

## In Praise of Cotter Pins

► The following letter from Roderick Stephens Jr., in which he explains the proper use of cotter pins, should be of interest to a good many of my readers. "Dear Ham: With regard to the much maligned cotter pin, perhaps it would be of interest and of service to your readers to make note of the following points:

"Fundamentally, the cotter pin, when properly used, is the best and safest method for locking fitting pins, turnbuckles, etc. in a yacht's rigging. However, they are usually mis-used, making them unpleasant and causing people to try hard to find other ways of doing the job. Rather than doing this, I would suggest that they use the cotter pins properly, taking note of the following:

"1. Each end of each cotter pin must be carefully filed so that it is absolutely smooth so that a magnifying glass would show a more-or-less hemispherical end. This makes the cotter pins less apt to cause damage, easier to open, and easier to tape or otherwise protect.

"2. Cotter pins should be brass, as stainless steel cotter pins are undesirably stiff, therefore difficult to remove and reinstall.

"3. Cotter pin holes in the fitting pins they are intended to secure must have a bit of clearance, including a slight countersink at each end. Otherwise, a hole that is a close fit, and without a countersink, makes it difficult to remove a cotter pin and almost impossible to reinstall it. On the other hand, a hole that is too sloppy makes

the cotter pin less certain to do its all-important job.

"4. The length of each cotter pin should be carefully controlled. It should protrude not less than 50% nor more than 60% of the diameter of the fitting pin in which it is installed. The only exception is where pins are in and out frequently, in which case they should properly extend 100% of the shaft diameter.

"5. Cotter pins must be opened carefully, each leg approximately 15° making a total spread of 30° between the two legs. With this opening, the cotter pin is not weakened by sharp bending, and it can be quite easily removed, as when necessary to adjust turnbuckles or to replace a piece of rigging. There are, however, two exceptions—in the case of high-velocity machinery certainly the normal practice of opening the pin right back would be accepted but this would generally be with steel pins. The other exception would be

where the pins are frequently removed, in which case it is a nice trick to spread them by squeezing tightly over a nail or wire at a point that would be in the middle of the shaft they are intended to secure. This provides enough friction to make them stay, but they are easy to remove and easy to reinstall as in the case of clew or tack fittings securing the mainsail or mizzen.

"6. Merriman has always had an excellent standard for the relation between cotter pin diameter and the hole-diameter of the pin in which it is used. The accompanying table is based on their figures.

"If the above suggestions are observed, one set of cotter pins will do for many years and any rigging jobs that have to be done can be accomplished with a minimum of tools and profanity and a maximum of dispatch. Join 'em, don't fight 'em! Best regards, Roderick Stephens Jr."

By HAM deFONTAINE

