

As an avid aviation enthusiast, I've always been intrigued by anything that flies. Whether it's a rocket, parachute, hang glider, sailplane, or even boomerang, if it flies, I'm game. I've never really had an interest in boats, however—until now. Modeled after modern hydroplane race boats, the new Graupner Hydro Plane 3D certainly looks like a boat at first glance. It has sponsons and a hull like a boat. The Hydro Plane is modeled after modern turbine-powered hydroplane race boats capable of extremely high speeds. In reality, they spend most of each race barely touching the water, flying in ground effect. This one is different, though, as it actually flies higher, and very nicely, I might add.

BUILDING THE HYDRO

The Hydro Plane 3D is built from with flat 3mm and molded 6mm Depron parts. Graupner also includes several pieces of flat carbon fiber for spars. Control is through two rudders on the vertical fins, and elevons on both the upper



Air, land or sea, this one does it all



SPECS



PLANE: Hydro Plane 3D
MANUFACTURER: Graupner
DISTRIBUTOR: Hobby Lobby International
TYPE: All terrain park flyer
FOR: Intermediate builders and pilots
WINGSPAN: 21.5 in.
WING AREA: 340 sq. in.
FLYING WEIGHT: 10.5 oz.

FULL THROTTLE POWER: 11.1 amps, 118 watts; 11.23 W/oz., 181 W/lb.

TOP RPM: 11,340

DURATION: 10-15 minutes mixed flying

MINIMAL FLYING AREA: Small park or pond!

PRICE: \$99.90

COMPONENTS NEEDED TO COMPLETE: 4-channel radio system with Elevon mixing capability, (3) 6-9 gram sub-micro servos, 100-150 watt brushless outrunner and brushless 10-15 amp ESC, and 300-900mAh Li-Poly battery

WING LOADING: 4.44 oz./sq. ft.

LENGTH: 31 in.

RADIO: 4 channels required; flown with Hitec Eclipse transmitter, Hitec Electron 6 receiver, (3) Hitec HS-55 servos

POWER SYSTEM: AXI 2208/26 brushless motor, Jeti Advance 12 Plus ESC, PolyQuest "Twenty" 3S 800mAh Li-Poly battery, Graupner 7x4SF propeller

SUMMARY

The Hydro Plane 3D is one of the most unique park flyers I have ever flown. It is a semi-scale hydrofoil boat that operates in all three dimensions—this one flies! Through the use of laser-cut and molded foam parts, the Hydro Plane builds quickly and is relatively durable. Loops, rolls, inverted, and harrier flight are all possible with this flying boat. The stunned look of amazement from onlookers is priceless as the Hydro Plane cruises the lake as a boat, then jumps effortlessly into the air!

HOBBY LOBBY

Hydro PLANE 3D

by Scott Stoops

PHOTOS BY DAVID MIELKE

wing and lower fuselage hull. The radio is contained in the formed Depron hull. The motor extends above and in front of the main hull assembly on a pylon. The battery is contained in the air scoop above the canopy area, and is connected via an exposed plug from the ESC.

Opening the box, I found several sheets of flat, laser-cut Depron foam for the basic hull structure and flight controls, several formed parts, a parts bag, and a nice sheet of self-adhesive decals. Before doing any gluing, I tested my intended adhesive and paint to ensure that it was compatible with the foam structure. Be sure to test your glue on some scrap to be sure that it doesn't eat the foam. I used foam-safe medium CA and foam-safe accelerator as well as the recommended UHU-POR contact cement. Both worked perfectly.

The first couple of steps include building the basic flat hull structure and attaching the motor pylon. Graupner uses flat carbon stock glued to the flat hull structure as a spar in two places along the hull, and one place on the upper wing. This really increases the rigidity of the structure. Once the basic flat structure is assembled, you then attach the lower elevons, the vertical fins and the forward sponsons, followed by the upper molded hull. It is critical that these areas are watertight (for obvious reasons!), so take your time during the assembly. With the basic top-hull assembly complete, it is time for the radio installation.

The watertight nature of the Hydro Plane requires the radio to be installed and tested before the hull is sealed up. It is critical that you correctly set up the radio before you close the hull, as it will be inaccessible from that point on. Any adjustments would require major surgery once the model is finished.

The Hydro Plane uses two servos to control both the upper and lower elevons, and one to control the rudder. Each servo hole is pre-cut, but I had to relieve the holes slightly for my HS-55 servos to fit. The servos are secured in their slots with a couple of dabs of medium foam-safe CA. I used the included pushrods and pushrod housings, and by following the directions closely, I was able to achieve a smooth and precise control setup easily. Again, be sure to test everything before you close up the hull!



AIRBORNE

First flights for the Hydro should be done over soft ground with a handlaunch from a helper. I chose a ball field with soft grass and no obstructions. That the Hydro looked more like a boat than an airplane didn't inspire the confidence I am used to with a new model, but I couldn't have been more wrong. From the first toss, the Hydro has been very stable!

With 1/2 throttle and a gentle toss, the Hydro was off under its own power. I found it to be very responsive in roll and pitch with the stock control throws, so be sure to program in some exponential.

As expected, the Hydro Plane does have some flying characteristics different from your standard model aircraft's. It will loop, roll, and fly inverted, but be very careful when using the rudder. I found that with small inputs the Hydro responded traditionally—with a small yaw. Anything more than about 1/2 movement of right rudder, however, causes a rapid rolling motion—to the left. This is not so prominent with left rudder inputs, but is still there. I found this out on my second flight while trying to hover. As the nose fell slightly to the left, I added right rudder, and she rolled extremely fast to the left and really caught me off guard. Start with lots of altitude for your first few large rudder inputs. I recommend selecting a high-rate setting for water maneuvering, and low-rate when flying.

Other than that difference, the Hydro flies remarkably well and similar to traditional aircraft. While the Hydro Plane 3D will do some 3D maneuvers, there are some it won't do. It won't knife-edge or fly flat spins. It will fly a nice waterfall, and it harriers with a fair amount of rock. I found the model will torque roll, but to be honest, it takes a lot of work.

The Hydro Plane's best trait is its ability to takeoff and land from many different surfaces. I have flown it from water, snow, and grass. It can takeoff from any of those surfaces, but water is my clear preference. I found its water handling to be very good. It tracks straight and gets up on the step almost instantaneously. Transition to airborne flight is a simple elevator input away. Water landings are also very easy with the Hydro. Simply set up a slight descent power on and start your flare at around a foot. With the descent rate slowed, close the throttle and let her touch down. I spend most of my time with the model shooting splash-and-goes mixed with light aerobatics as I make my way around the pattern.

I attached the remaining radio components inside the hull with Velcro. I used a lightenna micro antenna that can be fully enclosed in the hull, avoiding the need to cut another hole in the hull that could eventually leak water. With all of the radio equipment secured, do a CG check to make sure your chosen equipment and placement will balance. Now it's time to close up the hull and paint the model. I found it was easier to paint the upper wing separately and attach it once painted. I used Testors' red spray paint on the main body, and Testors' silver and black for the canopy and tailpipe.

TIPS FOR SUCCESS

Depending upon the equipment you choose, it is possible to end up with an aft or forward CG. I used Hobby Lobby's recommended gear, and my CG worked out perfectly. Once finished, you can't move the equipment around to adjust the CG. The battery tray allows very small adjustments, but it may not be enough. With that in mind, make an initial CG check before you complete the

assembly of your Hydro. With the radio equipment finalized and the motor installed, use thin, clear tape to temporarily attach your components to verify a CG 120mm aft of the forward carbon support. If needed, adjust the position of your receiver or speed control. As a last resort, it is possible to move the battery tray/scoop.

CONCLUSION

The Hydro Plane 3D has been a lot of fun to build and fly. It clearly isn't designed for beginners, but it is a unique model that any intermediate-level pilot will be comfortable with in short order. Flying it off of water has proven to be the most fun, shooting splash-and-goes and buzzing around the pond. I can't wait for my flying buddies to finish theirs so we can have races—both on the water and in the air. 🌊

Links

Hobby Lobby International, Inc.,
www.hobby-lobby.com, (615) 373-1444

For more information, please see our source guide on pg. ____.