



# APBA ELECTRIC BOAT RACING RULES

*Accepted by participant vote, December 1996*

## 1997 APBA ELECTRIC BOAT RACING RULES

Electric boat racing is an amateur sport run under the provisions of the American Power Boat Association General Racing Rules and General Safety Rules. In any conflict with the following rules APBA general racing and safety rules shall prevail.

### **Electric boat safety rules:**

- (1) Exposed terminals shall be taped over or otherwise covered to prevent accidental short circuits.
- (2) 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.
- (3) Boats must incorporate some means of flotation to ensure that, in the event of accident, the boat will float enough to be salvaged.
- (4) All electric boats in competition must be equipped with a physical disconnect. The purpose of the disconnect is to stop the motor, disable the electrical system and limit power to safe levels in the event of accident.
  - (a) In any boat operating at voltages above 72 volts such disconnects must be incorporated into the power system in a manner which splits battery power into packages of 72 volts or less.
  - (b) 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 energized. The tether must be six feet 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.
  - (c) All safety tethers must be securely attached to the driver at any time the boat and driver are under way.
  - (d) 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.
- (5) A caution decal must be affixed to the boat deck next to the disconnect receptacle, and to the boat 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.

(6) All electric boats must be equipped with at least one device enabling it to be towed and to be safely handled in the event of accident or disablement. Such devices may be of a handle or screw-eye nature. One must be located at the bow, additional devices are recommended.

(7) No motor may be operated out of the water when affixed with a propeller, washer, pin or other shaft mounted device. For the purpose of testing, motors with propellers affixed may be run under the following conditions: The boat must be on a secure stand or dolly with the bow pointing directly towards shore, at least half the propeller must be submerged and adequate prior warning must be given to nearby participants.

(8) All boats must have an operational steering wheel system. When cable operated steering is used, only closed connectors may be used for steering connections. "S" hooks may not be used. Swivel pulleys may not be used. Two (2) cable clamps are required at both terminations of the steering cable. Springs in the steering are permissible if looped with steering cable clamped by two (2) steering line clamps.

(9) Commutator shielding is recommended in all electric boats.

(10) Ankle length pants must be worn by drivers participating in electric events.

**Classes:** (Note: Hydroplanes and runabouts race as a combined class)

(1) General rules:

(a) Electric race boats are classified by Voltage and hull type. Classes are set for hydroplane and runabout at: 48 volts - 72 volts - 144 volts

(b) The whole of the propelling power shall be electric.

(c) Power source shall be multiples of commercially available lead/acid batteries, nominally rated at 12 volts, carried on board with no additional power being generated under way.

NOTE: 48 volt classes are limited to a maximum of 4 (four) batteries. The maximum volume of each battery, as determined by measurements of the length, width and height of the battery case, shall not exceed 950 cubic inches.

(d) Motors are restricted to brush type DC only.

(e) Drive train design is unrestricted.

(2) Electric Runabout:

(a) Hulls are defined as a displacement type; having no step, no breaks in the longitudinal or transverse continuity of the immersed surface other than the keel, rubbing strips or lapstrake of no more than 3/4 inch an parallel to the centerline of the boat.

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

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

(d) 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.

(3) Electric hydroplane:

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

(4) Technology inclusion: In order to bring in new motor and battery technology appropriate to advance the sport, at costs that preserve the sport, the following procedure shall be used:

(a) The manufacturer shall send to the electric boat owner/driver representative three (3) copies of specifications and details of the motor or battery for which approval is requested, postmarked no later than May 1st of the year for which approval is requested. Motor data must include nominal horsepower, RPM and voltage. Battery data must include dimensions, weight, voltage and amperage. Motor and battery data must include manufacturer's suggested retail price. Separate additional battery data must be included describing any toxic potential and the steps taken or required to ensure that any toxic materials be safely contained.

(b) The electric boat owner/driver representative will distribute copies of such information to electric boat owners and drivers for review and a vote to accept or reject. The manufacturer will be notified of the outcome of the request no later than July 15th of the year for which approval is sought.

(c) If the motor or battery is approved it is eligible for racing on the November 1st following the date of approval.

(d) Prior to October 1st notice of approval of such motors or batteries shall be sent in bulletin form to all electric boat owners and drivers.

(e) If a motor or battery does not become available by November 1st or is not available to any electric boat owner or driver within 45 days of order, or if it exceeds claimed costs, it shall be declared ineligible and will have to be resubmitted by the May 1st deadline.

(f) In the event a manufacturer discontinues business and sells jigs, fixtures, patterns and manufacturing rights to another the successor shall be recognized as the legal manufacturer of the original maker's motors, batteries or equipment or parts.

### **Electric boat racing rules:**

- (1) Starts shall be modified LeMans or flag starts. Drivers must draw for lane positions.
- (2) Races for electric boats shall consist of two (2) heats of two (2) laps.
- (3) 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 shut-down point will be determined by the drivers prior to the drivers' meeting. Failure of a driver to comply with this rule will result in a one race suspension.
- (4) Overlap: When there is less than one boat length between a leading boat and a following boat, an overlap is established. In a position of overlap the following rules shall apply:
  - (a) The front boat shall not alter course across or into the established path of the rear boat.
  - (b) The outside boat must give the inside boat room to clear any course marker.
- (5) Age: Drivers must be a minimum 12 years of age for the 48v class. Drivers must be a minimum 15 years of age with a minimum of one year of driving experience or 18 years of age without experience for 72v and 144v classes.

### **Time trials:**

All time trials shall be conducted in accordance with rule 25 of APBA general racing rules. Exceptions and clarifications for electric boats are noted below.

- (1) Classes and Hulls shall be in conformance with class rules stated above.
- (2) Boats may be towed to an on-course starting point only.
  - (a) Once at the starting point all tenders and assisting craft must be removed to positions at least 20 feet behind or to one side of the competing boat.
  - (b) The competing boat may not be towed to a planing attitude. Any such assistance will result in the disqualification of the competing boat.
- (3) Recharging or replacement of batteries between the initial and return runs through the course is not allowed.