

27" N2-Sport 1969 Notre Dame

Assembly instructions by: Garry Finlay

Preparation:

Cut the parts from good quality firm balsa and birch plywood exactly to the template outlines. The outside sheets will be laminated with 1/64" birch ply "wing skin". Do this before assembly, with the plywood cut 1/4" oversize. Coat the outside of the balsa sheets to be laminated (right and left) and the inside of the ply with 3M-77 or wing-skin contact cement. Allow this to set per manufactures instructions then press the parts together flat. If this is new to you, test with scraps first. Trim to final shape after the parts have set-up.

Tunnel:

Copy the tunnel layout lines to a 6" X 28" X 1" building board and cover with wax paper (top and sides). Cut small holes in the wax paper where shown for tack gluing. Tack glue the temporary sump supports in place. Tack glue the sump sheet in place. This should be flat from bulkhead B, aft. Glue the sump sides to the outside edges of the sump sheet. These should match the sump profile and sit flat on the wax paper from B, aft. Tack glue the temporary tunnel supports. Tack glue the tunnel sheets to the supports but permanently glue these to the top of the sump side sheets. The sump and tunnel sheets should come together flat on the building board at the transom.

Hull:

Add 1/8" square balsa sponson braces to the left and right stringers and square 1/16" non-trip braces to bulkhead-C. Assemble the stringers and bulkheads A, B & C. Make sure these are square and even then tack glue in place. Glue bulkheads D, E and the transom. Bevel the front of the 3/32" X 3/8" deck strips and glue in place. Bevel the bottoms of the rear non-trip sheets (right & left) and glue in place. Check the alignment and final glue all joints.

Curve the left and right sponson bottoms by quickly dipping in water then bend while heating with an iron, so they match the curve of the bulkheads. Glue in place. Bevel the bottom curve of the sponson sides, curve and then glue these in place. Be careful not to glue the sponson sheeting to the building board (be sure the wax paper is in place)

Deck:

Bevel the front of the tunnel sheet where the deck will join with it. This should blend smoothly with the tops of the sponson side panels. Carefully sand the tops of the bulkheads, stringers, transom, and side panels, as needed, for a smooth profile for the deck to sit on. Test fit the deck with the inside edge centered in the 3/8" deck strips, trim if needed. Put wing-skin contact cement on the tops of the bulkheads, stringers and side panels. Add contact cement to the inside of the deck (right and left). Let this set up per manufacturer's instructions.

When using contact cement, once you touch the parts together, they are STUCK. Be sure it is right before putting them together. With the boat still tack glued to the building board, line up the deck to the center of the deck strip at bulkhead-C and touch the deck

down. Lay the deck down evenly along the center of the deck stringer to the transom, then along bulkhead-C and the rest of the open structure. Add CA to all the outside seams.

Trim the outside deck edges to a smooth profile with the side sheeting. Add plywood sponson and transom doublers. Remove the centers of bulkheads B, C, and E as shown then add the inside stringers, the front and rear cross braces and center deck sheets. The basic hull is done and should weigh about 10oz.

The hull should be straight if it has been left tack glued to the building board. Before the front and aft center deck sections are installed, pop the hull off the board with a long thin knife blade. See if the transom lies flat with both sponsons on the surface. If not, block the transom up level, then glue the deck center front panel while the hull is tack glued to the building board. If there is still a warp, again block the transom level and secure the hull to the board while gluing the rear center deck section. After these are on, the hull cannot be twisted to correct for warps. If it's within 1/16", it is OK.

I show non-trip bevels on the inside of the sponsons. This is optional, and may smooth the ride in the turns. If you want this, use a plane or belt sander to carefully shape these.

Hatch:

Build the hatch cover from sections of 3/32" balsa assembled to match the curve of the deck and to fill the opening between the sides of the deck around the hatch supports. Laminate 1/64" ply to the top of this to harden the top surface. Cut 1/4" balsa sheets to the contours shown for the cowl then carve and sand the cowling to shape. Add the fin, headrest and the balsa V-12 motor.

Note; the plans show the basic engine, cowl, cockpit and fin outlines for the 1969 U-7, Notre Dame. Many boats can be built from these plans with different "top-side" details. Fiberglass or vacuum formed plastic cowling may also be available to purchase for different boats. Use the outlines shown to make the basic shapes. Check photos of the real boat for the exact proportions, details, markings and logo.

Hardware:

Bend 1/8" OD brass drive tube to the curve on the plans. Cut and solder 5/32" OD tube for the stuffing box and lube fitting. If you want to make a strut, instead of buying one, cut 1/16" X 3/4" brass sheet for the strut blade. Solder this to 3/16" and 7/32" OD tubes for the strut assembly. Slip a 2" piece of 5/32" OD tube inside this for a propeller bushing. Line this up as shown in the side view and glue the stuffing tube in the hull at bulkhead-E. Line up the strut to position the propeller trailing edge centerline 1 1/2" behind the transom and 3/4" below the bottom. The strut and rudder brackets can be cut from .06" aluminum angle. Position the motor so the coupler lines up with the wire drive shaft. Mount the rudder and turn fin as shown.

Radio and ESC

Put the receiver to the right side between bulkhead-E and the transom and the rudder servo on the left. The electronic speed controller can be located to the side of or behind the motor. Check to see that all those heavy wires and power connectors have a place to go, and you can get to them.

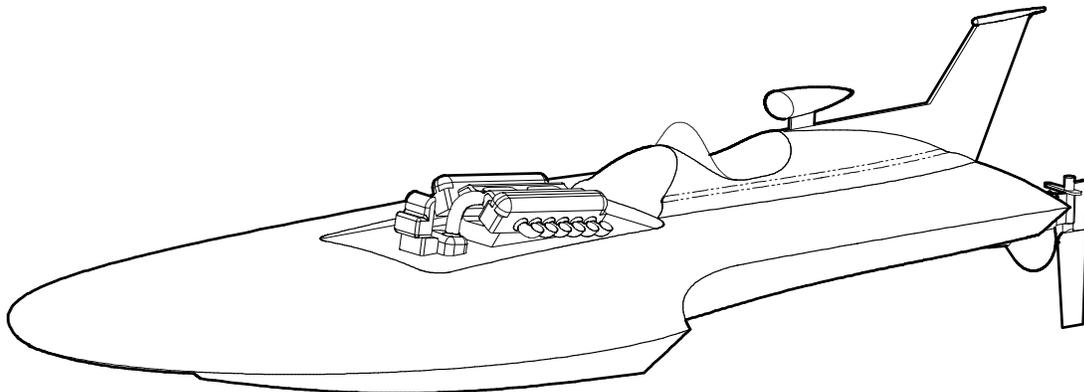
Water Pickup

Run a 1/8" OD brass tube along the back of the right sponson, through to the inside, for a water pickup. Beveled the end so it extends just below the sponson bottom. It will just bounce in and out of the water. Route water from the pickup to the speed controller, to the motor (if it is equipped with water cooling) and out an overboard tube on the left.

Finish:

Sand, fill with spackling paste and sand again. Spray sanding sealer, sand and repeat until the finish is smooth. Spray one or two coats of gloss white, add the trim and logo, then spray a coat of clear over everything. Add details like windscreen, driver, steering wheel and gages as desired.

This hull is designed for 2S lithium cells and a brushless motor. This is long, low and narrow with just enough room for the hardware. It is very light. You should have long run times and great straight-a-way speed. This hull geometry can run with propellers ranging from a little Y535 – X637 prop spinning 30,000RPM to an X640 at 22,500RPM.



Garry Finlay gfinlay@verizon.net