



## **Chesapeake Tartan 30 Association**

### **MAST PUMPING & TARTAN 30 BABY STAY\***

**John D. Connor, T-30 #142, writes:** When the boat is tied up at the dock, and the wind is abeam, the mast starts vibrating (“pumping”) fore and aft. To remedy this, a light cable was attached to the front of the mast above the spreaders. When at dock, the boom vang (block and tackle) is carried forward and used to haul the cable taut to the forestay fitting. This helps reduce the pumping action. Underway, the loose cable is hooked to a convenient cleat with shock cord so it is not in the way of sailing activity. I’d be interested in any comments on this problem.

**Comment from Brad Armendt, T-30 #282:** Because both upper and lower shrouds on a T-30 are almost in line with the mast, there is nothing but the stiffness of the mast to stabilize its center in a fore-and-aft direction when the mainsail is down. I have never heard that mast pumping was a problem with the mainsail up, but I suppose it could happen in heavy air. With the mainsail down, whether tied at dock, anchored or motoring, mast pumping is a frequent problem. From discussions with a number of owners, the degree of pumping which occurs seems to vary widely among T-30s, ranging from “never-noticed-it” to severe. It seems plausible that this variability could result from differences in original construction, the tuning of the rig, chocking at the partners, or fixtures installed on the mast, all of which could affect the resonant frequency of the mast assembly. In addition, the variability among boats may reflect the skippers’ sensitivity to the vibration, or how they use the boat. If mast pumping is bothersome, the only way I know to stop it is to stabilize the center of the mast with some type of fore-and-aft stay. Competition models came equipped with a baby stay, and some owners of standard models have added them. Tartan Marine Company’s specifications for baby stay installation will be found on following pages.

On our boat, mast pumping was “severe” no matter which direction the wind blew. It was especially bothersome at anchor during cruises. Several solutions were tried. First, it was found that Dacron line up to 1/2” in diameter wouldn’t work as a stay; it has too much elasticity to stabilize the center of the mast. Next, a wire baby stay was installed, but instead of using a turnbuckle, a short four-part block and tackle was used at the lower end, with the line run back to a winch next to the companionway. Actually, I hoped to solve the pumping problem, and also to be able to bend the mast a bit to adjust the draft in the main. This system was a total failure. The T-30 mast is too stiff to bend by that method, and there was still too much stretch in the four-part block and tackle to completely eliminate the pumping. As a final chapter in this Edisonian saga, a “hard” baby stay was installed, i.e., with a turnbuckle. This works. No more pumping when it is set up firmly.

The reason I tried everything else first is because a baby stay is really an annoyance to race with. It’s in the way of the spinnaker pole, so it slows down gybing. In light air, it can slow down tacking, and probably is hard on the sails when they drag across it. I wanted to be able to move the baby stay back out of the way when I didn’t need it. But disconnecting a standard turnbuckle is slow, and takes at least two tools, more if you use the cotter pins. Quick-release levers are available, but are all too large and too expensive. Then I found a Johnson HandyLock turnbuckle, model 02-106. This has built-in handles which fold out to operate the turnbuckle, or fold down to cover it and lock it without cotter pins. The clevis pin at the bottom was replaced with a captive Avibank Fast Pin. Moving the baby stay, or putting it back takes no tools, and only about a minute. While the baby stay is not being used to stabilize the mast, it is “parked” on a small, non-structural pad eye mounted on the inboard side of a dorade box. While in place, the Johnson turnbuckle normally is covered by a close-fitting Davis turnbuckle boot, to minimize wear on sails. Figures 1 through 4\*\* show some details of our baby stay installation. There are many other ways to do it, but we have found this works well for us.

\*- Based on items from the *Tartan 30 Manual*, published by the Chesapeake Tartan 30 Association, December 1981.

\*\* - Added February 2001.

## TARTAN 30 BABY STAY

Tartan Marine Company, circa 1978

### Bill of Materials:

- 1 ea. Schaefer Mast Tang, # 85-56
- 5 ea.  $\frac{3}{16}$ " x  $\frac{1}{2}$ " SS RH machine screw
- 1 ea. Merriman Holbrook Toggle Fork, # 5261-006
- 1 ea. Merriman Holbrook  $\frac{3}{8}$ " Turnbuckle, # 7854-061212
- 1 ea. Merriman Holbrook Pad Eye, # 4160-220
- 4 ea.  $\frac{1}{4}$ -20 x  $1\frac{1}{2}$ " SS FH machine screw with nut and lockwasher
- 1 ea.  $\frac{1}{4}$ " x 5" Sq. Aluminum Backing Plate
- 1 ea. Tube of Silaprene or equal bedding compound
- 2 ea. Aluminum Knees (available from Tartan; see Sheet 1)
- 2 ea.  $\frac{1}{4}$ " x  $1\frac{1}{2}$ " x 2" Aluminum Backing Plates (available from Tartan; see Sheet 1)
- 4 ea.  $\frac{1}{4}$ -20 x  $1\frac{1}{2}$ " SS FH Bolt with nut and lockwasher
- 4 ea.  $\frac{1}{4}$ -20 x  $1\frac{1}{2}$ " SS RH Bolt with nut and lockwasher
- 11 ea.  $\frac{1}{4}$ -20 x  $1\frac{1}{4}$ " RH Bolt with nut and washer
- 18 ft. 1 x 19 x  $\frac{3}{16}$ " SS Wire (standard rig)
- 19 ft. 1 x 19 x  $\frac{3}{16}$ " SS Wire (competition rig)

### Installation Instructions:

NOTE: Two people will be needed for installation

Spar: Mount Schaefer tang on forward edge of spar with the eye 2 ft. below the spreaders. Hold tang in place, drill ( $\frac{9}{64}$ " bit) and tap (10-24 tap). Mount the tang using  $\frac{3}{16}$ "x  $\frac{1}{2}$ " RHMS.

Deck: Mount MH pad eye on deck 33" forward of spar on the centerline of the deck. Place pad eye in the center of 5" backing plate and drill one  $\frac{1}{4}$ " hole forward. Put pad eye in place on deck and drill through the deck. Put backing plate on with one  $\frac{1}{4}$ -20 x  $1\frac{3}{4}$ " bolt. At this time just snug up the nut. Drill remaining 3 holes through deck and backing plate. Remove nut and bolt, clean deck of shavings and dirt. Bed the pad eye with bedding compound and secure to deck using 4 ea.  $\frac{1}{4}$ -20 x  $1\frac{3}{4}$ " SS FHMS.

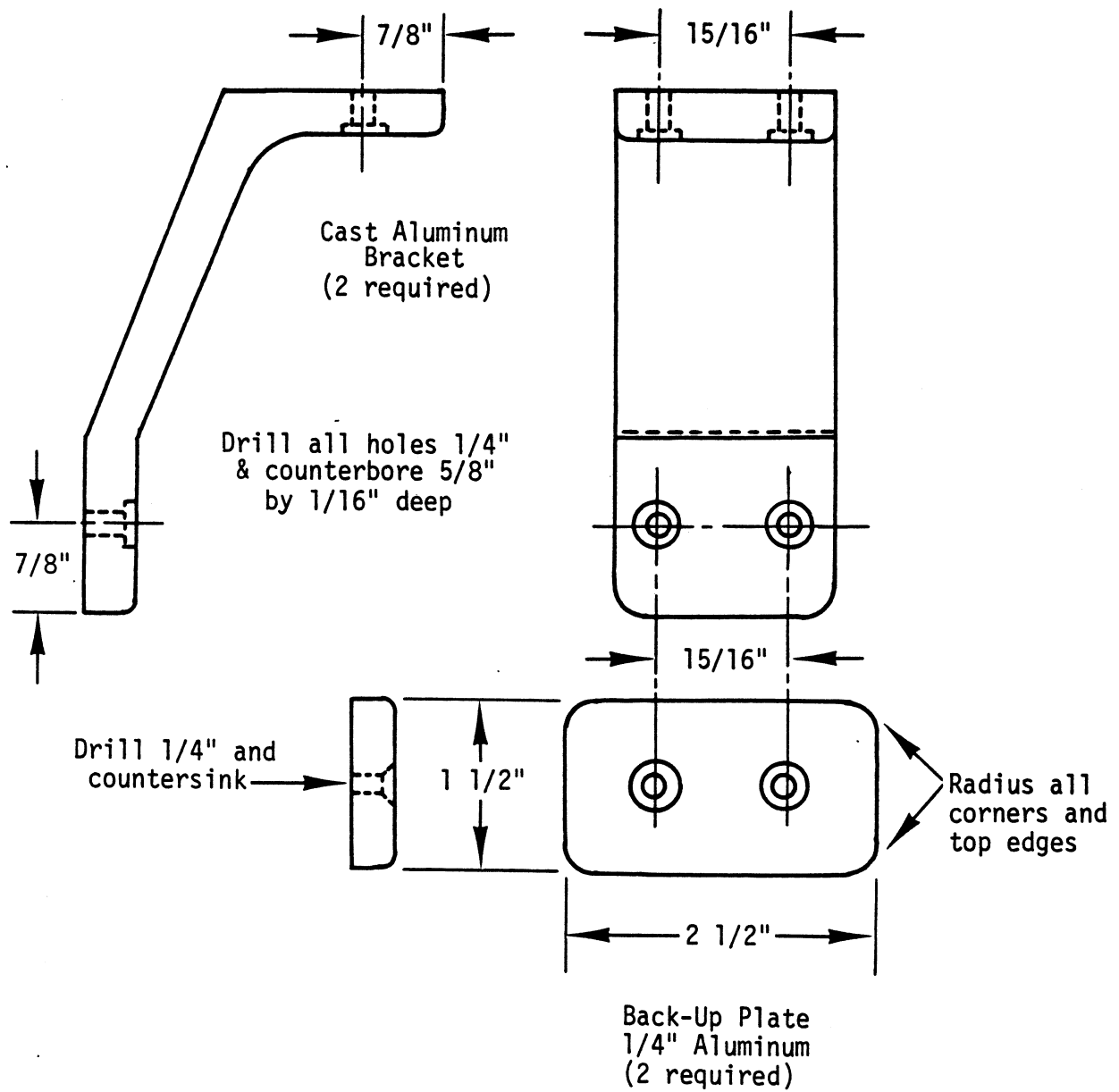
Knee Installation and Vee Berth Strengthening: Refer to Sheets 1 and 2.

Midstay: The toggle and turnbuckle must be swaged to the 1 x 19 wire and should be done by a qualified rigger. Length of the stay must be 17 ft. 9" from the eye of the tang to the eye of the turnbuckle for the standard rig (or 19 ft. for the competition rig). After stay is swaged, mount on spar and pad eye. Adjust turnbuckle until midstay is tight.

BULKHEAD BRACKETS FOR BOATS WITH BABY STAY

Sheet 1 of 2

1 Dec 1975



Installed 1st Boat: T-30 #356

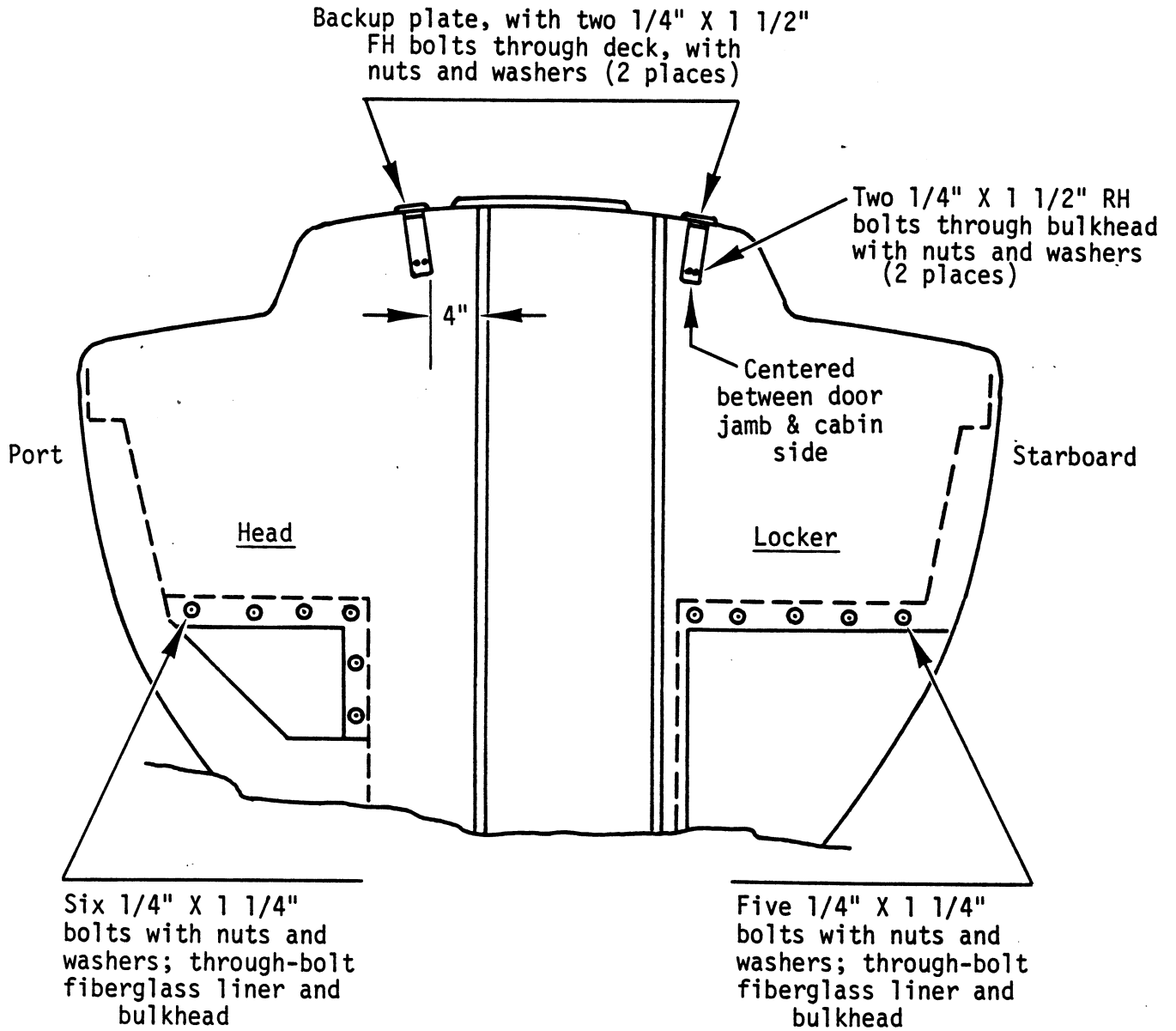
Tartan Marine Co.

BULKHEAD BRACKETS FOR BOATS WITH BABY STAY

Sheet 2 of 2

1 Dec 1975

Brackets mount on aft side of head/hanging locker to forward cabin bulkhead, and spaced outboard of door trim as shown.



Revised 18 Dec 1975: T-30 #361  
Installed 1st Boat: T-30 #356

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Figure 1. Aluminum bracket, painted to match bulkhead, mounted on port side in head

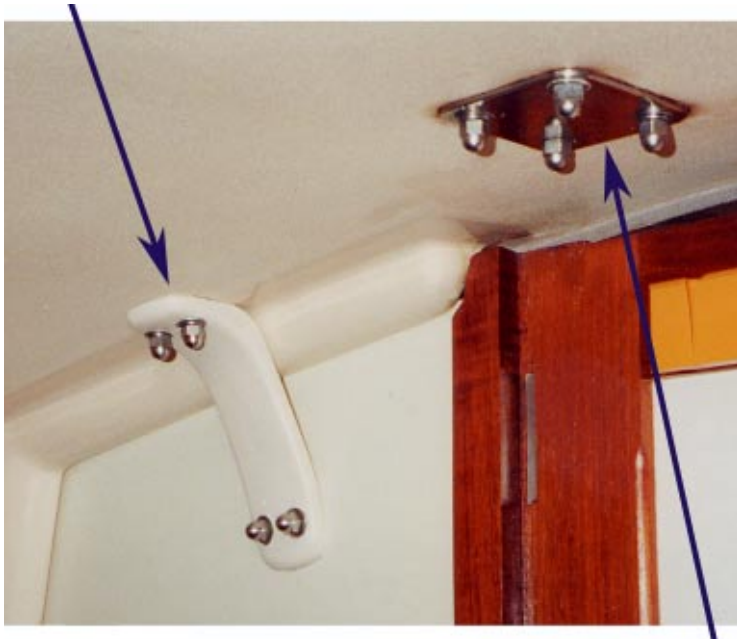
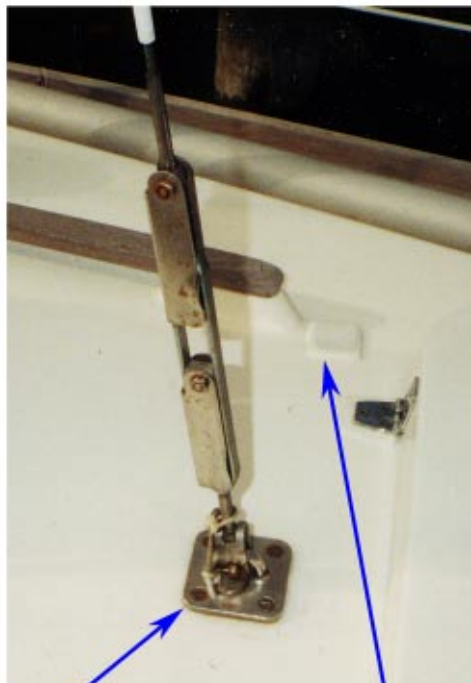


Figure 2. Second aluminum bracket, on starboard side



Schaefer 97-52 backing plate for pad eye

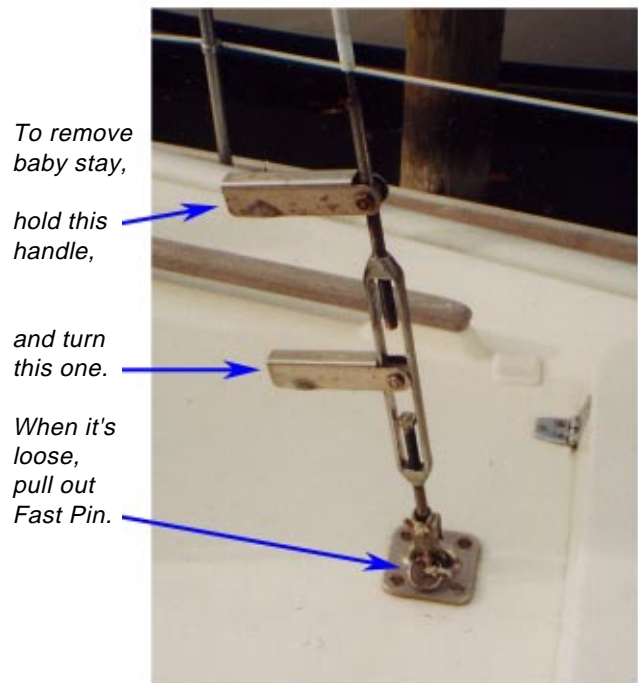
Figure 3. Turnbuckle closed & locked



Schaefer 97-42 pad eye

Al backup plate for bulkhead bracket, painted to match deck.

Figure 4. Turnbuckle open for adjustment or removal



To remove baby stay,

hold this handle,

and turn this one.

When it's loose, pull out Fast Pin.