

THE OZ BOAT
STOCK 4.2 HOLDEN
HYDRO / DISPLACEMENT
REGISTER RULES
2013

OZ BOAT STOCK 4.2 LITRE HYDRO CLASS REGULATIONS INC. DISPLACEMENTS

As at JULY 2013

Members of the Register have established a system for allocation of all prize money won at any meeting. All prize money is sent immediately to the Treasurer who then places 10% in the Register Account and then divides the rest of the prize money up equally between the drivers who attended that meeting. This is meant to encourage as many members as possible to attend a meeting and race as a Class. This obligation will be reviewed and endorsed at the A.G.M. each year.

At the request of the VSBC, we have included a Displacement Class starting season 1981-1982. After a period of two (2) seasons we would hope that the Displacement members are sufficient in numbers to take over the running of the Displacement section. Our membership and engine rules will apply as stated herein, Displacement Hull Rules are displayed page 7, the present Register would like to make it clear to all those contemplating joining the new stock class that every member is equal ~ all new members are welcomed to the Register by the present members, Displacement or Hydroplane ~ we are all in the same sport.

PLEASE READ THE RULES AND SUBSTITUE DISPLACEMENT FOR HYDROPLANE

WHERE NECESSARY

The 4.2 Litre Holden Stock Hydro Class was designed especially to satisfy the needs of those wishing to compete in the sport of speedboat racing by providing a class with one essential qualification - low cost. At the same time, the 4.2 Stock Hydro Class should assist in the promotion of the sport by providing spectators with close and interesting racing.

Reliability being the natural outcome of restricted engine modifications, the emphasis in racing should shift to driving ability rather than finishing ability, as is evident in most of our present inboard racing classes.

In the long run it is hoped that designers and builders of racing boats will take advantage of the ideal test vehicle provided by the Class to improve hull design.

Over the next few pages, there are details of the 4.2 Register and the advantages of becoming a member. Also, there are the specifications to which all 4.2 Stock Racing Boats must be built. In these rules, you have almost everything you need to know about the 4.2 Litre Stock Classes.

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4.2 LITRE HOLDEN STOCK HYDRO CLASS REGISTER

Incorporating

4.2 STOCK DISPLACEMENT CLASS REGULATIONS

This body is being officially formed to encourage the birth and growth of the Stock Hydro Class and to assist the Australian Power Boat Association, the Australian water sport governing body, to retain the category's viability.

The 4.2 SHC Register is also set up as a central clearing house for information regarding 4.2 SHC, being in contact with most of the country's race organisers and race boat manufacturing establishments.

[illegible]

At a Special Meeting held at Lake Eppalock on January 26th, 1996, the membership voted to update the name of the Australian 4.2 Litre Stock Holden Register to THE OZ BOATSTOCK 4.2 REGISTER.

IF ANY OF THE FOLLOWING RULES ARE UNCLEAR, PLEASE DO NOT HESITATE TO CONTACT YOUR PRESIDENT OR SECRETARY FOR CLARIFICATION.

OZ BOAT STOCK 4.2 LITRE HYDRO CLASS REGULATIONS INC. DISPLACEMENTS

1. Modifications not specifically covered by these Regulations are not permitted except where they are definitely stated to be FREE. Tolerances of components where not stated must be in accordance with the standard GMH 4.2 Litre (253 cid) Workshop manual.
2. The “Spirit of the Regulations” should be understood to imply that all persons connected with this type of competition are expected to assist in keeping the cost of Oz Boat Stock 4.2 Register class racing within reasonable bounds and not to participate in any action which may cause costs to escalate. The Register’s interpretation of the Regulations shall be the only accepted interpretation.
3. Type of Boat is restricted to single seater hulls of Hydroplane type, using a 4.2 Litre Holden engine, as per paragraph 7 or Displacement type hulls as per item 7A.
4. Engine Sealing - No boat will be allowed to start in Oz Boat Stock 4.2 events unless its engine has been checked for compliance with the Oz Boat 4.2 Stock Register Regulations and sealed beforehand.

Engine checking and sealing is to be carried out by an A.P.B.A. Engine Measurer and/or an 4.2 Oz Boat official measurer. Engines are to be delivered to the measurer complete with sump (not fitted) and ancillaries except for exhaust manifold, engine mounts and any special fittings or drive arrangements which may make the task more difficult or time consuming.

Any transport costs are to be paid by the owner and are not to be charged to the Oz Boat Stock 4.2 Register. ** Heads to carry A.P.B.A seal and be registered. Sump to be sealed both sides. Heads to be sealed to block. Engine certificates to be carried at all times.

In the absence of A.P.B.A Engine Examiner Seals, Holding Seals will be fitted prior to competition (effective from 11/10/1998)

5. **The Engine** - Definition: 4.2 Litre (253 cu. in.) V8 Holden engine as produced by GMH.

The engine must have an identification serial number inscribed before eligible for competition or for seals to be fitted. (Effective from 11.10.98)

Bore: Standard (3.625 - 3.628") or +040" therefore bore is not to exceed 3.672 inches including clearance.

New Rule: Bore must not exceed +060 or 3.692"

- a. Only the engine defined above will be permissible in 4.2 Oz Boat competition.
- b. **Rocker Covers.** Non-standard rocker covers are permitted provided that they in no way improve the performance of the engine. The breather take off may be situated at either end of the rocker cover.
- c. **Valve Springs.** Valve springs restricted to L34 Torana springs (brown) part no. 3927142 or LT1 Chev.

Limitations:-

- (i) Maximum free length of valve spring used is free.
 - (ii) Single valve springs with damper only - doubles prohibited.
 - (iii) ***A standard replacement valve spring retainer MUST be utilised without any intermediate device. Use of valve shrouds is free (Effective from 18/7/2013)***
 - (iv) Adjusting shims may be used.
- d. **Pushrods** may be adjustable. Rockers, Tappets, Pedestals must remain standard. No polishing, profiling, lightening or other modification to the standard part is permitted other than machining of aluminium pivot to maintain correct valve to rocker angle.

NEW RULE Roller Rockers are permitted.

e. **Carburettor -**

Both Hydroplane and Displacement sections may have the option of using either Carby (listed below) if they so desire.

308 Rochester Quadrajet

The air cleaner may be removed and substituted by a trumpet. Jets may be changed. The carburettor may be modified for both butterflies to open together. The cold start device may be removed. Anti-surge pipes and/or baffles may be fitted. No other modifications are permitted - chokes must remain standard and no polishing or profiling is allowed.

Holley spread-bore carburettor (model no. 6210) MUST be inspected by the Engine Measurer for compliance and a lead seal to be attached. (Effective from 18/7/2013)

SCOOP ~ An air scoop is permitted to be fitted over but not attached to the carburettor. It must be 85% open at the base. A velocity stack or air cleaner are the only components permitted to be fitted inside the air scoop. Engine MUST be naturally aspirated. (Effective from 18/7/2013)

The same restrictions shall apply to this brand as apply to the Quadrajet. A carburettor wedge can be fitted as long as the venturi sizes match the carburettor and inlet manifold (4 holes) with a maximum height at the thin edge of ¼ inch.

Fuel - The fuel is limited to petrol or ethanol base only (PUMP FUEL). (Effective from 18/7/2013)

f. **Exhaust manifold.** Free

g. **Lubrication System.** Oil sump and pump are free. Dry sump is permitted.

Clarification of rule : drain backs are permitted at the rear of each cylinder head (one per head) and to run directly to the sump (on a wet sump system) and into the dry sump system if fitted.

h. **Electrical Equipment.** Generator is optional. Any Twin Point Distributor with 8 Lobe cam and any Rotor Button may be used. L34 Twin Coil **NOT PERMITTED**. Electronic Ignition may be used, Commodore VC to VL Type with standard module, can be re curved. Vacuum Advance can be removed. Choice of Distributor Cap is **FREE**. Magneto's or Crank trigger ignition are **NOT PERMITTED**. Transistorized or Electronic within the Distributor is O.K. - Other Electrical Equipment is **FREE**. (As amended at AGM on **23-8-2008**.)

Rule clarification 5h; 12 volt system as per twin point distributor . Points distributor will not tolerate 16 volts and will cause the capacitor to fail. 12 volt system as produced by GMH to both styles of ignition

i. **Fuel Pump.** Free.

j. **Camshaft.** Camshaft must be hydraulic, otherwise free. Followers must be hydraulic - no specials, i.e.; Mushroom roller or Rhodes types. Camshaft manufacturer is free. (as amended at AGM on **14-9-96**)

k. **Crankshaft.** A standard crankshaft must be used. Spot machining to achieve balance is permitted. No special machining or altering of crankshaft is permitted. Polishing of the crankshaft is prohibited. Tuftriding is permitted. Crankshaft pulley is free as is with belt drive.

l. **Flywheel.** Free

m. **Compression Ratio.** Maching of the block surface is permitted to provide the maximum compression ratio or minimum crown to block distance.

Maximum permitted bore size 3.692" Minimum piston to block height Nil or Minimum. At least one piston must retain original stamping's on head.

In an engine with a damaged bore, it may be reclaimed by fitment of a standard liner.

- n. **Cylinder Head.** It is permissible only to re-cut valve seats. Valve seats may be reclaimed by the use of 30 degree, 45 degree or 70 degree cutters to provide the necessary seat for a standard 4.2 Litre valve. The 45 degree is to be the seat. Maximum size of 30 degree seat cutter is - Inlet two inches, Exhaust one and seven eighths inches. No polishing is allowed.

Combustion chamber: Minimum combustion chamber size (in head casting) is 53 ½ cc. The combustion chamber must not be machined or polished in any way. The Ports (inlet and exhaust) must not be altered from standard, i.e.; enlarged, machined or polished in any way.

**** Clarification:** (as amended at AGM August 94)

Guides: *May be replaced by any standard replacement guide - must match origin in length and diameter - material free.*

Seats: *May be reclaimed by use of inserts - type free but throat size must not be increased. (Used to be a maximum of 3 chambers but this was altered at the AGM August 94). The number of chambers is 8.*

- o. **Inlet Manifold.** GMH 4 Barrel manifold. The manifold is to be fitted with a seal by the Engine Measurer and registered by him. It is permitted to match the manifold ports to the cylinder head ports.

The manifold must not be machined in any way to match ports of head. Machining on gasket faces to allow correct fit to valley is permitted.

****Clarification:**

This rule is correct as printed, though it is easy to see the confusion created. The two sentences which cause the problems are "It is permitted to match the manifold ports to the cylinder head ports. The manifold must not be machined in any way to match ports of head." The first of these sentences means that if you are prepared to, then you may try a number of different manifolds until you find one which matches the cylinder head ports. The second sentence means that the manifold you use must not be machined to suit the ports of the cylinder head.

- p. **Pistons.** (effective from 14.9.97)

Flat-top Pistons only, no forged Pistons. ****Forged pistons below are permitted**** Must be standard replacement type. May be balanced by minimal machining. Original stamping's to remain on at least one piston head. Piston are not to come above the top of the Bore.

Permitted pistons: SRP part nos: P281541 (.040") or P281542 (.060") OR JE Piston No: 313871 (Effective from 18.7.2013)

Gudgeon Pin. Standard or Standard replacement.

Rings. Standard or standard replacement. No specials i.e.; No Sealpower Gapless or Child & Albert Z Gap ring.

- q. **Valves.** These are free providing the original 45 degree seat angle remains. Flash chroming of stems is permitted. Tips may be stellite.

Maximum distance across face (standard)

Inlet 1.765"/44.831mm

Outlet 1.485"/37.719mm

- r. **Connecting Rods** Standard GMH 253 or 4.2 connecting rods only may be used. Centre to centre length 143.773mm - 143.824 mm (5.621" - 5.623"). Standard or replacement 11/32 inches diameter bolts only. (effective from 11/10/98) Polishing not allowed (balancing permitted)
- s. **Miscellaneous**
- i) The timing chain / sprocket cover may be altered or replaced
 - ii) Mechanical tachometer drive maybe fitted
 - iii) The use of non standard replacement parts is permitted as follows, providing their use does not result in unauthorised modification of any other component:
 - a) Fasteners (nuts, bolts, screws, studs, washers, etc)
 - b) Gaskets and seals
 - c) Pump, fan and generator drive pulleys
 - d) Drive belts
 - e) 'O' Ringing the block is optional allowing the effective use of Copper Head Gaskets. (effective from 23/08/97)
 - iv) The crank case breather maybe altered or removed.
 - v) Standard oversize/undersize bearings are permitted.

****Engines maybe checked at any time at the discretion of the Engine Measures or Officials of the class. Two engines per year may be checked and these are drawn by ballot.**

6. Drive - Drive may be taken from either end of the crankshaft, single speed, fixed ratio gearbox is permitted.

7. Hull - Hydroplane type - Hull constraints

Definition: Conventional three point Hydroplane.

Length: Minimum (16'6") or 5 metres.

Width: To be open.

Driver Location: Located centrally behind or in front of motor. No wings to be fitted but Canard wings accepted according to following ruling. 11/11

Canard Wings:

Canards: may be used on Inboard Hydroplanes, provided they are no wider than the maximum dimension of the air-trap. A maximum of two canards may be used, (Example: one on the starboard and one on the portside). These canards may be adjusted from the cockpit while the Hydroplane is in motion. These canards must be placed in the picklefork area, that is in the first

three feet (900mm) from the bow and no higher or lower than six inches (150mm) from the deck line. The canards must have positive stops to limit travel in case of control system failure. The Safety Inspector shall have the authority and responsibility to approve or disapprove all mechanical parts and hardware used for fastening canards. (This rule adopted directly from the current American Power Boat Association rule book (1997/1998) (effective from 11.10.98).

Cowls must be square or convex with no aerodynamic attachments. A single vertical tail is allowable.

New rule: Adjustable rear tail wings may be fitted.

Sponsons:

- 1) Two only
- 2) Rear of sponson may not be further back than the centre of main hull (not including attachments)
- 3) High speed planning surface must be one continuous surface. However, there may be more than one sponson planning surface.

Propeller shaft must be fitted such that it comes through the bottom of the wind tunnel. It should be held by a main skeg. Whip skeg, V struts, enclosed skegs optional. The propeller shaft must be a straight line from engine or gear box coupling to propeller. The propeller can be mounted on a taper or spline.

The propeller shaft must be fixed and in no way adjustable for steering. Steering by rear mounted rudder only.

7A) Hull - Displacement type

Minimum length 15 feet 6 inches and must comply with APBA definition of a Displacement type hull.

APBA Engine Measurers

A list of Engine Measurers from each state is in the APBA rule book which is updated each year.

THE OZ BOAT STOCK 4.2 REGISTER CLASS AND DETAILS OF MEMBERSHIP

1. Terms of Reference

The Oz Boat Stock 4.2 register (hereinafter referred to as the register) is a National organisation formed to deal exclusively with the management of the Oz Boat 4.2 stock class in all its aspects.

The register is responsible for ensuring that all competitors and boats involved in Oz Boat 4.2 Stock Class comply with the regulations and the various rules indicated herein. The Register also represents all its members in all matters pertaining to the Oz Boat 4.2 stock class.

2. Boats

A 4.2 litre stock hydro/displacement is defined as one which complies wholly with the Oz Boat Stock 4.2 Register hydro class regulations Inc. Displacements as laid down by the Register. The Oz Boat Stock 4.2 Register regulations may be altered by the Register from time to time, but only

when such action is deemed necessary to retain the “Spirit of the Regulations” as intended. No alterations of the regulations will come into force until 3 months after their announcement. Full consideration will be given to such changes as may require a longer waiting period up to maximum of 12 calendar months. Such extra period will be clearly stated in the relevant announcements.

3. Markings on Boats

All Oz Boat Stock 4.2 Register class racing boats must bear the words “Oz Boat” and/or ‘4.2 Stock Hydro or Displacement’ in sticker form or letters not less than one inch high on both the left and right sides of the hull. The sticker/letters should be placed in such a manner that they are clearly visible.

4. Advertising on Boats

All advertising material on competing boats or on driver’s clothing must comply with APBA requirements.

5. The Spirit of the Regulations

Should be understood to imply that all persons connected with this type of competition are expected to assist in keeping the cost of Oz Boat Stock 4.2 Register Class racing within the reasonable bounds and not to participate in any action which may cause cost to escalate.

The Rules and Regulations of the Oz Boat Stock 4.2 register class are complementary to the National Competition Rules of the Australian Power Boat Association. All boats, drivers and events must comply with the regulations of the Register and the APBA as well as with the Supplementary regulations and final instructions issued by organisers at each race meeting whatever its status.

6 Oz Boat Stock 4.2 Register Membership

- a. Membership of the Register is obligatory for all entrants and drivers of Oz Boat Stock 4.2 Register class racing boats wishing to compete in events solely for Oz Boat Stock 4.2 Register class racing boats, or in events which include a separate class to Oz Boat Stock 4.2 Register Class boats. (This does not include open or capacity class type races where no particular categories are declared).
- b. No driver will be permitted to participate in any Oz Boat Stock 4.2 Register class race or race where Oz Boat Stock 4.2 Register class is a separate class, unless they are a fully paid up member of the Register. (This does not include open type races where no particular categories are declared).
- c. All boats raced under the title “Oz Boat Stock 4.2 Hydro/Displacement “must comply with the rules and regulations issued under the Register, as endorsed by the APBA, if they are to qualify for an award in respect of any event offering such award for Oz Boat Stock 4.2 Register class boats.

6.

Membership Fees

Individual (driver/non-driver) - the Joining Fee, plus Annual Subscription, is set yearly at the A.G.M. of the Register.

7.

Eligibility of Drivers

8. Driver's expenses

9. Races

10. Penalties

11.	Extent of penalties
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- ^ Withdrawal of points scored in any series of championships in total or regard to a specific event
- ^ With the agreement of the APBA steward, disqualification from an event and forfeiting of any prize money won.
- ^ Imposition of a fine of \$100.00
- ^ Such other penalty as may be deemed necessary and voted for unanimously by the members.

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[illegible]

Appendix Trial Period No 2012-13-1

Item 5 - Section 4, adjust to read:

The air cleaner may be removed and substituted by a trumpet

This trial period was approved by the Oz Boat members at the July 2012 AGM.

Item 5 - Section P, adjust to read:

Alternatively the specified flat top forged piston may be used. SRP part numbers P281541 (040) or P281542 (060)

This trial period was approved by the Oz Boat members at the July 2012 AGM. This trial period will be reviewed at the July 2013 AGM.

ADDITIONAL NOTES.

PARTS TO BE ASSESSED FOR POSSIBLE FUTURE USE:

SCAT CONRODS AND INLET MANIFOLD EDELBROCK PERFORMER

