

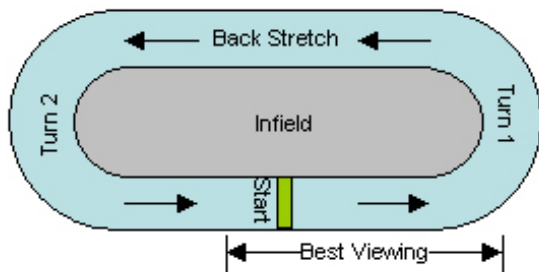
# How to Watch a Hydroplane Race

Photo Credit: Greg Grenier Mott Lake 2023



## Where to Sit:

One of the best parts of a boat race is to relax in your chair and enjoy the race. There can be some down time between heats that you can enjoy the outdoors or visit with the people around you. The best thing to do during these periods is visit the vendor booths. These vendors help pay for the race to keep your entry and parking low.



Finding a good seat is not hard. Some Venues have dedicated seating locations. Look for a location along the straight away side of the course just to the left of the starting line or the clock. Anywhere between here and the first turn where all the action takes place is excellent. Notice where the sun is and how it will move across the sky during the day. Although a nice shady spot may look good when you first arrive, what you really want to look for is a shady spot for the afternoon in the heat of the day. An umbrella can provide portable shade when there are no trees. Pay attention to the direction of the wind, so that you are not blocked from any wind on a hot summer day.

## Time During the Race:

There is a 5-minute gun to signal that it is time for the boats to leave the pits. This gives the engine time to get up to temperature for the race. The prudent driver will make a timing run or two, such as from the second turn to the starting line during this prestart period. Just prior to the one-minute gun, the drivers are jockeying for poll positions. When the one-minute gun goes off, the drivers must maintain their respective lanes or poll position. At this point the boats should be around the exit of turn one. The farther beyond that point, the more they must slow down to prevent jumping the gun or crossing the starting line too early. The object being to reach the starting line when the clock counts down to zero and be at full speed.



## The Flying Start:

The flying start is unlike any other motorsport. It is spectacular to see as many as 12 boats abreast all flying across the starting line at full speed. The turns are marked with large orange buoys and the starting line is marked with two checkered buoys on either end of it. The drivers must time their approach to cross the starting line when the clock has counted down to zero. The lane or poll position established must be maintained down the front straightaway to the exit of turn 1 during the start. When the boats enter the first turn, this is where the most action is likely to occur. You want to make sure that you have a clear view of the first turn.

## The Racecourse:

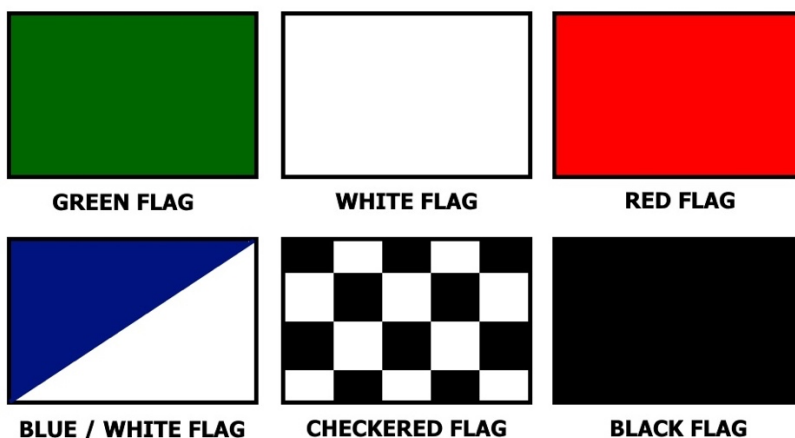
As with other motorsports, the inside lane is the most desirable. This is the shortest distance around the course. The length of the race is 5 miles, but the size of the course may vary.

| Course Length | Laps |
|---------------|------|
| 1 2/3 Mile    | 3    |
| 1 1/2 Mile    | 4    |
| 1 Mile        | 5    |

All buoys marking the inside of the racecourse must be passed on the driver's left side. If a driver jumped the gun, then they will not know until either during race or at the end of the race. They will not receive a 1-minute penalty.

## APBA (American Power Boat Association) Flags:

Flag signals are used to designate specific time or to give instructions to contestants. Briefly, the flags and their purposes are as follows:



- **Green Flag:** *Before Start* - Signaled between the Five Minute and One Minute Mark
- **Green Flag:** *After Start* - Signaled while the race is underway except the last lap
- **White Flag:** *Before Start* - Signaled between the One Minute and Race Start
- **White Flag:** *After Start* - Signaled when the Leader has started the last lap
- **Red Flag:** Racers must *STOP*, be alert and watch for other signals
- **Blue and White Flag:** Caution - Problems on the Racecourse, Racers Continue with Caution
- **Black Flag:** Course is Closed - Racers Return to Pits
- **Checkered Flag:** Race Finish

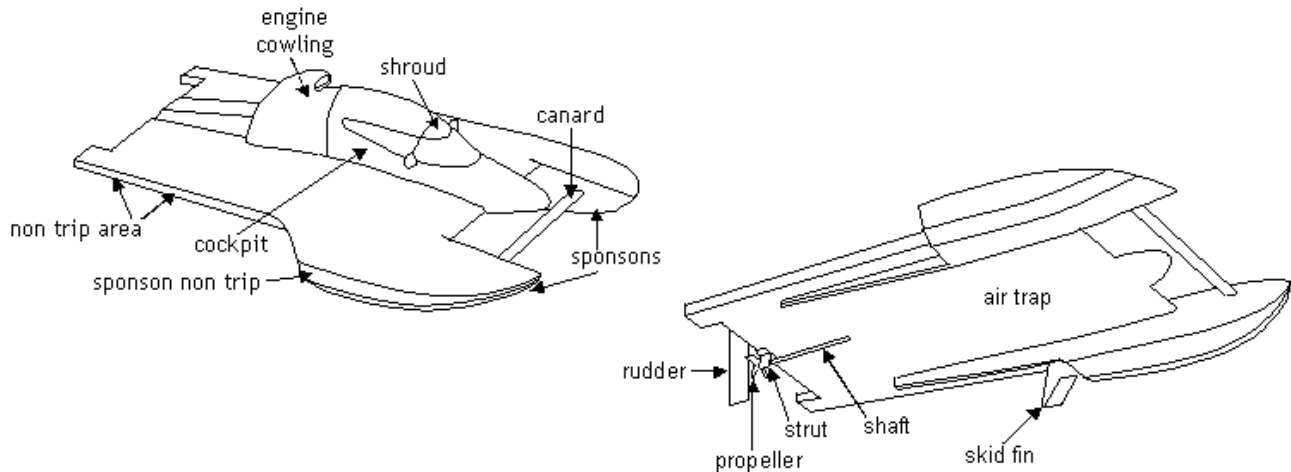
## Racing Code of Conduct:

Above all, get to know the people sitting around you. This makes it easier for all to enjoy the event and provides pleasant conversation throughout the day. Avoid any behavior that is an annoyance to others around you. Races are a family friendly atmosphere, and children are welcome. Please do not allow children to throw anything into the water that might drift onto the racecourse.

The following policies have been established to provide a quality experience for all guests.

- No swearing or use of profane language.
- No abusive, lewd, or indecent behavior.
- No throwing objects toward or onto the racecourse.
- No behavior determined by race officials to be offensive to others.

# Anatomy of a Hydroplane



**engine cowling** The engine cowling is a lightweight fiber glass covering to protect the engine from water.

**shroud** The shroud is the covering over the driver to keep water out of boat and the driver's face. It is not required, and some drivers prefer an open cockpit.

**canard** In a hydroplane, the canard is used to adjust how high the front end flies over the water. This is usually set to a fixed maximum position and driver has a foot pedal (sometimes called the "down" pedal) to lower the front end. This allows a driver with quick reflexes to possibly avoid a fly over.

**cockpit** The cockpit is the inside of the safety capsule, where the driver controls the boat. It contains instruments, a single seat with a 5-point harness, and sometimes air supply for the driver.

**non-trip** The non-trip is the side of the sponson that allows the boat to slide through the turns.

**sponson** The trailing bottom surface of the sponsons (not pontoons) on either side are two of the points in the 3 point suspension design. The propeller is the third.

**skid fin** The skid fin adds stability in the straight away with very little drag. In the turn, the skid fin digs in to maintain control. These fins must handle as much as 5 G force on most boats. The largest can experience as much as 20 G force.

**rudder** The rudder is the main steering device and is attached to a steering wheel in the cockpit by a series of levers or cables and pulleys.

**propeller** A propeller is essentially a type of fan which transmits power by converting rotational motion into thrust for forward propulsion of the hydroplane. The highly tuned propellers used for racing are the surface penetrating type, where only the bottom half of the propeller diameter is in the water at racing speeds.

**strut** The strut is typically a cast aluminum bracket to hold the shaft in a stable fixed position inside of bearings to allow it rotate freely.

**shaft** The shaft is directly connected to the output of the engine and the propeller is on the other end. Gear boxes are used on some of the biggest boats, but most are direct drive. There is no neutral, reverse, or brakes on a hydroplane. One of the hardest things for new drivers is bringing the boat back into the pits. If they shut it off too soon, then they drift away. If they shut it off too late, they risk running over crew and crashing into the shore or dock.

**air trap** The air trap refers to the space between the sponsons on the bottom of the boat. The wider this is the more air that is trapped and the higher the hydroplanes flies over the water.

## Inboard Hydroplane Classes

When you are watching a race or looking at a hydroplane and wonder what class it's in, just look for the class letter designation on the boat.

| Class Letter | Class                                     | Common Engine                 | Relative Speed* | Minimum Length and Other Information      |
|--------------|-------------------------------------------|-------------------------------|-----------------|-------------------------------------------|
| <b>Y</b>     | 1.0 Liter Modified                        | Yamaha, Polaris               | 105 MPH         | 14'6" Min. Length                         |
|              |                                           |                               |                 | 17'6" Max. length                         |
|              |                                           |                               |                 | 9'6" Max. Width                           |
| <b>T</b>     | 1.5 Liter Stock                           | Toyota                        | 95 MPH          | 14'6" Min. Length                         |
|              |                                           |                               |                 | 17'6" Max. Length                         |
|              |                                           |                               |                 | 9'6" Max. Width                           |
| <b>S</b>     | 2.5 Liter Stock                           | Ford                          | 100 MPH         | 13'6" Min. Length                         |
|              |                                           |                               |                 | 17'6" Max. Length                         |
|              |                                           |                               |                 | 9'6" Max. Width                           |
| <b>A</b>     | 2.5 Liter Modified                        | BMW, Ford<br>Chevy, Esslinger | 125 MPH         | 17'6" Min. Length                         |
|              |                                           |                               |                 | 9'6" Max. Width                           |
| <b>E</b>     | 5.0 Liter Stock                           | Chevy                         | 115 MPH         | 16' Min. Length                           |
|              |                                           |                               |                 | 21' Max. Length                           |
|              |                                           |                               |                 | 11' Max. Width                            |
| <b>NM</b>    | National Modified<br>(6.0 Liter Modified) | Chevy                         | 140 MPH         | 17'6" Min. Length (166 CID or less)       |
|              |                                           |                               |                 | 9'6" Max. Width (166 CID or less)         |
|              |                                           |                               |                 | 17' Min. Length (246 CID)                 |
|              |                                           |                               |                 | 19' Min. Length (308 CID or 368 CID)      |
|              |                                           |                               |                 | 18' Min. Length (built prior to 10/30/87) |
| <b>GNH</b>   | Grand National Hydro<br>(7.0 Liter Stock) | Chevy                         | 150 MPH         | 20' Min. Length                           |
|              |                                           |                               |                 | 20' Min. Length (511 CID)                 |
|              |                                           |                               |                 | 26' Max. length (511 CID)                 |
| <b>GP</b>    | Grand Prix                                | Chevy                         | 160 MPH         | 26' Min. Length                           |

\*Relative speed is an approximation of actual speeds to illustrate the differences between the classes.