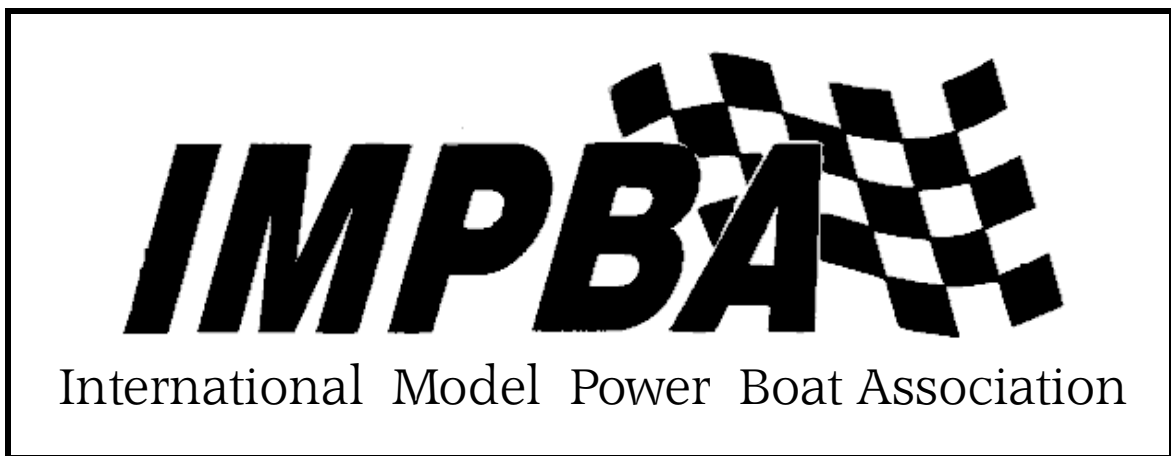


IMPBA OFFICIAL RULEBOOK



**“I”
Large
Scale
Gasoline**

Large Scale Gasoline

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Large Scale Gasoline

Preamble

Large Scale Gasoline (LSG) racing rules are intended as a supplement to the General Power Boat rules of IMPBA. In case of a conflict, the LSG racing rules shall prevail. Unless specially mentioned, the IMPBA rules pertaining to hulls and engines in sections other than Large Scale Gasoline do not apply.

Any deviation from the LSG racing rules at an IMPBA sanctioned race by a District and/or host club must be posted in the race flyer.

General

Safety Precautions

1. Sand containers must be present and used as a depository of racers' contaminated fuel. This shall be the responsibility of the host club who will also provide disposal of such fuel.
2. An area must be roped off from spectators and other racers to use as an engine test area.
3. Fire extinguishers must be located in the pit area and engine test areas as well.

Noise Level Specification

Maximum dB noise levels of all engines must be equal to or less than the maximum IMPBA National noise level specification. District and/or local club noise requirements that are a lower dB than the IMPBA National specification must be posted on the host club race flyer.

Fuel

Gasoline and oil mix of your choice shall be used. **No nitro** and/or other power boosting additives are allowed in the LSG engine classes.

Records

Records will be established for all LSG racing classes except the Open LSG Offshore and Super Sport.

Protests

All hull and/or engine protests during a sanctioned contest and/or record trial must be conducted as outlined under **Protests** in IMPBA rulebook section "Technical Standards".

Hull Classifications

The intent of the Hull and Class designation is to set standards and guidelines for the LSG classes. The following classes shall be recognized as the official hull/class standards. The Hydro, Catamaran and Mono will run in LS and/or XLS engine divisions (LS27, LS36, XLS27 and XLS36) and the Sport Hydro will run in the LS-27 engine division.

Districts and clubs may run a variation of these classes in order to fill out a class by including the variations on the race flyer. However, the Nationally recognized classes will be run at a National sanctioned event.

There is no restriction against a hull running in more than one class as long as it is a legal hull in the applicable classes.

Hydro Hull

This division will split into three (3) distinct classes.

1. Outrigger
2. Sport Hydro
3. Catamaran

All hydro hulls will conform to current IMPBA "Technical Standards" section, Hydro Hull Definitions and Restrictions.

Mono Hull

All hulls must conform to current IMPBA "Technical Standards", Hull Classifications, section MONO Hull Definitions and Restrictions.

Engine Classification

General Engine Rules for the (LS) Engine Classes

<u>Engine Classes</u>	<u>Cubic Inch Displacement</u>	<u>Cubic Centimeter Displacement</u>
LS27	Up to 1.647cid maximum	27.0000 cc maximum
LS36	1.648cid thru 2.196 cid maximum	36.0000 cc maximum
Formulas	CC x .061 = CID	CID divided by .061 = CC

1. The intent of this class is to utilize commercially manufactured gasoline powered 2 and 4 cycle engines.
2. Each engine must have a working throttle control and the engine must be set up to be completely stopped with the transmitter controls.
3. Internal and external modifications may be made to the engine's major and or minor parts. However, the cylinder and head assembly must be a single unit. No removable heads and/or head buttons are allowed.
4. The engine must use a spark plug type ignition. No glow plug or compression induced combustion allowed. All engines must have a positive off-on switch, or in lieu of this switch, the primary ignition lead must be removed from the spark plug except when in the pits, out of the spectator area, or in preparation for racing.
5. Any size or brand name of carburetor may be used. All engines must be normally aspirated and have a piston ported or reed valve fuel induction system on the 2 cycle engines and a cam operated valve fuel induction on the 4 cycle engines.
6. All engines must have a canister muffler, custom muffled exhaust system or tuned pipe.

General Engine Rules for the (XLS) Engine Classes

<u>Engine Classes</u>	<u>Cubic Inch Inch Displacement</u>	<u>Cubic Centimeter Displacement</u>
XLS27	1.647 cid maximum	27.0000 cc maximum
XLS36	1.648cid thru 2.196 cid maximum	36.0000 cc maximum
Formulas	CC x .061 = CID	CID divided by .061 = CC

1. The intent of this class is to utilize gasoline powered 2 and 4 cycle engines that do not meet the **LS** class engine rules.
2. Each engine must have a working throttle control and the engine must be set up to be completely stopped with the transmitter controls.
3. Any and all modifications may be made to the engine. The cylinder and head may be a multi-piece assembly and head buttons are allowed.
4. The engine must use a spark plug type ignition. No glow plug or compression induced combustion allowed. All engines must have a positive on-off switch, or in lieu of this switch, the primary ignition lead must be removed from the spark plug except when in the pits, out of the spectator area, or in preparation for racing.
5. Any size or brand name carburetor may be used. Fuel induction may be piston ported, reed valve, rotor valve, cam operated valve, etc.
6. All engines must have a canister muffler, custom muffled exhaust system or tuned pipe.

Specialty Classes

SLS Mono

1. **Purpose**

The intent of this SLG class is to utilize commercially manufactured gasoline powered 2 cycle engines that utilize the Cantilever crankshaft configuration.

2. **Hull Specification**

The hull will conform to current IMPBA “Technical Standards”, Mono Hull Definitions and Restrictions.

3. **Engine Specification**

- a. The engine must be a commercially manufactured gasoline powered 2 cycle engines that utilize the Cantilever crankshaft configuration with a maximum displacement of 2.916cid / 36.000cc.
- b. Each engine must have a working throttle control and the engine must be set up to be completely stopped with the transmitter controls.
- c. Internal and external modifications may be made to the engine’s major and/or minor parts. However, the cylinder and the head assembly must be a single unit. No removable heads and/or head buttons allowed. Water-cooling is allowed.
- d. The engine must use a spark plug type ignition, no glow plug or compression induced combustion allowed. All engines must have a positive on-off switch, or in lieu of this switch, the primary ignition lead must be removed from the spark plug except when in the pits, out of the spectator area, or in preparation for racing.

- e. The carburetor must be limited to a maximum venturi of .500 inches or less. Any brand name carburetor may be used. All engines must be normally aspirated and the original factory reed valve or piston ported fuel induction system must be used on each motor.
- f. All engines must have a canister type muffler. If a single hole or exhaust tube/pipe out of the muffler is used, the inside diameter must not exceed 3/4". If dual holes or exhaust tubes/pipes are used exiting the muffler, then the maximum inside diameter must not exceed 1/2" each. The canister muffler must be mounted directly to the exhaust flange of the engine. If a spacer is used between the muffler and the flange, a maximum spacer thickness of one inch (1") will be allowed. Custom exhaust systems or tuned pipes are not allowed.

Sport Hydro

1. Purpose

The intent of the Sport Hydro class is to provide a LSG racing class that duplicates the full size Limited Inboard, Unlimited Light and Unlimited hydroplane classes as closely as possible.

2. Hull Specification

- a. The hull must be a three (3)-Point Suspension hydroplane ("Technical Standards", Hulls Classification, 3-Point Suspension Hull) with two individual steps (sponsons) separated by a continuous hull. These steps (sponsons) must terminate at or before the hull mid point. The hull must be continuous with no steps or extra planing surfaces aft of the hull mid point. No rear "shoes", "pads", or "wedges" are allowed. The only exception to the 3-Point requirement is that a Canard hull, ("Technical Standards", Hulls Classification, Canard Hulls) defined as having two rear sponsons and a single forward sponson) will be allowed to run in the class.
- b. The hull must resemble a limited or unlimited hydroplane design of the past or present with the exception that outrigger, modified outrigger and/or tunnel hulls are not permitted.
- c. The boat must have a name, sponsor's name, logo and/or racing number affixed to hull (a local, national, or fictitious sponsor name is acceptable).
- d. If the bow is recessed behind the tips of the sponsons, that recess must be no larger than 25% of the overall length of the boat.
- e. The boat must have a driver and/or simulated enclosed cockpit.
- f. The strut must not have a width greater than 9/16 or a length longer than three (3) inches.
- g. See Sport Hull pictorial in "Nitro Specialized Classes", Sportsman Hydro section for clarification.

3. Engine Specification

- a. The boat must be powered by an **LS-27** engine as specified in the General **Engine Rules for the (LS) Engine Classes**.
- b. All engines must have a canister muffler, custom muffled exhaust system or tuned pipe.

Open LSG Offshore

1. Purpose

The intent of the Open LSG Offshore class is to provide a LSG racing class that duplicates the full size American Power Boat association (A.P.B.A.) Offshore Racing class as closely as possible.

2. Specification

- a. This class follows all current IMPBA guidelines found in “Nitro Specialized Classes” section Model Offshore Power Boat Racing.
- b. All IMPBA legal LSG engines are permitted.
- c. Stepped bottom deep vee hulls are permitted to run in this class providing they meet all other criteria and standards.
- d. The host club shall decide the racecourse and the race format.

Crackerbox

1. Purpose

The intent of the Quarter Scale Crackerbox class is to provide a LSG racing class that duplicates the full-size Crackerbox class as closely as possible.

2. Hull Specification

- a. The basic hull lines of the quarter scale Crackerbox must conform to the lines of the full-size Crackerbox racing Runabout.
- b. All boats must conform to the following measurements:
 - 1) Minimum length is 42”, maximum length is 49”.
 - 2) Minimum width at the widest point is 15”, width must be in proportion to the length.
 - 3) Maximum 1/8” ride pad allowed. “The addition of a riding surface up to 1/8” maximum thickness running from some point along the bottom of the boat to the transom with a width not to exceed 52% of the boats width at the transom. The leading edge shall be feathered with the boat’s bottom from the forward starting point. The side edge is parallel to the keel and shall look similar to that of a strake but without the horizontal planning surface that a strake provides.”
 - 4) The bottom must be no more a 5-degree vee (deadrise) at the transom.
- c. The deck/hatch must resemble the deck of a full-scale racing Crackerbox.
- d. The boat must be painted or finished in the spirit of a racing scale model. The letter “P” must precede or follow the racing number on each side. Minimum size of the letter and numbers is 2”.
- e. Two drivers of scale-like appearance with helmets and life jackets must be used in the driver/rider compartment. Cartoon or profile figures are not allowed. Instrument panel, steering wheel and other detailing are not mandatory but are encouraged.

3. **Engine Specifications**
 - a. Any stock or modified commercially available piston ported fuel induction 2-cycle gasoline engine not to exceed 1.83cid / 30.000cc.
 - b. Any stock or modified commercially available cam operated valve induction 4-cycle gasoline engine not to exceed 2.196 cid / 36.000cc.
 - c. The carburetor must be commercially available.
 - d. All engines must have a canister muffler, custom muffled exhaust system or tuned pipe.
 - 1) With the exception of the canister muffler the muffled exhaust system or tuned pipe must be enclosed by the hull.
 - 2) No part of the exhaust system or tuned pipe, including a muffler, shall extend more than 4" inches behind the transom.
4. **Drive Train**
 - a. The drive train may be straight or flex drive.
 - b. The propeller, rudder or any hardware must not protrude further than 4" beyond the transom.

Super Sport Class

1. **Purpose**

The intent of the Super Sport class is to provide a LSG racing class that enables the contestant to compete with a factory stock engine.

2. **Hull Specification**

Any Gas Mono Hull may be used as specified in the current IMPBA Rule Book that qualifies itself as a Legal IMPBA Gas Mono.

*This will not be a US-1 Class, and will NOT run for records!
It Will be a National Championship Class.*

3. **Engine Specifications**

- a. Each engine must have a working throttle control and the engine must be set up to be completely stopped with the transmitter controls.
- b. The engine must be a factory stock, commercially available piston ported fuel intake gasoline powered 2-cycle engine with a maximum displacement of 1.647cid / 27.000cc. The cylinder and head assembly must be a single unit (no removable heads and/or head buttons allowed). Absolutely no internal modifications are allowed either by adding or removing material to the engine. The originally equipped Carburetor (644 on Zenoah and 771 on the Sikk) and/or Choke must be used as they came equipped from the Manufacturer of each engine used. Some minor external modifications may be done but are limited to the following:
 - 1) Tapping the case or carburetor heat dam for a water/cooling pump.
 - 2) External modification to support a throttle linkage and or a kill switch.
 - 3) Movement of the engine ignition coil to another location on the engine or hull.
- c. The engine must use a spark plug type ignition. No glow plug or compression induced combustion allowed. All engines must have a positive off-on switch, or in lieu of this switch, the primary ignition lead must be removed from the spark plug except when in the pits, out of the spectator area, or in preparation for a race.
- d. The carburetor must be the stock, unmodified carburetor model that was furnished with the engine. No parts such as the choke shall be removed from the carburetor. All engines must be normally aspirated and have a piston ported or reed valve fuel induction system.

4. **Muffler**

All engines must have a **canister type can muffler**. Modifications may be made to the inside of the muffler if they will still meet the noise level limitations currently in place in the IMPBA Rule Book after modifications. If a single hole or exhaust tube/stack out of the muffler is used, the inside diameter must not exceed $\frac{3}{4}$ ". If dual holes or exhaust tubes/stacks are used exiting the muffler, then the maximum inside diameter must not exceed $\frac{1}{2}$ " each. The canister type can muffler must be mounted directly to the exhaust flange of the engine. If a spacer is used for cooling between the muffler and the flange, a maximum spacer thickness of one inch (1") will be allowed. **Custom exhaust systems and or tuned pipes are not allowed.**