

N.Z.M.P.B.A.

(New Zealand Model Power Boat Association Inc.)



Members Handbook

Issue Date September 2018 Website
www.nzmpba.co.nz

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NZMPBA Constitution.pdf

General Rules.pdf

Class Racing rules.pdf

Guide to Racing.pdf

Nationals Championships.pdf

1. GENERAL RULES.

These are general rules and will apply to all types of model boat racing. Further rules which apply to the various types of racing and events, i.e. endurance, matrix, oval etc., are listed separately. Where a rule for a specific type of racing is at variance with these rules the specific rule will apply.

2. HULL DEFINITIONS

Monoplane

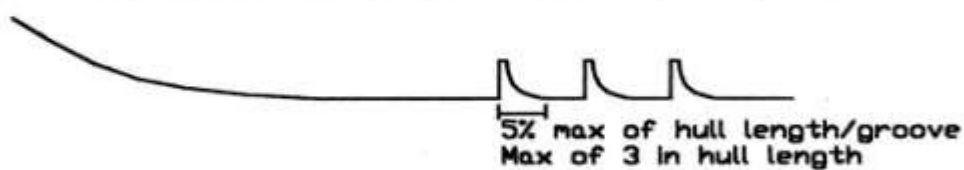
- A hull which has no surface or edge, level or lower than the keel line. I.e. No multi-hull or tunnel configurations as viewed from the transom.
- Aeration grooves, flat ride pads and torque wedges are permitted. Stepped hulls are not permitted. Refer to monoplane diagrams for clarification. The hull must be principally designed to run as one wetted surface (aeration grooves excluded.)

Mono Hull Sections



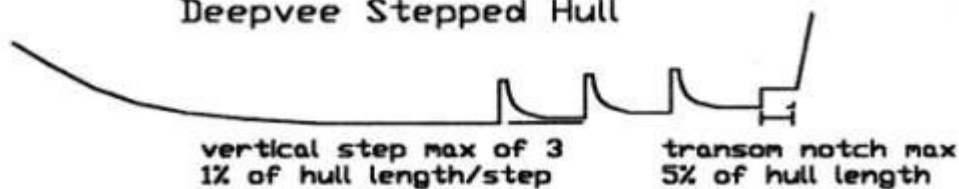
classed as a tunnel or multi-hull

Aeration Grooves - Mono & Deepvee



Deepvee Hull Sections

Deepvee Stepped Hull



notch alternatives viewed from transom

Deep Vee

Is a monoplane hull where the angle of the `V' bottom must be 15 deg. minimum and 28 deg. maximum at transom from chine to keel. Angle at bottom of keel line in the centre of the boat must be a `V' extending forward from transom to the bow with no flat pads allowed at keel line. Steps, aeration grooves and a transom notch are permitted. (See diagram.) Aerodynamic aids are permitted (above the waterline) and must comply with rule 7 i.e. no dangerous projections etc

Hydroplane

Is a hull that rides on two or more wetted surfaces while under full plane.

Tunnel hull

Is a hull that has its major ride surfaces spaced apart (more or less parallel with its centre line). Such ride surfaces forming more than 80 % of the hull length.

General Hull Information.

Any external projections, lifting foils, exhaust pipes, etc., projecting beyond the sides of the hull proper which in the opinion of the Race Director may be liable to cause interference or damage to other boats shall not be permitted. All boats must be propelled by water reaction. The driver's national registration number must be prominently displayed on the boat in a minimum of two positions. 25mm minimum size. Only one hull per event may be entered.

2. SAFETY

There will be no running by anybody in the pit areas.

Covered footwear must be worn by all competitors and their pit crew at all times while they are in the controlled model boating area.

Smoking is prohibited to all competitors and their pit crew at all times while they are in the controlled model boating area.

The contest director or other appointed person **must** outline any site hazards to the competitors prior to the start. Items such as water depth, launching and tuning areas, rescue boat requirements etc will be covered.

4. CLASSES (ELECTRIC CLASSES ARE SPECIFIED IN THE ELECTRIC RULES)

Internal combustion engine classes shall be determined by engine swept volume measured in or parts of a cm and shall be as described below.

A Class	Up to 3.5cc	Glow Fuel
B Class	3.51cc to 7.50cc	Glow Fuel
C1 Class	7.51cc to 10.00cc	Engines must be front induction and side Exhaust, Glow Fuel. Mono Hull Only
C2 Class	10.01cc to 16.60cc	Glow Fuel
X Class	16.61 to 36.00cc	Glow Fuel (Single or Multiple engines)

Stock Zenoah 22.5cc to 25.4cc Standard Pump Petrol and Oil only

- 1) Engine **MUST BE** a stock standard 231 or 260PUM Zenoah only. No internal modifications are allowed by removing or adding material to or from the engine, with the exception of relieving the side of the piston at the ring area to prevent seizing. The cylinder and head assembly must be a single unit as standard (no removable heads and or head buttons allowed)

- 2) All stock gaskets and seals must be installed (No splitting of paper gaskets or using thinner replacement gaskets allowed).
- 3) Engine must run on stock Grey and Red coils.
- 4) Spark plug can be any standard type (unmodified) and must have its washer installed.
- 5) No „Stroker“ crankshafts allowed.
- 6) NO other aftermarket parts are allowed, eg. Aluminium carburettor isolator block (or other even if only cosmetic in terms of colour etc.).
- 7) Any factory issued standard carburettor may be used, WT-603, WT-644, WT-929 but can be substituted with a stock WT-257 (NO modifications).
- 8) Any exhaust system with water cooled manifold is allowed. All boats must meet the current NZMPBA noise rules.
- 9) The engine must be equipped with a recoil starter as a means of starting the engine, the standard Zenoah recoil can be substituted with an “Ezy Start” recoil. Belt starting is also allowed as a secondary means of starting the engine. i.e. The recoil starter must be left in place when a belt start pulley to be installed.

P1 Class	Up to 23cc	Standard Pump Petrol and Oil only
P2 Class	23.01CC to 27cc	Standard Pump Petrol and Oil only
P3 Class	27.01cc to 36.00cc	Standard Pump Petrol and Oil only
PX Class	36.01cc to 72.00cc	Standard Pump Petrol and Oil only

Petrol is to be that available at any regular retail service station. NOT aviation fuel or any other specialist fuel or blend of fuels.

Open Oval will be the **only** event **X or PX** powered craft can enter at NZMPBA National Championships.

These classes are to apply according to the following table. The contest director may verify the displacement of any motor according to the class entered at their discretion.

Hull	Mono	Double	Tri	Quad	Sports 20	Sports 45	B Scale	C Scale	T1 Thunderboat	T2 Thunderboat	Petrol Outrigger Hydro	Petrol Sport Hydro	Cracker box	Offshore
Engine														
A	y	Y	y	y	y									y
B	y	Y	y	y		y	y							y
C1	y	Y	Y	Y										y
C2	y	Y	y	y				y 11cc						y
X	y	Y	y	y										y
Stock									Y				y	y
P1	y	Y	y	Y										y
P2	y	Y	y	v						y	y	Y		y
P3	y	Y	y	y										y
PX	y	y	y	y										y

Fail Safe Requirements

Radio Control systems with an integrated Fail safe must use and demonstrate the operation of the Fail Safe during scrutineering with the engine running.

- Effective January 1st 2017, all Petrol powered boats running in Offshore events must be protected against zero voltage receiver failure by using an ignition coil disabling system.
 - The effectiveness of the Ignition coil disabling system must be demonstrated during scrutineering with the engine running.
- Effective January 1st 2018 all Petrol powered boats running in either offshore or oval events must be protected against zero voltage receiver failure by using an ignition coil disabling system.
 - The effectiveness of the Ignition coil disabling system must be demonstrated during scrutineering with the engine running.

IT HAS BEEN BROUGHT TO THE COMMITTEE'S ATTENTION THAT ON ONE OCCASION A COMPETITOR WHO HAD KILL SWITCH ISSUES, DISCONNECTED HIS IGNITION KILL SWITCH IN ORDER THAT HE COULD CONTINUE RACING. THIS WAS NOT MADE KNOWN TO THE RACE OFFICIALS UNTIL AFTER THE EVENT.

As this is a health and safety issue and breaking the NZMPBA rules It is the committee's unanimous decision that in future should any competitor be found guilty of doing this they will lose all points gained at that regatta and as well be stood down for the following two sanctioned regattas on the NZMPBA Calendar for that year.

MINIMUM ENTRY LEVEL at NZMPBA National Championships

The minimum number of entries to form a legitimate race for any class is 4.

Where 4 entries are recorded, but upon the first heat there are withdrawals, the number of heats to be run will correspond with the following. 3 boats, 4 heats, 2 boats, 3 heats, 1 boat, 1 heat.

CLASS STEP UPS

At the time entries close for an event, if any class does not have the support of the minimum entry level, "Stepping Up" a class will be allowable providing the competitor/s concerned agrees to compete in the next class up. The result they compete for is for the class they have moved to, NOT the class they have come from.

Step Ups can only occur within the same power modes. I.e. glow to glow, petrol to petrol etc.

5. CERTIFICATE OF COMPLIANCE

This certificate is to be issued by the NZMPBA Committee or an appointed person or other organisation capable of performing the task on behalf of the NZMPBA Committee after a boat has been measured and viewed to confirm that it complies with the appropriate rules and specifications for a particular class, also that as SUHA (Scale Unlimited Hydroplane Association) have their own internal boat registration, specifications and compliance rules based on NAMBA rules, that because the NZMPBA recognizes this, it allows SUHA boats to run at sanctioned NZMPBA events without further enforcement of the requirements below.

- 1) All models may be issued with a certificate of compliance if requested by the owner.
- 2) A certificate of compliance is mandatory for all B and C Scale Hydroplanes and Sport 45 Hydroplanes.
- 3) Any structural modifications to the model will require the issue of a new certificate.
- 4) In certain circumstances the Committee may issue a certificate of compliance with an endorsement or endorsements.
- 5) The endorsement will cover a model that has been built or purchased in good faith but that doesn't comply with the rules in some way.
- 6) The non compliance must be deemed by the committee to offer no competitive performance advantage nor detract from the intent of the class.
- 7) The endorsement can restrict the model in its present configuration to the current owner only. It may require that hull modifications are made during an accident damage repair or within a certain time period. There can be some other requirement as deemed necessary by the committee.

6. NOISE

Noise levels shall be restricted to a maximum of 87 db at 10 m, measured 1 m above water level and at right angles to the direction of travel of the boat being tested.

For 100 m speed events or where it is considered too dangerous to do a noise check at 10m, noise levels shall not exceed 81 db at a distance of 20 m.

Any driver whose silencer unit becomes noisy due to damage or breakage of any kind shall immediately bring the boat into the pit area and shall repair it to the satisfaction of the Race Director before resuming the race.

7. SCRUTINEERING

Scrutineering may be carried out before each boat is run each day by a suitable person(s) appointed by the Regatta Director.

The items to be checked are:

1. Radio Frequency
2. Radio range (must extend 9m with the Tx aerial retracted).
3. Radio boxes should be free of condensation.
4. Rudder and turn fins should be kick up type where possible.
5. General overall mechanical condition, e.g., rudder post slop, linkage slop, throttle linkages, engine and radio box mounting etc.
6. Failsafe operation to be checked if fitted.
7. Engine capacity checks can also be requested at the completion of an event.

Any problems will be reported to the contest director who may carry out other types of checks and if not satisfied, the boat can be put off the water until a suitable repair is made. A failed 9m

radio test will require an aerial up test of 100m (paced) to verify control over the model.

8. RADIO

Radio control units must be such that a driver has control over speed and direction of the boat.

The NZMPBA encourages the use of modern 2.4Ghz radio control equipment to eliminate frequency interference.

The following frequency are also allowable except where noted:-

27mhz band

26.975 Black	26.995 Brown
27.025 Brown/Red	27.045 Red
27.075 Red/Orange	27.095 Orange
27.125 Orange/Yellow	27.145 Yellow
27.175 Yellow/Green	27.195 Green
27.225 Green/Blue	27.255 Blue

29mhz band

29.725	29.735	29.745	29.755
29.765	29.775	29.785	29.795
29.805	29.815	29.825	29.835
29.845	29.855	29.8865	29.875
29.885	29.895	29.905	29.915
29.925	29.935	29.945	29.955
29.965	29.975	29.985	29.995

35mhz band

35.450	35.650	35.850
35.550	35.750	35.950

36mhz band

36.050	36.120	36.150	36.160
36.200	36.250	36.330	36.350
36.370	36.410	36.430	36.450
36.470	36.550		

40mhz band

40.670	40.690	40.810
40.830	40.850	NB 40.790 is now Aircraft only frequency

The following frequency crystals are also available for use in Hitec FM dual conversion sets only:-

40.865	40.870	40.875	40.890
40.910	40.915	40.930	40.935
40.965	40.985		

IMPORTANT NOTE:

Entries to NZMPBA sanctioned regattas on the designated "AERONAUTICAL MODEL CONTROL ONLY" frequencies will be rejected.

THE DESIGNATED FREQUENCIES ARE ALL THOSE IN THE RANGES: -

40.500 ~ 40.660 AND 40.700 ~ 40.800

72MHZ band

72.270	72.290	72.310	72.330
72.350	72.370	72.390	72.430
72.470			

9. PROTESTS

- Protests may be registered during a race up to five minutes after the conclusion of the race.
- A fee of twenty dollars must be deposited with the Race Director at the time of registration of the protest. This fee being refunded if the protest is upheld.
- Protests against breaking the start of a race, warnings or disqualifications issued during a race will not be entertained. The decision of the Race Director will be final and binding and no correspondence will be entered into at any time.
- Protests will be heard by the Protest Committee comprising of the Race Director, Course Observer's and one other member present. They will decide and impose the appropriate disqualification/s, penalties and otherwise adjust the race result as appropriate. (In the case Matrix or Oval racing) or an award of time or laps lost during endurance racing, in which case the lap scorer concerned must have an accurate record of time lost.

The Protest Committee will consider:

- Identify who caused the incident, did they DNF themselves or go on to finish the heat. If damaged, is their boat repairable / non repairable.
- Did the „victim“ of the incident receive a penalty, lose their place, DNF, have their boat damaged (repairable / non repairable or were others disadvantaged?)
- Was anyone else in the heat affected, how?

The decision of the Protest Committee is final and binding and no further correspondence will be entered into at any time.

10. RESCUE

Drivers or pit crew are not to take rescue boat out under their own authority.

Rescues will not take place during matrix or oval racing unless there is a danger of loss of boat or equipment through sinking. In this case the race will be stopped and re-run. Only boats running at the time of the stoppage can restart.

Rescues will take place during endurance racing, in which case the rescue boat has the right of way at all times. The rescue boat must take the shortest route possible across the racing lanes of the course and should return the boat to either end of the pit area.

In all cases the rescued boat will be returned to an area designated at either end of the pit area. No person may enter the water during a race.

11. DRIVER ASSISTANCE

Each competitor must have one pit mechanic to assist at all times while his boat is on the water (including practice).

Only the driver may operate the transmitter while the boat is on the water during a race. In the event of an emergency the pit mechanic may operate the transmitter to bring the boat back to the pit, but any such lap so completed will not score.

No driver will leave the jetty at any time during a race or abandon his transmitter while his boat is still running on the water. If a driver leaves the jetty whilst a race is in progress without the permission of the judge he shall be considered to have finished racing in that event.

12. OVAL COURSE RACE STARTS

When ever the 2 1/2 minute start procedure is in use to facilitate race starts:

All boats shall mill the course proper and those on the course proper shall have right of way over those entering the course.

As boats enter the last turn (turn 3) before the race start proper, they must maintain the "lane" they are in until the start line is crossed.

A boat that leaves the mill proper to kill time and / or get a long run-up for a flying start, shall be deemed to have left the course and shall re-enter **Behind** those lining up for the start or, in the outer most lane allowing room for those on the mill proper.

After the Official start boats must retain their lane position until they have rounded Turn 1 unless they have a clear roostertails length lead in front to allow room for inside lanes to complete the turn without interference.

In the event of an infraction, either the Course Observer or Race Start Observer will report the infraction to the Race Director who will issue a 50 point penalty against the offending driver. Any Penalty issued is final and cannot be challenged or protested.

13. HEAT RACING POINTS SCORING SYSTEM

Mono Matrix heat racing starts with 200 points, Oval heat racing events start with 300 points for each heat. A DNF (did not finish) scores no points.

Points per heat: (mono)

200 points - Elapsed Time + Bonus Points for Place.

Bonus Points:	1st.	30 points
	2nd.	20 points
	3rd.	10 points

E.g. Elapsed time 65.2 sec and 2nd place.
Points = (200 - 65.2) + 20 = 154.8 points.

Penalties: 1 extra penalty lap per missed buoy, disqualification from heat for 3 penalties.
 (Unless specific penalties are noted in class rules that override this)

Optional Alternative Heat Racing Points Scoring System.

(Integrated Regatta Management System)

Points per Place Based.

1 st	=	400
2 nd	=	300
3 rd	=	225
4 th	=	169
5 th	=	127
6 th	=	96
DNF	=	25
DNS	=	0
DSQ	=	0

Penalties for this system as follows:

-50 point penalty for touching or cutting / missing per buoy, this includes mill time.

Disqualification from the heat for 3 penalties.

OTHER GENERAL PENALTIES

Penalties are as follows:

HITTING AN ANNOUNCED DEAD BOAT
 HITTING RESCUE BOAT

DISQUALIFICATION FROM **HEAT**
 DISQUALIFICATION FROM **EVENT**

Drivers and pitmen are encouraged to comment on reckless or inconsiderate driving at all times.

