

1 RACE RULES (ADDENDUM) FOR MPBA-FES NATIONALS 2019

1.1 GENERAL RULES

- 1) Club members shall operate no device deemed unsafe by a Club Officer
- 2) All "fit and able" members shall share the workload at organised events.
- 3) Members shall adopt a "reasonable" attitude at all times.
- 4) Any Club Officers, their co-opted assistant, or Race Controller may enforce these Rules, Appeals against decisions may be lodged at the next formal meeting.
- 5) During a race meeting, in the event of any protest against a judge's decision, the matter shall be referred to the Officer of the Day, or Race Controller whose decision in the matter is final.
- 6) A person can participate in Club events as a guest at up to three meetings, after which he/she must become a member of **The Club**, and of the MPBA.
- 7) The consumption of alcohol or recreational drugs will not be permitted during the racing or competition day, any competitor or helper found to be under the influence of either will not be allowed to race or compete or enter the start area and will not be allowed to use the rescue boat or any equipment.

1.2 PENALTIES

- 1) All penalties are to be declared to the competitor immediately. If there is a protest at a penalty then the Officer of the day or race controller has the final decision.
- 2) If race number shields become unreadable or missing during a race, the boat should be taken out of the water. If this is not done, the Platform Judge may disqualify the competitor after warning him first.
- 3) If a boat gets stuck in a buoy and the driver tries to escape from the buoy by using his motor, hereby removing the buoy from its fixed position, he is not allowed to take the restart.
- 4) If any competitor runs over a non-moving boat, a yellow card with a 1 lap deduction penalty is given to the driver of that boat who hit the non-moving boat, when avoiding it was possible. If the same driver hits this non-moving boat a second time, a red card is given. This means disqualification for that heat. If the non-moving boat is declared a "dead" boat by the Platform Judge any running into it automatically leads to a red card.
- 5) Should a boat pop out of the water or suddenly spin out so a collision is unavoidable, no penalty will be called.
- 6) If a competitor leaves the race platform during a race, his radio control must stay in place. If the radio is also off the platform, this leads to disqualification for that heat.
- 7) A slower boat can be passed on either side. The slower boat should then hold its course and in no way hinder the overtaking boat. Any obstruction will lead to a 1 lap penalty. If a slower boat repeats this, he will be disqualified for that heat. Any form of "Team" racing, hindering other competitors' boats or even damaging them will be sanctioned with a Red card. A faster boat overtaking a slower boat must not cause any obstruction to the slower boat, if a collision occurs caused by the faster boat, a Yellow card will be given. Should this lead to the early retirement of the slower boat, a Red card will be given.
- 8) Unsportsmanlike conduct, hindering another competitor, causing danger to spectators or hitting the race platform can be sanctioned by the Platform Judge at his own judgement,
 - a) First offence, official warning (yellow card)

- b) At a second time or in case of reckless behaviour, a red card will be given (disqualification).
The competitor is to take his boat out of the water immediately.
- 9) Fair play is to be respected at all times. Should a competitor behave in an un-sportsmanlike manner towards other competitors or Judges, he will be disqualified immediately for the event by the Main Judge; (on advice from the Platform Judge). Any physical violence towards other people leads to an immediate expelling from the grounds. This also counts for start helpers. Further penalty will be decided afterwards by the Section Committee.
- 10) At the discretion of the race controller, any racer must make their boat available for scrutineering immediately after a race. Any infringement of race rules for that class may result in disqualification.
- 11) After every race, the first three boats (and any other the race controller deems necessary) are to be opened up before they leave the start / finish area and before the battery is disconnected. If using a limiter, check that the correct energy band has been selected and that the throttle signal cables are correctly connected. If not using a limiter, check that authorised battery packs are being used.
- 12) If a limiter user uses up the allocated energy and re-enables after the limiter “Dead Time” but before the end of the race, the racer must not cross the start finish line.

Yellow card: 1 lap deduction
Red card Disqualification from the heat

1.3 SPECIFIC CLASS RULES

Please note that the following is a list of classes that COULD be run. It does not indicate that all these classes WILL be run. The classes to be run in any year will generally be decided at the AGM of the year before.

Please note that as from the 2018 AGM, the MPBA-FES race rules will be those of Naviga and will automatically track any changes in the Naviga rules. A summary of those rules are presented below for convenience but if there is any discrepancy, the Naviga rules will take precedence unless otherwise stated.

In addition to the Naviga rules regarding batteries, the MPBA-FES will also allow:-

- 1) If a battery WAS Naviga legal, this will continue to be allowed for a period of two years from the date it became illegal.
- 2) The overweight but capacity limited packs listed in “Battery Rules – Option 3” will be allowed.

Note: **Yellow highlights** = Non Naviga

1.3.1 Class - Physical Features

Class Name	Style	Length Max(mm)	Length Min(mm)	Weight Max(gm)	Weight Min(gm)	Motor
Cat	Catamaran Surface piercing prop	None	None	None	None	Any
Hydro 1 Hydro 2	Hydroplane, Surface piercing prop	None	None	None	None	Any
Mini Hydro	Hydroplane, Surface piercing prop	450	None	None	450	Any

Mini Hydro Sprint	Hydroplane, Surface piercing prop	450	None	None	Any	Any
Mini Mono	Mono Hull, Surface piercing prop	450	None	None	450	Any
Mono 1 Mono 2	Mono Hull, Surface piercing prop	None	None	None	None	Any
Mini Eco Expert	Mono Hull, Sub Surface prop	430	None	None	450	Any
ECO Expert	Mono Hull, Sub Surface prop	None	None	None	1000	Any

1.3.2 Class - Race format

Class Name	Course (See Apdx' 1)	Penalties		Mill Time	Race Time	Overrun Time	Format (See below)
		Missed Buoy	Jump Start				
Cat Hydro 1 Hydro 2 Mini Mono Mono 1 Mono 2 Mini Hydro	Naviga oval CW	1st = 5secs, others = 1 lap each	1 lap	10 secs	6 mins	60 secs	1
Mini Hydro Sprint	Naviga oval CW	DSQ	DSQ	10 secs	N/A	N/A	3
ECO Expert Mini ECO Expert	Naviga triangle CCW	1st = 5secs, others = 1 lap each	1 lap	None	6 mins	60 secs	2

Formats:

- After a mill start, race continues for 'Race Time'. Entrant continues after 'Race Over' signal to complete that lap. The time taken to finish that lap is recorded. The winner of a race is the one with the greatest number of laps and if drawn, the lowest 'Seconds Over'. The first line crossing is the race start and does not count towards the number of laps. Turning around trying to avoid missing a buoy is not allowed.
- There is no mill start. The race continues for 'Race Time'. Entrant continues after 'Race Over' signal to complete that lap. The time taken to finish that lap is recorded. The winner of a race is the one with the greatest number of laps and if drawn, the lowest 'Seconds Over'. The first line crossing counts towards the number of laps. If a buoy is passed on the wrong side, the competitor has the right to turn his model and drive around the buoy on the right side, provided that he thereby does not hinder the other competitors
- After a mill start, race continues for six laps. The winner of a race is the first to complete the six laps. The first line crossing is the race start and does not count towards the number of laps.

1.3.3 Class - Batteries

Only Nickel Metal Hydride, LiPo or LiFePo batteries are permitted as a propulsion pack. Dimensions and weight restrictions are fixed in each class rules and regulations.

Turning down cells on a lathe to achieve weight relief is not permitted.

If an energy limiter is used:

- It must be connected between the battery and the safety loop so that it remains powered when the safety loop is removed.
- The correct energy limit for the class being raced must be selected.
- The receiver throttle signal must connect to the limiter and the limiter to the ESC.

The maximum voltage of a single cell before the race may not exceed:-

NiMh (max. height of the cell with expansions 45 mm)	1.4v
Lipo	4.23v
LiFePo	3.65v

Battery Rules						
Class Name	Option 1		Option 2		Option 3 ^(b)	Option 4 ^(b)
	Numbers / Configuration	gm	Numbers / Configuration	gm	mAh	WattHrs
Mini Mono, Mini Hydro, Mini Eco Expert	LiPo - 2S1P / 2S2P / 3S1P / 3S2P hardcase allowed	110	LiPo - 2S1P / 2S2P / 3S1P / 3S2P hardcase allowed	113	2500(2S) 1700(3S)	See below
	NiMh - 7 x 2/3 af	any	NiMh - 7 x 2/3 af	any		
	LiFePo - 3 cells 18650 or 2 cells 26650	any	LiFePo - 3 cells 18650 or 2 cells 26650	any		
Mono1, Hydro1, Eco Expert	LiPo - 2S1P / 2S2P / 3S1P / 3S2P hardcase allowed	280	LiPo - 2S1P / 2S2P / 3S1P / 3S2P hardcase allowed	285	6600(2S) 4500(3S)	See below
	NiMh - 7 SubC	any	NiMh - 7 SubC	any		
	LiFePo - max 6 cells 3S2P Type 26650	any	LiFePo - max 6 cells 3S2P Type 26650	any		
Mono2, Hydro2	LiPo - 4-6S1P / 4-6S2P hardcase allowed	560	LiPo - 4-6S1P / 4-6S2P hardcase allowed	570	6600(4S) 4500(6S)	See below
	NiMh - 8-14 SubC	any	NiMh - 8-14 SubC	any		
	LiFePo - max 12 cells 4-6S2P Type 26650	any	LiFePo - max 12 cells 4-6S2P Type 26650	any		
Cat	N/A	N/A	N/A	N/A	6600(4S) 4500(6S)	See below
Mini Hydro Sprint	LiPo – 3S max	any	LiPo – 3S max	any	any	N/A
	NiMh – 7S max	any	NiMh – 7S max	any		
	LiFePo – 3S Max	any	LiFePo – 3S Max	any		

Note

a)

b) the same cell configurations apply as in Option 1.

Where Option:

- Naviga 2017 battery rules (can remove outer packaging. No capacity restrictions. No cables required.). Note that this option is only applicable until 31 Dec 2019.
- Naviga 2018 battery rules (can remove outer packaging. No capacity restrictions. 30mm min cables required.)
- Unlimited weight (No alteration to pack. No weight restrictions)
- Energy Limiters. With Naviga rules as defined from 1 Jan 2019 ie.
 - Energy bands
 - Mini Classes = 21WHr(1260 WMin)
 - Mono1/Hydro1/ECO Expert = 60WHr(3600 WMin)
 - Mono2/Hydro2/Cat = 120WHr (7200 WMin)
 - No minimum or maximum battery weight
 - Ramp down time = 5 seconds
 - Dead time = 60 seconds (Note: Crossing the line after the dead time will result in a red card)

1.4 TIMING & SCORING

Definition of terms:-

Competitor	An individual who is entered to race in one or more CLASSES
Class	A specification of a type of boat with defined characteristics and racing to defined rules.

Entrant	A unique combination of a COMPETITOR racing in a specific CLASS which has an associated boat number.
Heat	The label given to a RACE if two or more RACES contribute towards the ranking of an ENTRANT in a specific ROUND.
Race	An individually timed/counted race between two or more ENTRANTS in a specific CLASS. More than one race may be run for each HEAT in each CLASS if there are too many ENTRANTS to run in one race.

The format of the races on the day is as follows:-

- Depending upon how many 'Entrants' are available (2 minimum), a decision will be made by the Race Controller as to which classes are to be run that day and in what order.
- Each Class will have 3 heats during the day (time permitting).
- A maximum number of boats (decided by the Race Controller) are allowed to partake in a race. If there are more Entrants than this then the heat will be 'Split' into 2 or more.

The rules for calculating the results are as follows:-

- Missed buoys are penalised by deducting 5 seconds for the first buoy missed. Any subsequent missed buoys are penalised by deducting 1 lap.
- A Yellow Card can be given at the discretion of the Race Controller. This is penalised by the deduction of 1 lap.
- A Red Card can be given at the discretion of the Race Controller. This is penalised by disqualification from that heat. It will result in 0 laps being given.
- A Jump Start is allocated if in a Class which has a Mill Time, the Class Entrant crosses the start line before the start of the race. If the MyLaps transponder system is used, this will be done automatically.
- At the end of a race a Class Entrant is allowed to complete the lap they are on. The time from the end of the race to the final line crossing is called 'Seconds Over' and will contribute to the final result.
- The race order is in descending order of the number of laps completed in the race time. If there are Entrants with the same number of laps, the Seconds Over will be used to prioritise them (smaller the better). Any laps or time penalties are taken into account before calculating the race order. If there happens to be a draw (same laps and Seconds Over) the Entrant who had the better result in heat 1 is to be preferred.
- Only the best two of the three heats are used to calculate the winner.
- If an Entrant is disqualified in a heat. They will receive 0 laps for that heat. If they are disqualified in all 3 heats, they will receive 0 POINTS irrespective of their race position.
- If an Entrant completes 0 laps in total over the 3 heats, 0 points will be awarded.

Whenever possible, the race timing will be done by using a transponder based system. This is currently done by using a MyLaps RC4 decoder connected to the RaceMaster Timing & Management software.

All racers must equip their boats with a transponder which is compatible with the RC4 decoder. This transponder must be mounted horizontally, as high as possible and not beneath carbon fibre or any other material that will absorb the transponder signal. The placement of the transponder in the boat is not specified, but has to be in such a fashion it cannot move from its fixed placement.

See Appendix 4 for drawing.

If the transponder system is not functional due to it not being able to be deployed or to a fault, the RaceMaster system is to be used with the manual push button unit connected.

If the RaceMaster system is not functional, then manual stopwatches are to be used.

It is the racers responsibility that the transponder in the boat is correctly registered, connected, fitted and functioning. If the MyLaps timing system is deemed to be working correctly, then no adjustment will be made to the laps counted.

1.5 RACING NUMBERS

All models must have a race number.

The dimensions for the back plate is to be 80mm by 80mm minimum. The back plate should be made out of white none transparent material. The number on this shield must be in black with a height of 70mm and a width of at least 10mm.

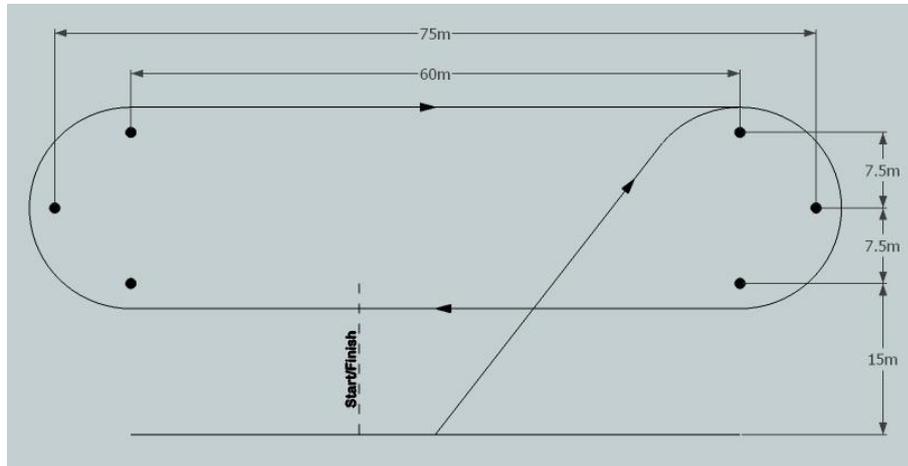
The race number has to be mounted on or at the back of the boat, vertically and visible from both sides.

If the number is not clearly visible or is transparent to the judges, the competitor has to return to the race platform in the next lap. After replacement of the race number the competitor can carry on with the race.

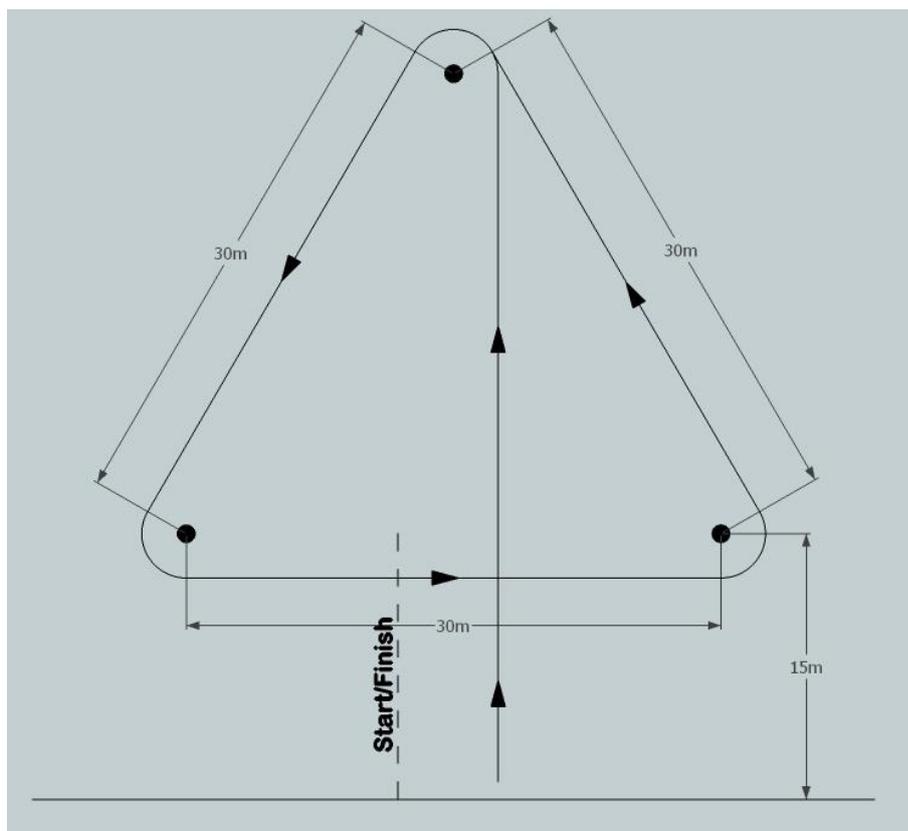
2 APPENDIX 1 – CIRCUITS

Note that the dimensions shown below are a maximum size and can be reduced at the discretion of the race controller.

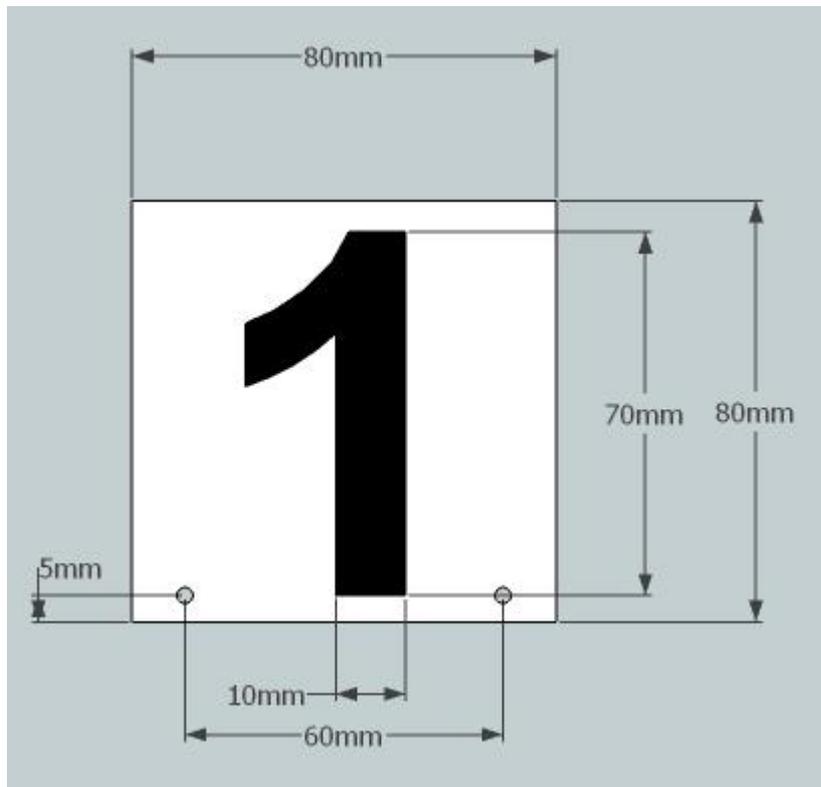
2.1 MONO/HYDRO OVAL



2.2 ECO TRIANGLE

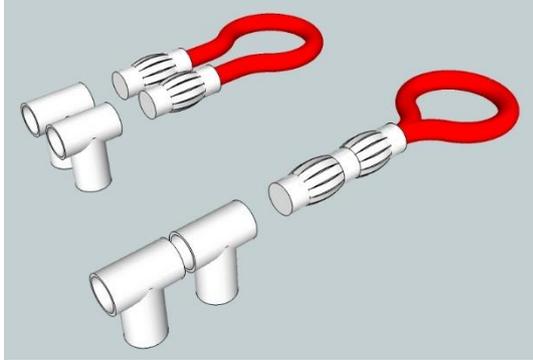


3 APPENDIX 2 – RACING NUMBERS



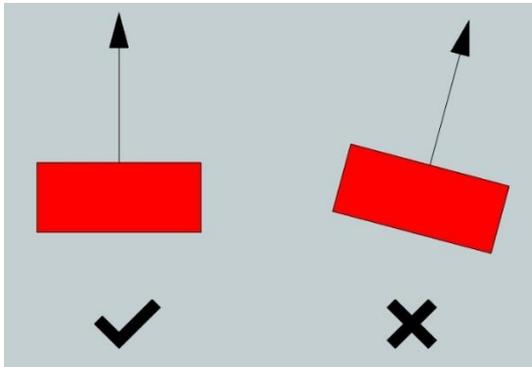
4 APPENDIX 3 – SAFETY LOOP

Here are two examples of designs which meet the required specifications as outlined in the “General Safety Regulations” section.

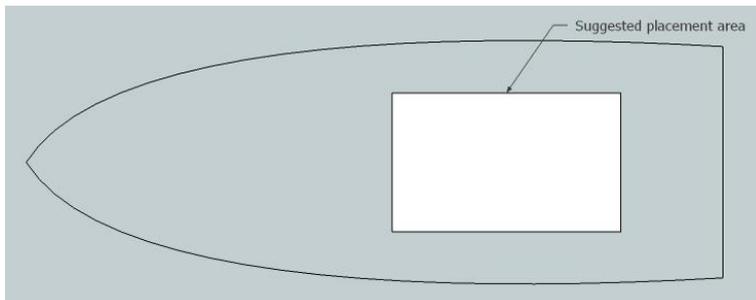


5 APPENDIX 4 – TRANSPONDER PLACEMENT

See the “Timing & Scoring” section for details.



Orientation – Mount horizontally.



Placement – The location is not prescribed but it is suggested to mount in the central area away from other electronics. Do not mount beneath carbon fibre or any other material that will absorb the transponder signal.