

Rigging an EchoMax 230I Radar Reflector

by Dan Corcoran

This entry is intended to help illustrate how I adapted the EchoMax 230I reflector for use with a flag halyard and incorporated the flexibility to easily tend to the reflectors need to be kept level when heeled to port or starboard.

The picture was taken in beautiful Seal Bay, Maine in July 2011 for this article.

Added to the stock reflector are a few bits of 3/8" line, snap hooks (1 & 3), dock line chafe preventer (5), and Johnson shroud cleats and a loop of line (4) to three attachment points in the rigging for use as follows:

1. Attaching the reflector involves clipping the snap hook I added to the top of the reflector on 4" of line to the snap hook on the flag halyard (1).
2. Before hoisting I loosely attach a stabilizing line I added to a plastic attachment on the reflector body, to the stay. This prevents the reflector from spinning like a top. I use a bowline knot rather than a snap hook, as the original plastic snap hook made noise as it rubbed the spreader.
3. The line and snap hook I added to the base of the reflector then attaches to my choice of three attachment points (4), after which I hoist the reflector and make the flag halyard line fairly taut.
4. Choosing among the three attachment points depends on if the sailboat is level or heeled to starboard or port. On the shrouds I use Johnson shroud cleats, at the mast I have a loop of line. On the shroud above each cleat I have wrapped rigging tape, to prevent the snap hook (3) from rubbing the shroud (noise reduction). Each of these points are equal distance from above, so that I can unclip and move it to another attachment point without adjusting the flag halyard.
5. A chafe preventer for dock lines was added here to avoid damage of the line by the nearby shroud when I am heeled to starboard and have attached (3) to the mast.
6. An extra bit of line was added between the top and bottom of the reflector, this adds lateral support to the reflector so as not to put all the load of the halyard on the core of the reflector. Possibly this isn't necessary, but seems like a good idea to distribute the load across the outside whole body of the reflector rather than having all the load centered on the core of the reflector. This line is just short enough to cause the outside skin of the reflector to contract under load. The reflector has spent extended periods in 50+ knots of wind without damage.
7. The reflector is intentionally not hauled to the top. By leaving 12" of line above the reflector, the entire reflector can move aft in high wind, and still stay level. Had I hoisted the reflector to the top, the top of the reflector would be stationary while the base of the reflector would move aft, reducing reflector performance.
8. Note the reflector is only inflated 85% in this picture, leaving room for expansion on warm days.



In practice, I don't adjust the reflector port/starboard unless the weather conditions are poor. Even then, it's rare that I do as the reflector does a fine job of staying level on its own unless I am heeling more than 8 degrees.