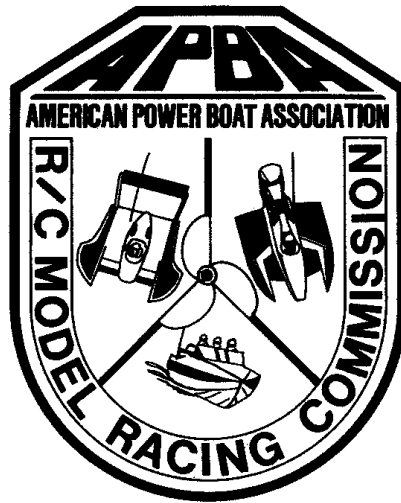


# APBA Rules for R/C Model Power Boat Racing

## 2004 Racing Season



"The rules and/or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements for such events. These rules shall govern the condition of all APBA events. And, by participating in these events, all APBA members are deemed to have complied with these rules. No express or implied warranty of safety shall result from publications of, or compliance with these rules and/or regulations. They are intended as a guide for the conduct of the sport and are in no way a guarantee against injury or death to participants, spectators, or others."

*R/C Drag Boat, Inboard Hydro (5 Litre, National Modified and Grand National Hydroplane); Crackerbox, Jersey Skiff; and Offshore Sportsman "A" "C" and Superboat were written and developed by Donald R. Hermann, APBA R/C Model District 1 Director.*

*Additional copies of rules for this or other categories of racing, or of the APBA Reference Book are available from APBA, P.O. Box 377, Eastpointe, Michigan 48021-0377. Phone (586) 773-9700; FAX (586) 773-6490 • E-mail: APBAHQ@apba-racing.com • Website: www.apba-racing.com  
R/C Model websites: www.apba-rcboating.com • www.rcunlimiteds.org*

**Individual changes appear in bold face type.**

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## SECTION 1 • CONSTITUTION & BY-LAWS

### ARTICLE I - NAME

1-00 This organization shall be known as the R/C MODEL RACING CATEGORY, hereinafter referred to as the R/CMRC, a category of the American Power Boat Association, hereinafter referred to as the APBA.

### ARTICLE II - DEDICATION AND OBJECTIVES

2-00 The R/CMRC shall be a non-profit organization dedicated to the promotion of radio controlled powerboating through fellowship, sportsmanship and competition and to the development of youth and youth activities. The objectives of the R/CMRC shall be to foster radio controlled powerboat construction and racing and to coordinate among member clubs, racing teams and individuals to the end that there shall be uniform rules governing R/C powerboat competition throughout the U.S. and Canada.

### ARTICLE III - ORGANIZATION

3-00 North America (i.e., the United States and Canada) shall be divided into districts. Note: R/CMRC Districts do not correspond with APBA Regions.

3-01 Clubs, racing teams and individuals located within the geographical limits of a district shall be members of that district. Said clubs, etc., shall have all rights (such as voting, etc.) and responsibilities (such as being subject to rules, etc.) attendant to district membership, subject to any limitations hereinafter set forth.

### ARTICLE IV - INDIVIDUAL, CLUB & RACING TEAM MEMBERSHIPS

4-00 Individual annual memberships in the R/CMRC may be obtained by application through an R/CMRC member club or racing team or by direct application to:

R/C MODEL RACING CATEGORY / AMERICAN POWER BOAT ASSOCIATION  
17640 EAST NINE MILE ROAD • P.O. BOX 377 • EASTPOINTE, MI 48021-0377

Memberships may also be obtained by visiting <http://www.apba-rcboating.com> (the APBA-R/C Boating website) or [apba-racing.com](http://apba-racing.com) (the APBA website).

4-01 R/CMRC Competition Identification Numbers, assigned at the time of initial membership, are reserved for the holder and honored by the APBA for up to one year after membership has expired, without renewal.

4-02 Annual membership in the R/CMRC shall entitle its holder to participate in most sanctioned competition events of the CATEGORY. It provides insurance coverage through the APBA and entitles its holder to eligibility for such other privileges and benefits as are considered appropriate by the APBA. The exception to this rule is the District finals, open only to District members in good standing.

4-03 Annual memberships commence on November 1st of each year and expire on October 31st of the following year.

4-04 Initial membership forms may be obtained from the APBA affiliated clubs/racing teams or from the administrative office of the APBA. Renewal membership forms will be furnished each individual member by the APBA. Club registration, site insurance and sanction application forms will be provided each club annually.

4-05 One or more members may become a registered club or racing team of the R/CMRC by submitting the proper application and appropriate registration fee to the administrative office of the APBA. Initial/renewal applications should be accompanied by a membership list, to include individual addresses, telephone numbers, competition identification numbers (if applicable), and club/racing team officers.

4-06 All members of R/CMRC registered clubs, whether or not individual members of the APBA, may serve as club officers. That member designated as the APBA point of contact or the club's chosen delegate at R/CMRC/APBA district or national meetings must be an APBA member in good standing.

4-07 Non-members of the APBA may compete in a sanctioned event of the R/CMRC by purchasing a "single event membership", by completing all paperwork attendant thereto, and by paying all APBA and regatta fees prior to the event. The "single event membership" allows participation in most events and provides the entrant insurance coverage for the event. It does not convey any other privileges of APBA membership. Single event membership at a National Regatta is non-convertible. The exception to this rule is the District finals, open only to District members in good standing. Single Event Membership Forms and/or copies of receipts issued for membership along with appropriate fees are to be returned to the APBA administrative office after an event.

4-08 Membership dues are paid per membership year. They will not be pro-rated for a portion of the membership year.

4-09 Appropriate dues/fees must accompany membership, registration and sanction applications and renewals submitted to the APBA.

4-10 The deadline for individual membership renewal is February 28th. Renewals postmarked after this date shall be assessed a \$5.00 penalty. This penalty applies to membership renewals only. New members joining after February 28th shall not be penalized.

4-11 Changing of dues is an administrative matter, not requiring constitutional amendment or By-Law modification. Appropriate notice will be provided in *Propeller* magazine, [apba-racing.com](http://apba-racing.com) and/or the "Racers Edge".

### ARTICLE V - INSURANCE

5-00 R/CMRC/APBA membership provides the member, clubs/racing teams, municipal or state park boards or other governmental entities, landowners, the R/CMRC and the APBA public liability and property damage insurance coverage at all times when said member is operating an R/C powerboat on an APBA approved body of water for which APBA member club(s) or individual(s) have been issued a site insurance certificate through the APBA. This constitutional provision is descriptive only and in no way modifies the coverage provided by the actual policy of insurance.

5-01 Only members in good standing of the R/CMRC/APBA are covered by the insurance described above. Members of other R/C model boating organizations are not covered by R/CMRC/APBA insurance except as may be otherwise provided for herein.

5-02 Applications for site insurance coverage may be obtained from the APBA administrative office. Said applications, completed as required and with such supporting diagrams and photographs as necessary, will be forwarded to the District Director for review and approval. Upon approval, the District Director will forward the application package to the APBA administrative office which will, in turn, forward same to the insurance carrier. Assuming regularity, the insurance carrier will then issue to the requester and others considered appropriate, a certificate of insurance pertaining to the site covered by the application.

5-03 R/CMRC site insurance coverage must be renewed annually.

5-04 All members must adhere to the safety regulations (see Section 2, Safety Regulations) of the R/CMRC at all times when operating R/C powerboats. Disregard of safety regulations could result in the loss of insurance eligibility and/or membership in the R/CMRC.

5-05 A copy of the insurance policy covering R/CMRC activities will be provided to its Category Chairman. Copies will also be provided to the District Director upon request.

5-06 Every contestant entering an R/CMRC contest must present written evidence of current R/CMRC membership, or must remit the proper dues (including any penalties, if applicable), or purchase a single event membership at the race site.

5-07 Receipts, as provided by the APBA, shall be signed and issued by the Contest Director for all dues and single event membership fees received. A receipt for full dues payment, to include any applicable penalties, shall serve as proof of membership until an R/CMRC/APBA membership card is received.

#### **ARTICLE VI - ADMINISTRATIVE OFFICE**

- 6-00 Administrative support for the R/CMRC shall be furnished by the APBA.
- 6-01 The R/CMRC is governed by the Constitution, By-Laws, rules of competition and safety regulations of the R/CMRC and the APBA.
- 6-02 All official communication to the APBA by R/CMRC members shall be via a club or district officer.
- 6-03 The administrative office of the APBA, upon receipt of correspondence directed to the R/CMRC, shall route same to the proper officials of said category.
- 6-04 The APBA will print and distribute promotional materials, upon request and with the approval of the Category Chairman, R/CMRC, for use by members of the category at hobby shows, etc.
- 6-05 The distribution of all dues and other monies received shall be the responsibility of the APBA or R/CMRC, as appropriate.

#### **ARTICLE VII - EXPENSES**

- 7-00 Upon presentation to the APBA of an expense report, with receipts, approved by the Executive Board, the Category Chairman shall be reimbursed, from the category fund, for telephone, postage and other expenses incurred in the operation and promotion of the R/CMRC. The Category Chairman may also be permitted an allowance of \$300.00 to attend the annual National Championship Regatta, subject to the availability of funds and with the approval of the Executive Board and may be reimbursed for the cost of airfare and registration for the annual APBA meeting if approved by the Executive Board.
- 7-01 The Category Vice Chairman, National Chairmen and members of the Technical and Rules Committee may be reimbursed for reasonable and necessary telephone and postage expenses. Such reimbursement shall be subject to the availability of funds and approval of the Executive Board and Category Chairman and shall be disbursed from the category fund by the APBA. All expense reports submitted in accordance with this provision shall be supported by receipts.
- 7-02 Expenses attendant to the distribution of the "Racers Edge" shall be the responsibility of the R/CMRC.
- 7-03 Special recognition awards (i.e., record awards, national championship team emblems, etc.) shall be the financial responsibility of the R/CMRC. Such expenses shall be subject to the approval of the Executive Board and the Category Chairman.
- 7-04 The R/CMRC may supplement its fund through the sale of promotional merchandise. Such merchandise may be ordered through the District Directors or from the Category Chairman. The collection and disbursement of all merchandise funds will be handled through the APBA.
- 7-05 Fees collected for record applications are applied to the Promotional Account.

#### **ARTICLE VIII - PUBLICATIONS**

##### **MONTHLY MAGAZINE**

- 8-00 A subscription to the monthly APBA magazine "Propeller" is included in the cost of a regular, individual membership in the R/CMRC/APBA. APBA distributes the "Propeller" to all members.
- 8-01 R/CMRC information published in "Propeller" (such as records, rule amendments, etc.) constitutes official notification of the information to general membership.
- 8-02 Deadline dates for the submission of material for inclusion in the "Propeller" are set forth therein. Deadlines should be considered when applying for sanctions, submitting rule proposals, etc.

##### **NEWSLETTER**

- 8-03 To provide additional information and official notification to members of the R/CMRC, a newsletter, the "Racers Edge", will be distributed on a one-per-household basis. Information can also be posted on the APBA-R/C Boating web site at <http://www.apba-rcboating.com> or on the APBA website, [apba-racing.com](http://apba-racing.com).
- 8-04 The "Racers Edge" shall include, but not be limited to, the following: A schedule of all future R/CMRC sanctioned regattas; an updated list of all R/CMRC records; the complete results of the National Championship Regatta; minutes of the annual meeting of the Executive Board; the annual financial statement, and any other information relating to the R/CMRC or of interest to its members. The frequency of publication of the items enumerated above will be within the discretion of the editor of the "Racers Edge".
- 8-05 The Category Chairman shall be responsible for the editorial policy of the "Racers Edge" and the R/CMRC's portion of the APBA "Propeller" (subject to editing by the APBA editorial staff).

##### **APBA REFERENCE BOOK**

- 8-06 The APBA "Reference Book" is printed and distributed annually by the APBA to all officials of the R/CMRC. The Reference Book is available to R/CMRC members upon request.
- 8-07 The "Reference Book" includes: APBA officers; the APBA history; By-Laws, Agreements, Endowments and Awards of the APBA.

#### **ARTICLE IX - RULE BOOK**

- 9-01 The official rule book of the R/CMRC will be published by the APBA administrative office, which will distribute a copy to each member of the Category.
- 9-02 All updates, corrections, additions and other changes to the rule book will be published in the "Propeller," the "Racers Edge" and/or on <http://www.apba-rcboating.com>.

#### **ARTICLE X - AMENDMENTS**

- 10-01 The Constitution, By-Laws, and rules of competition of the R/CMRC may be amended by a simple majority vote of the Executive Board.
- 10-02 Proposed changes to those items specified in paragraph 10-01 must be signed by 10 R/CMRC members in good standing and submitted in seven copies to a District Director. The District Director will immediately submit five copies of the proposal to the APBA administrative office, one copy to the appropriate National Chairman, if applicable, and one copy to the Category Vice Chairman, R/CMRC.
- 10-03 The National Chairman, if applicable, will be allowed 10 days from the date of receipt of the proposal to review it and to give the Technical and Rules Committee and Category Vice Chairman any recommendations.
- 10-04 The administrative office of the APBA will forward one copy of the proposal to each member of the Technical and Rules Committee, which will be allowed 10 days following receipt of the recommendation of the National Chairman, if applicable, to review the proposal for completeness and constitutional compatibility, and to inform the Category Vice Chairman of any problems. If no National Chairman is involved, the Committee shall have 10 days following receipt of the proposal to communicate with the Category Vice Chairman.
- 10-05 The Category Vice Chairman will notify the District Director of the position of the Technical and Rules Committee.

10-06 If constitutional conflicts exist, or if the proposal is incomplete, the Category Vice Chairman will so inform the District Director involved who shall resolve the conflict/ incompleteness or withdraw the proposal. If the District Director withdraws the proposal, he/she shall inform its proponents (signatories) of his/her action.

10-07 Upon successful clearance of the proposal, the Category Vice Chairman will cause it to be published in the next available issue of the "Propeller," the "Racers Edge," and/or on <http://www.apba-rboating.com>.

10-08 The Executive Board will have until the 25th day of the second month following receipt of the first publication containing the proposal to poll their districts, if applicable, and cast their ballots by mailing same to the APBA administrative office.

10-09 The Category Chairman shall have no vote on the Executive Board except in the event of a tie, the Category Chairman shall cast the deciding vote.

10-10 Results of the vote will be published in the next available issue of the APBA "Propeller," the "Racers Edge," and/or on <http://www.apba-rboating.com>.

10-11 All changes, additions or deletions will take effect on the first day of November following publication of the result of the Executive Board vote specified in 10-10, above.

## **ARTICLE XI - IDENTIFICATION**

11-00 R/CMRC members must display their name and/or competition identification numbers on their backs (minimum height to be 1 1/2") for identification purposes during competition. Competition identification numbers need not be displayed on boats.

11-01 Competition ID numbers may be prefixed by a district number, i.e., 7-1894.

11-02 The lowest available competition identification number will be assigned to a new member unless a different number is requested. Requests for specific numbers of four digits or less will be honored by the APBA, if available, except that the number "1" shall be reserved solely for National Regatta champions.

## **ARTICLE XII - AWARDS**

12-00 Members may accept merchandise and/or trophies as competitive awards at R/CMRC regattas. No cash prizes will be awarded to or accepted by any member at a R/CMRC regatta.

## **ARTICLE XIII - OFFICERS**

13-00 Any member in good standing, except those of minor age (17 years and under), may hold elected office in the R/CMRC.

13-01 The Category Chairman, Category Vice Chairman, Immediate Past Chairman and the District Directors of qualifying districts (see 19-00), or a representative appointed by the Director of a qualifying district, shall constitute the Executive Board.

13-02 The Executive Board is the supreme authority in interpreting the Constitution, By-Laws and rules of competition on the R/CMRC.

## **ARTICLE XIV - CATEGORY CHAIRMAN, VICE CHAIRMAN AND TREASURER**

### **NOMINATIONS AND ELECTIONS**

14-00 Nominations for candidates for elected office shall be forwarded to the administrative office of the APBA no later than July 1st for publication in the August and September issues of the "Propeller".

14-01 The nomination of any candidate for elected office shall be accompanied by a supporting petition signed by 10 members in good standing and a signed declaration of willingness to accept the office, if elected, executed by the nominee.

14-02 Written ballots in elections pertaining to the Category Chairman shall be distributed, to members in good standing, by the APBA Administrative office, postmarked no later than July 15. Write-in provisions for the office of Category Chairman are authorized. Ballots must be returned to the APBA Administrative office postmarked no later than September 25.

14-03 Elections pertaining to the Category Vice Chairman and Treasurer will be on the same ballot as the Category Chairman. Write-in provisions for Category Vice Chairman and Treasurer are not authorized.

14-04 A majority of the votes cast shall determine the winner. Those elected shall assume office on the first day of November following the election, for a term of two (2) years.

14-05 All candidates and District Directors shall be notified of the results of the election immediately upon tabulation of the votes. Official notification of the general membership shall be via the next possible issue of the "Propeller," the "Racers Edge" and/or on <http://www.apba-rboating.com>.

14-06 Any member in good standing may vote in Category Chairman and Category Vice Chairman elections and in the election of the Treasurer.

14-07 To be eligible for the office of Category Chairman or Category Vice Chairman, a candidate must have been a District Director of the R/CMRC (or other national, R/C powerboating organization) for at least one year prior to assuming office. Service as a District Director need not have been immediately prior to the assumption of office.

14-08 No R/CMRC member may hold more than one national or district level elected office simultaneously.

### **VACANCIES**

14-09 In the event of the resignation, removal from office or incapacity of the Category Chairman, the Category Vice Chairman will serve as the Category Chairman Pro Tem for the remainder of the term or until the incapacity is removed. If for any reason the Category Vice Chairman cannot serve as Category Chairman Pro Tem, the Executive Board shall elect from its membership a Category Chairman Pro Tem, who shall serve the remainder of the term or until the incapacity of the Category Chairman is removed.

14-10 In the event no nominations are received for an expiring elective office, the incumbent shall remain in office until such time as one nomination can be obtained at which time an election will be held.

### **DUTIES**

14-11 The Category Chairman shall be the presiding member of the Executive Board. He/she shall have additional responsibilities and duties as set forth elsewhere herein. The Category Vice Chairman shall assist the Category Chairperson in the accomplishment of his/her executive duties.

14-12 The Category Chairman shall schedule Executive Board meetings as outlined herein.

14-13 The Treasurer shall keep a monthly record of R/CMRC income and expenses.

14-14 The Treasurer shall meet with the Category Chairman and one other member in good standing of the R/CMRC to audit the accounts of the category and to prepare a financial statement for the annual Executive Board meeting.

14-15 The Treasurer shall insure that all necessary financial documents are sent to the APBA office for the final budget report in October.

14-16 The Treasurer has no vote on the Executive Board. He/she shall provide to the Executive Board all necessary information concerning the financial status of the R/CMRC.

## **ARTICLE XV - NATIONAL APPOINTMENTS**

### **NATIONAL CHAIRMEN**

15-00 The Category Chairman may establish such committees as he/she deems necessary to include, but not be limited to, various areas of general membership interest such as radio frequencies, public relations, etc. He/she may appoint members to the committees, or to other standing committees and he/she may appoint individuals to serve in various capacities. All appointees shall serve during the term of the appointing Category Chairman.

15-01 All appointees to national committees or positions must be R/CMRC members in good standing.

#### **DUTIES**

15-02 Chairmen for the various areas of competition (electric, offshore, outboard, time trials, unlimited, etc.) shall be appointed by the Category Chairman. They shall provide guidance to the membership and recommendations, as required, on rule change proposals in their areas of expertise to the Technical and Rules Committee.

15-03 The National Chairmen have no vote on the Executive Board. They serve in an advisory capacity and shall provide facts, attitude assessments and advice to the Category Chairman and the Executive Board so as to apprise those elected officials of the desires of those members who compete in categories falling within the Chairmen's areas of expertise.

15-04 The National Chairmen are encouraged to attend the annual meeting of the Executive Board, held during the National Championship Regatta, to offer assistance on areas of interest to the Executive Board.

### **SECRETARY**

15-05 The Secretary shall be appointed by the Category Chairman, from the membership of the category, in good standing. His term of office will coincide with the Category Chairman's. He/she shall assist the Category Chairman by performing those duties normally associated with the office of Secretary.

#### **DUTIES**

15-06 These duties shall include, but not be limited to: Keeping records of all sanctions and assigning sanction numbers thereto; forwarding original of sanctioning applications and sanction fees to the APBA office; recording minutes of Executive Board meetings and submitting same for publication in the next available issue of the "Racers Edge"; administering any correspondence generated by the office of Category Chairman; forwarding the rule book changes to the APBA office; sending race schedules to magazines for publication; compiling membership lists; and forwarding district information to each District Director.

### **TECHNICAL AND RULES COMMITTEE**

15-07 The Technical and Rules Committee shall consist of five members, in good standing, of the R/CMRC. Four members shall be appointed by the Category Chairman. The Category Vice Chairman shall constitute the fifth member and shall serve as Chairman of the committee.

#### **DUTIES**

15-08 The Technical and Rules Committee shall: Review rule proposals for completeness and constitutional compatibility; interpret the intent of rules; determine the legality of hulls, engines, etc.

15-09 The Technical and Rules Committee shall be responsible for compiling and updating the "Glossary of Terms" section of the rule book. Editing and arranging the section of "Glossary of Terms" shall be the responsibility of the Committee Chairman.

15-10 The Category Vice Chairman shall oversee the Technical and Rules Committee, but shall not vote or take a position unless a tie arises within the committee, at which time the Category Vice Chairman shall decide the question. The Technical and Rules Committee may act only on matters relating to their duties as defined in 15-08, above.

## **ARTICLE XVI - NATIONAL MEETINGS**

16-00 An annual meeting of the Executive Board shall be held during the R/CMRC National Championship.

16-01 The Category Chairman may call Executive Board meetings at any time deemed necessary and/or the Executive Board may meet in special session upon the call of 1/3 of its membership. If necessary, business may be conducted by mail or conference telephone call. If business is conducted by mail, all members of the Board must receive identical copies of all relevant documents.

16-02 Agenda items for the annual Executive Board meeting will be submitted to the Category Chairman six weeks prior to the meeting. The Category Chairman will provide copies of the finalized agenda to members of the Executive Board, National Chairmen and Technical and Rules Committee members at least 30 days prior to the meeting.

16-03 Agenda items will take precedence over business presented from the floor at the annual Executive Board meeting.

16-04 The Category Chairman or his/her appointed representative should attend the annual meeting of the APBA. The Category Vice Chairman, District Directors and interested members are also encouraged to attend.

16-05 Meetings shall be conducted in accordance with Roberts' Rules of Order. If those rules conflict with the Constitution and/or By-Laws of the R/CMRC, the Constitution and/or By-Laws shall govern.

## **ARTICLE XVII - NATIONAL CHAMPIONSHIP REGATTA**

17-00 The R/CMRC shall offer a National Championship Regatta each calendar year. The meet shall encompass a minimum of three (3) days. Four heats per class will be offered.

17-01 No sanctions will be issued for other regattas to be held during the period of the National Championship Regatta, or during the week preceding or following it, except as authorized by the Executive Board.

17-02 The National Championship Regatta Contest Director, Assistant Contest Director and individual Event Directors shall be experienced and knowledgeable R/C powerboaters with prior contest director experience. Additionally, the District Director of the host district shall certify that the proposed officials are competent and capable of performing the required duties. The Contest Director will serve with the approval of the Executive Board and the Category Chairman, R/CMRC.

17-03 Bids for the National Championship Regatta will be submitted to the Category Chairman at least 13 months in advance of the regatta. Selection of the winning National Championship Regatta site bid will be at the annual meeting the year preceding the regatta under consideration.

17-04 Districts/clubs bidding for the National Championship Regatta which have never hosted the event will be given preferential consideration.

17-05 Clubs bidding for the National Championship Regatta must receive the approval of their districts and District Directors prior to the annual Executive Board meeting at which the bids are considered. In the event the regatta loses money, the district in which the host club is located will be encouraged to assist that club financially so that it will not have to bear the burden alone.

17-06 The location of the next R/CMRC National Championship Regatta shall be announced at the National Championship Regatta Awards Banquet.

17-07 To be classified as a National Championship Regatta, the following classes must be offered: 3.5cc, 7.5cc, 11cc and 30cc Mono, 3.5cc, 7.5cc, 11cc and 30cc Hydro, 3.5cc, 7.5cc and 11cc OPC Tunnel, Sport Hydro - Div. 2; Gas-Powered classes; and R/C Scale Unlimited Hydro. Any other classes are optional but should be offered if time permits.

17-08 National Championship Regatta programs, etc., shall be approved by the Category Chairman and the Executive Board.

17-09 All entry fees must be received by the Contest Director prior to the National Championship Regatta. If entry fees are not received, the debtor will not be permitted to compete. If for some reason entry fees are not received and the debtor nonetheless competes in the event, non-payment shall be reported to the delinquent entrant's District Director and to the Contest Director of the next National Championship Regatta. The debtor's participation in any sanctioned event of the R/CMRC shall be denied until the entry fee indebtedness is resolved.

17-10 In case of any controversy involving the National Championship Regatta, the Category Chairman or the appointed representative will be the final authority on the matter.

17-11 All events of the R/CMRC National Championship Regatta shall be governed by the rules and regulations of the category. No district rules apply at the National Championship Regatta.

17-12 NATIONAL CHAMPIONSHIP TEAMS: Teams shall consist of 4 members on a team, with a maximum of 16 boats. Classes will be chosen at the end of the Nationals. Teams must be registered prior to the start of the first heat of the regatta. The team entry fee shall be \$8.00. Districts or clubs may enter as many teams as they choose. The total points from each event, for each member of the team, shall be tallied to determine the winner. Each member of the winning team will receive a National Championship Team Award.

17-13 Members placing first in National Championship Regatta events shall receive an APBA "US 1" embroidered emblem. They shall also be authorized to paint or affix "US 1" on boat(s) with which they compete in the class in which the championship was won.

17-14 A fee of \$1.00 per boat, to be included in the entry fees of the National Championship Regatta, shall be assigned to the R/CMRC and paid to the APBA within 30 days of the close of the event.

## **ARTICLE XVIII - SANCTIONS**

18-00 A sanction serves as protection for the contestants in a regatta. It constitutes an authorization for a given regatta and binds the officials thereof to comply with the rules and regulations of the R/CMRC and to impartially enforce same. It guarantees that the results of the sanctioned regatta will be recognized as official.

18-01 It shall be customary to award clubs which have fulfilled all sanction obligations corresponding regatta dates in subsequent years.

18-02 Sanctions will not be granted on the same dates for regattas within such proximity to each other that sanctioning officials have reason to believe that the success of either regatta could be jeopardized.

18-03 District Championship Points or District Championship Double Points regattas, etc. (or any event from which points are tallied toward an end-of-season district championship) shall take precedence for sanctioning purposes over all other events within a district.

18-04 Sanction applications will be forwarded on the proper forms to the District Director for approval and signature. That official will forward the application to the APBA administrative office or other appropriate official for action. Necessary fees will be sent with all applications, the check, money order, etc., made payable to the APBA. No application will be acted upon by the APBA administrative office unless postmarked at least 30 days prior to the date of the regatta for which the sanction is sought.

18-05 To facilitate scheduling, sanctions for District Championship Points or Double Points regattas will be applied for prior to April 1st of the year in which the regatta is to be held.

18-06 All district championship points regattas and/or double points regattas must be sanctioned by the APBA.

## **ARTICLE XIX - DISTRICT ORGANIZATION**

19-00 A district must have at least 15 members before its Director may be seated on the Executive Board. For purposes of voting at the national meeting, member numbers shall be determined by the latest APBA generated computer listing available prior to that meeting.

19-01 District boundaries shall follow state, province or county borders. Boundaries or club district affiliations may be altered by the Executive Board after due notice to the members of the affected districts.

19-02 Each R/CMRC member is automatically a member of the district in which he/she resides. His/her participation, however, is not limited to regattas of that district only.

19-03 Any member in good standing of the R/CMRC may enter any sanctioned regatta of the Category, no matter where located. No district or club shall implement a rule which restricts entry by any member in good standing of the R/CMRC. District or club safety regulations and race competition rules, etc., may, however, be promulgated and enforced.

## **ARTICLE XX - DISTRICT DIRECTORS**

### **NOMINATIONS AND ELECTIONS**

20-00 Nominations for District Director candidates shall be forwarded to the administrative office of the APBA no later than July 1st for publication in the August and September issues of the "Propeller".

20-01 The nomination of any candidate for District Director shall be accompanied by a supporting petition signed by 10 members in good standing of that district and a signed declaration of willingness to accept the office, if elected, executed by the nominee. In the event there is not 10 members in good standing in the district, a supporting petition signed by 1/3 of the members, in good standing, of the district is required.

20-02 Elections of District Directors shall be held in even-numbered years. Written ballots in district director elections shall be forwarded to the APBA administrative office postmarked no later than September 25th. A majority of the votes cast shall determine the winner. Those elected shall assume office on the first day of November following the election, for a term of two years.

20-03 A member may vote only in the election of the Director of the district in which the member resides.

20-04 In the event no nominations are received for an expiring elective office, the incumbent shall remain in office until such time as one nomination can be obtained and an election held.

## **VACANCIES**

20-05 In the event that a District Director resigns or is for any other reason unable to serve, the unexpired portion of his/her term of office shall be filled using the procedures set forth in paragraphs 20-00 and 20-01 above except that: Nominations shall be received in the APBA administrative office no later than 30 days after the office of the District Director becomes vacant. Notice of a special election to fill the vacant office will be published in the earliest practicable issue of the "Propeller," the "Racers Edge" and/or on the APBA and R/C Model websites. Ballots will be forwarded to the APBA administrative office postmarked not more than 30 days following announcement of the special election in either the "Propeller" or the "Racers Edge", whichever is earlier. A majority of the votes cast shall determine the winner.

20-06 If a vacant office is filled pursuant to the provisions herein, the term of office shall expire at the same time as if a vacancy had not arisen.

## **DUTIES**

20-07 A Director shall have a working knowledge of all clubs within his/her district and a personal knowledge of the officers of the clubs within his/her district.

20-08 A Director shall act as the coordinator of all activities within his/her district. He/she shall review all sanction applications to insure that date conflicts do not exist and that the applications have been completed properly. If a date conflict exists or the application has been improperly completed, the Director shall resolve these issues prior to forwarding the application.

20-09 A Director may suspend or revoke a regatta sanction at any time for significant violations of safety regulations and national or district rules. He/she may reinstate a suspended regatta sanction when the problems are resolved to his/her satisfaction. In any event, the Director shall submit a written report upon the circumstances to the Category Chairman.

20-10 Directors shall develop and institute a continuous recruiting program within their districts. They will advise member clubs as necessary, placing special emphasis on new clubs.

20-11 Directors of qualified districts shall serve on the Executive Board.

## **ARTICLE XXI - DISTRICT APPOINTMENTS**

21-00 A Director shall appoint an Assistant Director to assist him/her and/or to act in his/her behalf at regattas or other official events which the Director is unable to personally attend.

21-01 An Assistant District Director shall have the same powers as the District Director in the latter's absence.

21-02 District Directors may appoint committees or individuals, as necessary.

## **ARTICLE XXII - DISTRICT MEETINGS**

22-00 Meetings shall be conducted in accordance with Roberts' Rules of Order. In the event of conflict, the Constitution and By-Laws of the R/CMRC and the rules of the individual districts shall take precedence over Roberts' Rules of Order.

22-01 District Directors shall call at least one meeting per calendar year of the members of their districts for the purpose of transacting business pertaining to the district and the R/CMRC.

22-02 Each club with five or more R/CMRC members among its ranks shall have two votes at a district meeting. Those votes will be cast in person by each club's chosen delegates (2), who must be R/CMRC members.

22-03 A member can only cast votes within or represent one club at a time.

22-04 Districts may raise and maintain their own funds.

22-05 To meet the unique needs of geographical area and membership preferences, individual districts may adopt rules to supplement R/CMRC rules. District rules may not contradict category rules; and shall become effective at the beginning of the full racing season following the meeting at which the rules were adopted.

## **ARTICLE XXIII - DISTRICT CHAMPIONSHIP REGATTAS**

23-00 Sanctioned District Championship and Double Championship Points Regattas shall be limited to one per year per club, except that more than one sanctioned points regatta may be offered by one club if all clubs eligible to host a regatta have had the opportunity to apply for a sanction but have failed to do so.

23-01 The dates of sanctioned district points regattas shall be spaced so as to insure optimum attendance.

23-02 Classes to be offered at district points regattas will be determined at the district meeting held during the year preceding subject regatta season.

23-03 All district championship points races and/or double points races must be sanctioned by the APBA.

23-04 Regatta sanctions shall be granted only for holidays or weekends or such times so that the majority of members may have the opportunity to attend.

23-05 Each district shall set a fee schedule for District Points events, to be uniform throughout the district.

## **ARTICLE XXIV - DISCIPLINE**

24-00 GENERAL: Charges may be brought against R/CMRC Districts, officers, and individual members for violation(s) of the APBA and/or R/CMRC Constitution, By-Laws, or rules, or for conduct unworthy of a member of our Association and/or Category, or for acting in an unsportsmanlike manner or in a manner inimical to the Association/Category, or against an officer for misfeasance or malfeasance in office.

PROCEDURE: All charges, except as otherwise provided for hereafter, shall be in writing and shall be forwarded to the Category Chairman within 90 days of the incident or the last of a series of incidents giving rise to the charges, together with a full statement of the facts and all matters relating thereto, and any other supporting evidence as considered appropriate and/or necessary. The charges shall be accompanied by a check or money order in the sum of \$100.00, payable to the R/CMRC. This fee shall be returned to the party(ies) bringing the charges if said charges are upheld. In the event the charges are dismissed and/or otherwise found to be non-meritorious, the \$100.00 will not be returned by the category, but will be used by the category as a credit against expenses. National Officers, National Chairmen, and District Directors shall not be required to submit the \$100.00 fee with charges which they bring.

When charges under this section are received by the Category Chairman, they will immediately be referred to the APBA Chief Counsel for a determination as to whether or not the charges, considering the statement of facts and any other supporting evidence, would, if un rebutted, be sustainable. In the event Counsel finds them to be non-sustainable, the charges will be dismissed. The decision of Counsel upon this matter is final. His/her decision will be written.

Upon receiving a determination from Counsel that the charges are sustainable, the Category Chairman will appoint a hearing committee consisting of not less than 3 or more than 5 members of the Executive Board, who shall consider the charges and all relevant evidence and report its findings and decision in writing to the Category Chairman. The accused shall have the right to be present before the hearing committee, with one advisor or, if impractical, to submit written matters in his own behalf. The Category Chairman shall, as soon as practicable, notify the accused, in writing, of the decision of the hearing committee.

The hearing committee is empowered to make such rules as it considers appropriate to govern its proceedings.

The hearing committee shall have the authority to expel, dismiss, suspend, censor or otherwise rule as it sees fit, except that it shall not have the power to levy fines and/or forfeitures. The decision of the hearing committee is final. TEMPORARY SANCTIONS: The Category Chairman, Category Vice Chairman, District Directors and Contest Directors shall have the authority, within their areas of jurisdiction, to discipline any official, owner, driver, helper, pit person, crew member, assistant or category member who, whether actually competing in a race or not, violates any rules of the Association or category, interferes with racing or acts in a manner inimical to the Association or category.

Should it come to the attention of the Category Chairman, Category Vice Chairman, District Director or Contest Director that any such person has, within the jurisdiction of said officer or official, acted in a manner proscribed herein, or who has conducted himself in a manner not in the best interests of R/C powerboat racing or has acted in an unsportsmanlike manner in connection with any racing event, and such misconduct is, in the opinion of said officer or official, of major importance, then such officer or official may suspend or disqualify the offender from the event, for the day, or from the regatta, within said officer or official's sole discretion. The decision of said officer or official is final.

## SECTION 2 • SAFETY REGULATIONS

### REQUIREMENTS FOR R/C POWERBOATS

30-00 Propulsion shall be by contact with the water or by air propeller. Air prop driven boats shall be 3.5cc only. Inertia reaction devices such as rockets or jets are prohibited.

30-01 Effective engine throttle control is required of all internal combustion engines and electric motors entered in competition. The driver must be able to shut off his/her boat's engine by radio operation.

### SPECTATOR SAFETY

31-00 Reasonable and proper precautions shall be employed for the safety of spectators and contestants. These provisions are the responsibility of the sponsoring club.

31-01 Spectators shall be kept a minimum of 15 feet from any boat in operation. They shall be kept out of the water at all times. Fencing or roping portions or all of the shoreline is recommended for sites at which a boat may travel more than its own length out of the water.

31-02 The hot pit area shall be roped or fenced. It shall be kept clear of all spectators and persons other than the contest officials and those contestants and pit persons participating in the event at that time.

### CONTESTANT SAFETY

32-00 No persons other than contest officials and those members assisting the contestants with their boats at that time shall be permitted in the water. No person shall be permitted in the water following launch and prior to the retrieval of his/her boat without the permission of a contest official.

32-01 The retrieve boat will not be launched, for any purpose, while R/C boats are running. Similarly, no R/C boat will be launched while the retrieve boat is on the water.

32-02 At the discretion of the contest director, depending on safety conditions at an event site and unless otherwise prohibited, retrieval of R/C boats by a retrieving device such as a "tennis ball" or pole may be permitted.

32-03 At the discretion of the contest director, the launching of a boat at the expiration of pit time (see Section 5-C-1) will be permitted provided its engine has been started, it is ready for launch and it has been removed from its stand. The boat must be launched as quickly as safety conditions permit.

32-04 For safety reasons a boat may not be retrieved for the purpose of adjusting the needle valve or any other work unless the engine is shut down.

### OPERATOR SAFETY

33-00 Air props must be equipped with shrouds. Boats propelled by air props must be equipped with an underwater rudder or skeg at least one inch in depth.

33-01 No engine shall be started or turned over on the tables or in the working pits unless the prop is removed or properly protected from accidental contact. All boaters' starting stands should be equipped with propeller guards to prevent accidental contact with the propeller when the engine is started.

33-02 All participants must wear closed toed shoes at all times while in the "hot pits".

### FIRE SAFETY

**34-00 Smoking or open flames of any kind are not allowed within 15 feet of the hot pit.**

34-01 A minimum 5 lb. ABC rated fire extinguisher must be present in the hot pit area at all times when gasoline powered boats are present.

34-02 All modelers who are operating or starting a boat must have a fully operational 5 pound fire extinguisher located within four feet of the area of fueling or starting the boat. This Fire Extinguisher must be capable of extinguishing a gasoline fire. Those who do not comply with this requirement will not be permitted to operate their boat at that event.

34-03 Fire extinguishers may be inspected at a club events. Boaters will not be permitted to operate their boats until they comply with this ruling.

34-04 A fire watch (a person or persons standing by with a fire extinguisher to prevent a fire) must be enforced during any repairs to a boat that may cause fuel to ignite (welding, soldering, etc.).

34-05 All fuel must be stored and carried in an approved "D.O.T." approved container. This container must be free of leakage and have the proper venting. No other means of transporting or storing gasoline at club event or functions is permitted. Once the boat is fueled the container must be located away from the boat that is being started in the pit area.

34-06 An approved gasoline container must be provided at each event for contaminated gasoline. No gasoline is to be dumped on the ground.

### RADIO CONTROL SAFETY

34-00 Transmitters shall be impounded when brought into the pit area. The impound area shall be properly shaded. Adequate security and protection shall be provided impounded radios.

34-01 Readily observable channel clips shall be affixed to transmitters at all times.

34-02 The use of transmitters for checking operation shall be controlled by contest officials.

34-03 The owner's name and address shall be affixed to all transmitters.

34-04 Radio receiver on/off switches shall be positioned in boats in a manner which prevents accidental shut off if bumped during handling, launching or racing.



## GENERAL SAFETY

35-00 No boat which has run aground will be permitted to re-enter competition until contest officials are satisfied that it will operate properly.

35-01 No buoys shall be set on the course closer than 50 feet to any shoreline.

35-02 The consumption of alcoholic beverages or the use of illegal drugs during practice or competition by contestants, officials or assistants is absolutely prohibited.

35-03 When visibility is reduced to 200 feet or less due to darkness, fog, etc., the operation of R/C powerboats is prohibited unless sufficient lighting of the entire course and hot pit area is provided.

35-04 Only members in good standing of the R/CMRC may operate a R/C powerboat during a sanctioned regatta or its practice period.

35-05 Members must have their APBA membership cards in their possession at all times while operating a R/C powerboat at a regatta or during practice.

35-06 All applicable laws, ordinances, regulations and rules of any Federal, State, County or Municipal government having jurisdiction over an area being used for any R/CMRC function shall be observed at all times.

35-07 A "Release and Waiver of Liability and Indemnity Agreement," as provided by the APBA to all contest directors of sanctioned R/CMRC regattas shall be signed by all contestants, pit persons, contest officials, or any other persons, adult or minor, immediately upon entering the pit area. This document must be signed by a person before he is permitted entry to the hot pit area during a sanctioned event. The signed form(s) must be returned to the APBA Headquarters following the event.

## SECTION 3 • GENERAL POWER BOAT RULES OF COMPETITION

**PREAMBLE:** The following rules are intended to provide uniformity and continuity in competition; however, common sense and safety considerations may supersede the written rule.

### A. OFFICIALS AND DUTIES

1. THE CONTEST DIRECTOR is the primary official of an event or contest. His/her duties and responsibilities include but are not limited to the following:

- a. Accurate tabulation and organization of entries, accounting for the event, as well as accurate and prompt tabulation and reporting of the results.
- b. Resolving frequency conflicts based on postmark of entry.
- c. Entering the contestant on the requested frequency unless he/she alerts the contestant with ample time to make the change.
- d. Ensuring that all contestants understand the event by conducting a drivers' meeting prior to the start of the contest.
- e. Ensuring fair and expeditious progress of the regatta.
- f. Ensuring smooth and efficient Hot Pit operations.
- g. Resolving questions concerning interpretation of rules, starts, and assessment of penalties and/or disqualifications.
- h. Doing a thorough pre-race assignment of duties to insure that: the retrieve boat(s) are manned, heat race judges are ready, additional marker buoys are available, a transmitter impound monitor is on duty or a frequency scanner is used to check all available frequencies, and then during the course of an event continually monitors to see that all assignments are being performed.
- i. Appointing an Assistant Contest Director.

2. PIT MANAGER is responsible for the overall management of the Pit Area. Duties will include but are not limited to the following:

- a. Maintaining a check list of contestants in the designated pits and to inform the contest officials of absent entries.
- b. Ensuring that only drivers and pit crews are in the Hot Pit and that applicable safety rules are enforced.
- c. Signaling for the commencement of Pit Time.
- d. Monitoring of the boat traffic in the Pit Lane and announcement of potential hazards.

3. COURSE JUDGES shall be responsible for the constant monitoring of their assigned duties and note infractions of the rules and procedures. Duties will include but are not limited to the following:

- a. Counting laps, noting infractions and monitoring the course for obstacles, debris or hazards.
- b. Judging the severity of the infraction and assessing a just penalty, if necessary, under these rules.
- c. Informing the proper contest official(s) of the infraction(s) and judgment(s) within one lap.

### B. SCHEDULING OF RACES/HEATS

1. Although it is strongly recommended that the computer prepared grid system be used in assigning boats to the heats, drawing for races will be done by random selection of compatible frequencies and with no regard to specific entries, contestants or boats. Some types of racing (i.e. Love Plan), may require special techniques which may be followed at the discretion of the Contest Director.

2. During the course of a race when the number of boats in any scheduled heat has been reduced to three or less, the Contest Director may move the remaining boats to another heat barring any frequency conflict.

### C. RADIO COMPLIANCE

1. All boats must have an operational throttle and rudder that is operated by radio control.

2. All radio equipment must conform to the FCC requirements for radio control systems, comply with the APBA radio requirements, and be of a ground frequency only. Those boats that do not comply with the radio requirements will not be permitted to operate at any event until the radio equipment conforms to these guidelines.

3. All servos inside the boat must be rigidly mounted to the hull or to the rigid mounted radio box. The use of tape or other non rigid servo mounting will not be permitted. The receiver must be in a watertight container so that the radio equipment will withstand the rigors of R/C racing. The size of the servos used in the boat is the responsibility of the boat builder and/or the boat owner.

4. Fail safes are required for the Offshore Superboat class and Drag Boat classes of boats, and recommended for all other classes. The fail safe must be able to close the throttle in the event of radio failure. This will be tested on land, by turning off the transmitter. At that time the throttle servo will immediately close the throttle by means of the fail safe. This is mandatory regardless of the radio being used. A boater who does not comply with the testing, or fails, will not be able to race his boat until it is fully operational. Testing of this device will be done after the race, on the first place boat in each class. Those that do not pass will be disqualified and the next place boat that passes will be awarded first place in that class.

4. All servos used for steering in 1/4 scale classes must be a "1/4 SCALE", with a minimum of 160 in. oz. of torque and be metal geared. The throttle servo or servos must be "1/4 SCALE" as well.

## D. FREQUENCIES

1. Contestants are responsible for the correct frequency(ies) of their entry(ies). Contest officials are not required to rearrange scheduled heats due to incorrect frequency listings on entry forms, or frequency changes after entry. Contest officials may rearrange scheduled heats due to frequency problems if it can be accomplished easily and without disruption to the program.

2. All recognized ground frequency(ies) and all purpose frequency(ies), i.e., 27, 50, 53 are legal and may be used during participation (to include testing and practice during official "open water" periods) in APBA R/C Model Racing Category sanctioned racing events. (NOTE: For frequency 75, every effort should be made to use the 2-digit frequency designator called Channels to avoid confusion: i.e: Channel 64 instead of frequency 75.470.)

a. In Canada, channel 75.410 is also legal for the operation of model boats.

3. Frequency changes due to equipment failure will receive sympathetic treatment providing:

a. The Contest Director is notified of the necessity of a change.

b. The required frequency change does not significantly disrupt the contest.

## E. BACK TO BACK ENTRIES

Contestants shall be responsible for notifying the Contest Director in case of "Back to Back" races involving his/her entry and shall receive a maximum of five minutes to prepare for the next heat.

## F. BUOYS

Buoys shall be constructed of materials such as styrofoam or plastic that is intended to be non-injurious to boat hulls. They must float at least fifty percent out of the water, be clearly visible and be securely fastened. The portion of the buoy above the waterline will be 4 to 12 inches in diameter and 8 to 20 inches in height. Buoys shall be either solid bright discernible colors or have a discernible color on a contrasting background.

## G. ENGINE CLASSIFICATION: Internal Combustion

Class / cubic centimeters (Note: cc displacement =  $[3.142 \times (\text{BORE})^2 \times (\text{STROKE})] \div 4$ )

3.5cc	00.000cc up to 03.605cc 0.000 up to 0.220 cu. in.	SUPER DRAG 1 SUPER DRAG 2	30.6 up to 34.5cc 34.6cc up to 39.5cc
7.5cc	03.605cc up to 07.538cc 0.220 up to 0.460 cu. in.	SUPER DRAG 3 SUPER DRAG 4	39.6cc up to 45.5cc 45.6cc up to 53.5cc
11cc	07.538cc up to 11.143cc 0.460 up to 0.680 cu. in.	SUPER DRAG 5 5 LITRE	53.6cc up to 75.2cc 22cc up to 26cc
30cc	11.143cc up to 30.152cc 0.680 up to 1.840 cu. in.	NATIONAL MOD GRAND NATIONAL	27cc to 34cc Maximum 41cc
G-24	16cc up to 24.5cc	CRACKERBOX	Under 30cc
G-30	24.6cc up to 30.5cc	JERSEY SKIFF	21cc up to 31cc
G-36	30.6cc up to 36cc	SPORTSMAN "A"	Maximum 53cc
Novice Gasoline	25cc up to 30cc	SPORTSMAN "C"	Maximum 66cc
SUPER STOCK	20cc up to 24.5cc	SUPERBOAT	Maximum 77cc
PRO STOCK	24.6cc up to 30.5cc		(Combined / Dual Engines)

## H. HULL CLASSIFICATION

### 1. GENERAL

a. A monoplane hull can compete in only the monoplane class for both records and in racing events. No further modifications can be made to a hull to change its basic classification once it has been classed. (Example: glueing or taping shingles (steps) to the bottom of a monoplane to make it a hydro.) However, if such steps are an integral part of the hull and said hull has been originally classed as a hydro and so entered, then it is a hydro and will remain so.

b. The maximum size of a hull in racing competition is 60 inches.

c. All boats shall have positive buoyancy when open compartments are filled with water.

### 2. MONOPLANE

a. A hull which has a single keel (ride pads that meet the other criteria of this section are considered part of the keel).

b. A hull which has no surface or edge lower than the keel, (turn fin, struts and ride plates excepted).

c. A hull which, if cavitation or ride plate(s) are used, such plate(s) must be no more than plus or minus 1/16", above or below, bottom running surface of hull at intersection of hull and plate(s).

d. Strakes and chines may be no more than 1/4" deep and 3/4" wide. Strakes must be parallel with the keel (centerline of hull). "Add on" strips or running strakes must also adhere to this rule.

e. A hull when checked with a straight edge, at right angles to the keel, at any point on the hull, may not have a depression or concavity which exceeds 1/4".

f. If an enclosed prop shaft log is used, the portion exposed to the water must be either circular in cross section at least in the bottom 180 degrees of circumference, or streamlined to a sharper leading edge; however, no flat planing surface is allowed.

g. Any type strut is allowed.

### 3. HYDROPLANE

If a hull does not qualify as a monoplane hull, it automatically is classified as a hydroplane.

**I. PROXY** There shall be no proxy entries in R/CMRC Competitions.

## J. PIT CREW

While operating his/her boat, each driver must always have with him/her at least one knowledgeable pit person to assist in pit handling of a boat, and who is aware of all conditions on the course while the boat is in operation during both race and open water periods (includes test running).

**K. CONTROL AREA** Drivers must remain within the specified driving area when competing.

## L. NUMBER OF ENTRIES

1. Contestants entering R/CMRC events may enter only one boat, per class, per contest.
2. Two or more entrants may not drive the same boat, in the same class, in the same contest (exception: "Kids' Competition", Section 17).

## M. PRACTICE/TEST RUNNING

Procedures for controlled practice and test operations will be left to the discretion of the Contest Director. The following procedures are recommended: (1) limiting of course time, (2) limiting time of possession of a "Frequency Clip" and (3) all practice running will be in a clockwise direction around the course.

## N. DRIVERS' MEETINGS

1. Drivers' meetings will be held prior to each contest and at any time the Contest Director may deem necessary. It is the driver's responsibility to attend these meetings.
2. The primary purpose of the drivers' meeting is for interpretation and clarification of rules, procedures and any other questions regarding the contest rules.

## O. DRIVING RULES

Driving a model boat should require the same care, precaution and consideration for safety as is necessary in driving a full size boat. The lack of these factors could result in physical injury as well as boat damage.

### 1. RIGHT OF WAY

- a. A boat operating in a lane of travel around the course has the right to maintain that lane of travel without interference. Any boat desiring to enter an occupied lane of travel must establish a reasonable, safe interval before entering that lane.
- b. Good driving techniques and sportsmanship decree that a relatively straight course be driven. Fishtailing, "S" turns, or other such tactics to prevent or hinder a boat from entering an occupied lane is a violation of right of way. Violations of right of way will draw a Driver Infraction. The above pictures clarify situations of right of way.

### 2. BOAT OPERATION

It is the driver's responsibility, if upon experiencing any sign of inability to control his/her boat, to steer the boat away from the active part of the course and shut off the engine. It is also recommended that you alert the Contest Director or other drivers of the status/location of your boat.

### 3. NOISE ABATEMENT

No boat may exceed a maximum of 92 decibels. The following are requirements for measuring and lowering the maximum level.

- a. Measurements to be taken with Decibel Meter located no more than 20 feet from the shoreline, pointed at a right angle to the shoreline and with the boat approximately 35 to 40 feet from the shoreline.
- b. Boats not in compliance in the next heat, after being notified, will be disqualified.
- c. To meet federal and/or state and local noise abatement rules, the maximum levels will be 92 decibels.
- d. State or local noise abatement rules may require a lower maximum level.

## P. DRIVER INFRACTION

1. Should any driver operate a boat in violation of the Driving Rules or in an unsafe manner as outlined under Rule P, the designated Contest Director shall call a "Driver Infraction".
2. Driver infractions shall be penalized as follows:
  - a. An infraction shall draw a penalty of one extra lap over those required to complete the heat.
  - b. Should the infraction be of a serious nature as to endanger other boats, contestants or spectators or a flagrant violation of these rules in the opinion of the contest officials, the offender may be ordered off the course and disqualified from that heat. A disqualified driver receives no points.
  - c. If a driver hits a called dead boat, that driver will be disqualified for that heat.
  - d. All driver infractions must be called within one lap of their occurrence to have a penalty assessed against the driver. However, the assessment of the appropriate penalty may be delayed until all necessary discussion by the Contest Director/officials has taken place.
  - e. Should a boat show erratic, random or other unusual behavior, a contest official will warn the driver. Should the action continue, the boat will be ordered off the course. If a driver, after being warned and given the opportunity to leave the course, does not comply with the order to cease operation, he/she shall be banned from participation in any further heats and be given 0 points for the heat in question.
  - f. A driver experiencing control problems shall not be allowed to continue in another race unless he/she can demonstrate that the problem has been corrected.
  - g. Should a driver re-enter a heat, and after establishing controllability the boat continues to show erratic maneuvers, these maneuvers shall be interpreted as an inability to drive properly and he/she shall be ordered from the course and shall be awarded only those points earned up to that time.

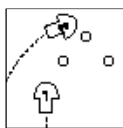
## Q. BUOY INFRACTIONS

1. A one lap penalty shall be assessed when a boat cuts inside, jumps over, or causes obvious damage to a buoy. No penalty shall be assessed for a boat that touches a buoy on the outside.
2. A one lap penalty occurs when one or more buoys are cut on a turn, in succession. Offending boats must yield right of way to others on the course when re-entering. Upon re-entering the course, another buoy(s) cut in that same turn shall result in another penalty being assessed.

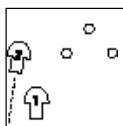


SITUATION #1: Driver #1 has chute. Drivers #2 and #3 are overtaking improperly. Driver #3 is in trouble: being within the

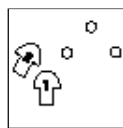
course, he must block #1 to avoid a buoy.



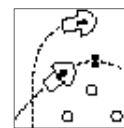
SITUATION #2: Driver #2 is clear. Driver #1 is not being forced into the buoy.



SITUATION #3: If Driver #2 passes and stays in his/her lane and does not attempt to take over the next inner lane, he/she is overtaking properly.



SITUATION #4: Driver #2 should be penalized: #1 is being forced into the buoy to avoid a collision.



SITUATION #5: In this instance, Driver #1 abandons his/her lane by turning too wide, allowing Driver #2 to take over the lane on a pass with a shorter turn. Driver #2 at point "X" has the right of way.

3. Lap penalties will be assessed during Pit Time, Mill Time or Race Time. If a buoy is cut after the boat has completed the race, then the boat will receive a 100 point reduction in earned points in that heat, but in no event shall the boat receive less than 50 points.

4. Buoy infractions shall be called by the Contest Director and/or officials; any decision made shall be final.

5. A driver that accumulates three "Driver Infractions" and/or "Buoy Infractions" shall be automatically ordered off the course and awarded a DISQ (0 points).

**R. PROTESTS**

1. As in many sporting events, situations develop that require judgment calls or decisions on the part of contest officials and all such decisions made shall be considered final.

2. Continued verbal protest, harangues or other abuses, either direct or indirect of any contest officials shall be considered unsportsmanlike conduct and will be just cause for disqualification or barring that contestant or crewperson from any further participation in that contest.

3. A protested hull/engine will be impounded immediately after receipt of a written protest. Thereafter, any needed maintenance, adjustments or repairs will be conducted in the impound under the supervision of a member of the Inspection Committee. This boat will be allowed to continue in competition under supervision of a member of the Inspection Committee until the protest is resolved. The inspection must be accomplished at least by the end of the day. Any points, records, places, etc. won, shall be held pending the resolution of the protest.

4. All protests of engines and/or hulls must be accompanied by a \$5.00 Protest Fee. If the protest is not upheld, the fee will be split between the protestee and the R/CMRC fund. If the protest is upheld, the fee will be returned to the protester.

5. A protested hull/engine will be measured by a committee made up of the Contest Director, the District Director or his/her authorized representative present at the contest, the National Event Chairman or one other member of the R/CMRC, other than the protester or owner of the protested engine or hull. Measurements will be made in the presence of the owner and the results and decisions thereof shall be made known in writing and signed by each member of the three person committee and be forwarded within three days of the contest to the Category Chairman of the R/CMRC. (Clarification: A protest of any kind must be made at the contest so all factors can be available.)

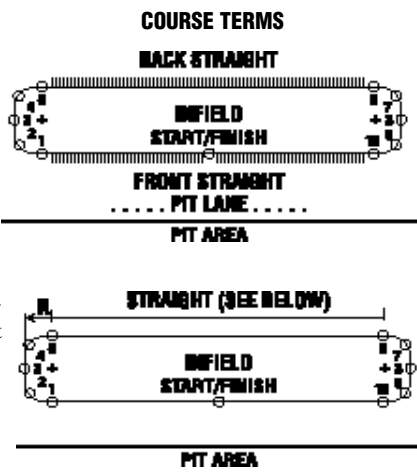
**S. TECHNICAL DISQUALIFICATION**

A hull/engine/motor that is found to be illegal, causing a disqualification, requires the re-calculation of each heat in which the disqualified contestant competed.

**SECTION 4 • OFFICIAL COURSES**

**A. TERMS**

1. The area between the turns will be referred to as the front and back "Straight-aways", respectively.
2. The section within the buoys is referred to as the "Infield".
3. The buoys at the end of the straight-aways are referred to as "Entrance Buoys" of the turns. The buoys at the beginning of the straight-aways are referred to as "Exit Buoys" of the turns.
4. The area between the shore and front straight is known as the "Pit Lane". This lane shall be considered present during all events whether marker buoys are set up or not. Drivers entering or leaving the Pit Area are encouraged to drive their boats accordingly.
5. The "Start/Finish Line" shall be an imaginary line that is perpendicular to the front straight of the course at the start/finish buoy.
6. Straight-away buoys are optional. If used, they shall be placed along both the front and back "Straight-aways", in a straight line between the "Entrance Buoys" and the "Exit Buoys". Straight-away buoys are subject to the same penalties as turn buoys.



**B. REGULATION COURSES - RECORDS, HEAT RACING**

The course shall be defined and measured as follows:

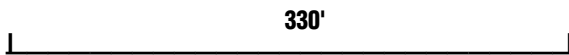
1. The course shall be 1 mile in length for all classes.
2. The course shall be six laps for all classes.
3. The radii used when establishing a course shall not exceed 50 feet or be less than 15 feet.
4. Five buoys shall be used to define the turn except 15' radii, which may use three buoys.
5. When optional straightaway buoys are used, a maximum of three buoys will be used for each straight-away.

STANDARD 6-LAP, 1 MILE (total distance) COURSE Mathematics of COURSE = 880' per lap length

TURN .....	STRAIGHT
30' radius, 94' circumference .....	.346 feet
35' radius, 110' circumference .....	.330 feet
40' radius, 126' circumference .....	.314 feet

**C. REGULATION COURSES - RECORD, 1/16th MILE**

**STRAIGHT-AWAY** Straight-away length shall be 1/16th mile (330 feet).



**SECTION 5 • HEAT RACING**

**A. GENERAL**

1. R/C Powerboat Heat Racing shall consist of the simultaneous scheduling of three or more boats. The number of heats constituting an event shall be determined by the number of entries and time available, however, a minimum of three heats is required. Ties will be broken by the fastest heat times.
2. There shall be a minimum of three entries on compatible frequencies to make a class and/or event. There shall be no more than eight boats in any heat.
3. Heat racing records can only be set at or during R/CMRC sanctioned heat races.

**B. HEAT RACING PROCEDURES**

1. Each heat race shall consist of three distinct phases: Pit Time, Mill Time and Race Time.

2. The heat begins with the starting of a clock. The starting clock (or a tape recorded verbal message start) will be placed in full view of all drivers and require no less than 30 seconds to complete one sweep. If all boats are on the water during this two minute period, Mill Time (30 seconds) can be started with the drivers' approval. Contestants will mill on the course in a designated milling pattern until the end of Mill Time.

**C. PIT TIME**

1. A Pit Time of two minutes is allowed for the starting of all engines and the launching of all boats.
2. If none of the contestants have started their engines and/or are not under way at the expiration of Pit Time, the heat shall be declared "No Contest".
3. During "Pit Time", a dead boat may be retrieved and relaunched using the transmitter's antenna, as long as the recovery person has one foot on dry land. After the heat is completed and all boats have stopped, dead boats may be recovered by any method approved by the pit boss.

**D. MILL TIME**

1. A 30 second Mill Time shall be initiated at the expiration of Pit Time. Launching of boats at the expiration of Pit Time will be permitted providing the boat is ready for launch and has been removed from its stand. The boat must be launched as quickly as safety conditions permit.
2. Milling procedures during Pit Time and Mill Time:
  - a. Boats shall be launched in a safe manner so as not to endanger pit crews or other boats on the course.
  - b. Boats should be launched and retrieved as close as possible in a direction parallel to the course.
  - c. Boats must stay on the course until passing the exit buoy of the right-hand turn.
  - d. During Pit and Mill Times boats may mill a full or partial course. Boats milling a partial course must mill around the right-hand turn and may only cut the course from front to back.
  - e. Boats on the back straight-away have the right of way over boats cutting the course.
  - f. During the last five seconds of Mill Time, boats are committed to the start/finish line and must steer a straight course and safely select lanes. Zigzagging, "S" turns, or fishtailing will draw a driver infraction.

**E. RACE TIME**

The Race Time shall commence with the expiration of Mill Time and shall not exceed five minutes. Any boat not completing the required number of laps in this time shall receive a DNF and be ordered off the course.

**F. START**

1. The expiration of Mill Time signifies the start of the heat regardless of the position of contestants and also starts the timing of the heat.
2. Boats crossing the start line during the last five seconds of Mill Time will be ruled as a "Jump Start" and must complete a circuit of the course and recross the start line for a legal start.
3. A heat is considered officially begun when one boat legally crosses the start line at the end of Mill Time.

**G. THE RACE**

1. Laps are counted from the first crossing of the start/finish line after the start of Race Time with the first crossing of the start/finish line counted as zero. Then each consecutive crossing of this line is counted as an additional lap until the required number of consecutive laps are completed. This constitutes the heat finish. The first boat to legally complete the final lap is declared the winner of that heat.
2. In the event that no boat completes the required number of laps, no winner will be declared.
3. Following an official start, the course shall be run clockwise for the required number of laps. Any penalty laps will be run after the normal heat laps and any penalty laps must be completed with no break between. All normal laps and any penalty laps must be completed in order to receive a heat finish.
4. The contest officials may order a boat(s) off the course any time after completion of the heat by the winning boat. Boats traveling at reduced speed but obviously capable of finishing the required laps will be awarded points according to their position at the time they are ordered off the course. If, in the judgment of the contest officials, boats that remain on the course and are incapable of finishing during the required five minutes shall be ordered off the course and scored a DNF.

**H. RESTARTS AND RERUNS**

Since each boat must cope equally with similar probabilities for all circumstances (obstacles, radio interference, collisions, etc.) in any given heat, no reruns or restarts shall be allowed for individual boats with the following exception: if, in the judgment of the Contest Director, a safety hazard is present which would justify ordering all boats off the water, a restart may be declared for all boats running at the time the heat was cancelled.

**I. CONCLUSION**

Boats that have completed their heat shall decrease speed and avoid interference with those still racing.

**J. HEAT DELAYS**

1. It shall be the policy of the Contest Director to maintain a sympathetic and helpful attitude toward contestants and their problems while conducting a contest. Any major equipment problem discovered by the contestant before reaching the pits should be relayed to the Contest Director immediately. Rescheduling may be done, if in the discretion of the Contest Director, it is advisable and fair to all the other contestants.
2. Delay or cancellation of Pit Time will be allowed at the discretion of the Contest Director.

**K. HEAT RACING POINTS AND AWARDS**

1. Boats will score and accumulate points according to the final positions as shown in the following table.

1st Place	.....400 points	5th Place	.....127 points	9th Place	.....40 points
2nd Place	.....300 points	6th Place	.....95 points	10th Place	.....30 points
3rd Place	.....225 points	7th Place	.....72 points	Did Not Finish	.....DNF 25 points
4th Place	.....169 points	8th Place	.....54 points	Did Not Start	.....DNS 0 points
				Disqualification	.....DISQ 0 points
2. Points will be awarded in order of finish for each heat and the entries placed in order of total accumulated points for the ultimate class and race results.
3. Point ties will be broken by the boat(s) with the fastest heat time(s).
4. Contestants will carry over points per their overall class finishing position toward the season championship.
5. If an overall High Point Championship is to be awarded, it shall be determined by an accumulation of the total points earned by all boats entered by one contestant.

## SECTION 6 • OUTBOARD COMPETITION

### A. INTENT AND DEFINITION

An outboard engine is defined as a complete internal combustion power and propulsion unit that can be attached to or removed from the boat as a complete unit. The axial thrust of the propeller shall be the primary means of controlling the direction of the boat. No independently steerable rudders will be allowed.

### B. RACE SPECIFICATIONS

1. The format of the event(s) will be left to the discretion of the Contest Director, club or district.
2. Outboard records will be recognized in 3.5cc, 7.7cc, 11cc and 13cc OPC Tunnel classes listed in Section 3, General Power Boat Rules of Competition, #G.
  - a. Modified engines may be used in 3.5cc, 7.5cc, 11cc and 13cc Outboard Hydro, Mono and Mod Tunnel.
3. Records can be set on any R/CMRC, 6-lap, 1 mile course, 1/16th mile straight-away course or 2-lap, 1/3 mile course.

### C. STOCK ENGINE AND REPLACEMENT PART ELIGIBILITY

1. Any type outboard engine used in stock outboard competition must be previously approved by the Outboard Technical Committee.
2. The Outboard Technical Committee may declare engines or replacement parts non-stock whose manufacturers have failed, at the request of the Outboard Technical Committee, to supply information and the necessary specifications for measurements, i.e., specifications or sales information on their various models as the Outboard Technical Committee shall deem necessary to establish "Stock" eligibility for each model.

### D. STOCK ENGINE SPECIFICATIONS AND/OR RESTRICTIONS

1. A model marine manufacturer of outboard engines must comply with all requirements provided by the following rules and the rules in Subsection C, and have manufactured engines in quantities greater than **100** units.
2. Engines and parts must be standard factory production units and have been available and offered for sale to the general public no less than 90 days prior to that year's national event.
3. Engine parts must remain as originally manufactured for that size and style engine (no modifications). Interchanging of parts from one series or edition to another is legal as long as the parts used were made by the engine manufacturer and were used on outboard engines and meet the requirements set forth in Subsection C.

Note: Slide valve exhaust configuration parts cannot be used in conjunction with a carburetor.

4. The following stock class exceptions will be allowed:
  - a. Adhesives, set screws and jam nuts.
  - b. Any carburetor linkage arms.
  - c. Throttle return springs.
  - d. Replacement of stock hinge plate to accommodate aftermarket engine trim assembly.
  - e. Glow plugs, propellers, fuel brand and mixtures.
  - f. Any type steering arm.
  - g. The exterior of the lower unit may be polished or painted but otherwise remain stock. The skeg may be trimmed, thinned or shortened as per dimensions allowed in the Outboard Inspection Manual.
  - h. Any type flywheel nut.
  - i. Cowlings, shrouds or painting of the outboard engine.
  - j. The re-tapping of a fastener hole.
  - k. A single hole will be allowed specifically for lubrication of the flex shaft and/or PTO bearing. This hole will be located on the lower unit along the shaft line but will not be allowed to enter the exhaust cavity.
  - l. It is allowed to use any brand bearing using stock design, i.e.: Boca STD phenolic caged, steel ball bearing. The use of ceramic bearings is not allowed.
  - m. It is allowed to replace the Teflon shaft log with any of the available metal logs. To improve dependability and allow additional lubrication, holes may be drilled into the lower unit case.
  - n. It is allowed to use any brand of flex shaft to improve dependability.
  - o. It is allowed to use any type of bushing to be installed in the drive dog unit.
5. "Stock Class" engines must meet the current specifications set forth in the approved Outboard Inspection Manual. Engines currently approved for "Stock Class" competition.
  - a. K&B, OS and Thunder Tiger 3.5cc, 7.5cc, 11cc and 13cc outboard engines.
6. The Outboard Technical and Inspection Manual is available for purchase from the R/CMRC Chairman.
7. A "Modified" engine must meet only Subsection #A, Intent and Definition and the engine classification as defined within Section 3, General Power Boat Rules of Competition, #G.

### E. HULL SPECIFICATIONS

Any hull currently recognized by the R/CMRC Rule Book shall be eligible for outboard racing. At the discretion of the Contest Director all hull classes may be run together and such classes may be run under either "Stock" or "Modified" engine rules.

### OPC TUNNEL

#### A. INTENT

1. The "Outboard Performance Craft (OPC) Tunnel" racing class was established to race outboard tunnel boats that resemble boats that participate in Outboard Performance Craft Tunnel races as sanctioned by the APBA.
2. OPC Tunnel Racing Rules are intended to supplement Section 3, General Power Boat Rules of Competition of the R/CMRC. In the event of a conflict between the two, Outboard Competition Rules shall prevail.

#### B. ENGINE SPECIFICATIONS

Engines shall meet the requirements as specified in the "Stock Class" engine standards defined under Subsection D of **OUTBOARD COMPETITION**.

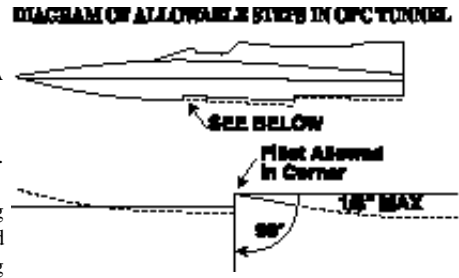
#### C. ENGINE INSPECTIONS

To ensure all engines meet the requirements as specified in the "Stock Class" engine standard as defined under Subsection D of **OUTBOARD COM-**

PETITION, they may be inspected.

**D. HULL SPECIFICATIONS**

The hull shall be of tunnel configuration with no restrictions as to size, weight or type of construction. A hull shall be classified as tunnel (Catamaran) as follows:



1. "Tunnel" of any design, width or depth which runs the full length of the hull.
2. "Tunnel" will connect two unbroken outer hulls or sponsons that also run the entire length of the hull. Picklefork designs accepted. No outrigger configuration.

3. Sponsons or hulls may be of any design and may include "stepped" surfaces on the wetted running sponson bottom of not more than 1/8" in depth. The 1/8" steps may not be less than five inches apart if used across the sponson. An alternative to this specification would be unlimited number of steps at any spacing as long as the aggregate change in elevation does not exceed 1/8" per sponson. Only one step may be used, if used lengthwise on the sponson. Lengthwise step may be used in conjunction with steps across the sponsons providing all intersection points measure 1/8" or less.

(Note: The intent of the rule is to discourage the racing of hydro hulls in the OPC Tunnel Class.)

4. No boat shall be allowed with a "recessed or picklefork bow" exceeding 30% of the overall boat length. Air slots in the center hull will be subtracted from overall length.
5. General design of a tunnel hull will be similar to full size OPC Tunnel Hulls. Imaginative painting, striping, company logos and lettering schemes may be added and are encouraged.
  - a. Open cockpit hulls must include a scale-like driver with at least head and shoulders.
  - b. Enclosed cockpit hulls must have a cross section, at least 2" wide by 2-1/2" high (for 3.5cc hulls) and 2-1/2" wide by 3" high (for 7.5cc hulls) that simulates the OPC Driver Cockpit. The cockpit must be represented by transparent materials, contrasting paint or other means that give the general scale appearance of an enclosed cockpit.

**MODIFIED TUNNEL**

**A. ENGINE SPECIFICATIONS**

The engine shall be the same as outlined in Subsection A, Intent and Definition, and the engine classification as defined within Section 3, General Power Boat Rules of Competition, #G.

**B. HULL SPECIFICATIONS** The hull is the same as outlined in OPC Tunnel Hull Classification, #C.

**SECTION 7 • R/C SCALE UNLIMITED HYDRO COMPETITION**

**A. INTENT:** To duplicate the APBA Unlimited class of hydroplane as closely as possible.

**B. DEFINITION**

1. R/C Scale Unlimited Hydro Racing Rules are intended as a supplement to Section 3, General Power Boat Rules of Competition of the R/CMRC. In the event of a conflict between the two, R/C Scale Unlimited Hydro Racing Rules shall prevail.
2. The R/C Scale Unlimited Hydro Chairman shall coordinate and communicate the business of R/C Scale Unlimited Hydro with the individual District R/C Scale Unlimited Hydro Chairmen.
3. The R/C Scale Unlimited Hydro Contest Board shall consist of the R/C Scale Unlimited Hydro Chairman and each District R/C Scale Unlimited Hydro Chairmen
4. The R/C Scale Unlimited Hydro Contest Board reserves unto itself, the power of decision in all matters of duplication or conflict.

**C. ENGINE SPECIFICATIONS**

1. The engine size shall be a maximum of 11cc (.67 cu. in.) total on-board displacement.
2. Boat engine(s) will be concealed by engine cowl and/or fake engine (modeling a Rolls Royce, Allison, etc.).

**D. HULL SPECIFICATIONS**

1. All boats shall be models of past or present APBA Unlimited Hydroplanes that are listed in the R/C Scale Unlimited Hydro Master Hull Roster.
2. Boats are to be built on a scale of 1-1/2" = 1 foot.
3. The actual scale dimensions of an R/C Scale Unlimited Hydro shall be derived from the Unlimited dimensions listed in the R/C Scale Unlimited Hydro Master Hull Roster.
4. Boats shall measure within the following tolerance, excluding appendages, as listed in the Master Hull Roster.
  - a. Overall length . . . . . plus or minus 1"
  - b. Beam . . . . . plus or minus 10%
  - c. Maximum depth. . . . . plus or minus 10%
  - d. Afterplane length (3 point design) . . . . . plus or minus 10%
  - e. Tunnel width . . . . . plus or minus 10%
5. Boats shall be painted, configured and detailed as the real Unlimited, as it ran on the water. Boats shall enter competition complete with cowling(s), fake engine(s), driver(s), instrument panel and steering wheel.
  - a. Hull or cowl offsets existing on the actual boat may be modeled in reverse (mirror image) if the correct dimensions are maintained.
  - b. A driver of scale appearance must be used in open or enclosed cockpits (with a clear windshield).
  - c. The Master Hull Roster and photos of the real Unlimited will constitute documentation of appearance.
6. All R/C Scale Unlimited Hydros participating in APBA sanctioned events shall be certified legal and registered by district officials.
  - a. Hulls must meet specifications according to Subsection D, 5.
  - b. Hull detail (i.e., hull silhouette, striping, colors, decals, etc.) will be inspected in the following manner:
    - (1) The first time a boat competes it shall be inspected.
    - (2) Inspection will be done by majority consensus of the R/C Scale Unlimited Hydro drivers entered at that event.
    - (3) If the hull does not meet specifications according to Subsection D, 5, a list of discrepancies will be provided to the driver by the district officials. The

driver will be allowed to compete at that contest but must conform to the list provided before the hull will be allowed to compete in a future sanctioned R/C Scale Unlimited Hydro event.

- (4) A reasonable attempt must be made to conceal tuned pipes and mufflers under the deck or cow l.
- c. Any boats incurring damage will be re-inspected according to Subsection D, 6b-(2) and (3).
7. In order for any driver to compete at a National Championship, the boat must conform to Subsection D, 5.
8. A boat bottom will be the same general appearance as that of the real unlimited. Exceptions include:
  - a. Sponson riding surfaces, which may be modified.
  - b. Rear non-trips and sponson sides must be scaled after the actual unlimited.
  - c. Boats modeled after unlimiteds using Jones non-symmetrical sponsons (48" right and 38" left widths) must also have non-symmetrical sponsons (approx. 1 1/4" difference). Sponsons may be widened or narrowed up to 10% (as part of the total width), however, both must be of equal percentage in the same direction. If the right sponson, for example, is widened 5%, the left sponson must also be widened 5%.
  - d. Obvious steps or recovery planes on sponsons are only allowable if they are built in or disguised into the sponson design, if not on the full-size unlimited.
  - e. Motor belly pan: for motor and flywheel only. If applicable, dimensions will not exceed 3 1/2" width, 7" in length and 3/4" in depth. Under no circumstances will said belly pan be allowed to exceed the depth of any riding surface or recovery surface. If the real boat had a full length belly pan, the model must conform.
  - f. Propeller shafts, which may be articulated.
  - g. Rudder and skid fin, which may be configured and located as desired.
  - h. If the boat being modeled has an outdrive or outdrive engines, they will be allowed on the model, if configured like the real unlimited boat.
  - i. No part of the stock propeller hub may extend beyond the transom of the boat unless scaled from dimensions of the real boat.

## **E. RACE SPECIFICATIONS**

1. At the discretion of the Contest Director races will be run under the R/CMRC heat racing format or the "Love Plan", which is run as follows:
  - a. The event will consist of three preliminary heats and one concluding set of heats. The concluding heats will consist of one final heat plus a maximum of two consolation heats.
  - b. The division of boats into preliminary heat selections shall occur by compatible frequencies random draw.
  - c. The boats accumulating the most points in the preliminary heats shall qualify for the final heat as determined by the Contest Director, i.e., five plus one from a consolation heat. If a frequency conflict between two or more boats eligible for the final heat exists, preference goes to the boat which has accumulated the most heat points (fastest heat time in the event of a tie).
  - d. Boats not qualifying for the final heat will be selected to fill the consolation heat(s), determined by the most number of points accumulated during the preliminary heats. The winner of the consolation heat(s) can qualify to participate in the final heat as predetermined by the Contest Director.
  - e. Final race standings will be determined by the order of finish in the final heat.
2. If any of the removable parts should fall off a boat during competition, except as the result of a collision, that boat shall be awarded 6th place points upon the completion of that heat. This penalty affects only the points awarded (if any) but not the heat placement of the boat in question. The placement of, or points awarded to, other boats in the field are not affected by this ruling. Exception: in consolation and final heats, the boat is awarded 6th place points and last place among "still running" boats.

## **F. CONCOURS JUDGING SPECIFICATIONS**

1. Boats will be judged from a distance of no less than six feet away (stand-off scale). A picture must be supplied to the Contest Director for each boat entered.
2. Points:
  - a. Adherence to documentation . . . . . 1 to 10 points
  - b. Detail: engine, cowl, drivers, cockpit, etc. . . . . 1 to 10 points
  - c. Paint job, markings, etc. . . . . 1 to 10 points
3. To be eligible for Concours, the boat must be run as shown in Concours, with all cowlings, drivers, fake engine, etc. The boat must also accumulate 50 racing points. In Concours judging, only the boat can be judged.
4. R/C Scale Unlimited Hydro judging forms must be used at the National Championship Regatta. These forms can be obtained from the National Chairman.

## **G. MASTER HULL ROSTER SPECIFICATIONS**

1. The R/C Scale Unlimited Hydro Master Hull Roster shall contain the names, details and known principal dimensions that identify each boat that could be built for R/C Scale Unlimited Hydro competition.
2. Real Unlimiteds must meet the following criteria to be included in the Master Hull Roster.
  - a. The boat must have been registered with the APBA Unlimited Racing Category.
  - b. The registered boat must have made at least one verifiable test run in the water.
3. The National Chairman will be responsible for the compiling, interpreting, updating and distributing the official Master Hull Roster. The Roster may be purchased for \$5.00 plus \$1.50 postage and must be signed and dated by the National Chairman. He/she will make available a new updated roster by January 31st of each year.
4. The Master Hull Roster shall include the name, address, and telephone number of the National R/C Scale Unlimited Hydro Chairman, district Chairmen, manufacturers, builders, photographers, plan-makers, etc., who would be helpful in the building of R/C Scale Unlimited Hydros.
5. Requests for changes to the Master Hull Roster should be forwarded to the National R/C Scale Unlimited Hydro Chairman accompanied by appropriate documentation. He/she will consider your request and advise you accordingly.

## **H. NATIONAL REGISTRATION SPECIFICATIONS**

1. R/C Scale Unlimited Hydro owners may register their boats with the National Chairman for the purpose of:
  - a. Relaying information to class participants.
  - b. Compiling a directory for information on particular boats.
  - c. Promoting attention to detail the class requires.
2. Any number of boats may be registered providing they:
  - a. Conform to the above rules of the R/C Scale Unlimited Hydro Racing Rules and Master Hull Roster.



- b. Have been measured by the District or National R/C Scale Unlimited Hydro Chairman or the District Director for the critical dimensions.
3. Standard national registration forms are to be used which can be obtained from the National Chairman.
4. Upon registration, a picture is to be supplied of each registered boat.
5. A registration fee of \$6.50 plus \$1.50 postage includes: a laminated registration card and an enamel lapel pin of the APBA R/C Scale Unlimited Hydro Class logo. Additional pins may be purchased from the National Chairman for \$3.00 plus \$1.50 for postage.

## SECTION 8 • SPORT HYDRO COMPETITION

### A. INTENT AND DEFINITION

To emulate the APBA Limited/Unlimited Hydroplane classes on a smaller, less detailed basis.

### B. RACE SPECIFICATIONS

1. The format of the event(s) will be left to the discretion of the Contest Director, club or district.
2. Sport Hydro records will be recognized as follows:
  - a. Records can be set on any R/CMRC, 6-lap, 1 mile course, 1/16th mile straight-away course or 2-lap, 1/3 mile course.
  - b. Records will be kept for both Sport Hydro Divisions.
3. Boat(s) and/or engine(s) may be checked for rule compliance at the end of the racing day. Any boat (dimensions and appearance) or engine not passing the technical inspection will be disqualified and forfeit points and entry fee(s) for that regatta.

## SPORT “40” HYDROPLANE - DIVISION 1

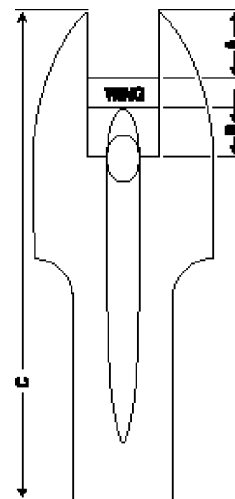
### A. ENGINE SPECIFICATIONS

1. Engines to be cross flow - blade baffle piston type .35 -.45 cu. inch, front intake only. Engine control via carburetor, no modifications to the carburetor. Any carburetor that is currently available through the normal supplier system (hobby shops or hobby dealers) that is/was made by the engine's manufacturer may be used to a maximum .312 inch bore. Except for ball bearings, rods, screws and glow plugs, all engine parts used during competition for this class must be original factory stock parts, (i.e., no modification or substitution of parts other than as noted).
2. No Perry or additional porting allowed. No Schnuerle porting or variants of the Schnuerle port system allowed.\*
3. Minor de-burring, clean-up or fitting of parts is allowed. Exhaust port and inlet system port timing changes are not allowed.
4. No hard chroming or metal plating of any kind, on any component. Any flywheel and drive shaft coupling nut may be used. Cooling system modifications are allowed.
5. No tuned expansion chamber exhaust systems allowed. Muffler noise emission to comply with noise limits set by R/CMRC rules.
6. No fuel or prop restrictions.

\*Source references for port systems: “Two-Stroke Tuners Handbook”, Gordon Jennings - 1973. “Two-Stroke High Performance Engine Design & Tuning”, Cesare Bossaglia - 1968.

### B. HULL SPECIFICATIONS

1. Boats may be purchased as a kit and built, purchased ready built, modified from an existing hull or scratch built from any suitable materials which are used in model boat construction.
2. Minimum hull length shall be 35”, excluding appendages and cowlings, as defined in illustration.
3. The deck, cockpit, tail or fin configurations may be altered to keep boats interesting.
4. Hulls must be of Limited/Unlimited design with all riding surfaces (drive train and prop not included) in the front 50% of the hull length. Pickle-fork hulls may not be recessed more than 25% of the total hull length. (A forward wing is considered part of the hull and is not included in 25% pickle-fork recess).
5. The following are not allowed: any outrigger, modified outrigger, canard or tunnel design hulls or boats.
6. No outdrive assemblies, twin rudders or twin propellers will be allowed. No part of the drive dog may extend beyond the transom.
7. Boats shall be painted and detailed in the spirit of Limited/Unlimited racing. Each boat must have a “sponsor's” name or logo affixed to the hull. The “sponsor” may be of the owner/builder's choice: hobby shop, local business, fictitious sponsor, etc. Each boat must have the driver's R/CMRC race identification number affixed to the deck, cowlings, tail or wing, unless the boat is built and detailed to scale, to emulate an existing (past or present) Limited/ Unlimited Hydroplane.
8. Engine compartment covers and simulated engines are not mandatory. Driver's cockpit and cowls are mandatory.
9. Open cockpit hulls must include a scale-like driver with at least head and shoulders.
10. Enclosed cockpits must be represented by transparent materials, paint or other means that gives a general scale-like appearance.



## SPORT “40” HYDROPLANE - DIVISION 2

### A. ENGINE SPECIFICATIONS

The engine must conform to the R/CMRC 7.5cc engine classification. Tuned pipes are allowed to be used in this division. Total noise emission must comply with noise limits set by R/CMRC rules.

### B. HULL SPECIFICATIONS

Hull specifications shall be the same as outlined in #B, Division 1, above.

## SPORT “60” HYDROPLANE

### A. ENGINE SPECIFICATIONS

The engine must conform to R/CMRC 11cc engine classification. Tuned pipes are allowed to be used in the division. Total noise emission must comply with noise limits set by R/CMRC.

## B. HULL SPECIFICATIONS

The hull used must have been originally designed for Sport "40" competition with a maximum 40" length.

## SECTION 9 • OFFSHORE COMPETITION

### A. INTENT

1. Offshore Competition Rules are intended as a supplement to Section 3, R/CMRC General Power Boat Rules of Competition. In the event of a conflict between the two, Offshore Competition Rules shall prevail.

2. Offshore Competition Rules are not intended to limit this event to scale or semi-scale R/C boats only. Scale R/C offshore boats are required for Concours judging only.

### B. ENGINE SPECIFICATIONS

1. Engine sizes must comply with the R/CMRC 3.5cc, 7.5cc, 11cc or 30cc displacement limits.

2. The combined total engine displacement will determine the class in which the boat will compete.

3. Outboard powered offshore racers are not permitted any external steering rudders mounted on boat hulls. The engine must steer the boat.

### C. HULL SPECIFICATIONS

1. Legal hulls will be: deep vees, monoplanes, catamarans and tunnels.

2. Boats shall enter competition with a minimum of two drivers.

3. Enclosed cockpits must be represented by transparent materials, paint or other means that give a general scale-like appearance.

4. Paint scheme may be authentic or reflect an attempt to make the hull appear like a full size boat with sponsor's name or logo. The sponsor may be of the builder's choice — business or fictitious. Each boat must have a racing number at least 3/4 inch high.

### D. RACE SPECIFICATIONS

1. All offshore races will be run as enduro type, using an irregular course.

2. Length of each heat shall be in five minute increments; i.e., 10, 15, etc.

3. A one minute pre-start countdown will be used.

a. Engines cannot be started prior to the countdown.

b. Boats may be started and launched at any time after the one minute pre-start and throughout the heat.

c. Boats crossing the start line during the last five seconds prior to the end of pre-start countdown, will be ruled as a "Jump Start" and must complete a circuit of the course and recross the start line for a legal start.

### E. RACE COURSE SPECIFICATIONS

Host clubs will use the irregular shaped course shown for offshore race competition.

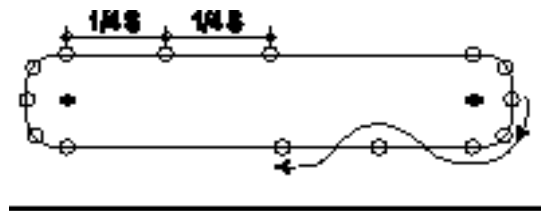
1. Two left turns are required.

2. A "Left Turn" entrance buoy is to be located 1/4 straight-away from each turn exit buoy.

(See figure)

3. A "Left Turn" exit buoy is to be located 1/4 straight-away from the left turn entrance buoy.

4. Both buoys used for the irregular course will be placed on the course line.



### F. CONOURS JUDGING SPECIFICATIONS

1. Models are to be detailed and painted as the actual APBA/UIM Offshore Racing Boat.

2. Mode of propulsion: Inboard or outboard hulls must be propelled by the same mode as the real boat. A full size hull using multi-engines may be represented by a model using only one engine; i.e., the number of engines in the model does not have to be the same as in the original full size boat.

3. Judging to be from a distance of 10 feet.

4. Recognition to be awarded through third place.

## SECTION 10 • ENDURO COMPETITION

### A. INTENT AND DEFINITION

An endurance (Enduro) race shall consist of a minimum of three boats simultaneously running a prescribed course for a specified length of time. The number of entries will be determined only by compatible frequencies in order of entry.

### B. RACE SPECIFICATIONS

1. Each boat will be allowed a maximum of two crew members in addition to the driver. Unlimited crew and driver changes are allowed in enduro races longer than 1/2 hour.

2. Entries will be placed in the order of receipt of compatible frequencies. The first entry on a given frequency will be in the first race; the second entry on the same frequency in the second race; etc.

3. When possible, entries will be classed according to engine size.

4. At five minutes prior to the start all entrants must have the boats in the pit areas assigned. No running of engines will be allowed two minutes prior to the start.

5. The race will start on a signal. Contestants may then start engines and enter the course "Le Mans" style. The race will end on signal at exactly the prescribed length of time. The contestant must run at least one lap in the first five minutes of a 1/2 hour Enduro, 10 minutes for all longer enduro events.

6. Driving will be in accordance with all R/C Model Racing Category Rules of Competition, Section 3.

7. During enduros of 1/2 hour length or longer one pit stop is required, at which time the engine must be shut off and fuel must be added.

8. Unlimited equipment repairs and parts replacement is allowed provided the original hull and frequency remains the same.

9. Finish positions will be awarded to the boats completing the most laps and running on the course at the end of the time. The lower finish positions will be awarded to those boats not running at the end of the time also based on the number of laps completed. A boat must be running at least the last full minute of the race.

10. Should time allow, after all of the contestants have competed in one race, all entries will be drawn at random for subsequent races.

11. Records for 1/2 hour enduros will be maintained with other enduro records being set up as appropriate. For record purposes a course must be set up and measured in accordance with Section 4, Official Courses, and must be certified to be a 6-lap, 1 mile course.

## **SECTION 11 • 100-LAP TEAM MARATHON**

### **A. INTENT AND DEFINITION**

Team Marathon racing shall consist of a minimum of two boats simultaneously running a prescribed course for a specified 100 laps to provide a test of both drivers and equipment.

### **B. ENGINE SPECIFICATIONS**

Engine size shall be limited to 7.5cc specifications.

### **C. HULL SPECIFICATIONS**

1. There shall be no restrictions of the hull type except that both boats must be of the same size, within one inch length overall and one-half inch extreme beam.
2. Boats shall be attractively painted in team colors.

### **D. RACE SPECIFICATIONS**

1. A race of 100 laps in a clockwise direction over a standard R/CMRC oval course.
2. Teams shall consist of two boats and four team members.
3. Both boats must be operated on the same frequency.
4. All boats shall have good idling characteristics. A demonstration of each boat's idle may be requested prior to the start of the race.
5. Teams with a boat(s) not idling satisfactorily will not be allowed to compete.
6. Boats losing idle capability during the race will be required to demonstrate that the idle has been repaired before being allowed to leave the pits and resume competition.
7. The race will commence with a "Le Mans" start. Driving will be in accordance with all R/CMRC Rules of Competition, Section 3, and Safety Rules, Section 2.
8. Each team boat will run 10 laps alternately until 100 laps have been completed. The first team completing 100 laps will be declared the winner. Points for completing the race will be allotted in order of finish.
9. A flag will be attached to the "running" boat and must be transferred to the "relief" or alternate boat in the assigned pit area before the relay or pass is considered complete. Laps without the flag will not be counted. Flags lost while running will require that the boat return to the pits to have it replaced.
10. LAPS (Lap Counting) - The start/finish line shall be established by the contest officials. A "lap line" will likewise be established in the right-hand area of the pit so that a boat coming into the pit will complete a full lap and the relief boat leaving will be starting its first lap.
  - a. Exactly 10 laps per boat must be run. Additional laps per boat will not be counted. If less than 10 laps is counted the boat must return to the course and complete the deficit.
  - b. All lap penalties assessed must be made up after the last relay set in completed. However, these laps may be made up by the boat completing the last relay set without a pit stop or relay.
11. There are no restrictions on the repairs allowed or the parts replaced as long as the original hulls and frequencies are used.
12. Records for 100-Lap Team Marathon will be maintained. For record purposes a course must be set up and measured in accordance with Section 4, Official Courses, and must be certified to be a 6-lap, 1 mile course.

## **SECTION 12 • MULTI-ENGINE COMPETITION**

### **A. INTENT AND DEFINITION**

To provide a separate, competitive class for R/C Powerboats up to and including the 30cc engine classification which utilize multi-engines.

### **B. ENGINE SPECIFICATIONS**

Any number of engines may be used but the total of all engine displacements may not exceed the 30cc specifications as set forth in Section 3, #G.

### **C. HULL SPECIFICATIONS**

1. Multi-Engine Hydroplane - Any hull which qualifies under Section 3, #H.
2. Multi-Engine Monoplane - Any hull which qualifies under Section 3, #H.

### **D. RACE SPECIFICATIONS**

1. The format of the event(s) will be left to the discretion of the Contest Director, club or district but must be consistent with the race format for other classes offered.
2. Multi-engine records will be recognized as follows:
  - a. Records can be set on any R/CMRC, 6-lap, 1 mile course, 1/16th mile straight-away course or 2-lap, 1/3 mile course.
  - b. Records shall be recorded as "Multi Hydroplane" or "Multi Monoplane".

## **SECTION 13 • RECORDS COMPETITION**

**A. INTENT** To establish, certify and publish records for all classes of R/C Powerboats as recognized by the APBA R/CMRC.

### **B. POWER BOAT RECORDS - GENERAL**

1. Records shall be established according to class, hull type and engine specifications. These records shall only be set at R/CMRC sanctioned events.
  - a. The R/CMRC shall issue awards of recognition to individuals establishing new R/CMRC records.
  - b. The R/CMRC will only recognize records set at sanctioned record trials (see Section 15) and at sanctioned events on measured and certified courses (see Section 4).
  - c. The R/CMRC reserves the right to withhold or withdraw recognition for any record at any time upon reasonable proof of falsification or error.
    - (1) Boats in any class of competition specifying particular hull dimensions and specifications must be measured and certified legal by the Contest Director or appointed official.

- (2) Engines/motors in any class of competition specifying particular engine/motor limitations must be measured and certified legal by the Contest Director or appointed official.
- d. The speed conversion of record time to equivalent miles per hour shall be the responsibility of the contest officials.
- e. The device(s) used to time sanctioned events shall be capable of measuring the time to the nearest 1/100th of a second.
2. Upon setting a record the contestant will be given a signed record application by the Contest Director. The contestant is responsible for forwarding it to the office of the R/CMRC as indicated on the form along with a \$7.50 filing fee (check or money order made payable to APBA), within three days of the contest. It is the responsibility of the contestant to verify that the record application is completed correctly.
3. The District Director or appointed official of the district in which the contest is held must:
  - a. Certify that the course is in compliance with regulation course requirements.
  - b. Provide the course specifications.
  - c. Certify that the device(s) used to time the event is capable of measuring to the nearest 1/100th second.
4. Records may only be set in the class in which a boat is entered, i.e., if a host club offers 3.5cc Hydro and a record is set by a boat which also qualifies as a 3.5cc Outboard Hydro, only the 3.5cc Hydro record may be applied for.
5. The membership will be notified of all new records in the "Racers Edge" and/or on the APBA-R/C Boating web site at <http://www.apba-rcboating.com>
6. For availability of Timing Equipment contact the APBA Category Chairman.

## **SECTION 14 • TIME TRIALS COMPETITION**

### **A. INTENT AND DEFINITION**

1. To measure and certify speeds and to record and publish records of the R/C powerboats.
2. Straightaway Trials may be hosted by any APBA club in good standing. The purpose is to better the existing National Record for established classes. Times not bettering existing records, will establish District records for classes run. District records will be in the District where the host club and their Records Chairman, if there is one, reside.

### **B. CLASSES**

- Records will be established for the following classes:
1. 3.5cc, 7.5cc, 11cc, 30cc Monoplane, Multi Monoplane.
  2. 3.5cc, 7.5cc, 11cc, 30cc Hydroplane, Multi Hydroplane.
  3. R/C Scale Unlimited Hydro.
  4. 3.5cc, 7.5cc, 11cc OPC Tunnel and 13cc.
  5. 3.5cc, 7.5cc, 11cc Mod Tunnel and 13cc.
  6. 3.5cc, 7.5cc, 11cc Outboard Hydro and 13cc.
  7. 3.5cc, 7.5cc, 11cc Outboard Monos and 13cc.
  8. Sport Hydro, Divisions 1 & 2.
  9. 3.5cc, 7.5cc, 11cc and 30cc Offshore.
  10. Electric.
  11. Gasoline Powered G-24, G-30 and G-36; 5 Litre, National Modified and Grand National Hydroplane; Crackerbox, Jersey Speed Skiff; Drag Boats; and Offshore Sportsman A, Sportsman C and Superboat classes.

### **C. COURSE SPECIFICATIONS**

1. 1/16th Mile Straight-away Course is a measured distance of 330 feet and must have a minimum 300 feet clearance on each end of the course. See Section 4, Official Courses.
2. 2-lap, 1/3 Mile Oval Course will be on a regulation 6-lap, 1 mile course as specified in Section 4, Official Courses.

### **D. RACE SPECIFICATIONS**

1. At the Contest Director's discretion Pit and Run Time will be a minimum of five (5) minutes.
2. 1/16th mile straight-away record attempts will consist of an average of two consecutive passes in opposite directions through the course. These passes must be made on a continuous run with no physical intervention by the operator or any other person between passes. Contestants may make as many passes as possible in their allotted time.
3. 2-lap, 1/3 mile oval record attempts will consist of two (2) consecutive laps around a standard 6-lap, 1 mile course. These two laps must be made on a continuous run with no physical intervention by the operator or any other person between laps. A cut buoy(s) during a lap will disqualify that lap. Contestants may make as many laps as possible in their allotted time.

### **E. TRACKING EQUIPMENT SPECIFICATIONS**

1. To be recognized as official, all 1/16th mile straight-away and 2-lap, 1/3 mile records of the R/CMRC must be measured by use of Infra-red or timing equipment owned by APBA R/C Model Power Boat Racing. No records shall be set if determined by use of manually operated scanning devices.
2. Timing equipment specifications must accompany sanction application.

### **F. INSPECTION**

Hull/engine specifications must be measured and certified legal by the Contest Director or appointed official.

### **G. TIMING EQUIPMENT AND FEES**

1. Equipment available from Category Chairman; shipping and insurance payable by the Club or District sanctioning the event.
2. Sanctioning Club or District pays sanctioning event fee to APBA.
3. Entry fee for contestant- \$10.00 and \$2.00 per 5 minute run, of which half the entry fee and half the run is payable to APBA R/C Category. The Club or District may increase the cost per 5 minute run; and may keep the additional funds.

**ELAPSED TIME TO M.P.H. CONVERSION FOR THE 1/16th MILE COURSE**

(in .01 second increments)

	<b>.00</b>	<b>.01</b>	<b>.02</b>	<b>.03</b>	<b>.04</b>	<b>.05</b>	<b>.06</b>	<b>.07</b>	<b>.08</b>	<b>.09</b>
2.5	90.000	89.641	89.285	88.932	88.582	88.235	87.890	87.548	87.209	86.872
2.6	86.538	86.206	85.877	85.551	85.227	84.905	84.586	84.269	83.955	83.643
2.7	83.333	83.025	82.720	82.417	82.116	81.818	81.521	81.227	80.935	80.645
2.8	80.357	80.071	79.787	79.505	79.225	78.947	78.671	78.397	78.125	77.854
2.9	77.586	77.319	77.054	76.791	76.530	76.271	76.013	75.757	75.503	75.250
3.0	75.000	74.750	74.503	74.257	74.013	73.770	73.529	73.289	73.051	72.815
3.1	72.580	72.347	72.115	71.884	71.656	71.428	71.202	70.977	70.754	70.532
3.2	70.312	70.093	69.875	69.659	69.444	69.230	69.018	68.807	68.597	68.389
3.3	68.181	67.975	67.771	67.567	67.365	67.164	66.964	66.765	66.568	66.371
3.4	66.176	65.982	65.789	65.597	65.406	65.217	65.028	64.841	64.655	64.469
3.5	64.285	64.102	63.920	63.739	63.559	63.380	63.202	63.025	62.849	62.674
3.6	62.500	62.326	62.154	61.983	61.813	61.643	61.475	61.307	61.141	60.975
3.7	60.810	60.646	60.483	60.321	60.160	60.000	59.840	59.681	59.523	59.366
3.8	59.210	59.055	58.900	58.746	58.593	58.441	58.290	58.139	57.989	57.840
3.9	57.692	57.544	57.397	57.251	57.106	56.962	56.818	56.675	56.532	56.390
4.0	56.250	56.109	55.970	55.831	55.693	55.555	55.418	55.282	55.147	55.012
4.1	54.878	54.744	54.611	54.479	54.347	54.216	54.086	53.956	53.827	53.699
4.2	53.571	53.444	53.317	53.191	53.066	52.941	52.816	52.693	52.570	52.447
4.3	52.325	52.204	52.083	51.963	51.843	51.724	51.605	51.487	51.369	51.252
4.4	51.136	51.020	50.904	50.790	50.675	50.561	50.448	50.335	50.223	50.111
4.5	50.000	49.889	49.778	49.668	49.559	49.450	49.342	49.234	49.126	49.019
4.6	48.913	48.806	48.701	48.596	48.491	48.387	48.283	48.179	48.076	47.974
4.7	47.872	47.770	47.669	47.568	47.468	47.368	47.268	47.169	47.071	46.972
4.8	46.875	46.777	46.680	46.583	46.487	46.391	46.296	46.201	46.106	46.012
4.9	45.918	45.824	45.731	45.638	45.546	45.454	45.362	45.271	45.180	45.090
5.0	45.000	44.910	44.820	44.731	44.642	44.554	44.466	44.378	44.291	44.204
5.1	44.117	44.031	43.945	43.859	43.774	43.689	43.604	43.520	43.436	43.352
5.2	43.269	43.186	43.103	43.021	42.938	42.857	42.775	42.694	42.613	42.533
5.3	42.452	42.372	42.293	42.213	42.134	42.056	41.977	41.899	41.821	41.743
5.4	41.666	41.589	41.512	41.436	41.360	41.284	41.208	41.133	41.058	40.983
5.5	40.909	40.834	40.760	40.687	40.613	40.540	40.467	40.394	40.322	40.250
5.6	40.178	40.106	40.035	39.964	39.893	39.823	39.752	39.682	39.612	39.543
5.7	39.473	39.404	39.335	39.267	39.198	39.130	39.062	38.994	38.927	38.860
5.8	38.793	38.726	38.659	38.593	38.527	38.461	38.395	38.330	38.265	38.200
5.9	38.135	38.071	38.006	37.942	37.878	37.815	37.751	37.688	37.625	37.562
6.0	37.500	37.437	37.375	37.313	37.251	37.190	37.128	37.067	37.006	36.945
6.1	36.885	36.824	36.764	36.704	36.644	36.585	36.525	36.466	36.407	36.348
6.2	36.290	36.231	36.173	36.115	36.057	36.000	35.942	35.885	35.828	35.771
6.3	35.714	35.657	35.601	35.545	35.488	35.433	35.377	35.321	35.286	35.211
6.4	34.156	35.101	35.046	34.992	34.937	34.883	34.829	34.775	34.722	34.668
6.5	34.615	34.562	34.509	34.456	34.403	34.351	34.298	34.240	34.194	34.142
6.6	34.090	34.039	33.987	33.936	33.885	33.834	33.783	33.733	33.682	33.632
6.7	33.582	33.532	33.482	33.432	33.382	33.333	33.284	33.234	33.185	33.136
6.8	33.088	33.039	32.991	32.942	32.894	32.846	32.798	32.751	32.703	32.656
6.9	32.618	32.569	32.521	32.472	32.424	32.376	32.328	32.281	32.233	32.186
7.0	32.14	32.10	32.05	32.01	31.96	31.91	31.87	31.82	31.78	31.73
7.1	31.69	31.65	31.60	31.56	31.51	31.47	31.42	31.38	31.34	31.29
7.2	31.25	31.21	31.16	31.12	31.08	31.03	30.99	30.95	30.91	30.86
7.3	30.82	30.78	30.74	30.70	30.65	30.61	30.57	30.53	30.49	30.45
7.4	30.41	30.36	30.32	30.28	30.24	30.20	30.16	30.12	30.08	30.04
7.5	30.00	29.96	29.92	29.88	29.84	29.80	29.76	29.72	29.68	29.64
7.6	29.61	29.57	29.53	29.48	29.45	29.41	29.37	29.34	29.30	29.26
7.7	29.22	29.18	29.15	29.11	29.07	29.03	28.99	28.96	28.92	28.88
7.8	28.85	28.81	28.77	28.74	28.70	26.66	28.63	28.59	28.55	28.52
7.9	28.48	28.45	28.41	28.37	28.34	28.30	28.27	28.23	28.20	28.16
8.0	28.13	28.10	28.06	28.03	27.39	27.96	27.92	27.89	27.85	27.82
8.1	27.78	28.75	28.71	27.68	27.64	27.61	27.57	27.54	27.51	27.48
8.2	27.44	27.41	27.38	27.35	27.31	27.28	27.24	27.21	27.18	27.15
8.3	27.11	27.08	27.05	27.01	26.98	26.95	26.92	26.89	26.85	26.82
8.4	26.79	26.76	26.72	26.69	26.66	26.63	26.59	26.57	26.54	26.51

8.5	26.47	26.44	26.41	26.38	26.34	26.32	26.29	26.26	26.23	26.20
8.6	26.17	26.14	26.10	26.07	26.04	26.01	25.98	25.95	25.92	25.89
8.7	25.86	25.84	25.81	25.79	25.76	25.72	25.69	25.66	25.63	25.60
8.8	25.57	25.54	25.51	25.48	25.45	25.43	25.40	25.37	25.34	25.31
8.9	25.28	25.26	25.23	25.20	25.17	25.14	25.11	25.09	25.06	25.03
9.0	25.00	24.98	24.95	24.92	24.89	24.87	24.84	24.81	24.78	24.76
9.1	24.73	24.70	24.67	24.65	24.62	24.59	24.56	24.54	24.51	24.49
9.2	24.46	24.44	24.41	24.38	24.35	24.33	24.30	24.28	24.25	24.23
9.3	24.20	24.17	24.14	24.12	24.09	24.07	24.04	24.02	23.99	23.97
9.4	23.94	23.92	23.89	23.87	23.84	23.82	23.79	23.77	23.74	23.72
9.5	23.69	23.67	23.64	23.62	23.59	23.57	23.54	23.52	23.49	23.47
9.6	23.44	23.42	23.39	23.37	23.34	23.32	23.29	23.27	23.25	23.23
9.7	23.20	23.18	23.15	23.13	23.10	23.08	23.06	23.04	23.01	22.99
9.8	22.96	22.94	22.92	22.90	22.87	22.85	22.82	22.80	22.78	22.76
9.9	22.73	22.71	22.68	22.66	22.64	22.62	22.59	22.57	22.55	22.59
10.0	22.50	22.48	22.46	22.44	22.41	22.39	22.27	22.35	22.32	22.30
10.1	22.28	22.26	22.24	22.22	22.19	22.17	22.15	22.13	22.10	22.08
10.2	22.06	22.04	22.02	22.00	21.98	21.96	21.93	21.91	21.89	21.87
10.3	21.85	21.83	21.80	21.78	21.76	21.74	21.72	21.70	21.68	21.66
10.4	21.64	21.62	21.60	21.58	21.55	21.53	21.51	21.49	21.47	21.45
10.5	21.43	21.41	21.39	21.37	21.35	21.33	21.31	21.29	21.27	21.25
10.6	21.23	21.21	21.19	21.17	21.15	21.13	21.11	21.09	21.07	21.05
10.7	21.03	21.01	20.99	20.97	20.95	20.93	20.91	20.90	20.88	20.86
10.8	20.84	20.82	20.80	20.78	20.76	20.74	20.72	20.70	20.68	20.66
10.9	20.64	20.63	20.61	20.59	20.57	20.55	20.53	20.51	20.49	20.48
11.0	20.46	20.44	20.42	20.40	20.38	20.37	20.35	20.33	20.31	20.29
11.1	20.27	20.26	20.24	20.22	20.20	20.18	20.16	20.55	20.13	20.11
11.2	20.09	20.08	20.06	20.04	20.02	20.00	19.98	19.97	19.95	19.93
11.3	19.91	19.90	19.88	19.86	19.84	19.83	19.81	19.79	19.77	19.76
11.4	19.74	19.72	19.70	19.69	19.67	19.66	19.64	19.62	19.60	19.59
11.5	19.57	19.50	19.53	19.52	19.50	19.49	19.47	19.45	19.43	19.42
11.6	19.40	19.39	19.37	19.35	19.33	19.32	19.30	19.29	19.27	19.25
11.7	19.23	19.22	19.20	19.19	19.17	19.15	19.13	19.12	19.10	19.09
11.8	19.07	19.06	19.04	19.03	19.01	18.99	18.97	18.96	18.94	18.93
11.9	18.91	18.90	18.88	18.87	18.85	18.84	18.82	18.80	18.78	18.77

## SECTION 15 • ELECTRIC COMPETITION

### A. INTENT

To encourage and promote a national standard of competition for electric powered R/C model boats.

### B. MOTOR/BATTERY SPECIFICATIONS

1. Batteries shall be nickel-cadmium type (Ni-CD) no larger than sub "C" size.
2. Motor Classifications:
  - a. STOCK - Stock motors shall be defined as any .05 size motor (1.5" diameter) with a tabbed or closed endbell and bushings as opposed to ball bearings, readily available through hobby shops, with a manufacturers suggested retail price not to exceed \$35.00. Motor magnets shall be of ferrite type. Motors must remain stock as supplied by the manufacturer, except for brushes and springs. The endbell cannot be removed.
  - b. OPEN - Open motors can be any motor including cobalt type. Stock motors may run in Modified.
3. Motor Control: A boat must have a means of starting and stopping the motor via radio control.

### C. CLASSES

- |   |   |   |
|---|---|---|
| <ol style="list-style-type: none"> <li>1. STOCK MOTOR           <ol style="list-style-type: none"> <li>a. 6 cell Mono - Roar '91 &amp; '95</li> <li>b. 6 cell Hydro - Roar '91 &amp; '95</li> <li>c. 7-12 Cell Mono</li> <li>d. 7-12 Cell Hydro</li> <li>e. 7-12 Cell OPC Tunnel</li> </ol> </li> </ol> | <ol style="list-style-type: none"> <li>2. OPEN MOTOR           <ol style="list-style-type: none"> <li>a. 7 Cell Mono</li> <li>b. 7 Cell Hydro</li> <li>c. 7 Cell OPC Tunnel</li> <li>d. 8-12 Cell Mono</li> <li>e. 8-12 Cell Hydro</li> </ol> </li> </ol> | <ol style="list-style-type: none"> <li>f. 8-12 Cell OPC Tunnel</li> <li>g. 13-18 Cell Mono</li> <li>h. 13-18 Cell Hydro</li> <li>i. 19-32 Cell Mono</li> <li>j. 19-32 Cell Hydro</li> </ol> |
|---|---|---|

### D. HULL SPECIFICATIONS

1. Hull classifications shall be as follows as per the R/CMRC Rule Book.
  - a. Mono
  - b. Hydro
  - c. Outboard Tunnel (OPC)
2. Records in any of the above classifications/combinations may be set on any legal R/CMRC electric course or 1/16th mile straight-away course.

## E. RACE SPECIFICATIONS

1. Heats shall be 5 laps in length.
2. Starting: Each race is started with a one minute audio countdown with the race starting as the count reaches zero. Boats may launch any time during the last 30 seconds. Boats not running after the countdown reaches 5 seconds will start in the direction of turn one and must circle left and right turns before making a legal start. Boats entering the course must yield right of way to boats on the course. All boats must circle at least the right turn before making a legal start. Once entering the course the boat must continue moving. Failure to do so shall result in a one lap penalty. Milling procedure will be defined by the race officials prior to the start. Jumping the start will result in a one lap penalty.
3. The Race: Once the race begins, the general racing rules per the R/CMRC Rule Book shall be enforced.
4. Enduro Racing:
  - a. Enduro competition may utilize any approved course.
  - b. All enduro competition shall be of a 3-minute duration from the start signal of "go".
  - c. At the discretion of the Contest Director, starts can be either flying starts or standing starts.
5. At the discretion of the Contest Director, the Love Plan may be used as defined in the R/CMRC Rule Book under the race specifications of the Scale Unlimited Hydro Competition.

## F. REGULATION COURSES

1. The course shall be defined and measured as follows:
  - a. The course shall be .5 mile in length for all classes.
  - b. The course shall be 5 laps for all classes.
  - c. A recommended .5 mile course shall have: (1) 170 feet straight-aways. (2) 60 feet diameter corners.
  - d. The start/finish line should be located as closely as possible to the center of the straight-away.
2. Courses for NAVIGA competition. (The front straight-aways for both courses shall be set 20 meters from the shore.)
  - a. Course A1 - For speed competition (F1 classes) Triangle course 30 meters on each side, one buoy placed halfway between front straight turn buoys. Boat is to run counter-clockwise around course, starting at the right hand front buoy and continuing clockwise around the course, finishing at the right hand front straight buoy.
  - b. Course B2 - For multi-racing (FSR classes - heat racing) Four turn buoys placed in a rectangle with 100 meters between the front and rear straight buoys and 50 meters between the front and rear straight buoys and 50 meters between the side buoys. A fifth buoy placed halfway between the rear straight buoys and in 10 meters from a straight line between the rear buoys. Boats will follow a "M" shaped course running clockwise starting at the front straight right hand buoy.

## G. SPECIAL CLASSES

1. Scale Unlimited Hydroplane
  - a. Intent - To duplicate the APBA Unlimited class of hydroplane as closely as possible.
  - b. Hull specifications:
    - (1) All boats shall be models of past or present APBA Unlimited Hydroplanes that are listed in the R/C Unlimited Master Hull Roster.
    - (2) Boats are to be approximately 1/16th scale.
    - (3) Modifications are allowed to the ride surfaces, keeping the general aesthetics and design of the particular hull intact.
    - (4) Final determination of the boats qualification will be made by host club technical committee.
    - (5) Effort in scale realism is the desired attitude.
    - (6) A driver of scale-like appearance will be used unless the boat has an enclosed canopy cowling.
  - c. Motor: Any single electric motor.
  - d. Batteries: 7 Cell maximum
  - e. Drive train:
    - (1) Steerable outrives are not allowed.
    - (2) Only a single propeller may be used.
2. 12 Cell Sport Hydro
  - a. Intent and definition - To emulate full scale hydroplanes that race in APBA hydro classes.
  - b. Hull specifications:
    - (1) Hull must be of Limited and/or Unlimited design, with all riding surfaces (drive train and prop not included) in the front 50% of the hull length.
    - (2) The following are not allowed: outrigger, modified outrigger, canard, or tunnel designs.
    - (3) No twin props.
    - (4) The boat must be painted in the spirit of Limited and/or Unlimited racing hydroplanes.
    - (5) A driver of scalelike appearance will be used unless the boat has an enclosed canopy cowling.
  - c. Motor: The class may be divided in Stock and/or Open motor as previously defined.
  - d. Batteries: 12 Cell maximum.
3. The R/CMRC will also acknowledge the following European Classes to allow an APBA member to compete for world records established by NAVIGA.
  - a. (F1-E1Kg) speed models up to 1 Kg (2.2 lb) total weight.
  - b. (F1-E500) limited to 42 volt power supply.
  - c. (FSR-E3Kg) multi-racers up to 2 Kg. (4.4 lb) - 8 cells, 15 minute races.
  - d. (FSR-E500) multi-racers up to 42 volt max, 10 minute race.

## H. SCORING SPECIFICATIONS

Scoring of races or events for R/CMRC Electric Competition shall be as outlined in Section 5-K.

## SECTION 16 • KIDS' COMPETITION

**A. INTENT:** To actively and positively promote the R/CMRC's dedication to the aid and development of youth and youth activities.

### B. DEFINITION

1. Entries shall be limited to junior members of the R/CMRC aged 12 years and younger
2. Any child competing in any other classes in a District shall not compete in the Kids' Competition at the Nationals.
3. A junior member entering any other class at a Nationals may not enter the Kids' Competition.
4. Entry fees are waived with receipt of an entry from a parent or sponsoring adult R/CMRC member competing at the same contest.

### C. ENGINE SPECIFICATIONS

Engines shall be limited to 3.5cc specifications.

### D. HULL SPECIFICATIONS

1. Boats shall be limited to those qualifying as 3.5cc Mono, 3.5cc Outboard Mono or 3.5cc OPC Tunnel.
2. No hydros or modified tunnels are allowed.
3. Two or more entrants may race the same boat providing they are members of the same family.

### E. RACE SPECIFICATIONS

1. Heats shall be 5 minute enduro type with distances counted in quarter lap increments.
2. The number of rounds offered shall be consistent with the other classes offered at the contest.
3. The driver must have a pit person at all times. A second pit person shall launch the boat.
4. If the number of entries (and driving capabilities) warrant, the Kids' Competition may be divided as follows:
  - a. DIVISION 1: For younger children or those with little or no previous model boat racing experience.
  - b. DIVISION 2: For those children who are capable of competing totally unassisted and/or those who have been competing in the kids' event on a regular basis.

### F. SCORING SPECIFICATIONS

1. A 1/2 lap penalty shall be assessed for infractions.
  - a. It is not necessary for all boat and driver infractions to be announced on the P/A system.
  - b. Disqualification from a heat for any reason other than unsportsmanlike conduct is not advised.
  - c. Lane and other driver infraction penalties are discouraged, but left to the discretion of the Contest Director, dependent upon circumstances and the severity of an infraction.
2. The pit person may assist the driver in avoiding another boat, the shoreline or water fowl.
  - a. Scoring shall reflect the number of unassisted laps completed by the driver.
  - b. The Contest Director shall assign special judge(s) to monitor those pit persons assisting with driving.
    - (1) A quarter of a lap will be subtracted from the driver's total accumulated laps for each instance of assistance from the pit person.
    - (2) A quarter of a lap will be subtracted from the driver's total accumulated laps for each turn in which the driver requires assistance (i.e., if the driver requires assistance driving in all turns, only 1/2 of the driver's total earned laps will be counted.)
  - c. Pit persons must keep hands at least 6 inches away from the driver's "rudder" hand/arm until assistance is needed and must immediately remove the hand when the assistance is no longer necessary.
  - d. Adjustment of the trim by a pit person is permitted.
  - e. The Contest Director may instruct the pit person to reduce the speed of the boat if the situation demands it. A pit person may decrease but not increase the speed at his/her discretion.

### G. AWARD SPECIFICATIONS

1. Consistent with other classes offered at the contest it is suggested that heat ribbons be awarded to all places in all heats.
2. Trophies shall be awarded to all finishing positions although the trophies need not be of a quality consistent with trophies awarded in other classes.

## SECTION 17 • R/C GASOLINE POWERED COMPETITION

### A. INTENT AND DEFINITION

1. To encourage and promote R/C gasoline powered model boat racing.
2. Gasoline Powered Competition Rules are intended as a supplement to Section 3 and 9, General Power Boat Rules of Competition of the R/CMRC. In the event of a conflict between the two, Gasoline Power Competition Rules shall prevail.

### B. ENGINE SPECIFICATIONS

1. All engines must be commercially available and commercially advertised to all persons involved in the hobby. All engines must be naturally aspirated single cylinder, single carburetor, gasoline burning, spark plug ignition, and water cooled.
2. After-market ignitions and upgrades from points to electronic ignition are allowed.
3. All engines must have been originally manufactured with spark plug ignition and recoil starting system. The engine must be started with a recoil starter. Water jackets are allowed.
4. Engine must be piston ported (piston control fuel intake) and must run a single carburetor. The single carburetor must be commercially advertised and available to all modelers. Engines originally manufactured with reed valve are allowed. Other means of introducing fuel into the engine, such as fuel injection and nitrous oxide injection, is not permitted in any class.
5. Fuel must be pump gas and oil only. No other fuel or additives such as nitro or alcohol can be used.
6. The following class engine displacements will be for both the mono's and hydro's. All engines for G-24, G-30 and G-36 classes must be commercially advertised and available to all of the modeling public. Engine classes will be:
  - a. G-24 The engine displacement for this class is 16cc to 24.5cc.
  - b. G-30 The engine for this class will be 24.6cc minimum with a maximum displacement of 30.5cc.



- c. G-36 The engine for this class will be 30.6cc minimum with a maximum displacement of 36cc.
- 7. The following engine clarifications pertain to all classes:
  - a. Modifications to the engines are permitted provided the displacement has not been altered beyond the displacement requirements for the class entered.
  - b. All engine exhaust systems must be commercially advertised and available to all of the modeling public. Modifications to the exhaust system consists of tune pipe lengthening or shortening for tuning purposes.
  - c. All engines must be securely mounted inside the boat. The engine mounting system is the responsibility of the modeler.

### C. HULL SPECIFICATIONS

- 1. Maximum hull length for gasoline competition events will be 60 inches.
- 2. Classifications for gasoline boat hulls.
  - a. Mono - As defined in the R/CMRC Rule Book.
  - b. Hydro - As defined in the R/CMRC Rule Book.
  - c. Sport Hydro - Any hydroplane other than an outrigger (see definition in glossary).

### D. DRIVER FIGURES

1. Driver figures are required for all classes except the Gasoline Powered Novice, G-24, G-30 and G-36 classes. In all other classes, driver figures the same scale (1/4 or 1/6) as the boat must be permanently attached to the driver compartment area. These driver figures must resemble full size driver and throttleman or mechanic, with lifejackets and helmets of the approved orange color per APBA rules. Helmets can be custom painted as desired by the boat owner. Cartoon figures, animal or doll figures, or those figures that do not represent full size driver figures will not be permitted. Those who do not comply will not be able to compete with their boats.

2. The scale driver figure must be in full view regardless of the type of driver's compartment used.

3. Modeling a full-size boat that uses an enclosed canopy is permitted. The canopy must be transparent so the driver figure is in full view. "BLACKING OUT" of the canopies is not permitted in any class.

### APBA NOVICE GASOLINE CLASS

The purpose of this class is to enable those with no prior experience with the operation of a Radio Controlled model boat, to get involved in single gasoline engine powered, model boat racing.

#### A. DRIVER REQUIREMENTS

There will be two age groups that will compete in the Novice Gasoline Class:

- a. "KIDS" 5 to 13 years of age. This class will require adult supervision in the operation of the boat. The control of the boat in this class must be by the child registered as the novice. Parents are to only assist in case of emergency or to avoid collision with other boats. The starting of the boats in the pits and the launching of the boat must be performed by the parent only and not the child.
- b. "ADULT" 14 years of age and above. This class does not require adult supervision; however, the younger racers should have the parents start and launch the boats.

NOTE: To maintain the novice status the racer cannot race in any other class. If the racer elects to race in another class he or she loses the novice status permanently.

#### B. HULLS

The hulls are to be "V" hulls only. Catamarans, Hydros, and Riggers are not permitted in this class. Hulls that have stepped bottoms are not permitted in this class. The minimum hull length is 43" and the maximum length is 59". Hull construction can be either wood or fiberglass.

#### C. ENGINE

- 1. The engine for this class will have a displacement of 25cc to 30cc. This is a single engine class and multi engines or multi cylinders are not permitted.
- 2. All engines must be spark ignition type, use gasoline fuel only, single cylinder, and be water cooled. The use of custom machined engine blocks, cylinder heads, and crankshafts are not permitted in the Novice Class.
- 3. Any internal engine modification is permitted provided the original engine supplier has performed all modifications.
- 4. Engines can be modified for water cooling, but must retain the original cylinder configuration.
- 5. All engines must have a clutch. This clutch must be operational in preventing the propeller from engaging while the boat is idling in the water. This will be randomly checked at the race site.
- 6. Any carburetor can be used provided it is commercially advertised and available to all modelers. Fuel injection, or other means of introducing fuel into the engine is not permitted.
- 7. The exhaust system can be either a dry type muffler or a water cooled tuned pipe.
- 8. Any gasoline can be used provided it is readily available for standard automobile use.

### APBA R/C GASOLINE POWERED DRAG BOAT RACING

*"Drag Racing" rules have been developed for gasoline engine powered boats only. The rules can be adapted for nitro boats but would be limited to inboard engines only.*

*Why another class? Scale model boats representing the full-size counterpart attract many spectators and new boaters. Also, many R/C boaters also race full-size boats and like to model them. Scale boats can help eliminate the phrase we hear from the public: "TOY BOATS". Many of you know that these boats are far from "TOYS" in performance, sophistication and cost. Good luck in building your "DRAG BOAT." I hope to see this class grow with the enthusiasm that many of you have expressed concerning these boats.*

*— Don Hermann*

#### INTENT

The Gasoline Engine Powered R/C Drag Boat Class has been developed to enable those model boaters interested in 1/4 Scale R/C Drag Boat Racing to compete in a very exciting class. These classes duplicate the full size drag boats as raced under the guidelines of APBA and other Drag Boat Associations.

The classes are divided into two distinct boat hull classes: the flatbottom and the drag hydroplane. No other hull types are permitted to compete in this class. (Riggers, Monos, Deepvees, Catamarans, Tunnel Boats, Scale Hydroplanes, and other boat types that do not conform to the hull rules are not permitted to compete.)

The hull types are further divided by engine displacements: Super Stock, Pro Stock, Super Drag 1, Super Drag 2, Super Drag 3, Super Drag 4, and Super Drag 5 engines. All must have clutches.

Please read all the rules completely and be sure that the boat that you build conforms to the rules.

## PROCEDURES AND RACE COURSE REQUIREMENTS

The race procedure for Drag Boat racing is very different than most boaters are accustomed to. The "Flying Start" or Shore Start is not permitted. All starts will be from a "Dead Start" staging area to a start position. That is why clutches are very important and the use of water pumps may be very helpful.

All boats are required to have clutches which will disengage the propeller entirely, preventing propeller rotation while the engine is running.

The race consists of only TWO BOATS ONLY racing down the course at the same time.

After being given the command by the official, you proceed to launch your boat and immediately proceed to the staging line. Once the boat is launched you cannot return to shore to make adjustments. If your boat stalls, you are automatically disqualified for that heat.

Once at the staging area, you must line your boat up, facing down the course. As soon as the boats are lined up and the course is clear the starting procedure (lights, countdown or clock) will begin. Once the start is indicated you will accelerate down the course at full throttle. You can use the countdown, staging lights or clock to begin your acceleration earlier than the green or go signal, but you cannot cross the start line earlier than the green or go signal. If you jump the start indication, you are disqualified from that heat. "Timing is everything in this type of racing. The biggest engine does not always win, but the boater who times the start correctly, will."

As you proceed down the course you will be observed by officials as to "Lane Cutting." Driving in the other person's lane or driving outside the course will result in disqualification. Once you cross the finish line you will slow down and make a long clockwise sweeping turn outside the course, and wait for the all clear to return to the pits. Do not drive down the course in the opposite direction. You only can return to shore when the officials have cleared the course. Do not come to the shore line on plane. Any of the infractions as mentioned above will lead you to disqualification for the remainder of the event; so please pay close attention at the drivers meeting.

Six officials will be required for conducting a drag race, with the following duties:

1. LAUNCH DIRECTOR AND STAGING OBSERVER
2. START LINE OBSERVER
3. MID COURSE OBSERVER
4. FINISH LINE OBSERVER AND NOTIFIES AS THE TRACK IS CLEAR
5. RECORDING FINISH STATUS AND DIRECTING AS TO WHAT BOATS

### RACE NEXT

6. STARTER OFFICIAL (OPERATES THE STARTING EQUIPMENT)

This list of duties does not reflect persons required for the radio impound, the hot pits director, rescue boat people, persons needed for registration and other site requirements.

The starting devices as stated (lights, clock, or verbal countdown) are at the discretion of the sponsoring club.

Point awards are up to the hosting club and other clubs that have elected to run all the combined events as a points event.

## HULL RULES FOR HYDROPLANE AND FLATBOTTOM DRAG BOATS

1. All hulls, both hydroplanes and flatbottoms, must be built to a scale of 3"=1'-0" or 1/4 scale. The typical full-size "Drag Boat" hull is from 16 feet to 20 feet long. Since the scale is 1/4 this gives the model a length of 48" to 60". All lengths are measured from the transom to the bow at the running surface and not the deck line or water line. Dimensions taken along the deck line cannot enable a boat to make the minimum or maximum hull length. All dimensions, both hull length and width, must be as the full-size counterpart in 1/4 scale.

2. All hulls must be able to float unassisted when fully loaded with fuel, fully operational radio gear, complete engine, all running hardware, driver figures, and all hatches and wings.

3. For information on drag boats you can consult APBA PROPELLER Magazine, HOT BOAT Magazine, or the INTERNATIONAL HOT BOAT ASSOCIATION.

4. All hulls can be constructed from wood or fiberglass. Solid foam boats are not permitted to run in any class.

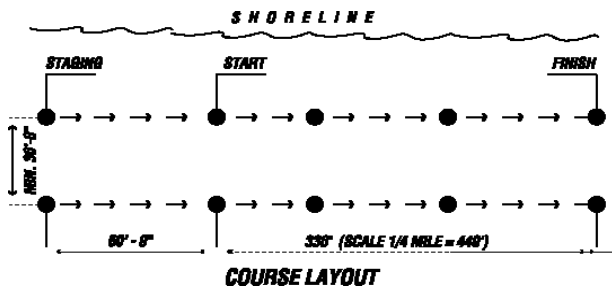
5. Flatbottom hulls must be as per the full size counterpart that is being modeled. The transom must be flat the full width of the boat's transom, and that flat bottom must extend a minimum of 4" as measured from the transom along the running surface across the full width at that point. The minimum width of the hull as measured at the running surface is 16" and must be as per the full-size counterpart in 1/4 scale.

6. A boat must have the driver compartment located as on the full size counterpart being modeled. Any boat with a driver compartment that appears not per the full-size counterpart will require verification of this location by photographs or pictures from a magazine for inboard powered "Drag Boats". If the boat owner does not have the necessary documentation, then the boat will be ruled illegal and will not be able to compete. (It should be noted that the requirement of photographs must be of an actual drag boat that has, or is currently, competing in sanctioned drag boat racing on the circuit. Non competing drag boats are not considered legal.) The painting of the boats can be as desired by the boat owner.

7. All class boats must have a rigid engine stringer system that is permanently mounted into the boat. These stringers must be able to withstand the rigors of racing in the classes. Removable stringers are not permitted.

8. The use of engine cowlings must be as the full-size counterpart being modeled. That a particular boat did run an enclosed engine must be verified by the use of photographs of the actual full-size counterpart that is being modeled. The use of "turbine style cowlings" is not permitted, since the full size drag racing counterpart does not permit "turbine" engine powered Drag boats.

9. All hydroplanes are to duplicate the full size counterpart that is being modeled. The length of these hulls must be in compliance with the scale rules as previously mentioned. (Riggers, Catamarans, Unlimited Hydroplanes, Hydroplanes with Turbine Cowl, Tunnel Boats, and other hull types that do not represent the full-size counterpart that is being modeled are not permitted in the hydroplane class.)



10. The minimum hull width for the hydros as measured at the sponson area is 20." This dimension is taken at running surface. (SEE SKETCH)

11. The hull requirement for the SUPER DRAG 5 class differs in that it must have a minimum length of 54" and a maximum length of 60". This typical for hydroplanes and flatbottom. The minimum hull width for the hydroplanes as measured at the sponson running is 24". The flatbottom hull width shall be as per the full-size counterparts.

12. All hydroplanes for any class can have turn fins which should enable the boat to track straight down the course.

14. Open type boats that not comply to the scale rules will not be permitted to race in this class. As previously mentioned, the hull rules are very explicit as to hull configuration, driver cockpit location, and dimensions of the hulls. If there is any deviation from the requirements, the boat will not be able to compete in any events until it has been inspected and approved that it complies with the drag racing rules. All boats are to have full length decks as the full size counterparts have. The proof of the legality of a particular hull is the responsibility of the boat owner. (THE BOAT'S LEGALITY IS VERIFIED BY PHOTOGRAPHS ONLY )

15. The following is the method of designation of boat classes and engine designation that must be used and displayed on both sides of the boat hull for all classes and boat hull types.

20cc to 24.5cc	class "SS"	39.6cc to 45.5cc	class "SD-3"
24.6cc to 30.5cc	class "PS"	45.6cc to 53.5cc	class "SD-4"
30.6cc to 34.5cc	class "SD-1"	53.6cc to 75.2cc	class "SD-5"
34.6cc to 39.5cc	class "SD-2"		

These designations must be placed on both sides of the hull along with your APBA Boat Number. (EXAMPLE: 777 SD-5) The minimum size lettering and numbering for all classes is 2." All lettering must be easily read from the shore line; script lettering is not permitted.

### ENGINE REQUIREMENTS

<b>SUPER STOCK ENGINE</b>	<b>20cc to 24.5cc</b>	<b>("SS" class)</b>
<b>PRO STOCK ENGINE</b>	<b>24.6cc to 30.5cc</b>	<b>("PS" class)</b>
<b>SUPER DRAG 1 ENGINE</b>	<b>30.6 to 34.5cc</b>	<b>("SD-1" class)</b>
<b>SUPER DRAG 2 ENGINE</b>	<b>34.6cc to 39.5cc</b>	<b>("SD-2" class)</b>

1. The engines for these classes must be commercially advertised and available to all modelers. The engine will be single cylinder, spark ignition, gasoline burning, single carburetor, and water cooled.

2. All engines are to be gasoline burning type. Any commercially available pump gasoline and 2 cycle oil are permitted. NO OTHER FUEL (NITROMETHANE, ALCOHOL OR METHANOL) IS PERMITTED.

3. Cylinder heads can be machined to increase the compression of the engine.

4. Pistons can be custom machined for the engine but must retain at least one ring.

5. Port timing can be modified, but the port location must retain its original location as manufactured.

6. Any carburetor spacer can be used provided that it does not exceed one inch, which includes both gaskets.

7. All engines must retain the stock flywheel location and ignition system, The lightening of the flywheel is permitted in this class. Starting of the engine must be by the original recoil pull start configuration.

7. All engines are to use spark plugs to ignite the fuel. The use of glow plugs or other methods of igniting fuel is not permitted. The use of multi spark plugs is not permitted.

8. Any method of introducing the fuel into the engine is permitted (fuel injection, carburetor).

9. All carburetors and fuel injection units must have a throttle return spring that is capable of closing the throttle plate in case of linkage failure. This will be inspected at every race.

10. The use of Nitrous Oxide is permitted. The nitrous supply tank must meet all regulations and D.O.T. standards regarding compressed gas. The supply tank must be rigidly mounted to the structure, inside the boat. No nitrous supply tanks are to be mounted outside the hull, or above or on the deck. The solenoid valve or control valve must be connected to a separate channel on the receiver. The coupling of the throttle linkage to the nitrous control valve is not permitted. Those who run this type of system will be required to have a second fail safe that will shut off the nitrous injection in case of radio failure. This fail safe is required regardless of the radio equipment being used. All supply lines to the engine must be braided reinforced and utilize threaded fasteners to the engine and supply "bottle". These lines must be capable of withstanding the pressure of the supply "bottle". The use of slip-on tubing for the supply lines will not be accepted. Any deviation from this rule that is found during inspection will prevent that boat from running for that or any other event until the problem has been corrected for inspection at another event.

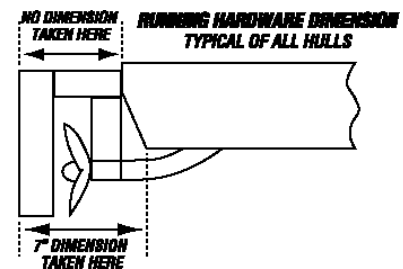
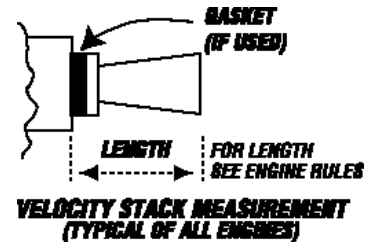
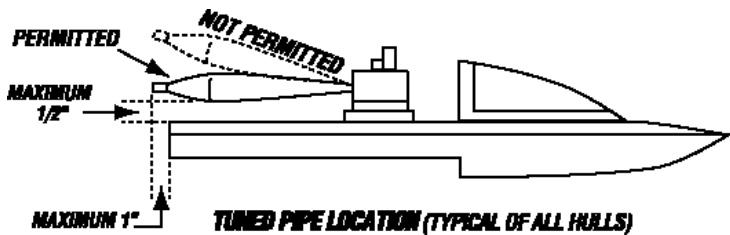
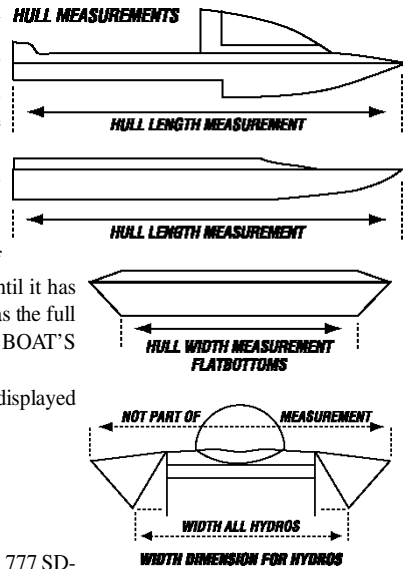
11. All fuel injections that use a separate fuel pump must have a separate fail safe device, that is separate from any other radio function, that must be capable of shutting off the fuel supply to the fuel injection unit, in the case of radio failure. This will be tested at every race using the method that is explained in these rules. If the boat fails this test, then the boat will not be able to compete in that day's events.

12. Any style velocity stack can be used provided the length does not exceed four inches as measured from the carburetor face or fuel injection body. This includes the gasket if used.

13. Any tuned pipe can be used provided it is commercially advertised and available to all modelers. All exhaust systems must be centered in the boat. The use of offset exhaust systems is not permitted. It is recommended that a water cooled system be used. The "header to the tuned pipe" can be custom manufactured.

**SUPER DRAG 3, ENGINE 39.6cc to 45.5cc ("SD-3" class)**

**SUPER DRAG 4, ENGINE 45.6cc to 53.5cc ("SD-4" class)**



1. The Super Drag - 3 and 4 class engine rules are identical to the Super Drag 1 and 2 engine rules. The exception to these rules is the ability to use a 2 cylinder engine. (DUAL ENGINES ARE NOT PERMITTED IN THESE CLASSES.) The two cylinder engine must conform to all the abovementioned Super Stock engine rules. The exhaust system must be as close to the center of the boat as possible and both tuned pipes must be mounted as low as possible in the bottom of the boat.

#### **SUPER DRAG 5 ENGINE 53.6cc to 75cc (“SD-5” class)**

1. This class may use a single cylinder or 2 cylinder engine only. (DUAL ENGINES ARE NOT PERMITTED IN THIS CLASS.) The engine rules for this class are identical to the above Super Stock/Super Drag rules except that NITROUS OXIDE INJECTION CANNOT BE USED IN THIS CLASS. The tuned pipes should be mounted as close to the center of the boat as possible and be mounted as close to the bottom of the hull as possible. This engine displacement class is a modified engine class only and there is no stock class for these engines. Please note this class requires a 1/4 scale servo for the steering that has a minimum torque of 160 in. oz. Metal gear servos are required. The steering push rods must be a minimum of 4-40 size and must have a push pull steering arrangement. Also, the throttle servos for this class must be 1/4 scale, and each carburetor or injection system must have its own throttle servo. (No coupled throttle servos for this class.)

#### **HARDWARE REQUIREMENTS**

1. Any running hardware can be used but the total assembly cannot exceed 7” as measured from the transom. This includes the rudder, prop nut, water pick up, propeller, strut, and turn fin.
2. It is required that all rudders be mounted behind the propeller so as to allow control of the boat at very low speeds and while staging.
3. Skid fins are permitted but must be rigidly mounted to the hull.
4. The shaft can be a flex shaft or a rigid shaft. Only a SINGLE SHAFT ATTACHED TO A SINGLE PROPELLER directly can be used. The use of dual propellers is not permitted in any class.
5. The hardware must be fastened to the boat hull using appropriate fasteners that can withstand the rigors of R/C Drag Boat Racing. This attachment of hardware is the responsibility of the boat owner.
6. Any propeller can be used for any class but it must be securely fastened to the propeller shaft. The use of “Prop Guards” on the starting stands for all boats is required.
7. Fuel tanks and nitrous oxide supply “bottles” must be securely mounted as low as possible inside the hull. The use of mounting tape for these items is not permitted. The mounting of these items on the deck or above the deck line is not permitted.
8. Radio boxes must be mounted inside the boat hull, below the deck line. These radio boxes must be securely fastened to the boat hull.
9. Any linkage that is used to steer the boat must be rigid and a “push pull” assembly (two push rods for steering). The use of flexible push rods is not permitted in any class. The minimum size push rod is 4-40.
10. Water pickups can be located at any location provided that the pickup does not exceed the 7” dimension from the transom. The routing of the water overboard is at the discretion of the boat owner.
11. The use of wings is permitted in all classes. The wings are to be mounted on the transom only and attached permanently to the hull. The wings can be manually adjusted on shore, but cannot be servo adjusted in any class. Wings cannot be attached to the bow. The maximum size of the wing must not extend beyond the width of the transom. The maximum width of the wing is 7”.
12. A single “JET DRIVE” can be used as per the full size counterpart. The definition of a “JET DRIVE” is a device that is mounted to the transom of the boat and is powered by a single engine that rotates the internal pump vanes, producing water pressure through a nozzle that is used to steer the boat and also produces thrust. The use of other devices called “JET DRIVES” is not permitted. The boats that run this device will compete against the inboard propeller driven boats unless there are enough boats at the race that use the “JET DRIVE” — then a class designated the “J” class, will be developed using the engine guidelines as detailed in these rules. The use of ducted fans will not be permitted.

All boats are to use a “WATER TYPE” propeller.

### **APBA R/C SCALE HYDRO**

#### **5 LITRE, NATIONAL MODIFIED AND GRAND NATIONAL**

The 5 Litre, National Modified and Grand National Hydroplane class has been developed to duplicate the full size counterpart as raced under the APBA Inboard Category. The 1/4 Scale Radio Controlled gasoline engine powered hydroplanes are separated into three separate classes based on the engine displacement, as with the full size counterpart.

#### **HULL RULES**

The hull rules as described represent all classes. There are not separate hull rules for each class.

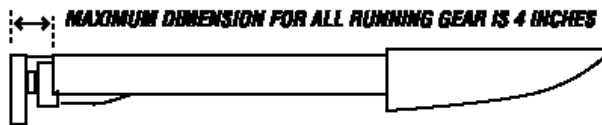
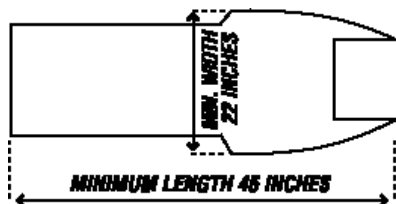
1. The hull must duplicate its full size counterpart being modeled in a minimum 1/4 scale, or 3” = 1’-0”.

Modified Riggers, Catamarans, Riggers, Tunnel Boats, Canards, and Unlimited Hydroplanes, are not permitted to run in these classes.

2. The minimum length for all classes is 40”.

The minimum beam or width for all classes is 18”

For dimensioning for these classes, see diagrams.



It is understood that the full size counterpart that is being modeled may be too large, or too small, to meet the requirements for this class. Adjustments necessary to conform to the hull rules will be accepted.

All hulls must be able to sustain flotation of the engine, all

hardware, radio equipment, and a full tank of fuel in a fully operational state while stationary in the water. The fuel tank that is installed, must be the one that is used for the full operation of the boat during the race. Substitute fuel tanks for the purpose of meeting the flotation rule are not permitted.

3. The hull may be constructed of wood, fiberglass, and foam composites. A solid foam boat that is not “skinned” with wood, and or fiberglass will not be

accepted.

4. All hulls are permitted to have removable cowls that enables the access to the engine, and other components. These cowls must represent the cowling as exhibited by the full size counterpart being modeled. The use of turbine type cowlings will not be permitted, since the full size counterparts are not permitted to use turbine engines as power. All removable cowls must be in place during while the boat is in operation. The use of flotation material attached to the cowl is recommended.

5. To duplicate the full size counterpart the drivers compartment — either an “open type” or enclosed “canopy type” — must resemble the actual boat being modeled, both in style and the location.

7. The painting and detailing of the hulls to be in the spirit of full size 5 Litre, National Modified, and Grand National Hydroplane racing. The color and detailing that represents the full size counterpart is desirable. If the modeler wishes to deviate from the paint scheme but remains in the spirit of full size racing, this is permitted in all classes.

8. The numbering of the hulls must appear as per the full size counterpart that was modeled.

The following letter prefix must be displayed in front of the number:

5 Litre= E          National Modified = NM          Grand National = GNH

The owner/ driver APBA Membership number must be displayed on both sides of the hull .

The accuracy of this number will be verified at the registration.

9. All hardware and running gear must not extend not more than 5” beyond the transom. This measurement will be taken from the transom. Stepped transoms will not be permitted so as to enable the boat owner to conform to the rule.

10. The motor mounts and stringers must be rigidly fastened to the boat’s structure. The structural integrity of the engine stringer and engine mount is the responsibility of the boat builder and/or the boat owner.

11. The use of offset engine mounts, or engine compartments is not permitted. All engines and running gear must be mounted on the center line of the boat. The use of an offset rudder is permitted.

12. All engine and engine related items must fit under the cowl. The exhaust system must fit under the cowl and fit below the deck line. The intake for the carburetor may extend beyond the cowl. This carburetor extension or velocity stack must extend no more than 2-3/4” past the exterior surface of the cowl.

13. A single turn fin is required for all classes. This turn fin should be mounted so as to enable a clockwise operation of the boat. The turn fin must be securely mounted to the hull of the boat. The turn fin design should be capable of withstanding the rigors of high speed operation. The structural integrity of the turn fin is the responsibility of the boat builder or the boat owner.

14. A “wing” or spoiler is permitted, only if the full size counterpart displays this “wing” or spoiler. The boat that has the “wing” or spoiler must be the boat being modeled and must compete in that full size class. The boat owner must provide photographs of the full size counterpart that uses these wings. The wings must be of scale size and must be mounted at the location displayed in the photograph of the full size counterpart.

15. All hulls can be either “picklefork” or “conventional round nose”. The configuration must be as per the full size counterpart being modeled.

16. A single (1) rudder and a single (1) propeller must used. The use of multi rudders and multi propellers are not permitted in any class.

#### **Radio Equipment**

1. All steering linkage which is connected to the steering servo and the rudder must be rigid pushrods. The use of flexible cable for the steering linkage is not permitted in any class. A “push /pull” configuration for the steering linkage is recommended.

2. The use of servo setters is recommended for all classes. The servo setter must be capable of lowering the throttle to an low idle position or shut off the engine. This servo setter must be operational once installed inside the boat.

3. The minimum servo type permitted for the steering of the boat is a 1/4 scale servo, with no less than 100 inch pounds of torque. It is recommended that a “metal gear” 1/4 scale servo be used.

4. The throttle linkage can be a flex cable. All carburetors should have the original return springs attached and operational. The throttle return spring must be capable of returning the throttle plate to a closed position in the event of throttle linkage failure.

#### **ENGINE RULES**

##### **5 LITRE ENGINE**

**22cc to 26cc**

##### **NATIONAL MODIFIED (7 LITRE) ENGINE**

**27cc to 34cc**

##### **GRAND NATIONAL ENGINE**

**MAXIMUM 41cc**

1. All engines must be commercially advertised and available to all modelers. The engines must be single cylinder, gasoline fueled, single carburetor, water cooled, spark plug ignition, using a recoil starter. No electric starters are permitted in this class.

2. All engines are to be naturally aspirated through the use of a single carburetor. All carburetors are to be commercially advertised and available to all modelers. The original return spring must be used and be fully operational. A velocity stack is permitted, provided that it meets the hull rule for extending beyond the cowling.

3. Engine modifications are permitted. The use of water-cooled heads, crankshaft work, porting, large carburetor, modified ignition system, and balancing is permitted. All components used must be commercially available to the modeling public. All engines must retain the original pull starter configuration.

3. The use of dual carburetors, fuel injection, and nitrous oxide is not permitted.

4. Any commercially available gasoline and 2-cycle oil may be used in this class. The introduction of nitromethane to the fuel or the use of nitromethane fuel is not permitted in this class.

5. The use of a clutch is recommended. This decision is the responsibility of the boat owner.

6. Any exhaust system or tuned exhaust pipe can be used provided it meets APBA’s noise restriction as described in this rulebook. It should be further noted that the sponsoring club does have the ability to lower the noise requirement so as not to impact the usage of the lake. All classes must follow these club guidelines for the event or while operating on the club lake, regardless of the boat owner’s membership in other clubs.

Due to the enclosed engine and exhaust system it is recommended that the exhaust system be water cooled.

#### **APBA 1/4 SCALE GASOLINE ENGINE POWERED CRACKERBOX RULES**

The intent of these rules is to duplicate the full size APBA Inboard class counterpart. This class also will comply with other organizations that are racing the “CRACKERBOX” under their rules.

#### **HULL (OPEN CLASS)**

1. All hulls are to be modeled after the full size counterpart that is being raced under APBA full size inboard rules. All hulls are to be constructed to 1/4 scale

including driver figures. Driver location and engine compartment to be located as the full size counterpart.

2. The minimum length of the hull as measured along the bottom is 45" with a maximum length of 49".
3. The minimum beam or hull width is 16 1/2" measured along the running surface.
4. The bottom of the boat is to be flat with no riding pads or stepped bottoms.
5. Hull construction is limited to wood or fiberglass. A complete foam or foam composite boat is not permitted.
6. The deck and hatch must resemble the full size Crackerbox. No modification to the location of these areas will be permitted.
8. The letter "P" must precede the driver/owner's APBA member number, assigned to the individual by APBA. The numbers and letter designation must be displayed on both sides of the boat. The minimum letter and number height is 2".

## **CLASSIC WOOD CRACKERBOX**

### **HULL**

1. The hull must be made of wood (glass cloth and resin may be added).
2. The hull length must be 48" plus or minus one inch and must complete to the remaining rules as mentioned in the Open Class.
3. The minimum weight ready to run is 15 pounds.
4. Classic wood boats cannot compete in the Open Class and the Classic Wood class at the same event. The boat owner must choose one class only for each event.
5. The location of the engine compartment and driver's compartment as explained in the Open Class applies for this class also.

### **ENGINE RULES:**

1. Any engine manufacturer can be used provided it is commercially advertised and available to the modeling public, gasoline burning, spark ignition, single cylinder, single carburetor, and does not exceed 30cc.
2. The carburetor can be any commercially advertised and available to the modeling public. Fuel injection or other means of introducing fuel into the engine is not permitted.
3. The fuel must be gasoline that is commercially available to the general public.
4. Any type of exhaust system is permitted, but must exit through the transom and may not project above the deck line at any location. A water cooled exhaust system is recommended.
5. The exhaust system may not project beyond the transom or transom exhaust flange more than 1".

### **DRIVE TRAIN:**

1. Direct Drive using straight or flex shaft drives are permitted.
2. The drive train may not extend more than FOUR INCHES beyond the transom. This dimension includes the rudder and any drive train components including trim tabs.

## **APBA 1/4 SCALE R/C MODEL JERSEY SPEED SKIFF**

The purpose of the R/C Jersey Speed Skiff Class is to enable those interested in competing in a 1/4 Scale, gasoline powered "Speed Skiff" class, duplicating the full-size counterpart as raced under the APBA Inboard Category. NOTE: A Jersey Speed Skiff hull that complies with these rules is commercially available from Aeromarine Laminates in Seaford, Delaware.

### **HULL**

1. All hulls must be built to a scale of 3" = 1-0" or 1/4 scale and must duplicate the full size counterpart in hull and deck design (lapstrake hull, driver compartment location, engine compartment location, front cockpit opening location, hull dimensions, deck dimensions, and beam). Hulls are to be flatbottom design and stepped hulls are not permitted.
2. The minimum hull length is 46" and maximum length is 54". The addition of trim tabs or deck and bow extensions will not be permitted to enable boats to comply with the minimum or maximum hull requirements.
3. As with the full-size counterpart, the engine compartment hood must be in place at all times while the boat is operating. This hood must be securely attached to the hull assembly. Those boats that "lose" their hoods while running during an event will be disqualified and must return to shore immediately. This hood must be removable, or hinged to enable the boat to be fueled or started. The method of attaching this hood is the boater's responsibility.
4. Hulls and decks can be built of wood or fiberglass.
5. Motor stringers must be securely fastened to the hull and must withstand the rigors of model boat operation.
6. All running gear must not extend past the transom more than 4-1/2" as measured at the transom to bottom intersection point. This dimension includes the rudder, trim tabs, propeller, strut, prop nut, water pickup and other running gear.
7. All exhaust systems must not extend past the transom not more than 2" as measured from the transom to bottom intersection point and must be completely concealed below the deck line. The use of tuned pipes or other exhaust systems that extend above the deck is not permitted.

### **ENGINE**

1. All engines are to be commercially advertised and available to the modeling public. The engine must be a single cylinder, spark ignition, gasoline fueled, naturally aspirated, engine with a minimum displacement of 21cc and a maximum displacement of 31cc.
2. Engines may be modified for marine use by converting the engine to water cooling.
3. Internal engine modifications are permitted provided that the original engine configuration and displacement requirements are maintained.
4. The use of clutches is recommended but installation of a clutch assembly is at the discretion of the boat owner.
5. Any exhaust system can be used provided that the system fits below the deck line and inside the boat hull. The exhaust must exit at the transom as to duplicate the full size counterpart. It is recommended that a water cooled exhaust system be used.
6. All carburetors are to be commercially advertised and available to the modeling public. All engines to have a single carburetor. Multi carburetors are not permitted.

### **DETAILING**

1. In the spirit of full-size racing, the hull can be detailed to represent a full size boat that is being modeled or represents the boat owner's color scheme.
2. All boats are to display their APBA number on each side of the hull, and centrally located as per the full size counterpart. The number is to have a prefix JS. Numbering on the deck does not eliminate this requirement.

## APBA R/C GASOLINE POWERED OFFSHORE CLASSES

The R/C Sportsman and Superboat classes have been developed to enable those who are interested in radio controlled, gasoline engine powered, 1/6 scale, off-shore race boats which depict their full size counterparts as raced under the guidelines of APBA Offshore, and UIM events held throughout the United States and Europe.

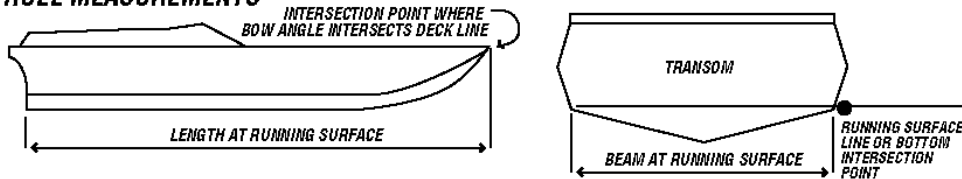
### HULLS

1. The 1/6 scale hulls either can be a deep vee or catamaran design as depicted by the full size counterpart being modeled. Hydros, Riggers, Flatbottom, or Semi Vee boats will not be able to run in these classes.

	Hull Length		Beam Width
Sportsman A	minimum 61"	maximum 64"	minimum 15-1/2"
Sportsman C	minimum 65"	maximum 68"	minimum 15-1/2"
Superboat	minimum 70"	maximum 75"	minimum 15-1/2"

All dimensions are taken along the running surface or keel line. Overhanging Decks, Transom Extensions, Swim Platforms, Stepped Out Transoms, Inset Transoms, and Overhanging Bows will not be taken into consideration when hull measurements are verified.

### HULL MEASUREMENTS



3. The minimum hull width or beam is 15-1/2" which is taken at the running surface of the transom (see drawing). Bowed hulls, overhanging decks or other projections will not be permitted to establish the minimum dimension.

4. All boats are required to have a full length deck which duplicates the full size counterpart being modeled. This deck is to

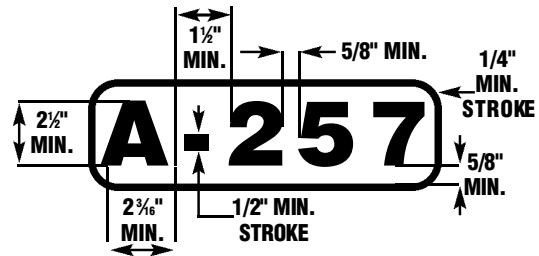
represent the actual full size driver and crew compartment, and location. A removable "hatch cover" representing a section of the deck as modeled, required to gain access to the engine, fuel, and radio equipment, is permitted. This "hatch cover" is to be in place at all times while running the boat. The addition of flotation material to the hatch cover is recommended. If the "hatch cover" is prematurely ejected during a race or fun run, the boat is disqualified and is to return to shore once the race is completed, or when it is safe to do so.

5. All hulls, decks and hatch covers may be constructed of wood, fiberglass, other composite material, or a combination thereof. The structural integrity of the complete boat is the responsibility of the boat owner. Vacuum-formed hulls, "foam" or "foam composite" as a main structure are not permitted at this time.

6. Engine mounting rails must be fastened to the boat's structure and be capable of withstanding the rigors of all the boat's operation. The structural integrity, and the structural attachment to the boat's structure is the responsibility of the boat owner.

7. The painting and the detailing of the boat can be either per the full size counterpart being modeled, or per the boat owner's selection. Remaining detailing requirements must be followed.

8. The boat owner/operator is to affix their ABPA number with the appropriate letter prefix ("A" or "C" for Sportsman classes) to both sides of the hull as the full size counterpart. See diagram.



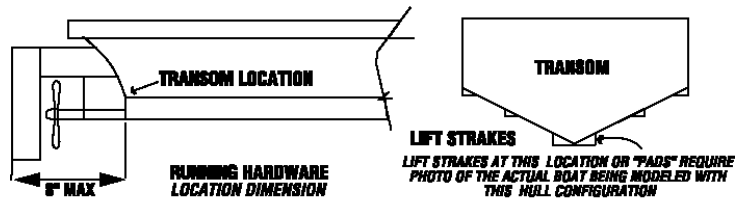
9. All routing of engine cooling, engine exhaust, and other engine components must be below the deck line or the deck surface. No additional cowling may be used in an attempt to cover any engine, radio, or fuel system that projects above the deck, as this would not appear on the full size counterpart being modeled. Turbine exhaust shrouds are not permitted.

10. The exhaust must exit the boat through the transom and may not project not more than 2" beyond the transom. This dimension is taken at the running surface of the transom, as previously described.

11. All struts, outdrives, rudders, propellers, prop nuts, and trim tabs may not extend past the transom more than 8". This measurement is taken from the transom's running surface.

12. Lift strakes are to be located as per the full size counterpart being modeled. The length and width of these lift strakes can be altered to suit the model's design. On deep vee hulls, riding pads or flat surfaces are not permitted. If the modeler elects to put steps into the bottom of the deep vee hull, the modeler must produce photos of the full size counterpart being modeled showing these steps. Catamaran type hulls are permitted to have steps in the hull.

13. All boats are to be propelled by means of a "boat propeller", either submerged or surfacing type. Airplane propulsion systems, ducted fans, turbines or jet engines cannot be used to power, or boost the power of, the boat.



### ENGINE REQUIREMENTS

<b>SPORTSMAN "A" ENGINES</b>	<b>Maximum 53cc</b>
<b>SPORTSMAN "C" ENGINES</b>	<b>Maximum 66cc</b>
<b>APBA SUPERBOAT ENGINES</b>	<b>Maximum 77cc (Combined/Dual Engine)</b>

1. All engines must be spark ignition type, gasoline fueled, single carburetor per cylinder, and water cooled.

2. All engines must be commercially advertised and available to the modeling public. The engines can be modified for marine use with the installation of water cooled cylinder heads.

3. Any internal modifications can be made provided the original supplied components are modified. Custom components not supplied with the engine will not be permitted (custom blocks, rods, pistons, crank shafts, and cylinder heads not permitted). Any engine that does not appear to comply with the rules may result

in the boat owner taking apart his engine to verify the engine is in compliance at his/her own expense.

4. Any carburetor can be used, provided it is commercially advertised and available to the modeling public. Modifications to the supplied carburetor are permitted. No fuel injection or any other means of introducing fuel into the engine, or increasing the fuel's burn rate are permitted. Throttle return springs must remain operational.

5. Any gasoline and 2 cycle oil can be used, provided they are commercially available to all modelers. The use of alcohol, nitromethane, or other fuel additives is not permitted in these classes.

6. Any exhaust system can be used for the gasoline engine provided the noise does not exceed 90db. at maximum RPMs, at 25 ft. from the boat in any direction. The noise level will be randomly checked and those who do not comply will not be permitted to run their boats. A water cooled exhaust system is recommended since the entire exhaust system must be below the deck and hatch cover.

7. Any motor mount can be used; however, it must be securely mounted to the engine stringers in the boat. A vibration dampening type is recommended. The structural integrity of the mounting system is the responsibility of the boat owner, or racer.

8. The total displacement for the "Superboat" class of 77cc represents the combined displacement for all engines used in the boat for power.

9. Due to the size and power of APBA Superboats, a clutch for each engine is recommended. This clutch must be capable of disengaging the propeller shaft, not allowing the shaft to rotate while the engine is idling, from the time the boat is taken from the pit area, until the boat is successfully launched.

## **RADIO EQUIPMENT**

1. A 130 oz. in. torque servo is the minimum allowable torque to be used for steering the boat. If equipped with dual steering devices, one servo for each device is required regardless of whether the devices are coupled together. Example: Two rudders Two servos.

2. All steering pushrods must be solid type. The connection must be in a push/pull configuration for each device. Flex cable or nylon pushrods are not permitted for steering devices. Flex cable is permitted for throttle control. The size of the pushrods is the responsibility of the boat owner.

3. Radio equipment and servos should be mounted in a waterproof radio box, rigidly mounted into the boat and must be capable of withstanding the rigors of the boats operation. The use of "servo tape" is not permitted for mounting the servos. If a radio box is used it too must be permanently fastened to the boat's hull. These items will be inspected prior to the starting and operation of the boat. The mounting of all radio equipment into the boat and the structural integrity is the boat owner's responsibility.

4. The battery pack capacity should be sized so as to provide more than enough power to allow the boat to maintain full control and have fully functional systems at all times while the boat is in operation.

5. A Servo Fail Safe is mandatory for each motor that is powering the boat, for all boats regardless of the radio equipment being used. This Fail Safe device must be able to activate the throttle servo and bring the engine to either a low idle or shut off if radio failure should occur. This device will be inspected for its operation at each event and those that are not operating will not be permitted to operate their boat until the boat owner/ operator can prove its operation to the inspector.

6. Throttle servos and linkage must be capable of overcoming the throttle return spring. The size and type of linkage which includes the "pushrods" is the responsibility of the boat owner.

## **RACE COURSE**

1. The race course for the Superboat class will be 346'-0" in length, with a turn radius of 30'-0". There will also be a "dog leg" whose length and location will be determined by the hosting club.

2. All Superboats will be required to complete 6 continuous laps of the course without any "pit" stops for adjustments or refueling. Once the boat leaves the launch area it cannot return to the pits for any reason. Those boats that return to the pits after being launched will be disqualified for that race.

3. Final approval for the race course will be the responsibility of the contest director and the hosting club. Once the course has been determined all racers will have to comply with its final configuration.

4. Once started, the race may be canceled due to weather related problems and/or visibility. This decision is the responsibility of the race director and the hosting club.

## **SECTION 18 • GLOSSARY OF TERMS**

**Radio Control** - Radio Control, referred to as R/C, is defined as a method by which a model boat is remotely operated through a prescribed course by wireless.

**Frequency** - A frequency is a transmitted radio signal.

**Channel** - A channel is a two digit identifier representing the 27 and 75 megahertz frequencies.

**Lane** - A lane is an imaginary path of water that enables the boat to circum-navigate the course.

**Decibel** - A calibrated unit of measure that determines the volume of sound.

**Heat** - A heat is a single event of competition over a prescribed course.

**Regatta** - A regatta is a series of competitive heats that result in a single winner for each participating class. A regatta can also be termed a contest, race or event and normally is scheduled over a weekend.

**Hot Pit** - The designated area in which contestants are preparing to compete in the next heat, i.e., starting engines, launching and retrieving boats.

**Working Pit** - The designated area in which contestants maintain their equipment between competitive heats.

**Pit Person** - A pit person assists the driver in the starting, launching, and retrieval of the boat, alerts the driver as to the action on the course and keeps track of the total laps completed.

**Practice** - To exercise with a craft in order to acquire or polish skill. Considered a non-competitive event.

**Testing** - A means of examination, trial, or proof of a craft. To run through a series of maneuvers to make sure everything is in working order. Testing is considered a non-competitive event.

**Club Event** - If one club is having a "fun day" at an approved event site and members of the club are practicing racing against each other, it is not considered competitive. If more than one club is at an event site and the clubs compete against one another - that's competitive.

**Sport Hydro (Gas Power Classes)** - Catamaran, shovel nose or pickle-fork hydros. The following are not allowed: any outrigger, modified outrigger or canard design hulls or boats. Hulls entered as a Sport Hydro must adhere to Section 9, Sport Hydro Competition Rules, B-Hull Specifications - 7 - 10 of the R/CMRC Rule Book.



## SECTION 19 • R/C MODEL RACING CATEGORY HALL OF HONOR

The Hall of Honor was established in 1990 to recognize and thank those individuals who have made distinguished contributions to the sport of model boating and to the betterment of the APBA R/C Model Racing Category. The Hall of Honor is designed to pay tribute to those participants and non-participants, from all aspects of the sport, for the work that they have performed in areas other than racing.

Criteria: District Directors, National Chairmen, or any interested party can nominate any member in good standing to the Hall of Honor.

1. Nominations with a short biography must be sent to **the executive assistant** by May 15th of each year.
2. In order to establish this award the first year, five members were voted on by the officers of the R/C Model Racing Category. In the future, the number of those selected will be one to three and the final voting will be done by the existing members of the Hall of Honor.
3. Final voting will be held by June 15th.
4. Inductees will be announced at the National Championship Regatta Awards Banquet.

## SECTION 20 • R/C MODEL RACING CATEGORY HALL OF CHAMPIONS

The Hall of Champions was established in 1990 to distinguish our most outstanding driver(s) at the end of each current season. Points and achievements for the current season form the basis for selection when APBA membership and performance conditions are met. The Hall of Champions is the R/C Model Racing Category's highest honor. Inductees are honored at the APBA Hall of Champions Luncheon.

**Criteria:** Must have won a National Class Championship and a District Championship for the current year, then will be awarded:

- a. 10 points for each National Championship with 25 boats or more.
- b. 8 points for each National Championship with 20-24 boats.
- c. 6 points for each National Championship with 15-19 boats.
- d. 4 points for each National Championship with 10-14 boats.
- e. 2 points for each National Championship with 9 or less boats.
- f. 10 points for each District Championship with 10 or more boats.
- g. 8 points for each District Championship with 9 or less boats.

To break a tie the following will be counted:

2nd place finishes at a Nationals with 6 points for 15 or more boats and 4 points for 14 or less boats. 2nd place finishes in final District Championships with 6 points for 10 or more boats and 4 points for 9 or less boats.

If a tie still exists:

1. 2 points for fast time at a Nationals in a class with 15 or more boats, and 1 point for 14 or less boats.
2. 3rd place finishes at a Nationals will be counted with 6 points for 15 or more boats and 4 points for 14 or less boats. 3rd place finishes in final District Championships with 6 points for 10 or more boats and 4 points for 9 or less boats.
3. 1 point for the highest total points earned at the Nationals.
4. 4th place finishes at a Nationals will be counted with 6 points for 15 or more boats and 4 points for 14 or less boats. 4th place finishes in final District Championships with 6 points for 15 or more boats and 4 points for 14 or less boats.
5. 5th place finishes at a Nationals will be counted with 6 points for 15 or more boats and 4 points for 14 or less boats. 5th place finishes in final District Championships with 6 points for 10 or more boats and 4 points for 9 or less boats.
6. The 2nd fastest time at a Nationals will be counted with 2 points for 15 or more boats and 1 point for 14 or less boats.
7. The 3rd fastest time at a Nationals will be counted with 2 points for 15 or more boats and 1 point for 14 or less boats.

Final tie breaker:

1. Each candidate will receive 1 point for each entry competing in the largest class that the candidate won at the Nationals.
2. Each District Director will furnish the Category Chairman with final points standings, to be forwarded to the Hall of Champions Committee for determining the winner.

## R/C MODEL RACING CATEGORY HALL OF CHAMPIONS INDUCTEES

1990 Dick Roberts, Albuquerque, NM	1993 Tony Rhodes, Long Beach, CA
1991 Dennis Love, Overland Park, KS	1994 Sam Maus, Jr., Manhattan Beach, CA
1992 Paul Dunlap, Tacoma, WA	1995 Sam Maus, Jr., Manhattan Beach, CA
Al Zaporteza, Chino Hills, CA	

## SECTION 21 • DIRECTORY OF OFFICERS

CATEGORY CHAIRMAN:	DICK CASPARI, 3550 SE Blvd., Wichita, KS 67216-2618	southernyachts@earthlink.net	(316) 685-8611
ASS'T CATEGORY CHAIR:	GUS DORNBUSCH, 6521 Everett St., Lincoln, NE 68506-1516	ad24734@alltel.net	(402) 483-6312
IMMEDIATE PAST CHAIR:	HARRY GATJENS, 8306 186th St. SW, Edmonds WA 98026-5839	hydroplane@budweiser.com	(425) 778-4898
EXECUTIVE ASSISTANT :	CINDY MINOLETTI, P.O. Box 377, Eastpointe, MI 48021-0377	cindy@apba-racing.com	(586) 773-9700
TREASURER:	PATTY MALEC, APBA, P.O. Box 377, Eastpointe, MI 48021-0377	patty@apba-racing.com	(586) 773-9700
RACERS EDGE EDITOR:	JOEL FAWCETT, 313 Chadwick St., Belton MO 64012-1751	j-jf@worldnet.att.net	816-331-1497

### DISTRICT DIRECTORS

DISTRICT 1:	DON HERMANN, 1219 Laurel Blvd, Lanoka Harbor, NJ 08734-2905	hgliderrider@aol.com	(609) 693-7248
DISTRICT 8:	CLIFFORD (EARL) SCHENCK, 1407 Gunnison Ct., Richland WA 99352-3101	earlpnp@msn.com	(509) 946-6903
DISTRICT 9 & 19	CHARLES HYNES, 19421 Joice Ln., Huntington Beach, CA 92646	chynes@socal.rr.com	H (714) 962-0709 (W) 714-585-0709
DISTRICT 17:	DAVE VERMILLION, 1901 N. Saint Charles Ave., Joplin MO 64801-1114	esawyer@4state.com	(417) 624-7773

### NATIONAL CHAIRMEN

D.B. (NOISE LEVEL)	MIKE LIVELY, 6340 SE 101st St., Berryton KS 66409-9537	pom5@earthlink.net	(913) 836-3115
SAFETY:	ROBERT FELGENHAUER, 1201 Aspen Trail, Edmond OK 73003-6442	rcfelge@aol.com	(405)-348-8990
MONOHULL	RUSS KOLB, 14916 Z Circle, Omaha NE 68137-2560		(402) 895-3385
HYDRO/CAT	KEVIN HERMRECK, 52 Lakeshore Drive, Garnett KS 66032-1735	kmherm@aceks.com	(785) 448-2343
SPORT 40	CHRIS PICKELL, 4480 S. Meridian Ave. Lot #260, Wichita KS 67217-3767		(316) 522-6811
OUTBOARD:	MIKE DORNBUSCH, 4004 W. 58TH St., Fairway, KS 66205-3142	mdornbusch@yahoo.com	(913) 362-4615
SCALE UNL. HYDRO:	DON MOCK, 723 SW Austin Pl., Seattle, WA 98106-2082	mock1p@attbi.com	(206) 763-0672
SPORT HYDRO:	SCOT KOLB, 7824 S. 71st St., La Vista, NE 68128-3010	kolbs@ops.org	(402) 593-6571
GASOLINE POWER:	RICH LASKOWSKI, P.O. Box 8487, Cherry Hill NJ 08002-0487	(856) 667-1011	fax (856) 667-7801
OFFSHORE	_____		
ELECTRIC:	_____		
RECORDS:	COLIN CASPARI, 354 N. Doris St., Wichita KS 67212-2427	h2operformance@earthlink.net	316-945-9572

### TECHNICAL & RULES COMMITTEE

GUS DORNBUSCH, Chairman,	6521 Everett St., Lincoln, NE 68506-1516	ad24734@navix.net	(402) 483-1593
ALAN ATKINS,	13751 S. Poplar St., Glenpool OK 74033-3940	a-atkins@sbcglobal.net	(918) 321-3800
LYNN COOPER,	9790 County Lane 190, Carthage MO 64836-7253		(417) 359-8032
STEVE COOPER,	18957 Jessamine Lane, Carthage MO 64836-6223		(417) 358-7117
GLEN WISDOM,	4548 S. Gold, Wichita KS 67217	g4wisdom@aol.com	(316) 522-2557

## SECTION 22 • SCHEDULE OF FEES

The following are available from: AMERICAN POWER BOAT ASSOCIATION

P.O. Box 377, Eastpointe, MI 48021-0377 (586) 773-9700	<b>Before 2/28</b>	<b>After 2/28</b>
Individual, APBA R/C Model Racing Category Membership	\$ 45.00	\$50.00
Add'l Family, APBA R/C Model Racing Category Membership	\$30.00	
Single Event Membership	\$10.00	
R/C Model Racing Category Club Registration	\$10.00	
R/C Model Racing Category Sanction Application	\$20.00	
R/C Model Racing Category Record Application	\$ 7.50	
R/C Model Racing Category Rule Book	\$15.00	

**SECTION 23 • DIVISION BY DISTRICT (United States and Canada)**

**DISTRICT 1**

Connecticut  
 Delaware  
 District of Columbia  
 Maine  
 Maryland  
 Massachusetts  
 New Hampshire  
 New Jersey  
 New York  
 Pennsylvania  
 Rhode Island  
 Vermont  
 Virginia

**DISTRICT 2**

Kentucky  
 Michigan  
 Ohio  
 West Virginia

**DISTRICT 3**

Florida  
 Georgia  
 North Carolina  
 South Carolina

**DISTRICT 4**

Illinois  
 Indiana  
 Wisconsin

**DISTRICT 5**

Alabama  
 Arkansas  
 Louisiana  
 Mississippi  
 Tennessee

**DISTRICT 7**

Arizona  
 New Mexico  
 Texas

**DISTRICT 8**

Idaho  
 Western Montana  
 Oregon  
 Washington

**DISTRICT 9**

Northern California  
 Northern Nevada  
 Northern Utah

**DISTRICT 10**

Hawaii

**DISTRICT 11**

Alaska

**DISTRICT 16**

Canada

**DISTRICT 17**

Iowa  
 Kansas  
 Minnesota  
 Missouri  
 Nebraska  
 North Dakota  
 Oklahoma  
 South Dakota

**DISTRICT 19**

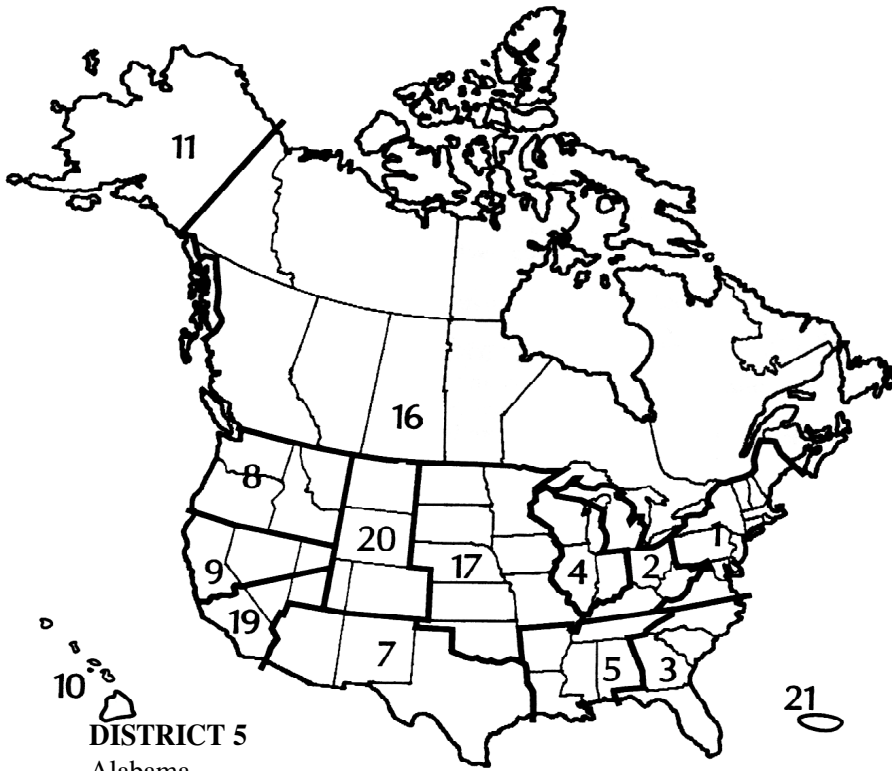
Southern California  
 Southern Nevada  
 Southern Utah

**DISTRICT 20**

Colorado  
 Wyoming  
 Eastern Utah  
 Eastern Montana

**DISTRICT 21**

Puerto Rico



## SECTION 24 • R/C MODEL RECORDS

(Code "A" = APBA record; Code "D" = district record)

CLASS	DRIVER	TIME	HULL	ENGINE	PROP	FUEL CODE
3.5cc Hydro	Don Newberger	1.20.880	Daytona	Picco	OCT-2.0	Revenge A
7.5cc Hydro	Steve O'Donnell	1.03.100	Mirage	Picco	TD3.42	O'Donnell A
11cc Hydro	Don Maher	1.07.250	Gail Force	K&B	OCT-1462	Liquid Gold A
30cc Hydro	Mark Anderson	1.01.230	Avenger	K&B 1ci.	OCT-67	O'Donnell A
30cc Hydro Multi	Gary Maxon	1.24.010	Mongoose	OPS	Maxster	Sidewinder A
7.5cc Marathon	Rod Hazelwood	35.09.94	Tunnel	K&B	OCT-X450	K&B A
3.5cc Mono	Don Donikowski	1.40.560	Banana Boat	Picco	DPD4703	Revenge A
7.5cc Mono	Bill Home II	1.27.570	Lee/Dudley	K&B	OCT-X450	K&B A
11cc Mono	Paul Mathews	1.24.130	Young Blood	K&B	OCT-X460/3	Mach7 A
30cc Mono	David Sarkin	1.33.080	Prather	Picco	OCT-460	Revenge A
3.5cc OB Hydro	Charles Johnson	1.24.730	Sundowner	K&B	OCT-1740/3	Powermaster A
3.5cc OB Mod Tun	Tommy Lee	1.37.660	Leecraft	K&B	OCT-X440/3	Red Max A
7.5cc OB Mod Tun	Tommy Lee	1.19.820	Leecraft	K&B	OCT-X448	Red Max A
11cc OB Mod Tun	Lina Lejeune	1.25.640	Aerotech	K&B	PRA-245	Mach7 A
3.5cc OB OPC Tun	Tommy Lee	1.51.590	Leecraft	K&B	OCT-X445	Red Max A
7.5cc OB OPC Tun	Mike Tally	1.36.150	Leecraft	K&B	PRA-230	Cool Power A
11cc OB OPC Tun	Tommy Lee	1.34.510	Leecraft	K&B	OCT-X445	Red Max A
13cc OB OPC Tun	Jim Auguston	1.53.460	Leecraft	K&B	OCTURA	O'Donnell A
Scale Unlimited	Lary Johnson	1.20.250	83 Renault	Rossi	OCT-X460	Revenge A
Sport40	Russ Nachtweih	1:19:590	Own	Picco	ABC	K&B A
Sport40I	Jim Wilson	1.30.230	Fisher	K&B	PRA-250	Own Mix A

### 1/16 MILE STRAIGHTAWAY

3.5cc Hydro	Steve O'Donnell	99.032	Water-Rocket	O'Don/Rossi	OCT-2160	O'Donnell A
7.5cc Hydro	Jack Goukassian	92.822	J&G	Picco	OCT-2160	O'Donnell A
11cc Hydro	Steve O'Donnell	100.942	Scratch Built	PiccoEXR-67	OCT	O'Donnell A
30cc Hydro	Steve O'Donnell	101.146	Scratch Built	PiccoEXR-80	OCT	O'Donnell A
30cc Hydro Multi	Randy Doucet	71.884	Mongoose	K&B	OCTURA	Red Max A
3.5cc Mono	Don Newberger	57.840	Diamond"D"	Picco	OCT-X448	Revenge A
7.5cc Mono	Don Newberger	60.729	Diamond"D"	K&B	OCT-X460/3	Revenge A
11cc Mono	Sam Maus, Jr.	60.443	Bullet	Tom 67	OCT-X462	O'Donnell A
30cc Mono	Don Huff	59.055	Young Blood	CMB	ABC-62X80	Mach 7 A
30cc Mono Multi	Paul Dassonville	57.544	Magic	K&B		Powermaster A
3.5cc OB Hydro	Paul Dassonville	60.975	Prather	K&B	OCT-1.6	Powermaster A
7.5cc OB Hydro	Jack Oxley	65.028	Prather	K&B	OCT-1752	Own Mix A
11cc OB Hydro	Jim Auguston	53.776	Prather	K&B	OCT	A
3.5cc OB Mod Tun	Jim Auguston	61.307	Own	K&B	OCT	O'Donnell A
7.5cc OB Mod Tun	Tommy Lee	61.475	Leecraft	K&B	OCT-X445	Red Max A
30 OB Mod Tun	Jim Auguston	61.307	Own	K&B	OCT	O'Donnell A
11cc OB Mod Tun	Jim Auguston	62.440	Lapcat	K&B	OCT	Powermaster A
3.5cc OB Mono	Bobby Tom	43.352	Stealth	K&B	OCT-X440/3	O'Donnell A
7.5cc OB Mono	Sam Maus, Jr.	47.239	Maus Mtrsr	K&B	OCT-X450	O'Donnell A
11cc OB Mono	Sam Maus, Jr.	43.436	Mach 45	K&B	OCT-X452	O'Donnell A
3.5cc OB OPC Tun	Jery Dunlap	48.076	DPI Tunnel	K&B	OCT-X642	Byrons A
7.5cc OB OPC Tun	Ronald Talley	53.003	Leecraft	K&B	PRA-235	Mach 7 A
13cc OB OPC Tun	Jim Auguston	54.216	Own	K&B	OCT	O'Donnell A
11cc OB OPC Tun	Jim Auguston	56.257	Lapcat II	K&B	OCT	Red Max A
3.5cc Offshore	Mark Anderson	56.109	Anderson Splash	Nova Rossi	PRA-230	O'Donnell A
7.5cc Offshore	Mike A. Shane	56.532	A.C. Magnum	45 Picco EXR	OCT-X455	O'Donnell A
11cc Offshore	Paul Dassonville	60.160	Diamond "D"	K&B	OCT-X465	Powermaster A
30cc Offshore	Paul Dassonville	59.055	Diamond "D"	K&B	PRA-260	Powermaster A
Scale Unlimited	Jim Auguston	77.963	86Boat	OS Max	OCT-1667	Red Max A
Sport40I	Don Newberger	53.229	Diamond"D"	K&B	OCT-1460	Revenge A
Sport40II	Mark Anderson	67.771	Mutt	K&B	OCTURA	O'Donnell A

### 1/16 MILE STRAIGHTAWAY FOR DISTRICT 17

3.5cc Hydro/Cat	Terry Dobson	43.774	A e romarine	Mac-21	OCTURA	Red Max D
11cc Hydro/Cat	Glenn Wisdom	48.596	Aeromarine	OPS-67	PRA-255	Red Max D
3.5cc Mono	Tony Pearson	52.452	Seaducer	OS	OCT-440/3	Byron D
7.5cc Mono	Dick Caspari	49.559	Andy Brown	OPS	OCTURA	Morgan D
30cc Mono	Robert Felgenhauer	59.681	Seaducer	CMB	OCT-X656	Red Max D
7.5cc OPC	Terry Dobson	36.231	Lee Craft	K&B-7.5	OCTURA	Red Max D
Scale Unlimited	Dick Caspari	58.675	Thunder Boat Repro	OPS-67	OCT-X457	McDonald D
Sport40 I	Tony Pearson	47.169	Super Sport	OPS	OCT-445/3	Byron D
11cc Offshore	Harold Wettstein	51.252	A e romarine	OS 67	PRA-245	Red Max D
30cc Offshore	Allen Wade	58.593	A e romarine	CMB	OCTURA	Ritch's Brew D
G-23 Gas Mono	Mark Haas	37.006	A e romarine	Zenoa	OCT-470	Gas D

### 1/16 MILE STRAIGHTAWAY ELECTRIC

7 Cell Open Hydro	Dick R. Crowe	48.586	Scratch	Reedy	OCT-1732	1200 MA A
12 Cell Open Hydro	David Frank	57.870	Own Design	Peak	OCT-1732	A
18 Cell Open Hydro	Jim Auguston	63.685	Own Design	Astro Flight	OCT-V937	600 MA A
32 Cell Open Hydro	Jim Auguston	69.103	Own Design	Astro Flight	OCT-V955	600 MA A
7 Cell Open Mono	Raymond Fuller	33.382	3-D	Trinity	OCTURA	1400 MA A
12 Cell Open Mono	Raymond Fuller	38.006	3-D	Aveox	OCTURA	A
18Cell Open Mono	Mark Walburn	36.525	Graupner	Trinity	OCT-440	A
32 Cell Open Mono	Ross Hatte	37.438	Hatte Vee	Cobalt	OCT-1752	A
12 Cell Open Sport	Mark Walburn	47.169	Graupner/TOR	Trinity	OCTURA	A

7 Cell Open Tun	Tom Kirk	26.410	Own Design	Astro Flight	OCT-X430	900 MA	A
12 Cell Open Tun	Dick R. Crowe	35.942	DPI	AstroFlight	25OCT-45	1200 MA	A
7 Cell Scale Unltd	Dick R. Crowe	48.460	Dunlap Cruiser	Reedy	OCT-1732	1200 MA	A
6 Cell Stock (ROAR) Hyd	Dick R. Crowe	29.03	DPI-Amer. Dream	Trinity	OCT-1735	1400 MA	A
12 Cell Stock Hydro	David Frank	51.605	Electro-Rigger	Trinity	OCT-1732		A
6 Cell Stock (ROAR) Mono	Dick R. Crowe	30.04	DPI- Shiada	Trinity	X-45	1400 MA	A
12 Cell Stock Mono	Jim Auguston	36.652	Own Design	Rey-Tech	OCT-X430	900 MA	A
12 Cell Stock Spt Hyd	Mark Walburn	43.352	Graupner/TOR	Trinity	OCTURA	1400 MA	A
12 Cell Stock Tun	Jim Auguston	33.185	Own Design	Kyosho	OCT-X432		A

### ENDURO COMPETITION

3.5cc 1/2Hr.	Louie Omerzu	69.25	Ward	OPC	OCT-X440		A
7.5cc 1/2Hr.	Andy Stishenko	78.50	AC-Wild Cat	K&B	OCT-X448	Magnum	A
11cc 1/2Hr.	Andy Stishenko	85.75	AC-Wild Cat	K&B	OCT-X445	Magnum	A

### 1/16 STRAIGHTAWAY (GAS)

G24 Hydro	Paul Dassonville	65.400	Own	Hanson Zenoah	2267	Gas	A
G24 Sport Hydro	Sam Maus, Jr.	62.580	Maus Mtrspts	J&G Racing	X-438	Go-Lo	A
G-24 Mono	Jim Auguston	47.972	Twin Craft	Hanson Zenoah	P rop Shop	Gas	A
G-36 Hydro	David C. Helland	31.267	Helland	QuadraQ35	275	Gas	A

### 1/3 MILE, 2 LAP (GAS)

G-24 Hydro	Jack Oxley	00.27.712	Oxley	Zenoah	1667	Gas	A
G-24 Sport Hydro	Sam Maus, Jr.	00.28.532	Maus Mtrspts	J&G Racing	X-438	Go-Lo	A
G-24 Mono	Paul Dassonville	00.34.834	Prather	Hanson Zenoah	270	Gas	A

### 1 MILE, 6 LAP (GAS)

G-24 Hydro	B ruce Hanson	01.26.06	Original	BH Hanson	P rop Shop	Gas	A
G-24 Sport Hydro	Todd Broester	01.37.12	Own	A&J Racing	2167	Gas	A
G-24 Mono	Sam Maus, Jr.	01.47.06	Maus Mtrspts	J&G Racing	275	Gas	A
G-36 Mono	Jack Oxley	01.57.28	Prather	Homelite	275	Gas	A

### 1/3 MILE, 2 LAP

3.5cc Hydro	Don Newberger	00.24.541	Daytona	Picco	1667	Revenge	A
7.5cc Hydro	Douglas Dewitte	00.20.001	Gail Force	Picco/Grim	ABC H22	O'Donnell	A
11cc Hydro	Don Maher	00.19.578	Gail Force	K&B	270	Liquid Gold	A
30cc Hydro	Mark Grim	00.17.745	Gail Force	Picco-Grim	Octura	O'Donnell	A
30cc Hydro Multi	Mark Grim	00.26.743	Predator	K&B	PRA-270	Own Mix	A
3.5cc Mono	Don Newberger	00.30.043	Diamond "D"	Picco	OCT-X447	Revenge	A
7.5cc Mono	Don Newberger	00.28.583	Diamond "D"	K&B	OCT-X460	Revenge	A
11cc Mono	Sam Maus, Jr.	00.27.543	Bullet 60	K&B	OCT-X462	O'Donnell	A
30cc Mono	Don Huff	00.31.597	Young Blood	CMB	ABC-62X80	Mach 7	A
3.5cc OB Hydro	Lee Garcia	00.25.246	Garcia Elipse	Nova Rossi 2K	OCT-1742	O'Donnell	A
7.5cc OB Hydro	Mark Anderson	00.27.594	Lee Craft	K&B	Octura	O'Donnell	A
11cc OB Hydro	Jery Dunlap	00.34.786	Dunlap Model Boats	K&B	Octura X-452	Byrons	A
3.5cc OB Mod Tun	Skip Wagner	00.33.181	Leecraft	K&B	OCT-X440/3		A
7.5cc Mod Tun	Mark Anderson	00.27.430	Lee Craft	K&B	Octura	O'Donnell	A
7.5cc OB Mod Tun	Bobby Tom	00.28.417	Leecraft	K&B	OCT-X448	O'Donnell	A
30cc OB Mod Tun	Jim Auguston	00.30.156	Leecraft	K&B	OCTURA	O'Donnell	A
11cc OB Mod Tun	Sam Maus, Jr.	00.30.060	Maus Motorsport s	K&B	OCT-X452	O'Donnell	A
3.5cc OB Mono	Pilar Garcia	00.37.403	Cal Craft	K&B	OCT-X452	Revenge	A
7.5cc OB Mono	Sam Maus, Jr.	00.34.585	Mach 45	Nova Rossi	OCT-X440/3	O'Donnell	A
3.5cc OB OPC Mod Tun	Mark Anderson	00.33.989	Dunlap	K&B	OCT-X447	Red Max	A
7.5cc OB OPC Mod Tun	David Helland	00.31.351	Geraghty/Helland	K&B	OCT-X447	Red Max	A
30cc OB OPC Mod Tun	Jim Auguston	00.31.768	Leecraft	K&B	OCT-X455	Red Max	A
11cc OB OPC Mod Tun	Jim Auguston	00.31.393	Leecraft	K&B	OCT-X440/3	O'Donnell	A
3.5cc Offshore	Skip Wagner	00.30.717	Leecraft	K&B	OCT-X440/3		A
7.5cc Offshore	Bobby Tom	00.28.518	Leecraft	K&B	OCT-X448	O'Donnell	A
11cc Offshore	Randy Doucet	00.28.694	AC Models	OPS	PRA-255	Red Max	A
30cc Offshore	Randy Doucet	00.28.037	AC Models	K&B	PRA-255	Red Max	A
11cc Scale Unlimited	Jim Auguston	00.25.851	Boat	OS Max	OCT-X460	Red Max	A
7.5cc Sport II	Doug Dewitte	00.24.304	Maus Mtrspts	Picco/Grimm	PRA-245	O'Donnell	A

### 1/2 MILE OVAL ELECTRIC, 5 LAP

CLASS	DRIVER	TIME	HULL	ENGINE	PROP	BATTERY	CODE
7 Cell Open Hydro	David Frank	00.57.380	Electro-Rigger	Peak	OCT-X432	1400 MA	A
12 Cell Open Hydro	Rich Kouns	01.06.070	Own Design	Big Jim	OCT-1750		A
18 Cell Open Hydro	Dick Crow e	01.19.762	Dave Frank	Astro Flight	OCT-1945	1200 MA	A
7 Cell Open Mono	G reg Schweers	01.19.470	Schweers Mono	Astro 05-5-T	X435	Ele#1700 Orion	A
12 Cell Open Mono	Mark Walburn	01.19.890	Graupner	Astro	OCT-1945		A
18 Cell Open Mono	Ross Hatte	01.26.213	Hatte Vee	Astro Flight	OCT-X642		A
12 Cell Open Sport	David Frank	01.00.750	O'Boy Obert o	Astro Flight	OCT-1945	1200 MA	A
12 Cell Open OPC Tun	Jeff Vasquez	01:17:360	Kouns	Astroflite/P.M.P.	X640	1700 SCRC	A
7 Cell Scale Unltd	Dick Crow e	01.12.630	Crowe	Peak	OCT-X430		A
6 Cell Stock Hydro	David Frank	01.23.290	Electro-Rigger	Trinity	OCT-X432		A
12 Cell Stock Hydro	Mark Walburn	01.14.970	Graupner	Trinity	OCT-X645		A
6 Cell Stock Mono	David Frank	01.39.660	Ski Cruis er	Trinity	OCT-X427	1200 MA	A
12 Cell Stock Mono	Rich Kouns	01.25.190	Black Diamond	Trinity	OCT-X442		A