

Building Stripper Canoes

By Don Wilkinson

In 1987 I built our first canoe, a David Hazen Micmac design. It was a little over 18' long, built with 3/16" fir strips, and weighed about 64#. We used it hard for a dozen years (including 5 times around the Bowron circuit), and then in 1999 I built another David Hazen design, the Abenaki.

The Abenaki is a really fast boat that tracks well, but is very tender and has little maneuverability. We took it around the Bowron circuit in 1999. With packs for ballast it was pretty stable and we could pass anyone on the lakes. However, for recreational paddling we found it to be a bit too tender for our comfort and the bow paddler often had to do some emergency sweeps to turn it. We were looking for something a little less extreme.

In 2001 we talked Sandy and Gary into building a Freedom 17, a Steven Killing design. At the same time I decided to build a modified version for Barbara and I. It was essentially a Freedom 17, but stretched out to 17.5 feet, narrowed by 1 inch and with a bit more tumblehome. That proved to be a nearly ideal boat. It is stable, reasonably fast, tracks well and still is quite maneuverable. Sandy and Gary's stock Freedom 17 was a huge improvement on their original Lincoln fiberglass canoe. It probably added about 1/2 to 1 mile per hour to their average cruising speed, is more stable -- and it looks so much better!

In 2003 we also built a much stretched version of the 17.5 footer for my son and family. It is 21.5 feet long about 34 inches wide and has a third seat for the two grandsons. The 17.5 footer weighed 53 pounds, and I wanted to trim that a bit for portaging on the Bowron Circuit, so last winter, I started the new boat. I wanted to stretch the waterline a little for speed potential and, since the original boat was quite stable, decided to narrow it a bit in the process.

So the new canoe is 1.5 feet longer and 2 inches narrower than the original Freedom 17. It also retains the extra tumblehome as we like the relief it gives the bow paddler's wrists (keeps them from constantly banging against the rail).

We normally build using square edged 3/16" thick cedar strips. I've never tried the complication of bead and cove edging. Figured those coved edges would be difficult to handle without damaging. With 3/16" strips it only takes a few minutes to plane a bevel to fit tightly to the last strip. Normally only necessary around the turn of the bilge. Until now we have also used 6 oz. cloth, two layers on the bottom (inside and out) and one layer up the sides. The last three boats have been done without staples. It takes a little longer to strip, but I love the look and the fact that I don't have to try to patch up spots where I've crushed the wood trying to keep strips in position.

For the canoe we took on the circuit this year, we used 1/8" cedar strips and 4 oz. cloth. I figured the combination would save between 5 and 8 pounds over the 17.5 footer. The finished boat, even with extra weight of a sliding bow seat, came in at 45 pounds, so we were very pleased.

Dimensions are 18.5' long, 31.5" maximum beam, 45". With us and all our Bowron gear, the waterline beam was about 30". It is still quite stable and so we will likely narrow it up a bit more for the next canoe. Also plan to play around a bit with the hull shape near the bow and the stern. I love the light weight so will also use 1/8" strips and 4 oz. cloth again.

Strips: Except for the last canoe, where I used 1/8" strips and 4 oz. cloth, I've always used 3/16" thick square edged strips and 6oz. cloth. Even for the 21.5' canoe that layup provides plenty of strength. The advantage of the square edge is that I don't have to worry so much about damaging the edges of the strips. It only takes a minute or two to plane a bevel on the edge of a square strip to allow it to fit tightly to the next strip. Normally only necessary where curves are tight, like the turn of the bilge. There are plenty of places on the canoe where a few licks with a plane are necessary to do some fitting, and I always thought the bead and coved edges would just complicate some of that fitting.

Finishing The Inside: We wet out the cloth and then when it starts to set up we start squeegeeing out all excess resin. This is a Ted Moores trick. Actually we do this for both inside and outside of the hull. The cloth tends to float in the resin, more so on the inside of the hull, and removing excess resin sets the cloth as close to the hull as possible and removes any excess weight. For the inside, that is all we do, except to spray on a coat or two of matte finish varnish. Without the varnish, System 3 Clear Coat will start to turn white after contact with water. I've seen canoes that were finished as pretty on the inside as they were on the outside. But that means the cloth was filled with multiple layers of resin and that adds weight. In addition, we use our canoes pretty hard, and after dragging in a bit of gravel and sliding some heavy packs around on the bottom, I don't think they would look so pretty if finished smooth. The single coat of resin provides a non-slip surface and saves a lot of weight for a canoe that will be portaged.



Starter Strips: Shows frames set up with first two strips in place. I like the look of strips running parallel to the waterline, and start stripping at the lowest point of the rail, with the longest strip on the boat. I'll fill in where the gunnel rises to the bow and stern after I've stripped all the way to the bottom of the canoe.

Starter Close Up: This shows a little detail of the nailed block that holds the starter strip in place. Also, you can see the 3/8" wide x 1/4" deep groove that is routed around the edge of each frame, about 3/4" from the edge. This provides enough grip for the small spring clamps that hold the strip in place until the glue sets.





One Third Stripped: This shows the fiberglass reinforced packing tape that I use to hold the strips together edgewise between the frames. This works really well. I just peel it back after each strip is glued and then use the same piece of tape to hold the next strip. The stickum never really wears out. After wrapping the tape over the strip and down the inside, I usually put a clamp on to hold the tape tightly to the top strip, also prevents the tape from slipping. If I need another piece of tape to hold a maverick strip, I just slap one on. As the stripping gets closer to the bottom of the boat, I just tape a new section of tape to the old one to add length. Since I don't use bead and cove strips, the spring clamps are used in abundance to keep the edges of the strips aligned with each other.

Clamps Close Up: Shows clamps used to keep strip edges aligned.



Almost Stripped: Getting down to the last dozen strips. You can see lighter colored stripes where the tape has been pulled off and thrown away.





Wood Sanded and Wetted Out: After the first sanding with about 60 grit paper, I wetted the hull with a sponge to raise the grain a little, then went over quickly with finer sandpaper.

Outside Glassed and Half Sanded.



Off the Mold and Inside Sanded: Here I use a small high speed (10,000rpm) grinder but with a dimmer switch to slow it way down (a few thousand rpm's at most). I use a couple of very flexible sanding disks (one to sand with, one to back it up) and hold the sander at an angle to bend the disks while sanding. This is a technique used by David Hazen ("A Stripper's Guide to Canoe Building") to keep the edge of the sanding disk from digging into the wood.

The Finished Boat: I had just finished installing the seats and taken it out of the garage. First stop the scales where it weighed in at a very svelte 45 pounds, a portager's dream!



Sliding Bow Seat: I'm somewhat proud of this. It is relatively light weight and simple to construct. Just need two rails to slide on and a cross bar to support them. I've used this on 3 canoes and it works really well. This one had the refinement of a simple locking method that allows the seat to slide freely when you want to adjust.

Seat Detail #1: Shows the ash seat has been slightly routed with a round bit to fit the curved edges of the rails. This isn't necessary, but does a nice job of keeping the seat aligned with the rails. the seat is held on by a simple 1" wide nylon strap. It has a 1/8" grommet in each end, and is held to the seat by one screw from the bottom and one from the top. The vinyl tape shown here is to keep the edge of the nylon strap from chaffing the bow paddler's nether regions. The strap is just loose enough to allow the seat to slide easily.





Seat Detail #2: This shows the detail from underneath. The bottoms crew is covered by the tape.

Seat Detail #3: This shows the details of the locking mechanism. There is a third grommet on each strap about mid-way between the top edge of the seat and the bottom edge of the rail. We tie a line to one of the straps, string it through a spring clip, the other strap, then back through the spring clip and tie a loop in the end. When you pull on the loop it jams the straps sideways and tightens their grip on the rails. Just loosen the spring clip to relieve pressure and slide the seat. It works much better than it sounds.



Bow Details: Some details of the bow showing the deck and the bulkhead with deck plate. I liked this approach by Susan Van Leuven, "Illustrated Guide to Wood Strip Canoe Building", so followed it for the last 4 boats. The veneer is backed up by 1/8" ply and is quite strong. The deck plate allows access to the floatation chamber for storage of small items.



17.5' and 21.5' Strippers: A picture in the back yard showing the two previous boats. The small boat is slightly stretched and slightly narrowed Freedom 17. The large one is a Freedom 17 blown up to 20, then stretched other 1.5 feet, since I had room in the garage. The small one weighs in at 53#, the large one is 72#.

Right: The grand parents trying out the 21' 6" Stripper.

