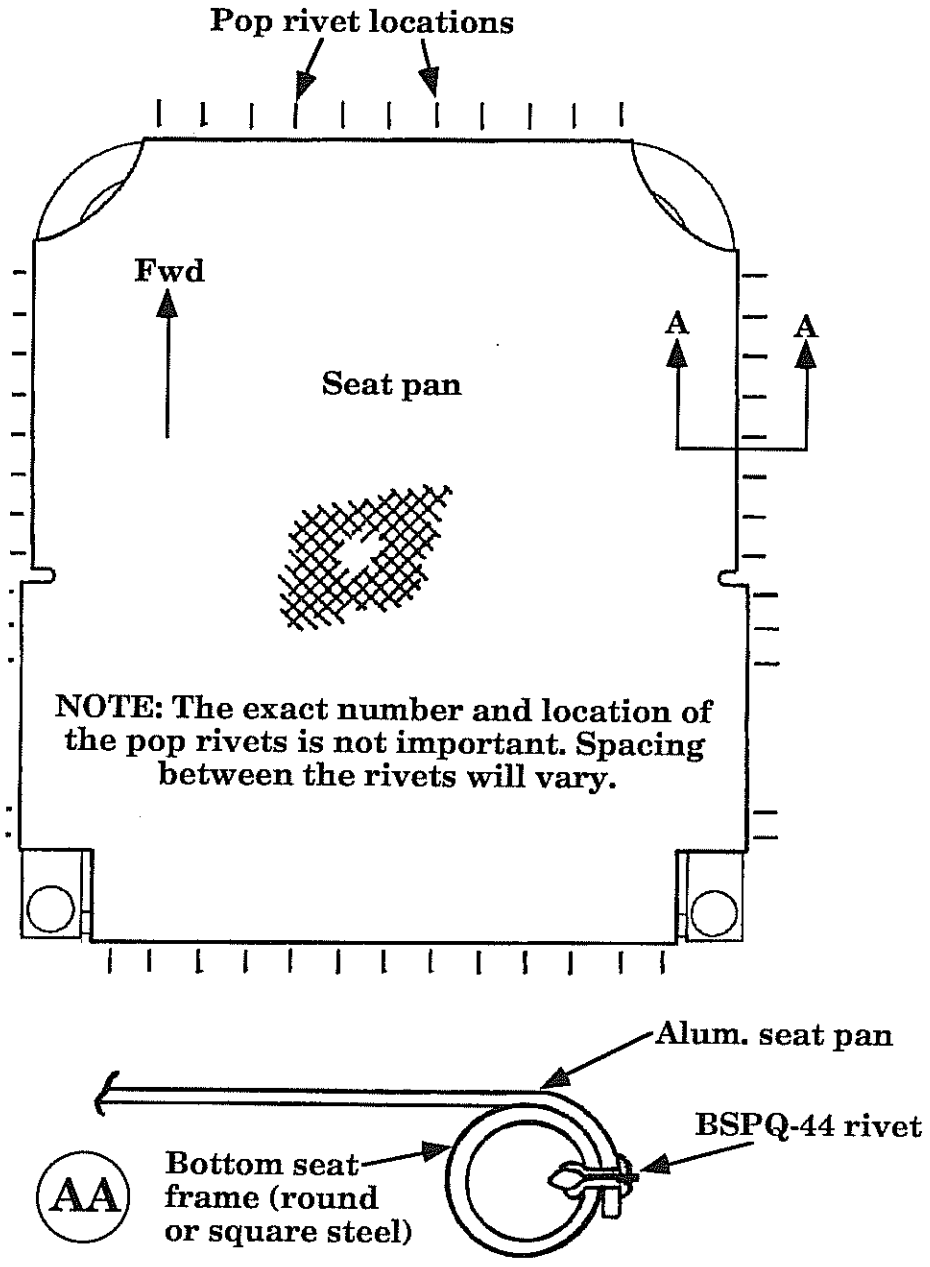


A1. Place the aluminum seat pan onto the bottom seat frame. Make a 3/4" wide, 3/4" high notch in both sides of the aluminum pan, centered on the seat back pivot bolt hole, as shown in Figure 25:A:1.

A2. Check that the aluminum seat pan fits tight to the steel frame on all four edges (circular and square)

A3. Secure the seat pan to the bottom seat frame with BSPQ-44 pop rivets. Use 10-12 rivets to secure each seat pan edge to the steel frame.

Riveting seat pan
Figure 25:A:2

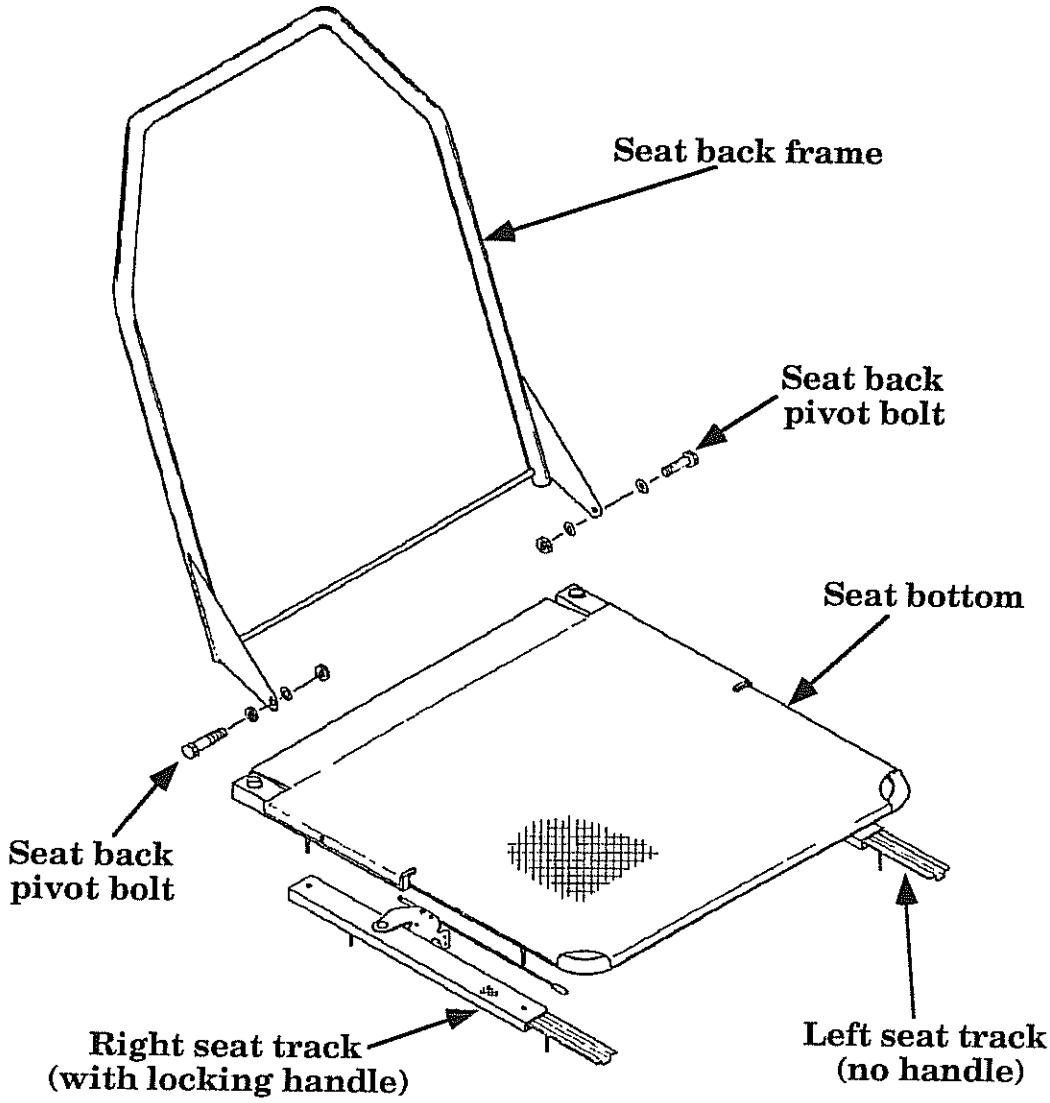


B. ASSEMBLING SEAT

The seat back is foldable and pivots on two 1/4" bolts. The angle of the seat backs can be adjusted with two stop bolts.

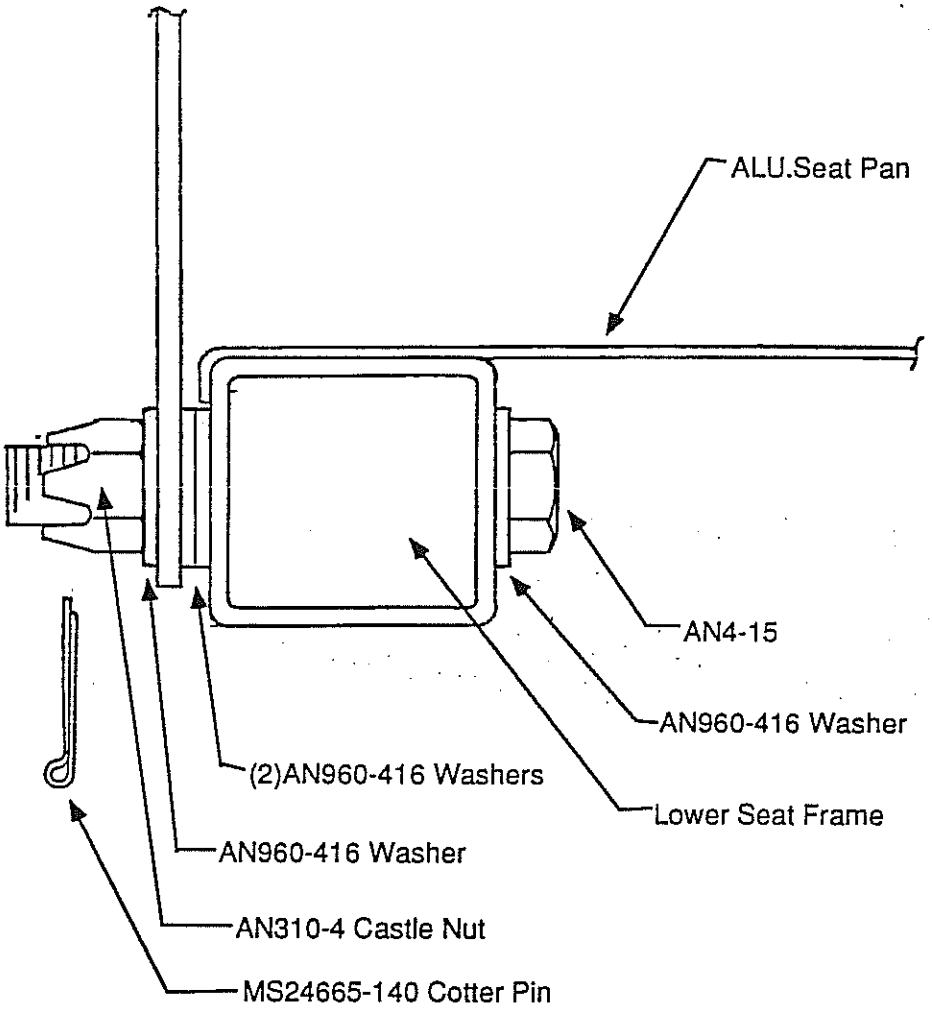
The entire seat is adjustable fore/aft on two slider tracks.

Seat assembly
Figure 25:B:1



B1. Bolt the seat back to the bottom seat frame as shown in Figure 25:B:2. Do not tighten the castle nut too tight or the seat back will not flip forward easily.

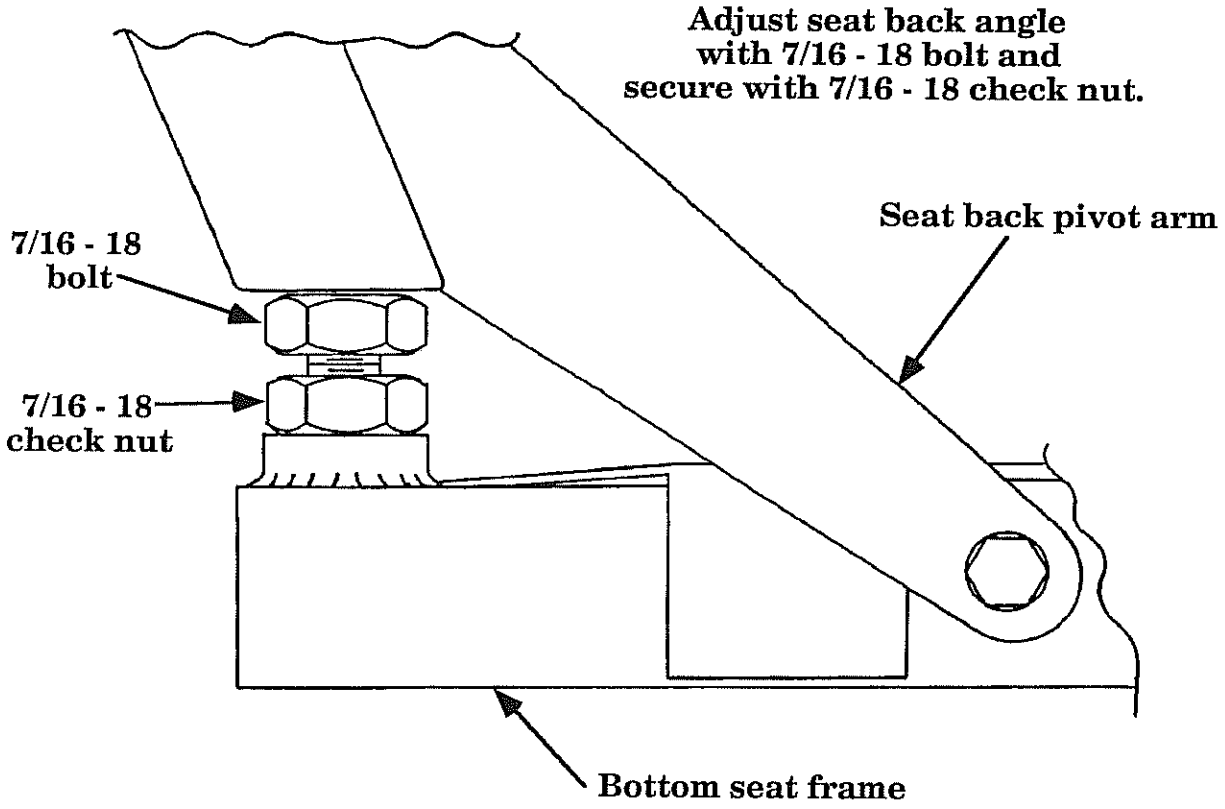
Seat back pivot bolt
Figure 25:B:2



B2. Thread a 7/16-18 check nut onto each of the 7/16-18 stop bolts. (The stop bolts and check nuts may already be installed in your bottom seat frame).

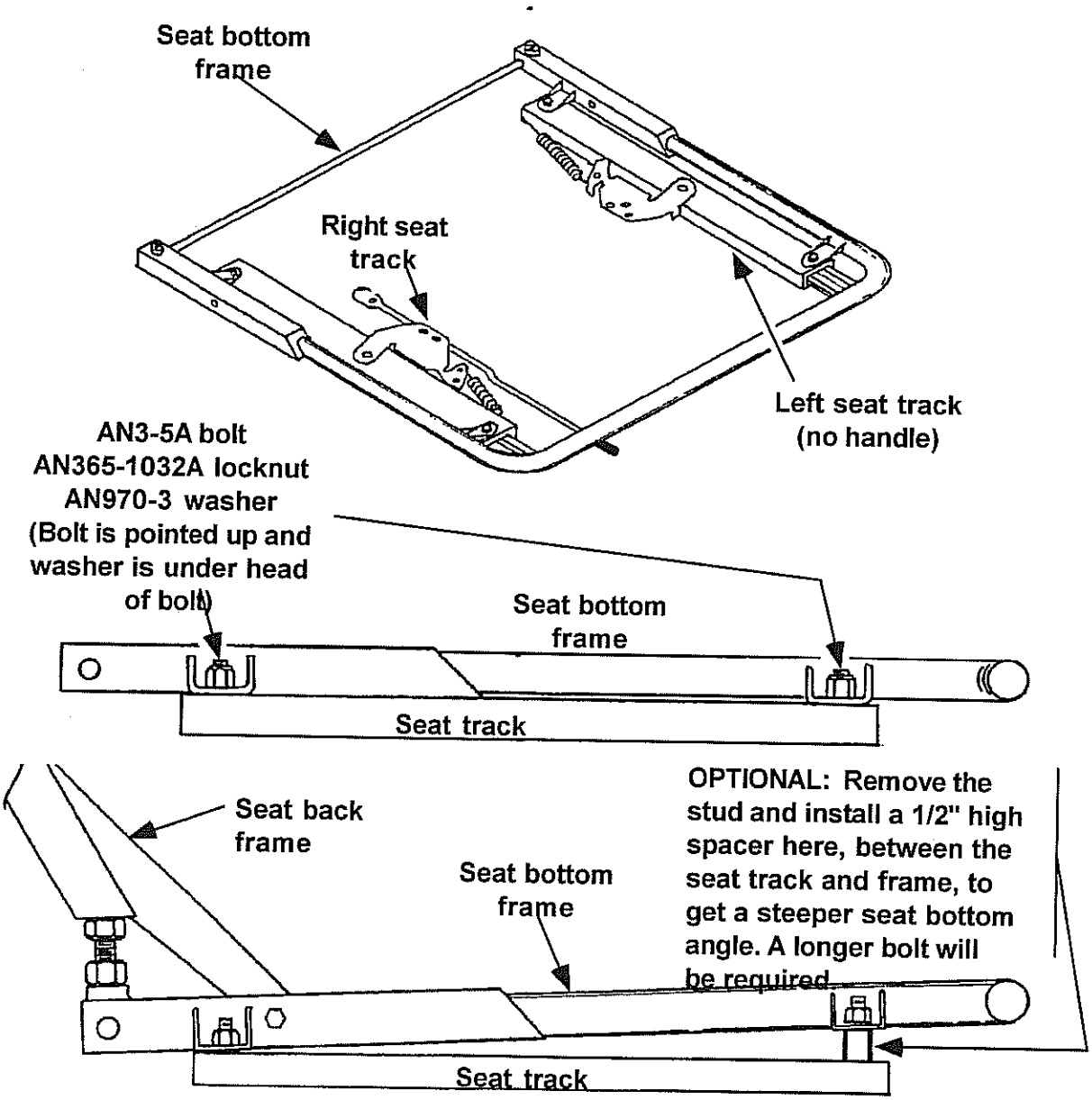
B3. Screw the 7/16-18 stop bolts into the bottom seat frame as shown in Figure 25:B:3. The seat back should strike the heads of the stop bolts evenly, then the check nuts should be tightened to lock in that height. The height of the stop bolts will determine the angle of the seat back. What seat back angle is most comfortable? This is totally builder preference. We prefer a more laid back angle, and you could even remove the check nuts to get more angle on the seat back. It's up to you.

Seat back stop bolts
Figure 25:B:3



B4. There are two bolts that secure each track to the seat frame. The tracks with the release handle are mounted to the *right* side of each seat. Mount the tracks as shown in Figure 25:B:4. Two, 1/2" spacers between the tracks and the seat frame can be installed to give the seat bottom a steeper angle. These spacers reduce the amount of foam necessary to support a person's legs, but they also create a slight misalignment to the mounting bolts. The misalignment is not much though, and should never harm the nut or bolt. The choice of installing the spacers is up to the builder.

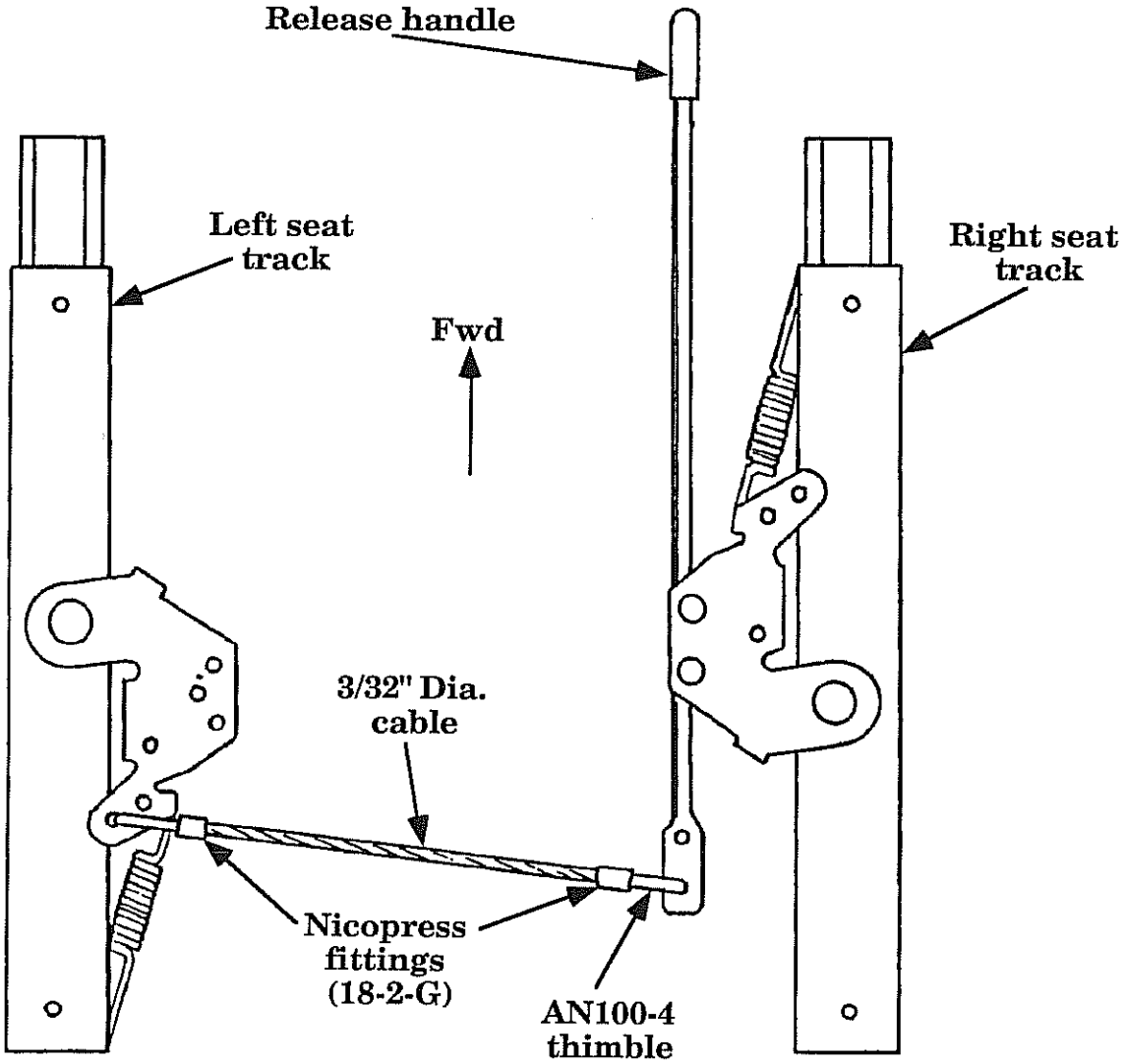
Mounting the Seat Tracks
Figure 25:B:4



B5. The track release mechanisms can be connected together to release at the same time with one handle. A short cable is made up and installed as shown in Figure 25:B:4. The length of this cable is determined by the distance between the two mounting holes.

NOTE: Having two lockable tracks on each seat is not necessary. We have had good luck by locking the seat in position with only the right track (the one with the handle). If you wish to do away with the interconnect cable and a little weight, simply grind off the locking mechanisms from the left tracks. There will be a slight amount of twisting potential by locking only the right track, but this is negligible.

Interconnect cable
Figure 25:B:5



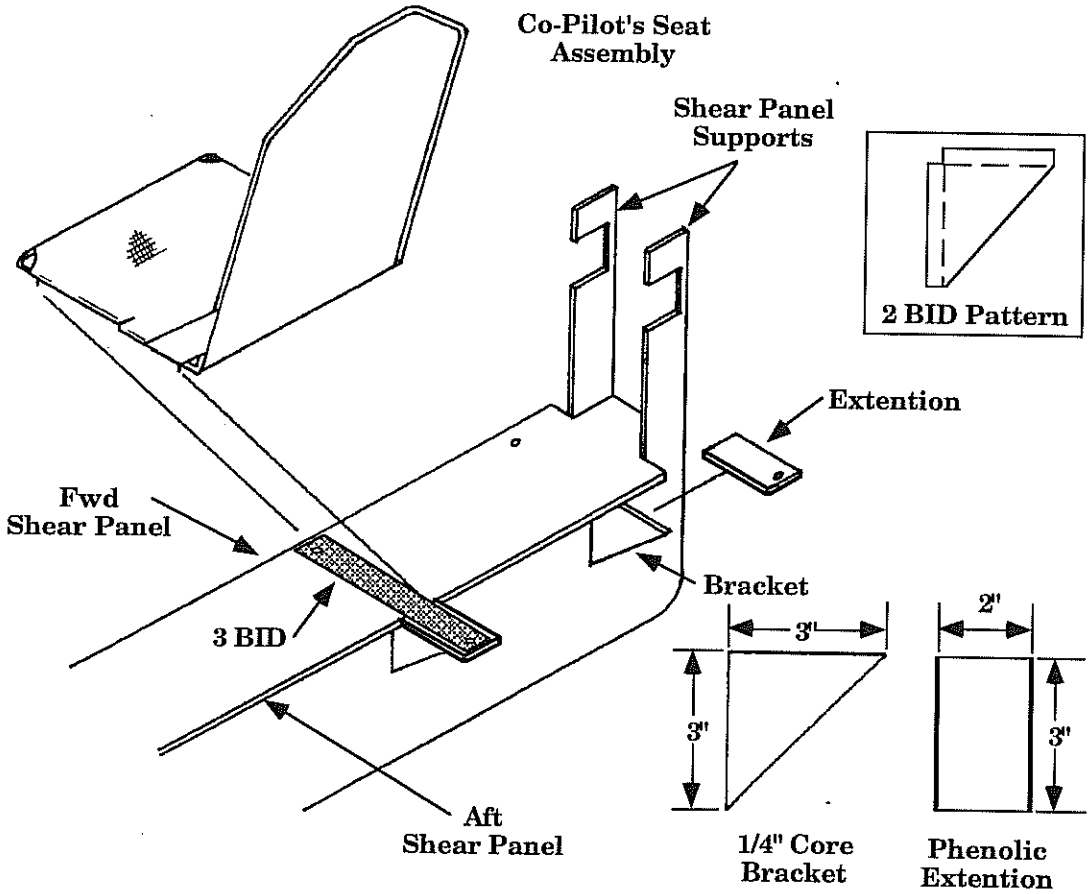
C. MOUNTING SEATS

The pilot and co-pilot seats are mounted to the flanges of the shear panels (the wing carry thru structure). Originally, we had intended to mount the seat tracks on an angle, which is why early tracks have the longer front mounting stud. This worked fine, but at full forward travel, we lost some headroom. Eventually we decided to mount the tracks horizontal (even with the shear panel flanges) and mount the seat bottom at an angle (using the spacers described in Step B4). If you have the earlier tracks with longer front mounting studs, cut down the long studs to the same length as the rear studs. The new tracks are lighter and longer, and make it necessary to extend the shear panel.

Cut four 1/4" core brackets to the dimensions shown in Figure 25:C:1. Attach them with a 2 BID lay up, across the aft shear panel. Position them to fit under the tracks. Using 1/4" phenolic, cut four rectangular pieces to the dimensions given in Figure 25:C:1. Center the rectangular phenolic pieces over the core and attach with a 3 BID lay up.

Seat mounting

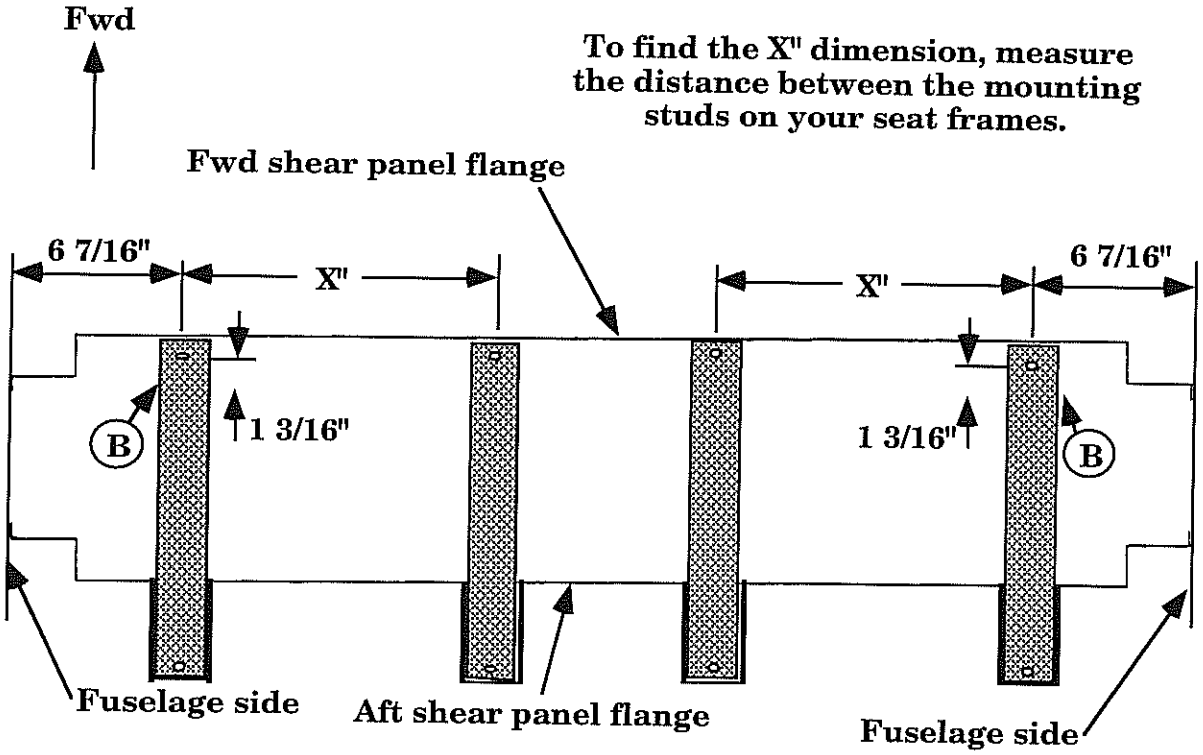
Figure 25:C:1



C1. Position the seats with the mounting studs at the locations shown in Figure 25:C:2. Mark the stud locations on the shear panel cover.

C2. Drill 5/16" diameter holes through the forward shear panel flange and the aft phenolic extention at each mounting stud location (8 holes total).

Seat frame locations
Figure 25:C:2



NOTE: The outbd, fwd mounting holes (B) of each seat will also be used to attach the jack point. These two holes should be drilled 1 3/16" from the aft face of the fwd shear panel. If you have already installed the jack point weldments, these holes will, of course, already have been drilled.

C3. Secure the seat tracks to the shear panel flanges with AN3-10A bolts, AN970-10 washers and AN365-1032 nuts.

Securing the Seats to the Shear Panels
Figure 25:C:3