

An Overview of the Sport

by Don Mock, edited by Geoffry Grembowski in 2014

Radio Controlled Unlimited Hydros - What Are They?

Welcome to the exciting world of 1/8th scale unlimited hydroplanes. Capable of speeds in excess of 60 MPH, these models are exact replicas of the fastest and most spectacular race boats in the world. They are nearly four feet long, two feet wide and weigh between ten and twenty pounds. Hundreds of boats participate in races sponsored by clubs in the U.S. and Canada. Here in the Northwest, R/C Unlimiteds (R/CU), formed in 1974, was the first club of it's kind in the country devoted strictly to 1/8th scale unlimited hydroplanes. The club, which is affiliated with the American Power Boat Association and sponsored by Budweiser (now Meyers Auto Tech –Ed.), has over 100 members participating in a fourteen (now eleven-Ed.) race circuit throughout the Northwest.

No Two Alike

Club members pay \$10 to join and register a hydro. The club maintains a "[Master Hull Roster](#)" listing every unlimited hydroplane going back to the 1940's. Because there have been hundreds of different boats during this period, the club only allows one model of each "real" boat to compete. This rule insures that each racer can run his or her "own" boat and reduces the possibility of confusion on the race course. When a new unlimited hits the water, members can enter a drawing for the "rights" to build a model of that boat. The hydros are built from wood, fiberglass or even new "aircraft composite" materials, such as kevlar, graphite, and honeycomb. Although wood kits are available in hobby stores, many modelers choose to scratch build their boats from scale plans of the actual hydroplanes. Designers, such as [Roger Newton](#) and Roland DeSteeze, offer plans for boats from the early 50's to the latest high-tech hydros of today.

Labor of Love

No matter what method is used to build the hull, all boats require long hours of the modelers time to complete construction, hardware, radio installation, and painting and detailing. The easiest and probably cheapest way to enter the sport is to buy a "[used](#)" boat. Many modelers sell their boats, as they enjoy the challenge of building new ones. Prices range from as low as \$200 for a bare hull to over \$1,000 for a "ready to race" boat. Some modelers have invested as much as \$2,500 in their craft.

Radios

The boats are controlled by a radio with two channels; one for the throttle and another for the rudder. Some modelers use additional channels to control flaps

and fuel mixture. A receiver, mounted in the boat, controls the drive motors or "servos," which are connected by linkage rods to the rudder and engine. The servos and receiver are powered by an on-board battery. There are over 20 transmitting frequencies allotted for the operation of R/C model boats. Hydros on the same frequency do not race at the same time. When boats on the same frequency end up in the same consolation or final heat, the one with the least amount of accumulated points must change frequencies by replacing the small "crystals" in both the receiver and transmitter.

Details Really Count

The boats are painted with the same epoxy and/or polyurethane paints used on the "big" boats. Paint schemes are determined through detailed inspection of photographs. Our local boaters have the advantage of being able to visit the homes of many actual unlimiteds.

Engines

A closer look into the engine compartment reveals a .67 cubic inch (11cc), two-cycle, water cooled engine designed specifically for these models. The cooling water enters through a pick-up at the rear of the hull. All boats require an exotic exhaust system designed to keep noise down and horsepower up. The fuel used in the boats is a mixture of nitromethane, methanol and lubricants. Racing fuel can contain as much as 65% nitromethane and costs over \$25 a gallon. A racer will normally use nearly a gallon in a day of racing.

Duplicating the Real Thing

The credo of R/C Unlimiteds is "To duplicate the sport of Unlimited Hydroplane racing as closely as possible" in 1/8th scale. Because there are many spectators at R/CU events, the modelers try to build their boats with as much detail as possible. Details, such as "correct" driver's uniforms, helmets, steering wheels, and dashboards, add to the realism. Racing follows much the same format as the real unlimiteds. There is a 3 minute "preliminary" time for the boats to get on the water and running. At the end of that time, they attempt to be at the starting line, full throttle, for an exciting "flying start." Too early and you get a one-lap penalty. Too late and you've already lost. The only difference between these boats and the actual unlimiteds is that the models travel clockwise around the course. A race is run with "flights" of five or six boat preliminary heats where the boaters accumulate points to determine who gets to run in the "winner-take-all" final. The course is a little larger than a football field, and the boats travel approximately one mile in less than 90 seconds during a five-lap heat.

No Small Thrill

Even though these hydros are small and driven from the shore, the excitement for the drivers can be as great as for the big unlimited drivers. The winner of an R/C Unlimiteds race has just as much of a thrill as Mark Evans or Dave Villwock have when they win on the full-sized circuit.