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## HANDICAPPING IN RACING

WMBRC encourages all comers to race in all kinds of boats so there has to be a fair and equal ability to win a race. This is why we have a handicapping system which in essence is slowest boat sets off first and the fastest boat last in a 'first over the line wins' race. This is the final result unless penalties are applied as detailed below.

The general ethos of WMBRC handicapping rules is to encourage each boat to race safely as fast as each driver is capable of.

### Handicapping in general

Handicap times are based upon a driver's lap time on each of the courses raced. At the first event of each season a timing race will be held for the timekeepers to obtain lap times and produce new handicap times. The course is re-laid after winter and will remain in position for the whole season so this initial timing race will provide the basis of a drivers lap time for the entire season unless changes are made and a subsequent timing session required.

- In a 5 lap race the driver's handicap lap time is multiplied by 5. (10 for 10 laps)
- A list of starting times is then generated with the slowest boat at the top
- The first (slowest) boat starts the race at 5 seconds after the start. (*Due to timing computer limitations nobody starts at 'zero'*)
- All the subsequent (increasingly faster) boats then start at a time calculated to give away the amount of time required for all boats to finish at exactly the same time.
- In a perfect race- everyone races to their defined lap time, no one gets in anybody's way and all finish by crossing the line at the same time.

However, we race on water and conditions change, people get in the way and skill is involved to maintain consistency and speed.

This is all based on an ideal scenario so this is where the penalty concept of 'Busting' comes in. (Busting = Finishing early in excess of your predicted finish time plus a 'buffer zone')

*The 'buffer zone' is a % of a competitors lap time for which they are permitted to break their time without penalty. This is a sliding scale which increases with the faster boats due to the margin for error being higher the faster the boat and the potential increase in lap time being due to traffic through the course of a race.*

Below is a visual aid which explains each of the scenarios above.



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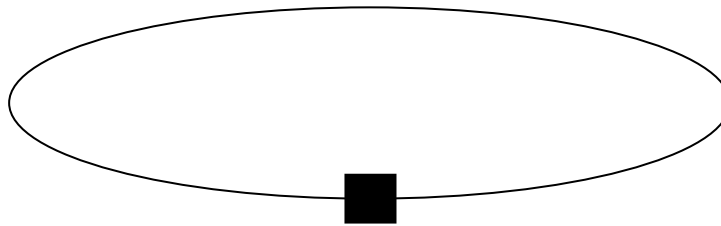
### Handicap visual aid

X - Boat, travelling anti-clockwise

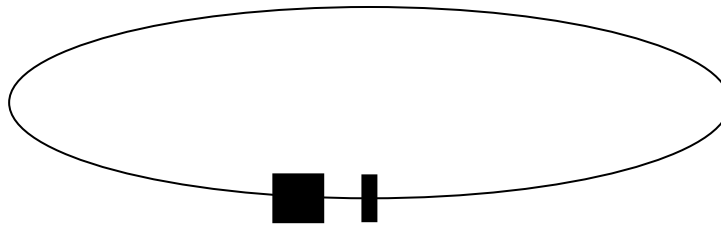
Thick line - Finish line (time)

Thin Line - Allowance line (time)

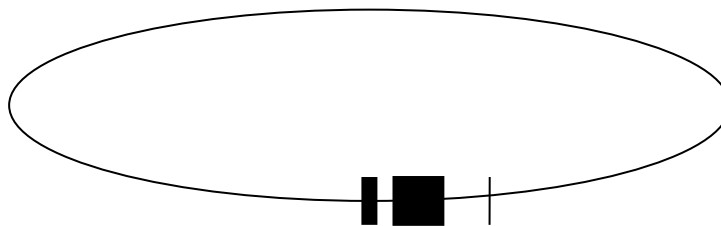
Perfect Handicap lap time



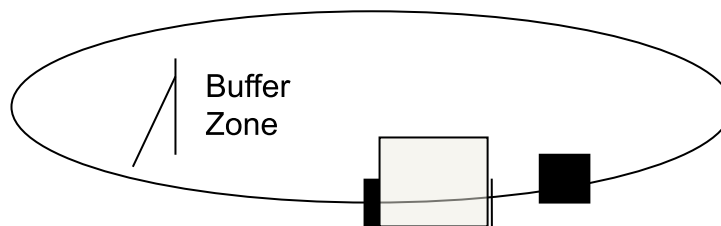
Within Handicap (slower)



Faster than Handicap within Buffer Zone (bust with no penalty, good)



Faster than handicap and Buffer Zone (BUST with penalty)





**Time adjustments**

WMBRC run our handicapping system through an intelligent computer program that in normal circumstances makes minor adjustments to each driver's handicap times after each race that a driver does not produce an exact handicap race. This either gives them some time back if they are running slower than usual or removes some time if running faster. Generally, this works very well.

However; a computer cannot assess water and weather conditions, the amount of traffic, similarity of boat and driver combinations or engine troubles that make boat racing such a dynamic sport. Therefore, the computer will not make dramatic changes and will result in a struggling driver being heavily penalised in the next race. With this in mind the timekeeper always has the final say and if required can change the computer's adjustments for a particular entry in order to give them a fair chance in the next race.

When a driver does 'bust' he is moved to the bottom of the results but in front of any early starters (see General Racing Rules). When more than one driver busts their time, the 'most bust' time is placed above the others.

When a driver does bust they will be reassessed based upon the statistics sheet posted after the race bust in. They will be retimed based on an average of the 2<sup>nd</sup> and 3<sup>rd</sup> fastest laps of the previous race by the computer. If there is a large anomaly between a handicap time and the actual race time the timekeepers will make an adjustment accordingly.

In each race a boat will be allowed to 'bust' their time by an allowance or 'Buffer Zone'. This is determined by using the scale below.

The system uses the following table to calculate the Buffer Zone.

Average lap time	% max allowance
> 0:55:00	0.75%
<= 0:55:00	1.0%
<= 0:45:00	2.0%

This results in a time being generated and the 'Buffer Zone' being the % allowance in seconds

A slower than average last lap will not be considered when calculating average race time – this is designed to counteract throttle pulling over the line to escape 'busting'.

If a driver should arrive at a race event knowing there will be a change in performance, the driver is required to inform the timekeepers. The timekeepers have no obligation to ask if drivers need a different race time than that of a previous event.



### **Penalties:**

(a) Early Starts

The rules state that early starting by any margin puts you to the back of the field. If multiple boats start early those closest to the start time will be recorded above those who bust by more.

(b) Late starts

The system will deduct any late start time from the first lap before using the result to calculate complete race time before assessing a 'Bust'.

(c) Bust boats

Should several boats bust their times in a race the final positions will be that the person busting by least finishes behind the more bust person in order to discourage coasting to the finish line in a situation where a handicap is given is too long due to course conditions or alterations (as an example).

Should a driver have a race within their handicap time but have several very fast lap times then a timekeeper may 'bust' the boat as they deem it capable of achieving that faster time. This will then reflect in the next race where the handicap time will be less and the driver will be encouraged to race faster.

(d) 51% bust rule

If more than half the fleet bust then this suggests there could be an error with the timing that has affected all. In this instance the finishing order is the final order for the race.

### **Points**

See 'WMBRC Racing rules' for CPA and WMBRC points scales by finishing position

### **Amendments**

The Race committee have been careful to construct a set of rules that they consider to be both fair and in keeping with the character of racing at WMBRC. However, as with many systems – and as we have found out with previous handicap mechanisms – a certain amount of tweaking may be necessary to ensure that competition is as close as safety permits. To this end the amendments heading exists. When an amendment is required the OOD or one of his officers will explain it as part of the drivers briefing. The change will then be applied to racing results from that point on. The amendments section will then be updated, stating the change and the rule that has been updated. This allows a driver to revisit the update without necessarily reading the entire 'handicap rules' document again.