



AQUATIC RACE CAR

Miss Bardahl aims for top speed on water using auto design techniques

IN 1904, C. C. Riotta's unlimited racing boat, Standard, won the Gold Cup (the first Gold Cup ever held) with the best heat speed of 23.6 mph. Just 16 years later, Gar Wood's Miss America raised the Gold Cup heat speed record by 46.6 mph, to 70. Today, heat speeds in the Gold Cup and other unlimited hydroplane events are consistently over 100 mph. This amazing increase of more than 75 mph in less than half a century can only be attributed to man's untiring and constant attempts to build racing boats that will break speed records. (The same can be said for racing on land and in the air).

Probably the most prolific race boat designer and builder in the world today is Ted Jones of Seattle, Washington. In 1950 Jones piloted Slo-Motion IV, a boat he also designed and built, to victory in the Gold Cup, bringing unlimited hydroplane racing to Seattle for the first time. Slo-Mo set a new lap speed record of 86 mph in that race on the Detroit River. Since that time, Jones has designed and built nearly 20 unlimited hydroplanes for boat racing sportsmen throughout the country. The last four National Champion unlimiteds were designed and

built by Jones: Century 21, 1961; Miss Thriftway, 1960; Maverick, 1959; and Miss Bardahl, 1958.

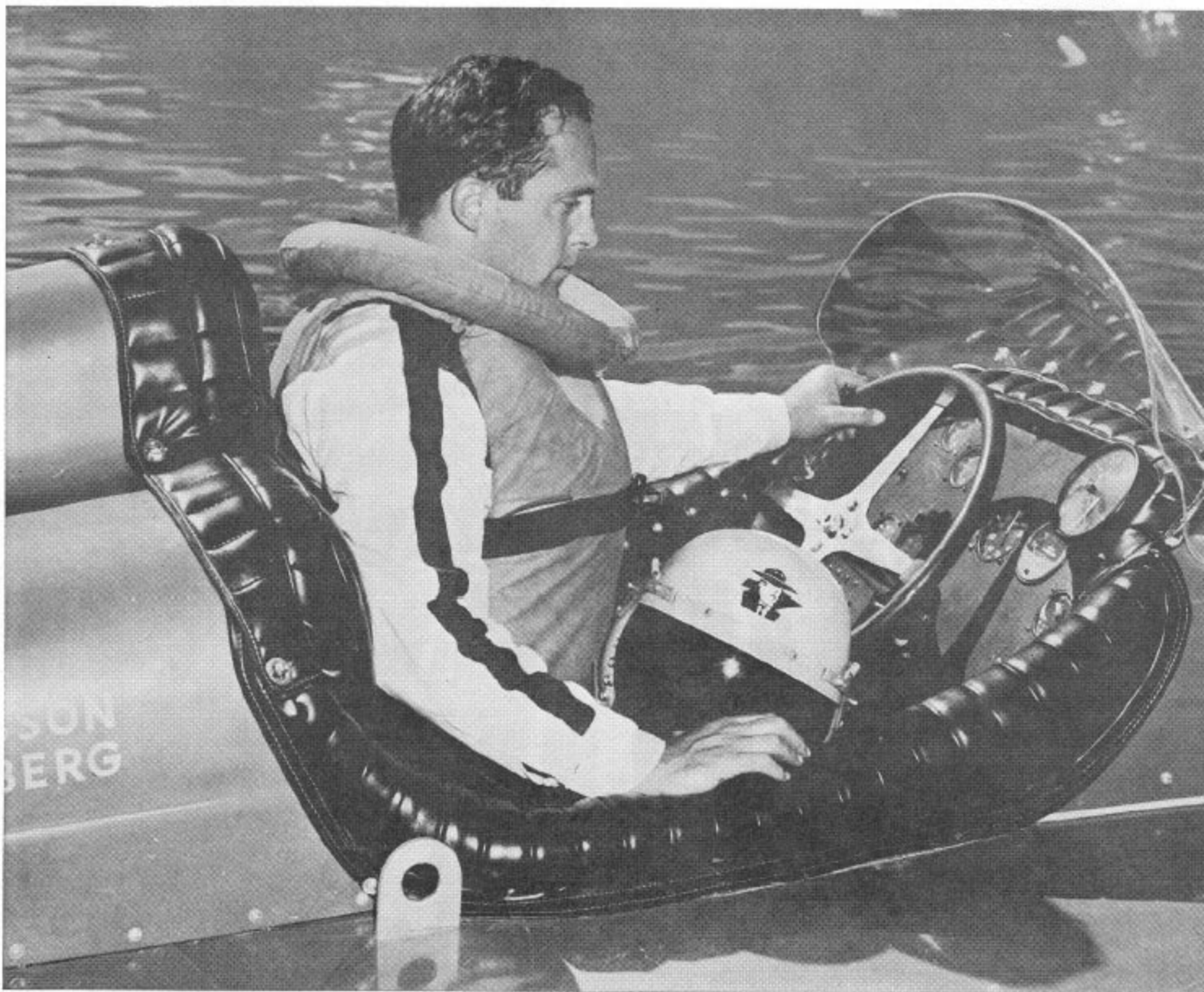
Over the 12-year period since 1950, Jones has used basically the same design dimensions and materials in every boat. In February, 1962, he began building a new Miss Bardahl with major dimension changes, designed to make the new boat drive like an Indianapolis race car.

"No unlimited hydroplane has ever been built with the new Bardahl's particular dimensions, to my knowledge," Jones says. "She's the same length as most of the boats I've built, but she's wider. The main advantages are faster turning and more rapid acceleration. That's what you need to win boat races.

"The easiest way to understand what I mean is to understand the theory behind the changes. After all, at this point, we still don't know what the boat will do. We're only trying to find out if the theory will bear out when we're out there on the course with half a dozen other boats.

"The course is three miles around. Turns are 600 to 650 feet in radius. That means that almost one-third of the three miles

COCKPIT OF THE NEW MISS BARDAHL CLOSELY RESEMBLES THE COCKPIT OF AN INDIANAPOLIS RACE CAR. DRIVER IS TOP-RATED RON MUSSON.



Aquatic Race Car *continued*

is in turns. Every year the boys go into the turns at high speeds, around 150 mph, but they come out at about 90. It takes them a long time to get back up to a good fast straightaway speed. Figure the average — about 150 going into the turns, 90 coming out. They're lucky if they average 110 a lap. (The current lap speed record set by Wahoo, August 9, 1959, is 113.924 mph.)

"The new Bardahl has different widths from any other boat I've built," Jones continued. "The width of the tunnel left-hand sponson, and the inside are all different. The inside of the left-hand sponson has been chamfered (beveled). All this allows the driver to establish a sliding, racing, power-on turn, just like they employ in automobile racing. Musson should drive the new Bardahl much like the big car drivers at Indianapolis do."

In most unlimited hydroplanes, the driver is pretty much limited as to the course he drives by the way the boat handles. Most of the drivers lose precious time when they decelerate going into the turns. In the new Bardahl, if the theory is correct, Musson will go into the turns with his foot down heavy on the throttle, brake the boat with his rudder left, and as

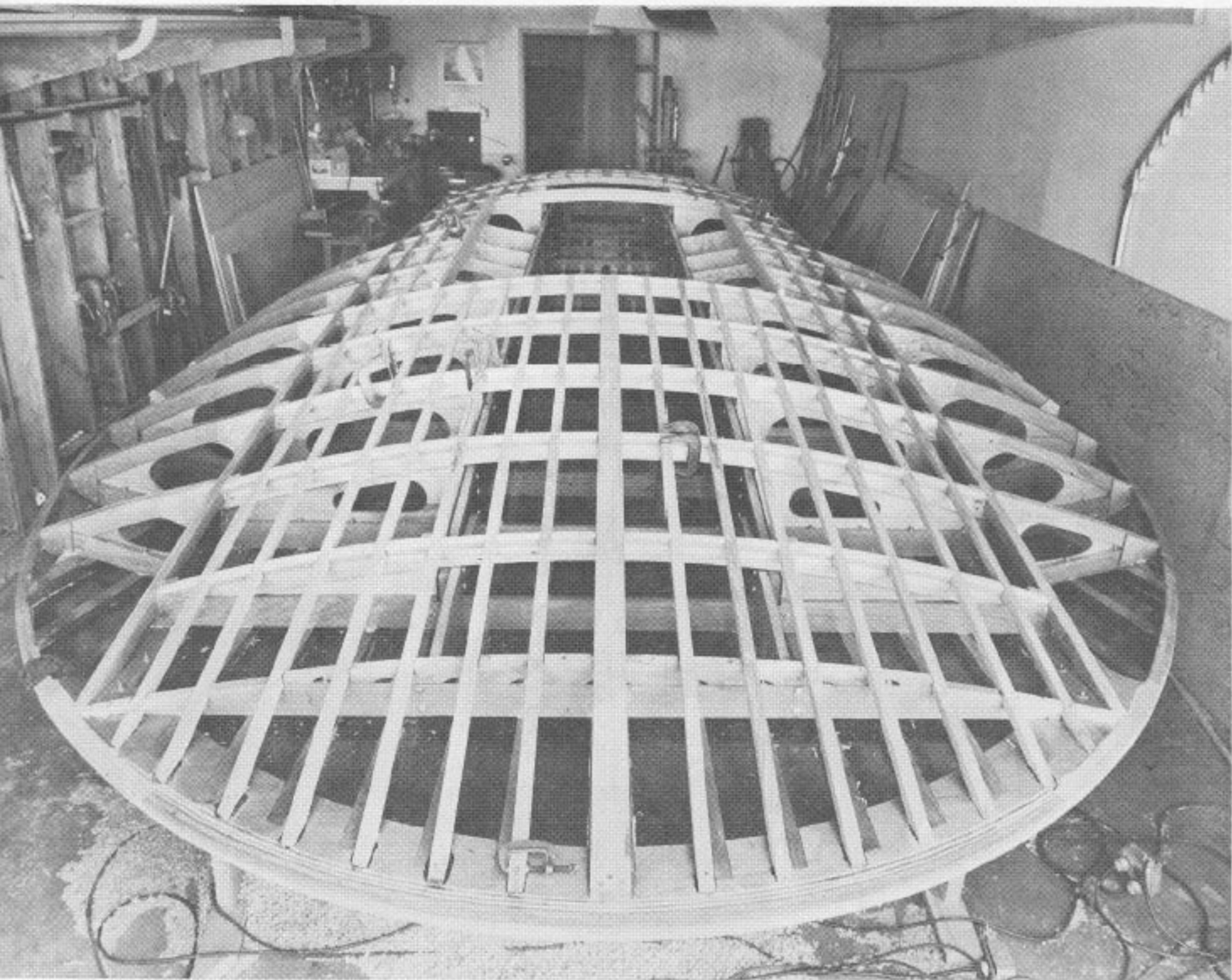
soon as the boat has deviated from its course so that the stern has drifted 35 to 40 degrees right, he'll apply the right rudder and jam the throttle to the floor.

It's the same principle they call "crossing up" in auto racing. The driver turns his wheels with his drift, just opposite from the direction he is turning. It's like coming out of a skid when driving your car in snow. You turn your wheel the same direction you are skidding.

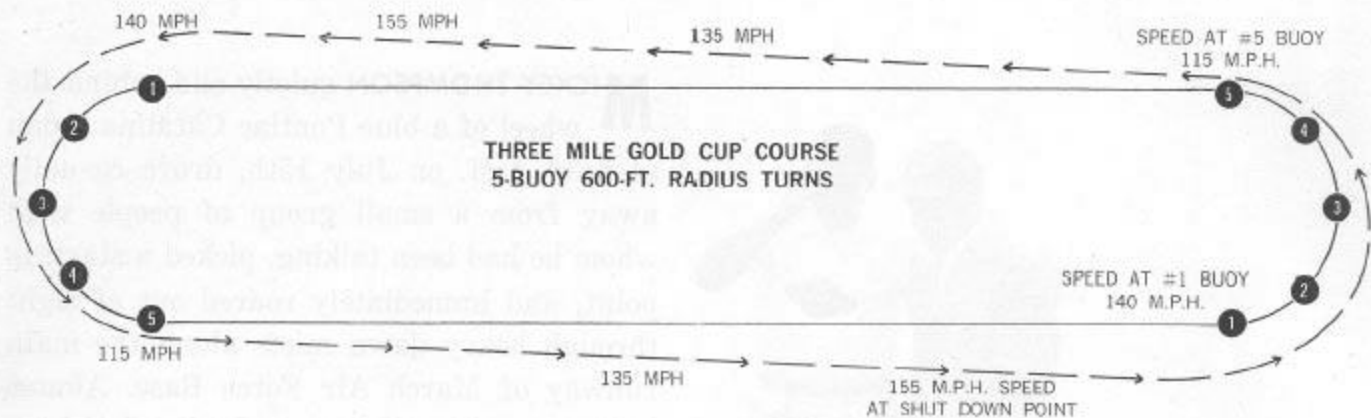
If the theory is correct, Musson will go into the turns at 140 to 150 mph, and come out of them at 115. This means Musson's lap speed would be around 128. It couldn't be lower than 115, nearly two miles over the existing record.

A lot of things have happened in unlimited boat racing since C. C. Riote's Standard won the 1904 Gold Cup. Not only have the speeds increased by nearly 100 mph, but a whole host of new owners, drivers and mechanics have entered into the thrilling water sport. New races have been added to the schedule. But the biggest change of all may come this season, when the Ted Jones-designed new Miss Bardahl, with young Ron Musson employing some unique new driving methods, roars onto the lake. The "Green Dragon" may eat 'em all up. /MT

PHOTOS BY BOB CARVER

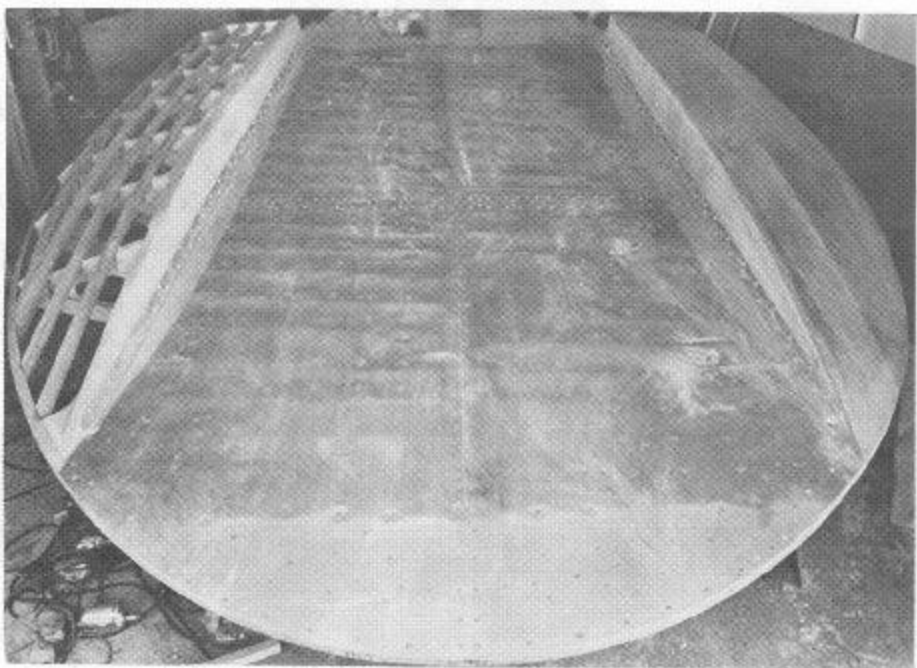


CONSTRUCTION METHODS FOLLOW CONVENTIONAL GOLD CUP PRACTICES; DIFFERENCES ARE IN OVERALL DIMENSIONS AND SPONSON DESIGN.



Most unlimiteds are traveling a maximum of 90 mph coming out of turns. In theory, the new Miss Bardahl hull should be able to come out at 115 mph.

Inboard corner of the left-hand sponson is beveled to prevent water from piling up in air trap area. Tunnel between the sponsons is also wider.



Because of width, all the big hydros have to be tilted on their trailers to comply with state highway regulations. Boat is actually 12 ft. 5 ins. wide.

