

# U.I.M. ELECTRIC BOAT RACING RULES

## 595 - ELECTRIC POWERED BOATS (E)

### 596 - CLASSES

#### **596.01**

Battery powered 48 volt runabout

Battery powered 72 volt runabout

Battery powered 144 volt runabout

Battery powered 48 volt hydroplane

Battery powered 72 volt hydroplane

Battery powered 144 volt hydroplane

Solar powered

Hybrid battery/solar powered

#### **596.02**

Electrically propelled boats are accepted as an international series.

### 597 - HULL

#### **597.01**

Electric powered Runabout.

Hulls are defined as a displacement type, having no steps, no breaks in the longitudinal or transverse continuity of the immersed surface other than the keel, rubbing strips or lapstrakes of no more than 18.75 mm (75 in) and parallel to the centreline of the boat.

Hulls are not permitted to depend on external air pressure or design which creates a tunnel effect to aid planing.

Hulls are not required to conform to any maximum or minimum dimension restrictions.

Hulls shall not have a sponson/pod protruding from the side of the boat which interrupts the line of the side non-trip or bottom of the boat.

## **597.02**

Electric hydroplane :

Hulls are unrestricted. Any boat having a multiple planing area or which cannot qualify as a runabout is considered a hydroplane.

## **597.03**

Hybrid solar/battery powered marathon boats :

The hull is free.

## **598 - MACHINERY**

### **598.01**

The whole of the propelling power shall be electric.

Excluding noted class restrictions for motors, drive train design is unrestricted.

### **598.02 - ELECTRIC RUNABOUT AND HYDROPLANE**

The whole of the electrical energy shall be battery stored and carried on board and when the boat is being timed or raced over the measured distance, no additional electric power shall be generated.

Power source ***For circuit racing*** shall be multiples of commercially available lead/acid batteries, nominally rated at 12 volts.

Motors are restricted to brush type direct current only.

### **598.03 - BATTERY POWERED MARATHON BOATS**

The whole of the electric energy shall be battery stored and carried on board and when the boat is being timed or raced over the measured distance, no additional power shall be generated.

Power source shall be multiples of commercially available lead/acid batteries, nominally rated at 12 volts.

Total battery weight shall not exceed 56.699 kg (125 pounds).

### **598.04 - SOLAR POWERED**

The whole of the energy required shall be from ambient solar power excluding wind. Solar collectors designed as rigid or flexible sails are not allowed.

## **598.05 - HYBRID SOLAR/BATTERY POWERED**

The whole of the propulsion energy shall be battery stored and carried on board.

Solar power may charge the batteries while the boat is being timed or raced over the measured distance.

## **599 - ELECTRIC BOAT SAFETY RULES**

### **599.01 - ELECTRIC BOATS**

Exposed terminals shall be taped over or other wise insulated to prevent accidental short circuits.

Batteries must be securely fastened to the boat in such manner that if the boat were to capsize, the batteries would remain with the hull.

Boats must incorporate enough flotation to ensure that, in the event of accident, the boat will float enough to be salvaged.

All electric boats in competition must be equipped with a physical disconnect. The purpose of the disconnect is to stop the motor, disable the electric system and limit power to safe levels in the event of an accident.

In any boat operating at voltages above 72 volts, such disconnect must be incorporated into the power system in a manner which splits battery power into packages of 72 volts or less.

The disconnect must consist of a plug and tether combination. The plug fits an in-line receptacle completing the electrical circuit and allowing it to be energised. The tether must be two metres or less in length and made of or attached to the plug by material not subject to heat damage such as melting or becoming brittle.

All safety tethers must be securely attached to the driver at all times whilst the boat and the driver are under way.

At any time an electric boat is launched, recovered, disabled on the course or is under tow, the disconnect plug shall be removed from the in-line receptacle.

A caution decal must be affixed in the vicinity of the disconnect receptacle, and to the bottom or non-trip at the same approximate station line. Its purpose is to warn rescuers against handling the boat at that point and possibly completing the electrical circuit. All exposed drives and drive trains must be adequately covered or shielded with appropriate guards or covers.

Commutator shielding is recommended in all electric boats.

Protective clothing must be worn by all drivers participating in electric events.

## **599.02 - ELECTRIC BOAT CIRCUIT RACING RULES**

Starts must be dead motor starts. Drivers must draw for lane positions.

Classes and hulls shall be in conformance with class rules.

Electric boat drivers who's boats are not on plane by the time the lead boat reaches a predetermined point must move off course and stop. The shutdown point will be determined by the drivers prior to the drivers meeting. Failure of a driver complying with this rule will result in a one race suspension.

## **599.03 - ELECTRIC BOAT WATER SPEED TRIALS RULES**

Power source for Water Speed Trials shall be multiples of commercially available batteries, of any type. Motors are restricted to direct current (dc) only.

Boats may be towed to an on-course starting point, but may not be towed to achieve a planing attitude. Any such assistance will result in the disqualification of the competing boat.

Once at the starting point all tenders and assisting craft must be removed to positions away from the racing line.

Recharging or replacement of batteries between initial and return runs while attempting a record is not permitted.