11-20-87
9283 Lindbergh Blvd.
Olmsted Falls,Oh
44138

Dear Arnie,

I figure it is about time I supported my friendly local newsletter.

Enclosed are some drawings and photos of the roll trim screw jack I made for Ken's and my Long Ezs. They've both been in service for over 1½ years with no problems. This unit is light weight. The complete assembly, with knob and mounting screws, has a weight of 2.35 oz. It attaches to the stock roll trim RT-1 installation with no modifications.

	Roll Trim Screw Jack		Bill of Material
(1)	1 ea	Upper bracket	.062" X 1.25" X 5.0" 2024T3 Alum plate
(2)	1 ea	Lower bracket	.062" X 1.25" X 2.0" 2024T3 Alum plate
(3)	1 ea	Trim screw	3/16" X 6.5" steel rod
(4)	1 ea	Trim nut assembly	¼" X .035" wall X 3½" 2024T3 tube
(5)			5/16" X .035" wall X 2" 2024T3 tube
(6)	1 ea	Knob	from old radio with ¼" shaft or from Radio Shack
(7)	2 ea	Floating anchor nut	MS21059-L3
(8)	6 ea	Rivets	MS20426AD3-4
(9)	2 ea	Machine screws	~~AN526-1032-14~~ FL. HD. - PHILLIPS MS24694-556 (10-32 × 3/4 LG)
(10)	1 ea	Cotter pin	1/16" X 1"

None of the above dimentions are critical. If brackets are made of different thickness material then #4 length will need to be changed. I bent the brackets #1 and #2 before drilling holes as it was easier to accurately locate the holes. The dimentions are meerly a guide which can be changed. The important thing is that the trim nut assembly #4,5 be kept close to the arm rest side so it will not interfere with CS10 when full right aileron is required. It is also important that the trim nut assembly turn freely in the bracket. I lubed mine with silver graphite grease. (Permatex anti seize compound)

The fun part is making the trim nut assembly #4,5. This part is best made on a lathe but as most people don't have one, I developed a fabrication method using aluminium tubing.

Cut tubes # 4 and #5 to length. Drill through the inside of tube #5 with a ¼" drill. Clamp the tube or it will spin when the drill grabs. Drive tube #4 through tube #5 until 1/8" sticks out the other end. Be sure there are no burrs or you will not be able to drive #4 through. The two tubes are now locked together via the interference fit. Clamp the assembly in the vise again and ream the inside with a # 16 drill for the 12-24 thread. Drill the # 10 hole 1.9" deep in the other end of the tube. This gives clearance for the trim screw to pass. Tap the 12-24 thread using plenty of light weight oil for tap lubrication to assure smooth threads.

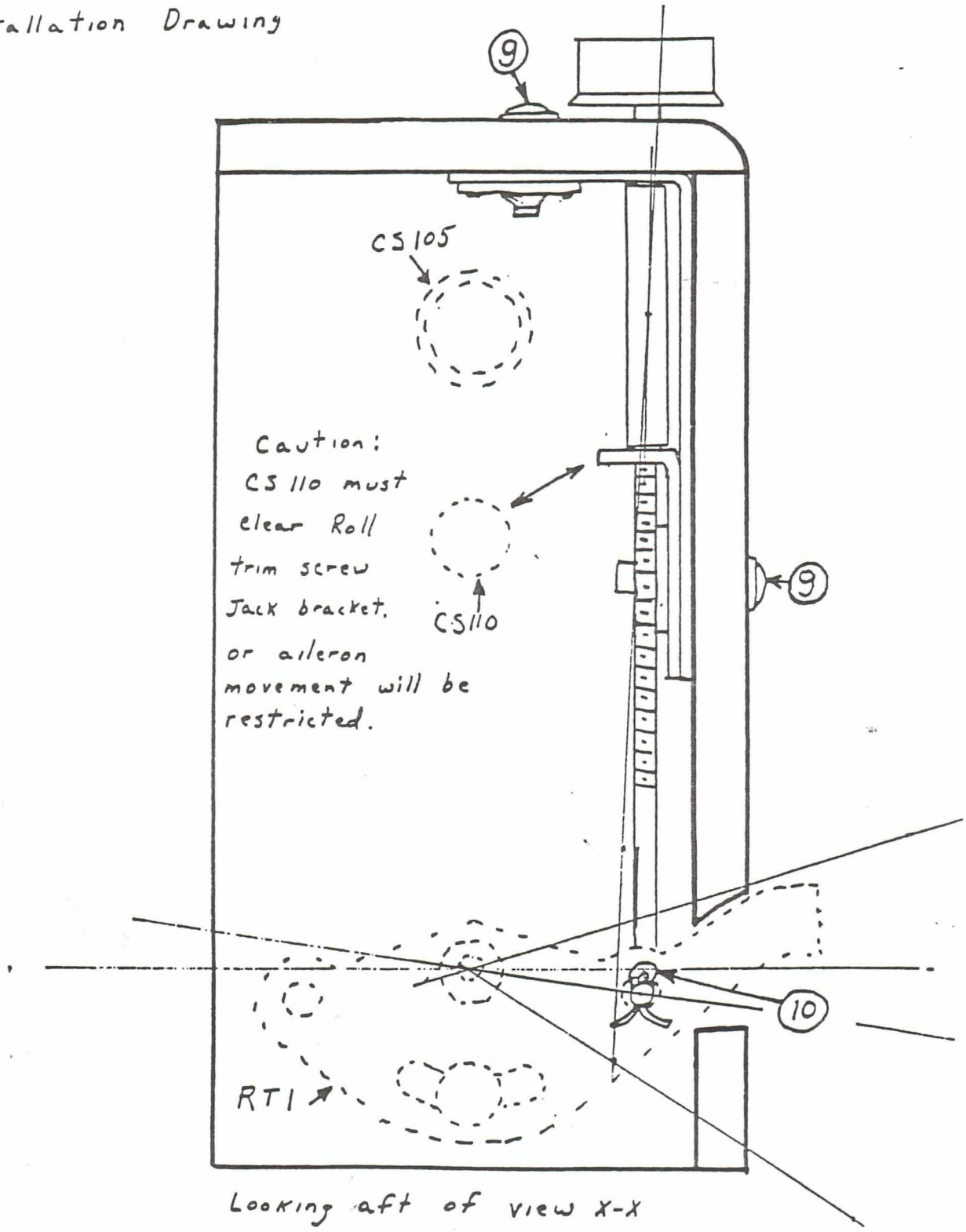
Note: The 1" length of tube #4 may be lengthened if your knob is more than 3/8" deep or if your arm rest is thicker than standard.

Next assemble all the components per the pictures and the assembly drawing. Install the complete unit per the installation drawing. The brackets mount inside the right arm rest just aft of the control stick cut out hole. Loosen the friction adjustment on RT-1 as the roll trim screw jack will prevent trim slippage. Check all controls for freedom of movement and full travel. You will need to install a placard on the arm rest to identify knob function.

TRY IT YOU'LL LIKE IT! (TERRY SCHUBERT)

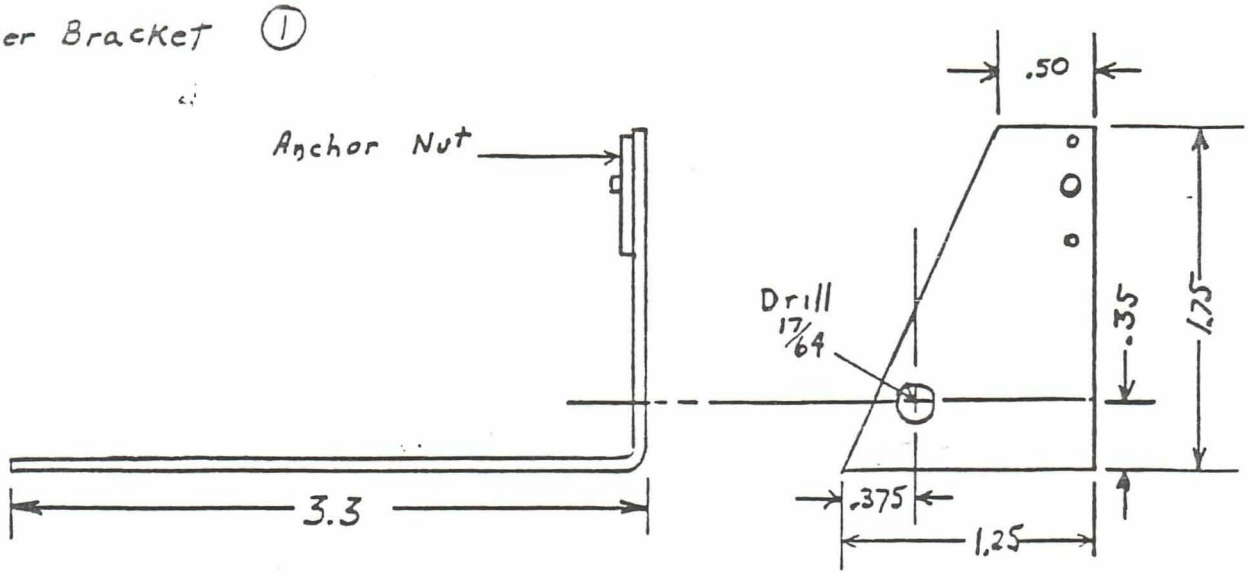
"We found most of it, sir."

Installation Drawing

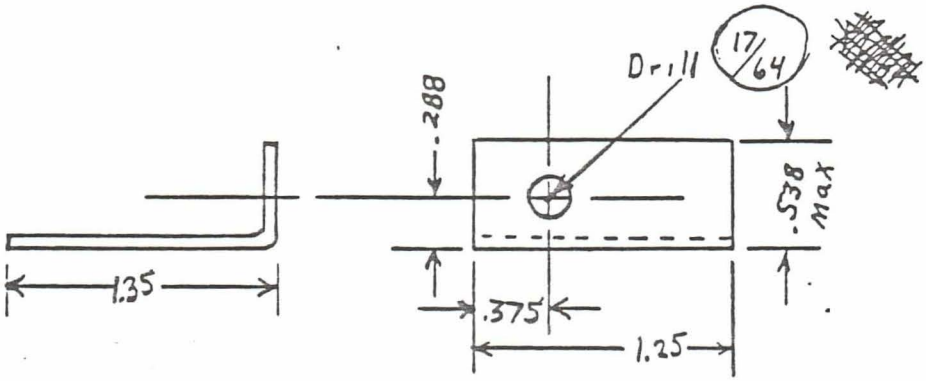


Looking aft of view X-X
p 17-3 of Long E2 plans

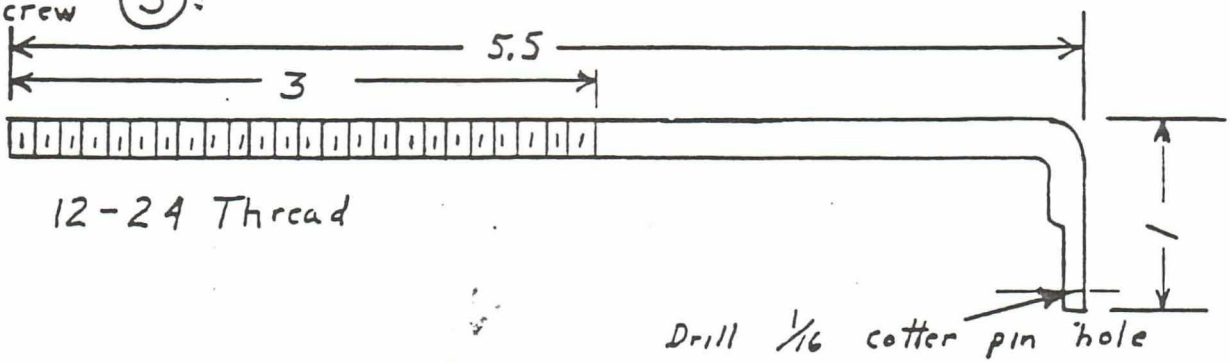
Upper Bracket (1)



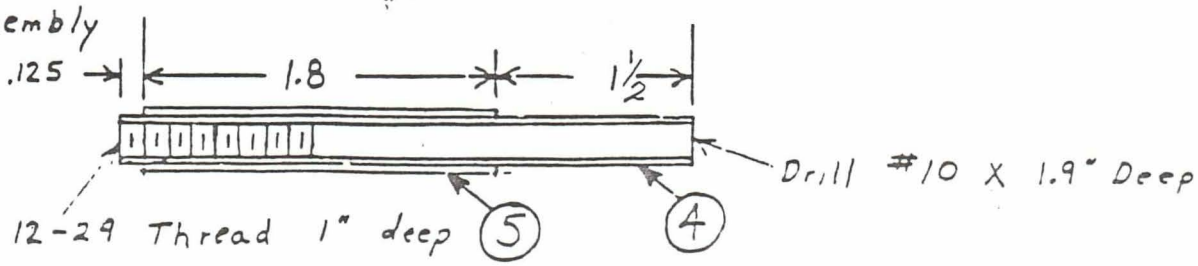
Lower Bracket (2)



Trim Screw (3)



Trim Nut Assembly
Section View



Roll trim screw jack
Assembly Drawing
Terry Schubert