

InboardHydroplanes.com

## Inboard Hydroplane Racing Spectator's Guide



**Ready, Set, Wait...** Sometimes this can be the hardest part of all. The boats and drivers need to be in the water and ready for their heat. This prevents long breaks in the action for the spectators. However, the race course may need to be cleared of debris and all hydroplanes from the previous heat. On a scorcher of a summer day, this is brutal for the drivers. They are wearing a racing suit, flack suit, helmet, oxygen mask and cooped up inside of a cockpit that functions as a solar oven when at rest. Of course at around **100 MPH**, there is a nice breeze flowing though the cockpit.

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# What to Bring



## Necessary Equipment

**Umbrellas** This is probably the single most important piece of equipment. You can use it to protect you from the blazing sun, as well as rain. Often the races will continue in the rain or a rain shower will pass in 20 minutes or so. It would be a shame to miss a day of great racing, when this simple tool can protect you from discomfort. The large beach umbrellas are even permitted at most race sites.

**Sun Screen** Even on cloudy day the damaging sun's rays will still get you. Remember that you will be on the waterfront with the sun reflecting off the water.

**Cooler** One soft-sided bag or cooler, approximately 6" x 6" x 12" inches. The small size is so that it is easy to carry back to the car if not allowed. Some race sites do not allow coolers at all, while others allow large coolers. It is best to check with the race site. We actually want to support the vendors, without whom we would not have a race.

**Folding Chairs** The kind that are cloth and fold up into a bag are best. These folding chairs have four separate legs, which prevents rocking on uneven ground. A chair with a built in sun shade (cabana style) is even better, but you can use an umbrella for the same sun protection. Usually there is enough room in the carry bag for your chair to carry additional items, such as umbrella, sunscreen, etc.

**Clothing Layers** The weather may vary during the day, as with a passing shower or cloudy skies. It is best to layer your clothing, so that adjustments can be made to keep yourself comfortable throughout the day. If you find yourself needing an extra layer at the race, there is usually a vendor selling T-shirts, sweatshirts, or hats. Again, we want to support the vendors.

## Optional Equipment

**Hat** If you are not a hat person, then see "Umbrellas" above. It is a good idea to wear a hat for general sun protection and a wide brim offers the best protection. Of course once you put the hat on, it becomes a hat day. That is because you will have hat hair, when you take it off.

**Cameras** You will want a high speed camera with a 1/1000 second shutter speed and at least 10X optical zoom, possibly on a tripod. Do not use digital zoom or you are sure to be disappointed. The actions on the water is best captured by following a boat in the viewfinder as it goes by and snapping the shutter while still moving the camera. This keeps the boat sharply focused, while blurring the background. Other cameras are great for pictures in the pits and the people around you.

**Scanners** The race teams are starting to use radios to communicate with their drivers on the race course. You might be able to listen in on them. If you see someone in a racing uniform with a headset and microphone, do not distract them during the race. However, most are friendly people and will be glad to tell you about their boats.

**Binoculars** These are not necessary, but are great for peering into the pits and people watching.

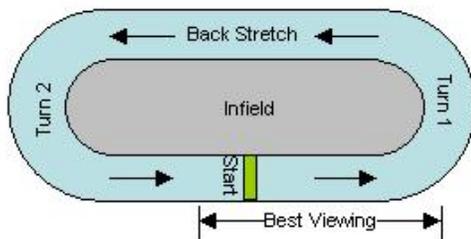
**Books, Magazines, Cards, Headset** Entertaining yourself and your family between the events on the water can make the day more enjoyable for some.

# How to Watch



## 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 (usually \$5 to \$15) or free.



Finding a good seat is not hard. 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 have to 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. Once the race has started, the clock will count up rather than counting down as it did prior to the start.



## 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.

## Rooster Tails

That long plume of water behind the boats is called the rooster tail. When the boats turn, the skid fin on the left side of the boat digs in and sends up a second rooster tail. All this water up in the air makes it difficult for the officials to see what is going on in the turns.



This is an important factor for a driver changing lanes. They must not cross toward the inside lanes, without being at least 4 boat lengths or one rooster tail ahead of the boat they are passing. When a driver crosses a rooster tail, the driver is totally blinded by the spray of water on the cockpit. This powerful rooster tail can cause a boat to go airborne and fly over backwards or do a barrel roll flip. If a driver is lucky enough to cross through a rooster tail right side up, then there is still the possibility that an unseen boat will be there causing a collision. For these reasons, a driver will avoid crossing a rooster tail, if at all possible.

## The Race Course

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 a 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 race course must be passed on the driver's left side. If not, then the driver must go back and pass the buoy on the correct side. If a driver touches a buoy without any damage, they may continue. However, if the buoy is dislodged, deflated, or otherwise damaged, then the boat is disqualified. If a driver jumped the gun, then they will not know until the end of the race. They will not receive a checkered flag after 5 miles and be required to take an extra lap. In order for a driver to set a National or World Record, the course must be accurately surveyed prior and during the race. Should a record be set, then the boat must undergo an official inspection.

# Cold Pits Access



The pits are usually divided into a hot pits and cold pits. The hot pits are where the cranes are located and where the boats are lifted into the water. This can be a dangerous place, with the boats being moved overhead. Not only is there a chance that the lifting sling might fail and drop a boat on you, but there may also be hot water draining out of the engine to burn you. If you find yourself in the hot pits, always be aware of the cranes moving boats at all times. For these reasons, access to the hot pits may be restricted.

The cold pits are where there are the most boats and you can safely walk up close enough to get really good pictures. The owners and crew are generally pretty friendly people, when they are not busy. They are usually glad to answer questions, and if you think that you might want to race, this is a good chance get more information.

Most races permit access to the cold pits (the ones away from the cranes) for a small fee, usually around \$10. Many allow free public access on the day or evening prior to the race. Some races charge as much as \$50, but it is well worth it, as they include food, beverages, grandstand seating, or a tent to protect you from rain and especially the sun.



# Signal Flags

## APBA (American Power Boat Association)

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



**Green** Time between five-minute and one-minute signal; while race is underway except last lap.



**White** Time between one-minute signal and start; leader has started last lap.



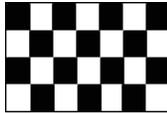
**Red** STOP! STOP! Be alert and watch for other signals. The discharge of red or orange smoke/aerial flares in conjunction with RED FLAGS is advised.



**Blue/White** CAUTION: Problems on race course, continue with caution.



**Black** Course is closed, return to pits; do not leave pits.



**Checkered** FINISH.

# CBF (Canadian Boating Federation)

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



**Green** Time between five-minute and one-minute signal; while race is underway.



**White** Time between one-minute signal and start; leader has started last lap.



**Red** STOP Immediately! The race has been stopped.



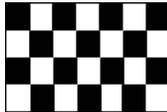
**Yellow** Problem on the course "Attention!"



**Black** Return to pits; do not leave pits.



**Black and Nonofficial results.** There has been a Yellow Cross penalty.



**Checkered** FINISH.

# Race 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. Do not allow children to throw anything into the water that might drift onto the race course.

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 race course.
- No behavior determined by race officials to be offensive to others.

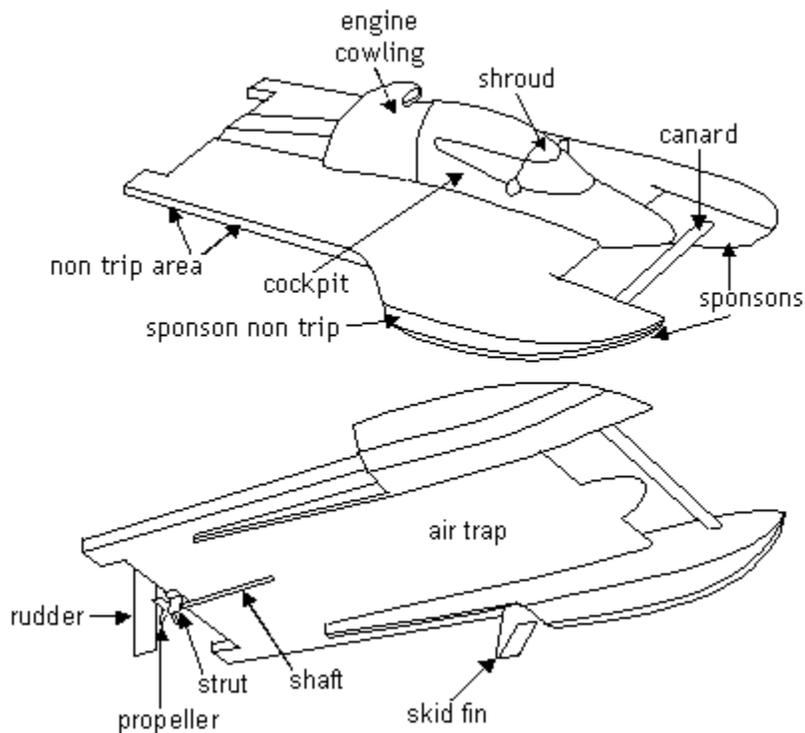
# Hydroplanes



The word "hydroplane" usually refers to a three point suspension craft. A three point hydroplane has two planing surfaces (sponsons) forward that are lower than the main hull and are outboard on either side. The third point is the propeller at the aft end of the boat. Hydroplanes use aerodynamics to force a cushion of air beneath the boat and at full speed only the front sponsons and the propeller at the rear of the boat should be touching the water. The concept of such a three pint suspension craft was developed and patented by Amo Apel in 1936. The modern day hydroplane is a refinement of this design principle. Hydroplanes require relatively calm water to run well and are not intended for rough water conditions. Hydroplanes do not turn easily because they have so little hull in the water. To compensate a skid fin has been added to the back of the left sponson.



# Anatomy



**engine cowling** The engine cowling is a light weight fiber glass covering to protect the engine from water. Often you will see boats racing without an engine cowling. This is usually because the boat was up side down in a previous race and the engine cowling is at the bottom of a lake or river somewhere.

**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 aeronautics, canard (French for duck) is an airframe configuration of fixed-wing aircraft in which the tail plane is ahead of the main wing, rather than behind them as in conventional aircraft. The earliest models, such as the Wright Flyer, the world's first airplane, and the Santos-Dumont 14-bis, were seen by observers to resemble a flying duck – hence the name. 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 (some times called the "down" pedal) to lower the front end. This allows a driver with quick reflexes to possibly avoid a fly over (see [Accidents](#)).

**cockpit** The cockpit is the inside of the safety capsule, where the driver controls the boat. It contains instruments, a single seat with 5 point harness, and optionally an 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 have to 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. Trapping too much air will make the boat prone to fly over (see [Accidents](#)).

# Drivers



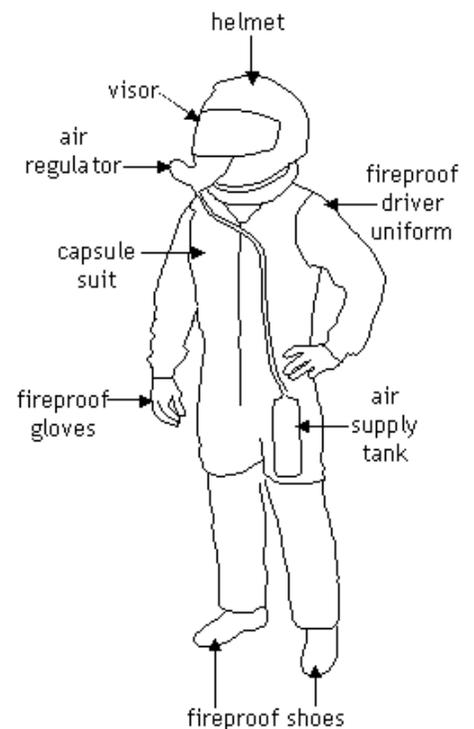
## Safety Equipment

As stated in [Accidents](#), drivers are encased in a protective safety capsule made of a Kevlar composite material that is almost impenetrable. They wear a helmet and capsule suit providing additional protection to the torso. Drivers are restrained with a 5 point safety harness like those used in other motorsports.

Although not required, many drivers are equipped with an air supply and breathing mask that is worn throughout the race. In some cases, the breathing apparatus is built into the helmet. The visor acts like a diving mask. The helmet has a valve on it that allows the driver to breath the natural air in the cockpit. When the valve senses water in the cockpit, it switches to allow the driver to breath from the air supply tank. In other cases, the breathing apparatus uses separate breathing mask more like those worn by jet fighter pilots with the air supply tank built into the boat.

Helmets also may contain headphones and microphone for the radio system. The radio systems are used by the crew chief to relay information to the driver, like what other boats are around, the time on the clock, when it is clear (4 boat lengths) to get over, etc.

Capsule suits are made of Cordura Ballistic Nylon. They are padded with 1/2" Ensolite High density foam for impact protection. Some have a pocket for the air supply tank and some have a belt cutter in a leg pocket. Each driver uniform and capsule suite are custom made to fit comfortably.



## Diverse Ageless Sport

Though not the ages of the drivers shown here, drivers vary from 14 to 82 years old. Generally they are spread throughout that age range and are a mixture of both sexes. It is truly an ageless sport. Women are just as competitive and professional as the men and hold many championship titles. One of the reasons for so many women competing is that old boat racers had daughters and granddaughters. These women grew up racing in professional racing families. Such a diversity of competitive professionals ready to assist each other when needed is rare indeed.



## Driver Qualifications\*

Inboard racing members who intend to drive racing boats and inboard riding mechanics must submit a statement of good health, certified by either a licensed FAA or D.O.T. physician. The original or a photocopy of this current FAA Class I, II or III, or D.O.T. medical certificate, with no waivers except for corrective lenses, must be sent to APBA headquarters with membership application. If corrective lenses are listed on the medical certificate, they must be used in competition.

New drivers shall be designated “Unqualified Rookie” until all provisions of these rules have been met. After completion of these qualification requirements, a new driver shall be designated “Qualified Rookie” for the remainder of his first season.

New drivers must be given a written open book examination, followed by an oral review of said examination by the referee or an Inboard Commissioner. He shall show knowledge of course safety and racing rules before being approved to enter the race course.

New drivers shall tape or paint a one inch (1”) wide white cross on their helmet for a period of one calendar year. The cross shall extend from the front, up over the top of the helmet to the back rim of the helmet, and from left ear, up over the top of the helmet to the right ear. Rookie drivers in reinforced cockpits, whose helmets are not readily visible, must put the rookie “X” on the cockpit or canopy as near the driver’s head as possible, without obstructing his vision. The “X” may be taped or painted on and must be at least 12” long and 1” wide on both sides of the hull in a color strongly contrasting the color behind it.

A new driver shall run four heats, starting at the rear of the pack and advancing only to a position predetermined by the referee. After successfully completing the first 4-heat requirement, a new driver shall run four (4) additional heats advancing only to a position predetermined by the referee. The new driver may only start in the farthest outside position during these heats. To become fully qualified to race, the new driver must get signatures from four (4) qualified drivers in his/her class and at least one referee he/she has raced under.

## Capsule Training\*

All drivers and riders of Inboard boats with restraint capsules are required to successfully complete an APBA Approved Inboard Capsule Training Program. Training programs will be approved by the Inboard Racing Commission and conducted by an approved APBA Inboard Rescue Team. The driver will:

Demonstrate that he can adequately extricate himself from a safety team test cell, both on land and under water.

Demonstrate that he can extricate himself from the cockpit of the boat he intends to drive prior to any event.

Complete any further test, including a driving test, under the supervision of the Inboard Racing Commission or their designee, to demonstrate that he can participate in an event without representing an unjustifiable risk or endangerment to himself or others.

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\*These sections are excerpts are from the [2010 APBA Rules for Inboard Racing](#).

# Hydroplane Classes



When you are looking at a hydroplane and wonder what class it is in, then look for the Class Letter from the table below:

| Class Letter | Class  | Common Engine              | Relative Speed* | Minimum Driver Age | Maximum Per Heat | Minimum Length and Other Information | Minimum Weight With Driver |
|--------------|--|----------------------------|-----------------|--------------------|------------------|--------------------------------------|----------------------------|
| Y            | <a href="#">1.0 Liter Modified</a>                     | Yamaha, Polaris            | 105 MPH         | 16                 | 12               | 13'6" Min. Length                    | 750 lbs                    |
|              |  |                            |                 |                    |                  | 17'6" Max. length                    |                            |
|              |  |                            |                 |                    |                  | 9'6" Max. Width                      |                            |
| T            | <a href="#">1.5 Liter Stock</a>                        | Toyota                     | 95 MPH          | 14                 | 12               | 13'6" Min. Length                    | 750 lbs                    |
|              |  |                            |                 |                    |                  | Max. Length 16'6"                    |                            |
|              |  |                            |                 |                    |                  | Max. Width 8'10"                     |                            |
| S            | <a href="#">2.5 Liter Stock</a>                        | Ford                       | 100 MPH         | 16                 | 12               | 13'6" Min. Length                    | 975 lbs                    |
| A            | <a href="#">2.5 Liter Modified</a>                     | BMW, Ford Chevy, Esslinger | 125 MPH         | 16                 | 10               | 16' / 155.5 Engine                   | 1225 lbs                   |
|              |  |                            |                 |                    |                  | 16' / 166.0 Engine                   | 1325 lbs                   |
| E            | <a href="#">5.0 Liter Stock</a>                        | Chevy                      | 115 MPH         | 16                 | 10               | 16' Min. Length                      | 1450 lbs                   |
| NM           | <a href="#">National Modified (6.0 Liter Modified)</a> | Chevy                      | 140 MPH         | 16                 | 8                | 17' / 155 Engine                     | 1225 lbs                   |
|              |  |                            |                 |                    |                  | 17' / 166 Engine                     | 1325 lbs                   |
|              |  |                            |                 |                    |                  | 17' / 246 Engine                     | 1350 lbs                   |

| Class Letter | Class  | Common Engine | Relative Speed* | Minimum Driver Age | Maximum Per Heat | Minimum Length and Other Information | Minimum Weight With Driver                             |
|--------------|--|---------------|-----------------|--------------------|------------------|--------------------------------------|--|
|              |  |               |                 |                    |                  | 19' / 308 Engine                     | 1900 lbs   |
|              |  |               |                 |                    |                  | 19' / 368 Engine                     |  |
|              |  |               |                 |                    |                  | 18' / Built prior to 10/30/87        | 1600 lbs   |
| GNH          | <a href="#">Grand National Hydro</a><br>(7.0 Liter Modified) | Chevy         | 150 MPH         | 21                 | 8                | 20' Min. Length                      | 2000 lbs   |
|              |  |               |                 |                    |                  | 20' / Built after 11/1/97            | 2200 lbs   |
| GP           | <a href="#">Grand Prix</a>                                   | Chevy         | 160 MPH         | 18                 | 8                | 26' Min. Length                      | 2700 lbs   |
| UL           | <a href="#">Unlimited Light</a>                              | Chevy         | 160 MPH         | 18                 | 8                | 20' / 468 Engine                     | 2000 lbs   |
|              |  |               |                 |                    |                  | 20' / 468 / 511 Engine               | 2500 lbs   |
|              |  |               |                 |                    |                  | 20' / 468 Supercharged               | 2700 lbs   |
| G            | <a href="#">North American Challenge Cup Series</a>          | Chevy, Dodge  | 170 MPH         | 18                 | 8                | 26' Min. Length<br>28' Max. Length   | 3,600 lbs /<br>575 Engine<br>2,800 lbs /<br>468 Engine |

\* Relative Speed is only a loose approximation of actual speed to illustrate the differences between the classes. The estimated speed is based on a short course (1 mile). On a long race course (1 2/3 mile), actual speeds will be 10 to 20 MPH faster than those shown.

# Accidents



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## Safety Equipment

Inboard hydroplane racing has undergone a transformation since the introduction of the safety capsule about 15 years ago. Prior to that, drivers wore a life jacket and helmet. The drivers did not wear any kind of seat belts or other restraints, so they were often thrown out of boat into the water when things went wrong. Some boats were equipped with string attached between the driver and a kill switch, which would kill the motor when the driver was thrown out of the boat.

Currently, drivers are encased in a protective safety capsule made of a Kevlar composite material that is almost impenetrable. They wear a helmet and flack suit providing additional protection to the torso. Drivers are restrained with a 5 point safety harness like those used in other motorsports.

Although not required, many boats are equipped with additional safety equipment:

- Shroud or canopy covering the cockpit
- Air supply and breathing mask that is worn throughout the race
- Cockpit radio systems

These changes have made a tremendous difference in terms of reducing injuries and almost eliminating fatalities. The sport has changed so much that many who retired from racing prior to these improvements are returning to the sport. Many of the drivers today are the children and grandchildren of those returning since the vast improvement in the safety of inboard hydroplane racing.

Whenever there is a driver is in the water or otherwise in trouble, there are highly trained rescue personnel. They are very effective at attending to such a driver within literally a few seconds. There are rescue teams strategically located on the course at all times the boats are on the race course.



As bad as this looks, both drivers survived to race another day. However, they did have a bad day.

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## Types of Accidents

### Collision

This is just what it sounds like. This can happen when both boats try to occupy the same lane and they broadside each other. It can also happen when one boat spins out and the boats collide head on.

### Spinout

This is when the boats enters into the turn digging in with the skid fin and the rudder loses its grip or the torque of the prop causes the boat to go into a flat spin. Sometimes the boat can spin into the path of another boat coming up on the inside.

### Flip

This is again in the turn, when the right front side or sponson digs into the water and the boat does a barrel roll ending up upside down. The driver must free themselves from the harness and cockpit to swim to the surface.

### Fly Over

This usually happens at the end of the straight away where maximum speed is reached. In this case the boat traps too much air underneath cause it to go airborne doing an inside out loop. It can also happen when a boat runs up a rooster tail, which lifts up the front end and again goes go airborne. Some times the boat lands up side down. If the boat does land right side up, it usually lands very hard and provides a tremendous jolt to the driver.



# About



Some friends had trouble learning about the excitement of inboard hydroplane racing. They found it difficult to get any information on when and where the races were being held. There was very little if any media coverage on the races. There was also not much information about the rules and the general way that races are conducted. Even if they could find and attend the race, understanding what was happening proved more difficult. Of course the announcers explained some of these things, but the noise of the engines and the distance from the speakers made it impossible to make sense of what they were seeing. From their perspective, the boats go out on the race course and "mill around for a while". Somewhere in the middle of this the race started, then they made several laps at full speed. The race would end and it was not obvious to them when or who won. The programs distributed at the race did not help in this regard and in many cases did not even list the competitors. This is the reason why this web site was created, to remove some of the mystery and clear the fog.

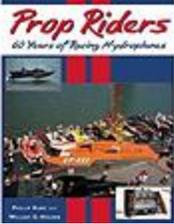
It is the purpose of this site to give spectators the information that they need to find, attend, and enjoy this most exciting motorsport by informing spectators on:

- how the races work
- how to make the most of the event
- learning more about the sport

There are many other web sites that post images and videos, provide news, or publish results. This web site is not intended to replace or duplicate these, rather merely supplement the information available, elsewhere. If you have any comments or suggestions, please do not hesitate to contact the "Driver" of this web site by sending them to [Driver@InboardHydroplanes.com](mailto:Driver@InboardHydroplanes.com).

# Links

| Race Associations   |   |   |
|---|---|---|
|    | <a href="#">APBA</a> (American Power Boat Association)  | Primary organization that sanctions the races including inboard hydroplanes in the United States. Select Events to see the <a href="#">Race Schedule</a> .  |
|    | <a href="#">IPC</a> (Inboard Powerboat Circuit)   | Also an APBA site specific to inboard hydroplanes. This is a good place to start if you would like to participate.  |
|    | <a href="#">ULHRA</a> (Unlimited Light Hydroplane Racing Association)   | The Unlimited Lights class, formed in 1995, grew out of a select group of Grand National Hydros that thrilled crowds in a series of exhibition races run with the Unlimited Hydroplanes in 1994.  |
|    | <a href="#">CBF</a> (Canadian Boating Federation)   | Primary organization that sanctions the races including inboard hydroplanes in Canada.  |
|  | <ul style="list-style-type: none"> <li><a href="#">2011 MACH Series Standing</a></li> <li><a href="#">2011 Results - Geneva, NY</a></li> <li><a href="#">2011 Results - Celina, OH</a></li> <li><a href="#">2011 Results - Waterford, MI</a></li> <li><a href="#">2011 Results - Walled Lake, MI</a></li> </ul> | <ul style="list-style-type: none"> <li><a href="#">2011 MACH Series Team List</a></li> <li><a href="#">2011 MACH Series News</a></li> <li><a href="#">2011 MACH Series Information</a></li> <li><a href="#">2010 MACH Series Team List</a></li> <li><a href="#">2010 MACH Series Results</a></li> </ul> |
|  | <a href="#">APBA Region 4</a>   | A very active site with results, race site information, and other information regarding activities in APBA Region 4.  |
| Race Information  |   |   |
|  | <a href="#">Roostertails</a>  | A good place to find images, news, classifieds, etc. This web site seems to be updated frequently well maintained.  |
|  | <a href="#">Hydroplane Quebec</a>   | A Canadian site with a great listing of North American Teams, when you select Teams and then the class of interest.   |

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|    | <a href="#"><u>Northwest Hydroplanes</u></a>   | <p>Hydroplane Racing in the Pacific Northwest.</p>   |
|    | <a href="#"><u>Grand Prix Hydroplanes</u></a>  | <p>Fabulous images and videos of the Grand Prix class hydroplanes.</p>   |
|    | <a href="#"><u>Phil Kunz Photography</u></a>   | <p>Excellent source of images, especially if you have a historical interest. A special thanks to Phil for providing many of the images shown.</p>  |
|    | <p><a href="#"><u>Prop Riders: 60 Years of Racing Hydroplanes</u></a> (Paperback)<br/>by <a href="#"><u>Phillip Kunz</u></a> (Author), <a href="#"><u>William G. Holder</u></a> (Author)</p> | <p>The definitive source on the sport of inboard hydroplane racing. Not only does it give relevant historical information, but it explains the motorsport rules, strategies, boat designs, engine technologies, and other useful information. This is the primary reference for this web site. One of the authors, Phil Kunz, is at the races more often than not. He usually carries a couple of books in his trunk and will sell you an autographed copy if you ask him.</p> |
|    | <a href="#"><u>Marine Services Unlimited</u></a>   | <p>One of the best resources for minor repairs, full restoration, and custom design boat building. These folks have a legendary reputation for quality and craftsmanship.</p>  |
| <h2>Race Clubs</h2>   |  |  |
|  | <p><a href="#"><u>TIRA</u></a> (Tacoma Inboard Racing Association)</p>   | <p>Tacoma, Washington club.</p>  |
|  | <p><a href="#"><u>SIRA</u></a> (Seattle Inboard Racing Association)</p>  | <p>Seattle, Washington club.</p>   |
|  | <p><a href="#"><u>Seattle Drag &amp; Ski Sprint Boat Association</u></a></p>   | <p>Seattle, Washington club.</p>   |

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|    | <p><u><a href="#">Marine Prop Riders</a></u></p>                               | <p>Detroit, Michigan club with technical and other information.</p>                        |
|    | <p><u><a href="#">NFBRA</a></u> (Niagara Frontier Boat Racing Association)</p> | <p>Buffalo, New York club with a nice collection of boats and images.</p>                  |
|    | <p><u><a href="#">ISHRC</a></u> (Inland States Hydroplane Racing Club)</p>     | <p>New Region 7 APBA Club web site is coming soon at this location.</p>                    |
|   | <p><u><a href="#">Grand Prix West Hydroplane Association</a></u></p>           | <p>A Club in the American Power Boat Association focused on the Grand Prix Class (GP).</p> |
|  | <p><u><a href="#">New England Inboard Racing and Vintage</a></u></p>           | <p>Webster, Massachusetts Club</p>   |
| <h2>Race Sites</h2>   |  |  |
|  | <p><u><a href="#">River City Racen'</a></u></p>                                | <p>Chamberlain, South Dakota</p>   |
|  | <p><u><a href="#">Stuart Sailfish Regatta</a></u></p>                          | <p>Lake Hollingsworth, Lakeland, Florida</p>   |
|  | <p><u><a href="#">HydroBowl on Seneca Lake</a></u></p>                         | <p>Seneca Lake, Geneva, New York</p>   |

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|    | <a href="#"><u>Celina Governor's Cup Regatta</u></a>             | Celina, Ohio   |
|    | <a href="#"><u>Kent Narrows Racing Association</u></a>           | Kent Narrows, Maryland                                     |
|    | <a href="#"><u>Thunder on the Niagara</u></a>                    | Niagara River, Tonawanda, New York                         |
|    | <a href="#"><u>Power In The Park</u></a>                         | Portsmouth, Virginia                                       |
|   | <a href="#"><u>IHBA Lakefest</u></a>                             | Firebird International Raceway, Phoenix, Arizona (UL Race) |
|  | <a href="#"><u>Quake on the Lake</u></a>                         | Pontiac Lake, Waterford, Michigan                          |
|  | <a href="#"><u>Walled Lake Thunder</u></a>                       | Walled Lake, Michigan                                      |
|  | <a href="#"><u>Papa's Casino presents Moses lake Regatta</u></a> | Connelly Park, Moses Lake, Washington                      |
|  | <a href="#"><u>Thunder in the Hills</u></a>                      | Rocky Fork, Ohio   |
|  | <a href="#"><u>Lake Hopatcong</u></a>                            | Lake Hopatcong, New Jersey                                 |
|  | <a href="#"><u>Tastin' n Racin'</u></a>                          | Lake Sammamish, Issaquah, Washington                       |

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|    | <u>Régates de Valleyfield</u>                      | Salaberry de Valleyfield, Quebec, Canada |
|    | <u>Wildwood Hydrofest</u>                          | Sunset Lake, Wildwood, New Jersey        |
|    | <u>Ragin' on the River</u>                         | Port Deposit, Maryland                   |
|    | <u>Carolina Club Regatta</u>                       | Elizabeth City, North Carolina           |
|    | <u>Clarksville Hydroplane Challenge</u>            | Clarksville, Virginia                    |
|   | <u>Régates internationales de Venise-en-Québec</u> | Venise-En-Quebec, Quebec, Canada         |
|  | <u>Hampton Cup Regatta</u>                         | Hampton, Virginia                        |
|  | <u>Régates de St-Félicien</u>                      | St-Félicien, Quebec, Canada              |