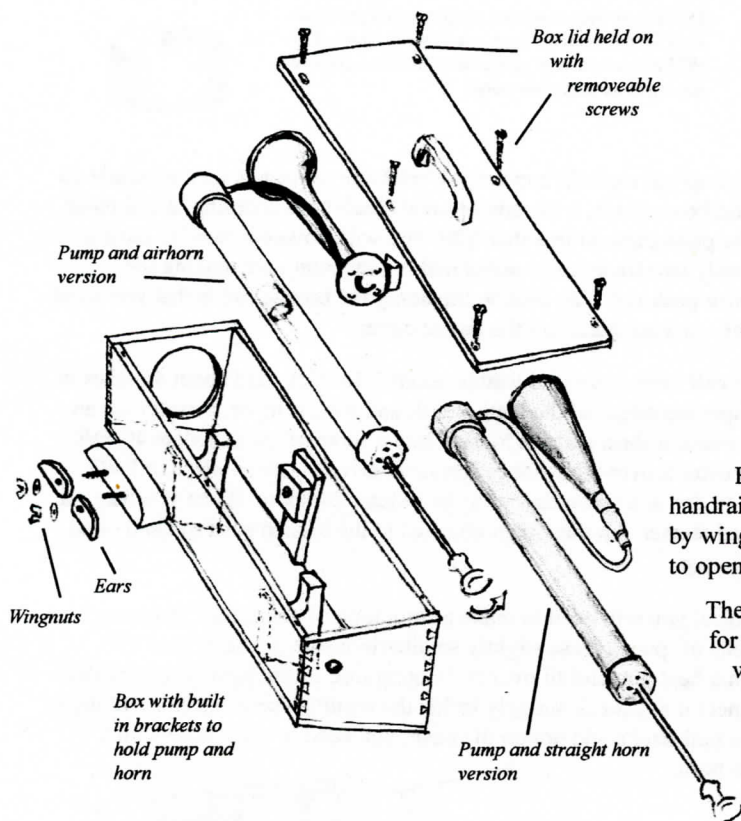
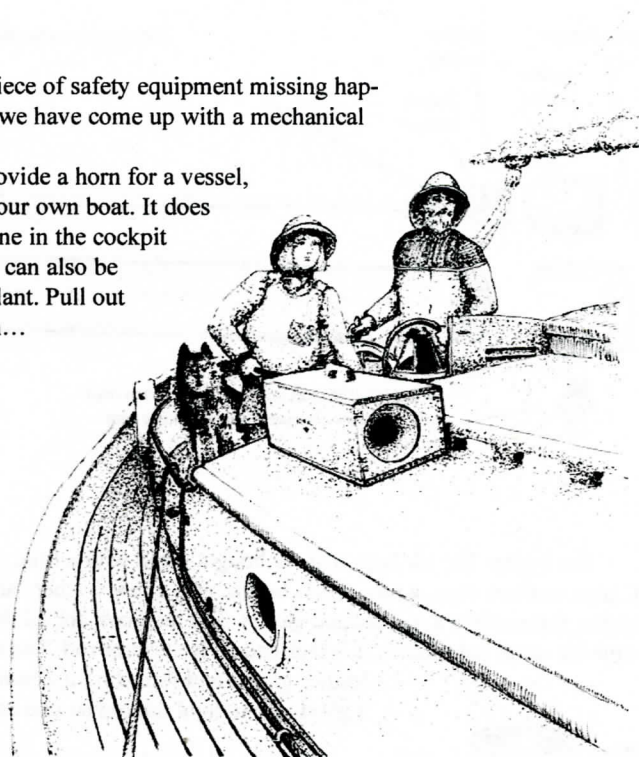


A Winter Project

By Ted Walsh

When we took on the stewardship of the *Black Star*, the only piece of safety equipment missing happened to be a horn. Having experimented with a number of options, we have come up with a mechanical horn that I thought might interest other FSS members.

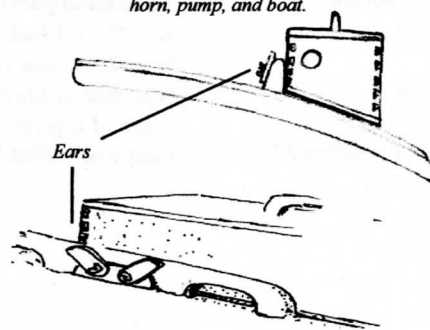
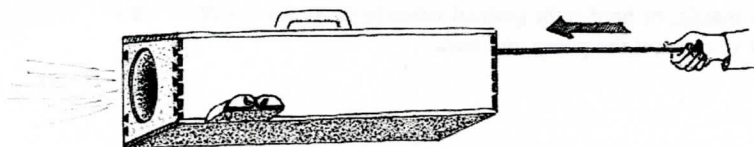
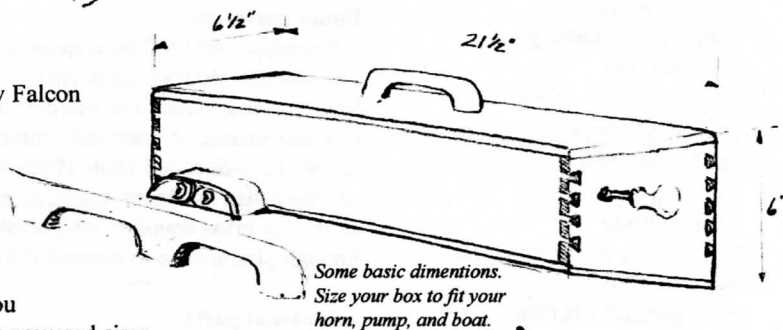
The project presented here is not the most effortless way to provide a horn for a vessel, but is rather, a fun winter project that can add to the uniqueness of your own boat. It does have advantages in that the horn can be secured to the house so no one in the cockpit gets deafened and there is one less thing rolling around underfoot. It can also be stowed out of way when not needed and you won't run out of propellant. Pull out the plunger, and when you push it back in you get a blast of the horn...



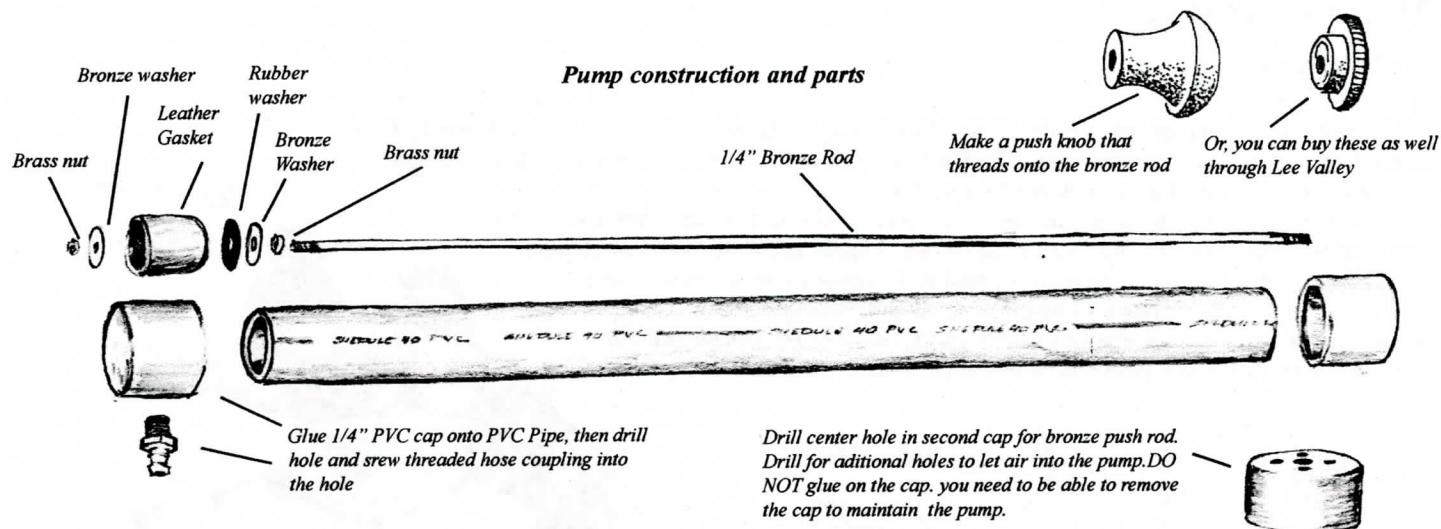
Basically you are going to make a box that can be secured to the handrail on the cabin top by a pair of "ears" held to the box of the horn by wing-nuts. The top of the box is secured with screws to make it easy to open in the event that repairs are needed.

The drawings and diagrams presented here show what we made for our sloop. I hope they might serve as guidelines for anyone wishing to make a horn of their own. You would need to make adjustments to the design to suit your vessel. For example, the angle between the bottom of the box and the side that will go against the handrail will be determined by the angle of your cabin-top and the handrail on your boat.

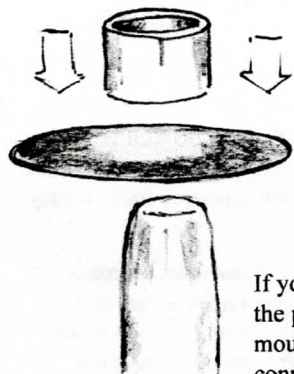
The Horn: We went with a plastic air horn made by Falcon (\$18.95) but for a more traditional sound, a brass straight horn works well (I have experimented). These are available in different sizes from 6 inches long (\$11.95) to 18 inches long (\$25.95). The best source I know for these is a company called *Lark In The Morning*. Of course you can just order a horn and then blow on it but then what would you do for a winter project? If you really want to get carried away you can get a traditional air powered siren made by the Acme Siren Co. (\$76.50 through Garrett Wade).



Pump construction and parts



The Pump: The air horn that we bought came with a little pump but we built a more powerful one using 1 1/4 inch schedule 40 PVC pipe and two caps, a piece of 1/4 bronze rod, a few washers and bronze nuts, a threaded-to-male barb hose coupling, and a piece of leather formed into a cup shaped gasket. The total cost for all the parts came to less than \$20. You will, however, need to have a tap-and-die set to cut threads in either end of the bronze rod. The only two tricky parts about making the pump are making the leather gasket and threading the bronze push rod. The trick to threading the bronze rod is that you need a good vise to hold the rod so you can use both hands on the thread cutter.



To form the leather gasket you will need a piece of leather about 3/16 thick and about 4 inches in diameter. With a sharp knife taper the edges of the leather disk and soak it in warm water for an hour. You will need to make a wooden form that fits loosely into a scrap of the Schedule 40 PVC. When the leather has soaked, center it over the wooden form and drive the scrap piece of PVC over it and leave the whole jig to dry in a warm dry place for at least 24 hours. When you take off the PVC you will have a formed leather cup that when attached to the bronze push rod and oiled will make an excellent pump gasket.

If you are using a straight horn in your project you will need to make a "mouthpiece connector" to connect the pump hose to the horn. You need a piece of plastic hose slightly smaller in inside diameter than the mouthpiece. To get a tight seal, warm with a heat gun and fit over the mouthpiece of the horn. The hose that connects the pump to the mouthpiece connector should fit snugly inside the mouthpiece connector making a good seal as well. If the horn works on the pull stroke and not on the push, you need to use a hose with a larger diameter to connect the pump to the horn.

Sources for parts:

Lark in the Morning

P.O. Box 799

Fort Bragg, CA 95437

www.larkinthemorning.com

(877) 964-5569

Garrett Wade

161 Avenue of the Americas

NY, NY 10013

www.garrettwade.com

(800) 221-2942

Lee Valley Tools

P.O. Box 1780

Ogdensburg, NY 13669-6780

www.leevalley.com

(800) 871-8158

Pump parts list:

1 1/4 schedule 40 PVC pipe aprox two feet

1 1/4 schedule 40 PVC caps, two

1/4 bronze rod, (Hamilton Marine carries this)

1/4 x #20 Bronze or brass nuts, three

1/4 x #20 pre-threaded knob, If you can't get this at the local hardware store, Lee Valley Tools and hardware has them. www.leevalley.com

Bronze or brass coupling with outside thread on one end and a hose barb on the other

Enough plastic hose to connect the horn to the pump

Additional parts:

1/4 x #20 x 3 Inch bronze or brass round head screws, two

1/4 x #20 bronze or brass wing nuts, two

1/4 bronze or brass washers, two

Scrap of high density plastic, or hard-tight grained wood to make the handrail "ears"

Plastic or rubber hose to connect the pump and horn

