Vanguard 15 Hull Reinforcements

The following reinforcements are sometimes made to Vanguard 15's that have been in use for several seasons.

The construction of V-15s has evolved in order to make the boats more durable. Examples of this are the use of Plexus for all structural bonds in the boat, the use of a metal backing plate and tapped fasteners for the mainsheet ratchet eyestrap, and the addition of reinforcements in the hull stringers. Another major change has been the shortening of the spreader length. The class rule that shortens the spreaders to 14" from 16" decreases the rig's ability to deliver punishing loads to the hull, and reduces the benefit of sailing with extreme rig tension.

As always, if you suspect that you have a warranty matter with your boat, please contact your V-15 dealer. This will allow the fastest and best resolution to all warranty matters.

Vanguard 15 Floor-Stringer and Mast-Knee Reinforcement
Many Vanguard 15 owners have expressed an interest in reinforcing the floor stringer and mast knee in their boats. Here's how to do it.
You will need:
• Epoxy
• Small paint brushes
• Acetone
• Vacuum cleaner with hose
• Masking tape
• Something to cut inspection port hole (router, hole saw, jigsaw, Dremel tool, etc.)
• 5-inch inspection port
• 60-grit sandpaper
• 1 square yard of fiberglass cloth

Inspection-port installation
Cut the inspection port hole into front of cockpit wall as shown on the diagram. This hole gives you access to all the areas of the repair. Clean the area around the hole and mask off the area to prevent epoxy from spilling or dripping onto your cockpit. Leaving the installation of the port to the end, after all repairs are done, will give you more room and prevent you from damaging your port.

Mast knee repair/reinforcement
Inspect the mast knee located under the maststep. If it is intact but poorly bonded to the hull, leave it where it is. If it is delaminated or in any way structurally unsound, remove it. You will need to get a piece of marine plywood and make a new knee of the same dimensions.

If you are replacing the knee, sand the old bonding area with 60 grit sandpaper and clean the area with acetone and a rag. To install the replacement knee, mix some epoxy with a

thickening agent (microballoons, filetting blend) to the consistency of peanut butter. Bond the new knee into place with this thickened epoxy. Let the epoxy cure for 5 to 6 hours.

To reinforce the tabbing of the knee, first lightly sand the bonding area with some 60 grit paper and clean the surfaces with acetone. Cut 4 strips of 3-inch-by-6-inch fiberglass. These are your tabs.

Mix some epoxy and paint it onto the knee and the fiberglass areas around the knee. Wet out one of the fiberglass tabs and install it in one of the corners between the knee and the hull. The corner should bisect the width of the cloth 1 1 2 inches on either side of the corner. Be sure to roll the cloth out to get rid of air bubbles. Repeat this process at each hull/knee corner. Allow this area to cure for 5 or 6 hours.

Floor stringer repair
Prepare the floor stringer area by lightly sanding it with 60 grit paper, then vacuum the area and clean it with acetone.

Cut three pieces of fiberglass cloth. One is 20 inches wide by 6 inches long, one is 22 inches wide by 7 inches long, one is 24 inches wide by 8 inches long.

Mix about 1 cup of epoxy. Wet out the area on the hull stringers where you are going to install the fiberglass support. This area is wider than it is long.

Wet out each piece of fiberglass and install them one on top of the other. The smallest piece goes on the bottom, the largest on top. Make sure to roll out any air bubbles after installing each piece.

Allow 5 to 6 hours of cure time, install the inspection port and go sailing.

Vanguard 15 Mainsheet Ratchet Eyestrap Repair
Making an effective repair to a loose Vanguard 15 mainsheet ratchet eyestrap is fairly easy.

First it is helpful to understand the biology of this area of the boat. The cockpit floor is foam-sandwich construction. In boats built prior to the fall of 1999, there is a wooden backing plate on the inside of the boat in the area underneath the eyestrap. The eyestrap itself is through-bolted through this block. The reason you are reading this now is probably that water has infiltrated the wooden block and it has become soft, allowing the washer and nut on the inside of the boat to press into the block, causing the eyestrap to be wobbly. Fortunately the solution to this is simple.
You will need the following materials:
• Drill with 1 8-inch and countersink bits
• Hair dryer or heat gun
• Epoxy
• High-density filler
• Syringe for epoxy

• 2 x #10 x 1.5 inch pan-head self-tapping screws
• Screwdriver to fit above screws
• Acetone

If you don't have any epoxy supplies on hand, I recommend the West System Maxi Repair Kit. This includes easy to mix packets of epoxy, the filler and syringe mentioned above, along with other accessories which are useful in maintaining your boat.

To start, drill through the heads of the bolts which hold the mainsheet ratchet eyestrap to the boat. You may need to grip the heads of the bolts with needle nose pliers while you are drilling them, to prevent the heads from spinning. When the head is drilled through, pull the eyestrap up off the bolts. The bolts should drop into the inside of the boat, where you can retrieve them through one of the inspection ports later. If you grind your eyestrap down in this process and find that you want to replace it, it is a Harken eyestrap, Vanguard part #10137, Harken part #137—available at your Vanguard dealer.

After the bolts are through, use the countersink bit to enlarge the hole into an inverted-cone shape. This will provide more surface area for quicker drying of the area and better bonding for the epoxy repair.

Next, take the hair dryer or heat gun and dry the area around the now-exposed holes thoroughly. If in doubt, keep drying. There is no such thing as too dry, but there is such a thing as too hot. Be patient and don't let the boat's surface temperature get above 100 degrees.

After the holes are completely dry, fill them with thickened epoxy. First, mask the cockpit floor around the area so you don't wind up with a messy repair. Mix some epoxy, adding high-density filler as you mix. The final consistency should be somewhat thinner than peanut butter—just thick enough to prevent running and dripping. Pour some epoxy into the syringe, and push the epoxy into the two holes left from the bolts. A little extra epoxy coming out of the holes is fine.

After that epoxy is set (leave 5 to 6 hours for a full cure), lightly sand down any epoxy hills. Drill a 1 8-inch pilot hole into each of the newly filled holes. Have youreyestrap, screws, and screwdriver standing by. Mix up some epoxy without any thickeners. Drip a small bit of epoxy into each pilot hole. Dip each screw into the epoxy to coat it, then put the eyestrap in position and fasten it by screwing the screws into the holes. There will be some excess epoxy around the screw heads, which you can clean up with some epoxy and a rag.

Wait 5 or 6 hours for the epoxy to set, test the eyestrap by pulling up on it to make sure that nothing unexpected has happened, reattach your ratchet block, and go sailing.