1/10th Scale 1956 Ted Jones Classic Hydroplane

Preparation

These plans show outside sheeting of 3/32" balsa laminated with 1/64" birch ply. This makes a light and strong skin for this boat. Optionally you can use 1/16" birch ply for outside sheeting which may add a few ounces, but is much easier to make. Either way will work well. The inside bulkheads are 1/8" balsa. Cut the parts exactly to the template outlines. Copy the assembly and center lines shown on the templates to the parts.

If you use the 3/32" balsa-ply laminate, start by coating the outside of the balsa and inside of the ply (identified on sheet-2) with 3M-77 contact cement. Allow to set per manufactures instructions then press the parts together flat. If this is your first time, test with scraps first. Trim to final shape after the parts have set-up. For a mahogany finish, substitute .02" or .03"mahogany veneer for ply on the deck and rear sides. The transom is a sandwich of 1/32" ply on both sides of 3/32" balsa. Laminate the inside ply doubler now. The outside ply doubler is added to the transom after the deck is on.

In addition to the 1/64 ply on the outside (bottom), the tunnel sheet should also have 3/32" cross grain balsa and 1/64 ply laminated to the inside (top) between bulkheads B – F. Do this after the tunnel is blocked up, but before assembling the bulkheads. This will add stiffness and strength to the motor mount and battery areas.

Basic Hull Assembly

Cover the top and sides of a 1"X7.81"X36" building board with wax paper. Block the front of the tunnel sheet up 1.52". The offset at bulkhead-B is .72" and at C .20".Tack glue this to the building board through small holes in the paper where shown. Glue the transom to the top rear edge of the tunnel sheet. Slip bulkhead-D to the slots of the stringers, and place this over the marks on the tunnel. Be sure all is square and level, then tack glue in place. Leave the hull on the building board until after the deck is on.

Add the rest of the bulkheads and check the alignment. Glue these to the bottom and stringers. Don't glue the center of bulkheads E, D & C to the tunnel (these will be removed later) Bevel the front bottom edge of the 5/15" square balsa deck stringers to fit flush with the tunnel sheet 1/16" from the leading edge. Glue these in place all the way to the transom. (See assembly illustrations on sheet-2)

Bottom sheeting

Bevel the edges of the rear non-trip panels to fit between the stringers and the bottom sheet, glue in place. Curve the sponson bottoms by dipping in water then bend while heating with an iron so they lay over the bulkheads smoothly. Check the fit and trim the outside if needed. Fit these in place against the side of the building board (covered with wax paper) and along the bottoms of bulkheads D – A then glue in place. Pre-bend the outside sponson panels, bevel the inside edge to match the outside of the sponson bottom and glue. Add the turn fin doubler to the right inside of bulkhead-D.

Decking

Bevel the front 1/8" of the tunnel sheet where the deck will join with it. 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 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 manufacture'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-D and touch the deck down. Lay the deck down evenly along the center of the deck stringer to the transom, then along bulkhead-D and the rest of the open structure. Add CA to all the outside seams.

If the hull is left tack glued to the building board it will be straight. You can check for warps by popping it off the board after the deck sides are on. Lay the hull on a flat surface. If the transom is not level with the sponsons, block the transom up level with a small shim under the low side, then glue the deck front center 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 in place. After these are on, the hull cannot be twisted to correct for warps. If it is within 1/16", it is OK.

Trim the deck outside edges flush with the sides. Put a 45° downward bevel on the front seam of the deck to the bottom sheet. Test fit the 1/32" birch plywood doubler to the back of the right sponson and glue in place. Glue the outside transom doubler in place. Glue a 1/8X1/4" hardwood floor brace aft of bulkhead-D. Remove the centers of bulkheads D & E where marked. Fill any gaps inside the hull in the seams of the deck, bulkheads, bottom, and stringers with thick CA so water won't find it's way past the exposed areas into the sealed off sections. Trim the front and rear center deck sections to fit and glue in place. Sand with 220, or 320 grit using small sanding blocks.

Hatch Cover, Cowling, Cockpit, & V-12 Engine

Build the removable hatch frame from side and cross pieces as shown. Add the hatch cowl base, deck sides and engine bay. Trim the edges to fit into the hatch opening without gaps or binding. Sand the hatch deck sides to match the deck profile. Laminate 1/64" ply (or mahogany) to the hatch deck sides. (See sheet-3)

The motor hood, cockpit and cowling are built up from 3/8" balsa. Carve and sand this to the profile shown. Shape the nose block and headrest then glue in place. Cut the tail fin from 1/16" balsa with vertical grain. Laminated both sides with 1/64" ply (or mahogany). Sand the edges smooth and shape the base to fit the rear cowling. Toughen the cowling with finishing resin and/or 1oz. glass cloth.

If you are building a boat that ran with an exposed engine, purchase or make one from balsa by cutting the basic shapes. Sand to the final shape and glue the pieces together.

Trim this to fit on the engine bay cover. Exhaust stacks can be cut from ¼" aluminum tube or dowels. Paint the open engine bay cover flat black or dark gray. At the sides of the bay, the "flash-pans" can be painted silver.

Note; the plans show only the basic cowl, cockpit and fin outlines. Many boats can be built from these plans with different "top-side" details. Fiberglass or vacu-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.

Drive Assembly

The driveline shown is a solid 3/16" shaft. This is simple, tough and easy to make. Many will want a ¼" flex cable or wire drive. Any of these will work well as long at the initial propeller position is as shown on the plans. For the straight shaft use ¼" O.D. brass stuffing tube assembled and soldered as shown with 1" long, 7/32" O.D. brass tube for the motor and propeller end bushings.

The shaft is 3/16" X 14" long. You can buy one or make one from .1875" drill rod. Grind flats on each end for the setscrews. The propeller trailing edge centerline should be 1.88" behind the transom and 1.00" below the bottom. The drive angle should be no more than 7.5°. A flex drive will have an prop angle of between 3° and 6°. Make an opening in the tunnel for the stuffing tube. Line this up with the motor and apply CA to the stuffing box and strut blade.

Radio and ESC

Put the receiver on the right side between bulkheads F & G and the rudder servo on the left. The battery location shown is for a light-weight lithium pack. This needs to be forward to balance the boat. If a conventional cells are used, it is best to use two or more packs. Place these on both sides of the motor and move them fore-aft to balance the boat. Note, move the right pack aft 1" and the left pack forward 1" to clear the water inlet and maintain balance. The electronic speed controller can be located just ahead of, or beside 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:

Fill the low spots with spackling compound and sand. Prepare the surface with your favorite sanding sealer then sand smooth with 320 grit before paining, repeat as needed for a smooth finish. Brush paint under the deck and in the corners inside the hull where the outside paint won't reach. This will waterproof the inside of the hull.

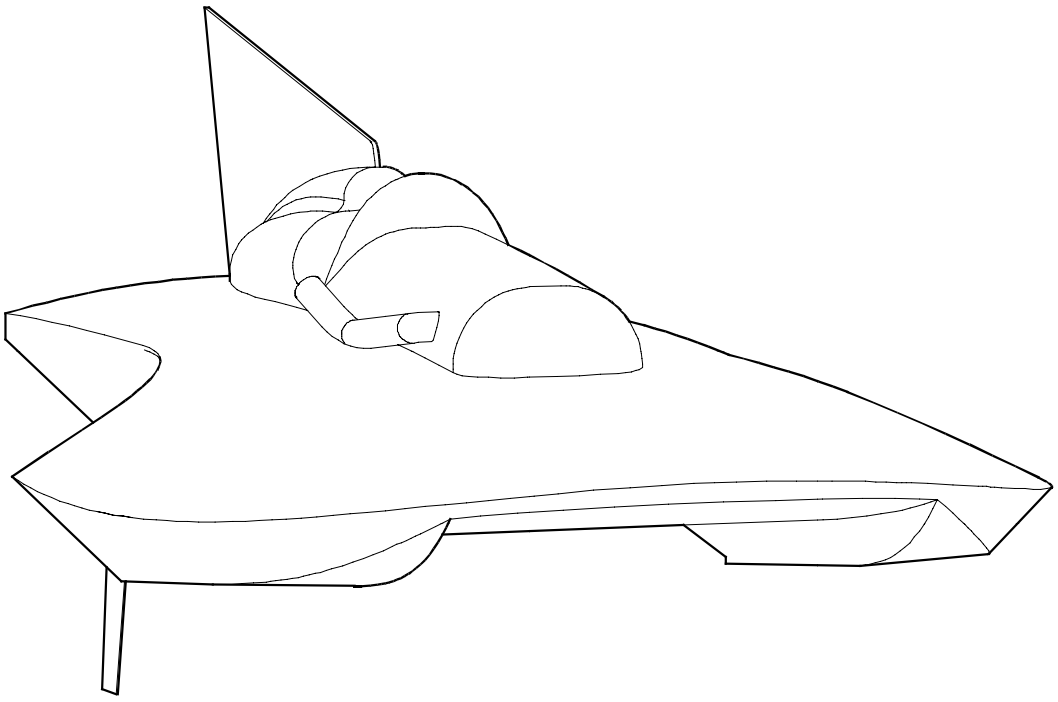
Krylon or Rustolium spray-can acrylic are a popular electric model boat paints. Spray this on top of compatible sanding sealer. Finish with a coat of clear after the trim is on. Don't mix paint types without first testing on scrap parts.

A bright mahogany finish is best obtained by applying ¾ or 1oz. glass cloth with finishing resin over the mahogany. Sand this and add a top coat of finishing resin. Sand again to get a smooth surface. Add the trim and put a coat of clear over everything.

Original:
In 1955 Ted Jones had many request to design and build unlimited hydroplanes after the tremendous success of Slo-Mo-3 and 4. This resulted in the 28½ foot hulls that were to become the first Miss Thriftway, Miss Wahoo, and Shanty. The boats were very fast for their time and won many races. They lived on well into the late 1960s as Miss Spokane, Miss Exide and even a Bud.

Note:
If this is to have a high-end power system, a flex-shaft or wire drive will be necessary to keep from blowing over. This hull geometry was directly scaled up from what was a LSH (a loose running boat with a Speed-700 motor).

The solid shaft produces a lot of lift in the tail of the boat. So, a rear-ward balance was recommended This also makes the sponsons light. With more power, that straight shaft will cause tail hop. To eliminate this, you shift the C-G back and you get blow-overs. That's why I recommend a flex shaft for big power systems.



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