



# SAFETY AND RACING RULES

Southern California Speedboat Club

*Updated Apr. 2003*

These rules are adopted to provide a minimum structure and requirements for the orderly conduct of boat racing events. These rules will govern the racing at all SCSC sanctioned events. All participants in these events are deemed to have read, understood and confirmed their commitment to comply with these rules. Neither these SCSC Rules, the participating teams, event sponsors, event promoters or any event participants provide an expressed or implied warranty of safety and in no way provide a guarantee against injury or death to participants, spectators or others.

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# 1. Safety Rules

## 1.1. Safety Responsibilities

**1.1.1.** SCSC officers, officials, agents, participating clubs, sponsors, vendors and representatives thereof have no responsibility to ensure the adequacy or competency of the racing facility, safety personnel or equipment, or conditions of the premises including the waterway.

**1.1.2.** Participants are responsible to inspect and determine to their satisfaction that the pits, course and general racing facilities and prevailing weather and all other matters that would affect their decision to participate are acceptable; are directly and solely responsible for the safety of their boat and associated racing equipment; must deliberately and consciously perform their duties so as to minimize the risk of injury to all participants.

**1.2. Substance Abuse.** No controlled substance, alcohol or other intoxicating agent can be consumed by any participant within 10 hours before the drivers meeting or during the event.

**1.2.1. Testing:** A breathalyzer or other text approved and/or administered by the Referee or their designee may be required of any participant who signs the insurance release form.

**1.2.2.** A participant who refuses to be tested will be deemed to have failed.

**1.2.3.** Consequences of failing the approved and administered test are:

- **1<sup>st</sup> failure** – not allowed to participate in the balance of the event, loss of points and no refund.
- **2<sup>nd</sup> failure** – not allowed to participate for twelve (12) months, loss of year-to-date points and no refund.
- **Additional failure** – not allowed to participate in SCSC events, loss of year-to-date points and no refund.

**1.3. Medical Incapacity.** A driver, rider or course official will not participate while using any medical device that limits the flexibility of any joint or interferes with their normal vision in the sole judgment of the Safety Manager.

**1.4. Safety Inspection.** All boats, at each event, must receive and pass, as noted on the boat's inspection form, a safety inspection based on the general safety rules and those for their class prior to being allowed to launch at the event.

**1.4.1.** The events Chief Inspector or their designee will perform all safety inspections and report their results to the Referee.

**1.4.2.** Failure to pass the safety inspection for any violation will bar the boat from further participation until the violation is corrected and has passed the safety inspection for their class.

**1.4.3.** Any boat involved in a flip or contact with another boat, the shore, buoys or other water born items or motion that at the discretion of the Referee warrants investigation will be required to pass a new safety inspection.

## 1.5. Personal Safety Equipment

**1.5.1. Shoes:** All participants must wear closed toed shoes when on the race course, in the pits and at the launch ramps.

**1.5.1.1.** Capsules – Required to wear shoes with Velcro lace covers or must cover laces with race tape.

**1.5.2. Eye Protection:** When onboard any racing boat a helmet face shield, goggles or ANSI/OSHA approved safety glasses with restraint straps must be used.

**1.5.3. Uniforms:** When on board any racing boat, driver and rider must wear long sleeves, long pants and closed toed shoes. For all inboard powered boats, a Nomex or comparable fire-retardant material uniform with tight fitting cuffs must be worn.

1.5.3.1. **Capsules** – Required to wear a one- or two-piece driving suit that is made from SFII rated Nomex (minimum single layer). No jeans, shorts, t-shirts or sweatshirts allowed.

**1.5.4. Helmet:** When onboard any racing boat a helmet must be worn whenever the race boat is in the water.

1.5.4.1. One of the following Snell specifications must be met: K2010, M2010, M2015, SAH2010, SAH2015, EA2016 or CMS/CMR2016. Helmets that not labeled to these standards must get the approval of the event Safety Manager prior to use at the event.

1.5.4.2. Participants in open cockpit flatbottoms must use, as a minimum, helmet support straps secured to the participants uniform or life jacket. The use of a head & neck restraint device is mandated however not limited to manufacturer or type, i.e., D-Rings, Hans, Leatt, Neck Airbag System. Use of a “donut” is only allowed with a “D-Ring” style helmet restraint system. Use of a “donut” without any other style helmet is restraint system is prohibited.

1.5.4.3. Participants in capsule cockpit flatbottoms must use a head & neck restraint device that is secured by shoulder seat belts and designed for restrained cockpit driver. Must be correct angle for seat and driver position. Horseshoe foam type neck braces or neck rolls are not allowed.

1.5.4.4. Capsules – Open face helmet or full-face helmet with air breathing system required.

1.5.4.4.1. If involved in an incident where air system is under water, it is highly recommended to send system to manufacturer for evaluation.

**1.5.5. Life Jacket.** When onboard any racing boat in the water the life jacket must be securely fastened.

1.5.5.1. Must be designed for racing with integral leg straps or thigh skirts; must have impact material covering the back and sides; must be covered with puncture and tear resistant outer covering; must meet or exceed USCG Type II flotation and UL standard 1123, have a 10% or greater flotation balance and an 18 pound or greater flotation; must have a sewn in manufacturers label showing the date of manufacture or recertification; must be recertified every three (3) years from date of previous certification.

1.5.5.2. A participant may be required to demonstrate that the life jacket is functioning properly at the sole discretion of the Referee.

1.5.5.3. Capsules - Capsule flotation suit required.

**1.5.6. Ballistic Pants:** All drivers and riders are required to wear ballistic pants when in the boat on the water.

**1.5.7. Driving Gloves:** Optional and highly recommended

**1.5.8. Knee pads and shin pads:** Optional and highly recommended

## **1.6. Hull and Hardware Safety**

**1.6.1. Return Throttle.** The throttle must have a positive spring return to a neutral or idle position independent of participant action.

**1.6.2. Flotation.** The hull must float without participant intervention supporting the hull, motor and occupants in a swamped state.

1.6.2.1. **Capsules:** Floatation/foam in deck and sides of hull required, minimum area of 80% of deck, gunnels & transom combined. Foam must be securely fixed to the inside areas of the boat so it does not separate in the event of an incident.

1.6.2.1.1. Divinycell foam or a composite closed style cell foam must be used so it does not wick or absorb water. Alternatives could be foam blocks, pool noodles taped and roped together and secured to inside of boat.

### **1.6.3. Capsules**

#### **1.6.3.1. Latches and Lid Hardware**

1.6.3.1.1. Side open capsule lids must also have a top flip forward opening incorporated so there are two exit options if needed

1.6.3.1.2. Main pivot hinge capsule lid must have a pull-to-release style hinge with a strap, handle or similar lever so it can be pulled out by a diver easily if main capsule release latch is not functional.

1.6.3.1.3. Highly recommended for **no** lift supports or shock struts on capsule lids that can cause loading of pivot hinge. This can hinder release of hinge pin for quick release and timely access to driver.

1.6.3.2. **Lifting Hooks:** Adequate size and strength lifting hooks to be mounted as follows: one (1) hook at 9 o'clock, one (1) hook at 12 o'clock and one (1) hook at 3 o'clock. Hooks at 9 and 3 to be at gunnel height and must be mounted securely through the capsule. Lifting hooks must be colored red, green or yellow for visibility underwater.

#### **1.6.3.3. Inside Capsule**

##### **1.6.3.3.1. Seat Belts**

1.6.3.3.1.1. Mounting points of seat belts to be per manufacturer specifications.

a) Belt mounting options within the capsule must be bolt in, snap in or wrap.

1.6.3.3.1.2. Belts must be 5-point style (minimum), 2" wide over shoulders to sit in head & neck restraint devices properly. Belts can be 2" throughout or go to 3" for lower shoulder belts and lap belts. Latching mechanism must be latch-link or cam lock.

1.6.3.3.1.3. Mounting hardware must be adequate one-piece surface area backing plate across back inside or outside of the capsule. If mounted through back of the capsule, 1/8" stainless or 3/16" aluminum hardware required. Both shoulder belt mounting points must have the same backing plate, no washers with bolts and nuts only.

1.6.3.3.1.4. Seat belts must be recertified by original manufacturer or replaced every three (3) years.

1.6.3.3.2. **Seats:** Allowed options: pour foam seats or fabricated seat (aluminum, composite or carbon fiber).

1.6.3.3.3. Foam or padding required on as many surfaces as possible inside capsule cockpit.

1.6.3.3.4. No sharp edges, long bolts, sharp or protruding obstacles inside cockpit

1.6.3.3.5. All wiring, leads, hoses to be secured as much as possible

1.6.3.3.6. Minimum of 4" head clearance between top of helmet and inside capsule lid.

1.6.3.3.7. Air Bottle

1.6.3.3.7.1. Minimum 19 cubic foot air bottle required.

1.6.3.3.7.2. Air bottle must be properly secured with horseshoe style mounts within a well-protected area of the capsule. Do not mount air bottle in the open.

1.6.3.3.7.3. Minimum 10 feet of air hose from inside cockpit that connects to driver's air system short hose.

#### **1.6.3.4. Windshields**

1.6.3.4.1. Windshield should be a minimum 3/8" thick Lexan polycarbonate.

1.6.3.4.1.1. If 3/8" thick is used on 1/4" flange, Lexan must be beveled to meet capsule.

1.6.3.4.2. Flanges used to mount windshield glass must be of acceptable thickness.

#### **1.6.3.5. Capsule Certificate**

1.6.3.5.1. Manufacturer certificate must be laminated into the capsule or available for Inspector.

1.6.3.5.2. Capsule material sample must be tested and rated to 5,000 newtons. Contact class rep for approved testing companies.

1.6.3.6. Two-way radio communications required with at least one (1) spotter that communicates with driver.

1.6.3.7. Rear view mirrors required on both sides of capsule

1.6.3.8. All bolt holes that are drilled through and the core of the capsule must be potted with hard point or sealed with resin and then re-drilled to prevent wicking into the core.

1.6.3.9. Highly recommended to install fire suppression inside of capsule.

### **1.7. Capsule Training Certification**

**1.7.1.** Participants must complete capsule training certification once every three (3) years if competing in a capsuled boat.

**1.7.2.** Participants are highly recommended to wear everything for training that they would wear in the boat when racing. This includes air system (required), head & neck restraint, shoes, driving suit, capsule suit (required), etc.

**1.7.3.** Participants to complete a scuba certified dive course. Mandatory for all new capsule racers as of 1/1/2023.

### **1.8. Rescue Safety**

**1.8.1.** All safety and rescue matters will be the responsibility of the event Safety Manager.

**1.8.2.** Each event will have an ambulance, medical staff, dive team and rescue teams ready to perform their duties in the location assigned by the race director prior to any race boats entering the water. These resources will remain on duty and have no other assigned duties until the Event Manager declares the days event closed.

**1.8.3.** The Safety Manager will assure that the planned receiving hospital has been contacted prior to the event and made aware of the event.

**1.8.4.** The rescue boats, Event Manager, Referee and Safety Manager must have communication equipment sufficient to ensure open and immediate communication. Any patients' condition can only be discussed in confidence with the Safety Manager.

#### **1.8.5. Rescue and Safety Personnel**

1.8.5.1. **Ambulance Medical Attendant.** Must be certified and authorized to use all of the equipment in the ambulance and to transport patients to the planned receiving hospital. The equipment in the ambulance must be on site whenever boats are on the water and must be in the location assigned by the Safety Manager.

1.8.5.2. **Medical Staff.** The race should have an appropriately trained responders in attendance. At a minimum the race must be attended by two (2) certified EMTs.

1.8.5.3. **Dive Team.** A minimum of four (4) certified divers must be in their assigned position at all times that race boats are on the water. Divers may attend the drivers meeting and must be familiar with the safety equipment on and the structure of each race boat.

1.8.5.4. **Rescue Team.** Must be at least 18 years of age and authorized by the Safety Manager to be on a rescue craft. There must be a minimum of two (2) people per boat, one of whom must be an EMT – Basic certified, and one of whom must demonstrate a working knowledge of how to right and tow each type of boat.

#### **1.8.6. Rescue Boats**

1.8.6.1. Two (2) boats equipped to carry one or more participants in a supine position will be in their assigned position before race boats enter the water.

1.8.6.2. Each boat must carry a set of signal flags, flares and radios whose operation is confirmed by the Race Director and or Referee before the start of each heat.

1.8.6.3. There is a now wake zone within 100 feet of an accident.

1.8.6.4. The rescue boat driver must remain at the driving station.

#### **1.8.7. Rescue Equipment per Boat**

##### **1.8.7.1. Hardware**

- Belt cutters or knives – with each diver
- Basic scuba equipment with a minimum 40 cu. Ft. tank
- Prying tool (minimum 12 inch)
- 16-inch cable cutter
- Stokes basket or other rigid immobilization device
- A minimum of 25 to 50 foot tow rope with heavy duty quick connects
- Equivalent of 20 lb. dry chemical (ABC) fire extinguisher
- Radio and spare battery

##### **1.8.7.2. Medical**

- Body substance isolation devices
- Airway kit including basic airway adjuncts, a bag-valve mask and manual or mechanical suction
- Basic BLS trauma kit
- Blankets and towels
- Liquid detergent

#### **1.9. Event Safety**

1.9.1. **Fire Extinguishers.** Each boat's pit must have a dry charge fire extinguisher with a minimum rating of 3A30BC; a gauge indicating the charge; the fire extinguisher must be in current certification compliance; fire extinguisher must be manned when fueling.

1.9.2. The propeller must be disengaged or removed before the boat's engine is turned over or started.

1.9.3. Crane areas must be separate from non-crane pit areas and accessed only by participants authorized by the Safety Director.

1.9.4. The Referee is solely responsible for determining and communicating when racing will take place.

1.9.5. The Rescue Team or Turn Judge may ask the Referee to halt any boat in which the participant appears to lack control.

1.9.6. If a boat flips or a participant leaves the boat all water activity will cease except for rescue boats.

- 1.9.7.** Any aircraft over a race course while boats are on the water must have the written consent of the Safety Manager.

## **2. Event Management**

- 2.1. Events will be managed and under the sole control of the Event Management Team which will include Event Director (aka Race Director), Referee, Safety Manager, Rescue Captain, Risk Manager, Chief Inspector, Registrar, Starter and Scorer. The Race Director, may, if necessary, also work in the capacity as the Referee for the event with the approval of the Event Management Team, however, whenever possible the Referee should be separate from the Race Director.
- 2.2. Members of the Event Management Team will excuse themselves from any issue in which they have or are deemed by the Event Manager Team to have a direct commercial or competitive interest that may affect the outcome of an issue.
- 2.3. The members of the Event Management Team are appointed by SCSC.
- 2.3.1.** All inspections, incidents, actions, scoring and timing are to be recorded on the approved forms provided by SCSC.
- 2.3.2.** Members of the Event Management Team will have no responsibilities or duties other than those of their position except as noted in 2.1 above.
- 2.3.3.** The Event Management Team will meet prior to the drivers meeting and race boats entering the water to confirm that all pre-race requirements are complete as well as the number of heats per class and number of boats per heat. The Referee, Safety Manager and Risk Manager each have the right to veto any decision to open the event.
- 2.3.4.** No person shall be appointed to perform in any official capacity at an event who is currently under suspension, whose suspension is pending appeal, has been expelled from participation by SCSC or any sanctioning organization recognized by SCSC, nor shall any boat in which they hold an ownership interest be allowed to participate in the event except where the terms of suspension require supervised official participation in events.
- 2.4. Event Management Team and Responsibilities**
- 2.4.1. Event Manager (aka Race Director).** Will be the chairperson of the Event Management Team; will assure that the personnel, facilities, equipment, contracts, community support, insurances, event promotion, security, medical support, promoted prizes and participants are in place for and managed during the event; will have in their possession, before any boats are allowed on the water, a copy of the insurance certificate and signed participant insurance waivers/release forms for the event; will announce the opening of each day of the event before race boats are on the water; will be responsible for all actions taken or discipline exercised on all matters not covered by these rules; will remove any appointed official who fails to satisfactorily accomplish their responsibilities; must be in radio contact with the Referee.
- 2.4.2. Referee.** Will be responsible for compliance with all general and class rules under which the event is governed and for all actions taken or discipline exercised under these rules; will attend the drivers meeting; will (or their designee) be on the judges stand at all times when race boats are on the water; will assure all scoring and timing is properly recorded; will approved the course; will determine and announce the order of finish for each heat of racing or time trial; will instruct the Starter when the yellow or red flags are to be used; will notify any participant of disqualification and record the action; will have the sole authority to allow racing to continue or cease; within two (2) days following the event report to SCSC the details of protests, appeals, disciplinary actions, penalties imposed, and the racing results of

the event. SCSC will have the authority to review and accept or modify these reports for 30 days following the close of the event.

- 2.4.3. Safety Manager.** Will be responsible for compliance with all safety rules under which the event is governed and all associated facility and team inspections and for all actions taken or discipline exercised under these rules and record the action; will notify the participant, Event Manager, Referee and Risk Manager of any safety rule violations and actions taken; will prohibit the use of equipment deemed unfit for service; must attend the drivers meeting; will advise the Referee to close the race course when conditions warrant; must be in radio contact with the Referee.
- 2.4.4. Rescue Captain.** Will be responsible for all rescue personnel, approving suitability of their boats and equipment, and assuring that each rescue team is in their location as assigned by the Referee; will attend the drivers meeting with all rescue personnel; must be on radio communication with the Referee and each rescue team.
- 2.4.5. Risk Manager.** Will be responsible to assure that event insurance is in place, that all insurance underwriting requirement are met, and that all participants credentials are in order and that the participants insurance waivers/release forms are signed before boats are on the water; will attend the drivers meeting; must be in radio communication with the Referee.
- 2.4.6. Chief Inspector.** Will be responsible for the inspection and enforcement of all class technical rules; will assure that all competing boats are in compliance with the class technical rules either by evidence of prior certification and confirming owner assurance in writing, or event inspected following competition and the time and place of the inspection.
- 2.4.7. Starter.** Will be responsible for starting all heats; managing the use of all signal flags; taking and recording the timing and scoring of each heat and time trial; providing a photographic record of all starts and finishes; must have radio communication with the Referee; must attend the drivers meeting; will function under the supervision of the Referee.
- 2.4.8. Scorer.** Will be responsible for taking and recording the timing and scoring of each heat and time trial; will function under the supervision of the Starter.
- 2.4.9. Registrar.** Will be responsible from the registration of all participants, receiving entry forms and collecting entry fees, confirming participant credentials, assuring insurance waivers/release forms are signed and providing their event identification; will function under the supervision of the Risk Manager.
- 2.4.10. Class Liaison.** Each class will appoint a Class Liaison to act on its behalf. The Class Marshal will have the sole authority to bring any matters of concern to the class or any team in the class to the attention of the Event Manager or Referee; must attend the drivers meeting.
- 2.4.11. Team Spokesperson.** Each team will appoint a team spokesperson who will be the only spokesperson for the team when communicating any complaint to filing any protest with any member of the Event Management Team; complaints or protest not following this procedure may be subject to penalties or fines; will attend the drivers meeting; the Team Spokesperson will be identified on the event entry form and will make themselves known to the Class Liaison prior to or during the drivers meeting.

### **3. Entries**

- 3.1. Entry for an event must be made on a fully completed form and insurance/release waiver provided by and submitted to SCSC.
- 3.2. SCSC reserves the right to deny entry to any applicant.

- 3.3. Submission of an application constitutes a release from the applicant to SCSC to use any photos or interview content obtained at the event for promotional or other use and is a waiver by the applicant of all rights and damages associated with all uses of such material by SCSC.
- 3.4. All participants in SCSC sanctioned events must be SCSC members.

## **4. Boat Registration**

- 4.1. Boats must be annually registered for the calendar year with SCSC prior to participating in any SCSC approved, sponsored or sanctioned event.
- 4.2. The registration number will not be assigned for one year following the last year of registration and may be passed from one owner to the next with written consent from the previous owner.
- 4.3. Boats that are eligible for more than one (1) class may be registered and compete in all classes for which they are eligible.
- 4.4. **Paint and Names.** These are optional but subject to the review and approval by SCSC or its designee to assure compatibility with a family-based event.
- 4.5. Boat numbers may be retired at the discretion of SCSC following nomination for retirement by an SCSC member and a 75% vote of the eligible SCSC membership.
- 4.6. Boat numbers registered and currently in use in other sanctioning organizations recognized by SCSC that do not duplicate a currently registered SCSC number will be accepted.

## **5. Driver Qualifications**

- 5.1. **Medical Certificate.** All participants who will be in a race boat in testing or competition must submit an original or photocopy of a FAA Class I, II or III, or D.O.T. medical certificate completed by a licensed FAA or D.O.T. physician to SCSC prior to their first participation. No waivers other than for corrective lenses (which must be used in testing and competition) are acceptable. This medical certificate will be valid for two (2) years from the certificates date of completion.
  - 5.1.1. Members of CBF or APBA or any other sanctioning organization recognized by SCSC may submit proof of their membership and medical certificate for consideration.
  - 5.1.2. Participants returning to competition from an injury that prevented them from competing must present a medical certificate per Rule 5.1.
- 5.2. **New Drivers.** Anyone who has not driven an SCSC registered boat as a certified driver or boat registered in other sanctioning organizations recognized by SCSC in the last two (2) calendar years is a new driver.
  - 5.2.1. **Knowledge.** New drivers must speak with the Chief Referee prior to their first race and may be required to pass either a written examination or an oral examination by a Referee before being approved to enter the race course.
  - 5.2.2. **Skill.** Drivers will have the designation of Rookie until they have met all provisions of Rule 5.2.4; each new driver will be assigned a certified driver as a mentor.
    - 1) A Rookie first, must demonstrate the ability to control the boat at competitive speeds for two (2) laps of a test session to the satisfaction of the Referee
    - 2) Must successfully complete a minimum of two (2) heats in the outside lane assigned by the Referee, starting at the back and advancing only to a position instructed by the Referee
    - 3) Following certification new drivers will remain rookies for their first 12 months or racing calendar year, whichever comes first, of participation. Rookie status may be removed at the sole discretion of the Chief Referee or Race Director.

The rookie or certified status of a driver will be noted on their SCSC membership card.

### **5.2.3. Procedures**

5.2.3.1. Rookie drivers will have a 1-inch-wide white cross on their helmet that extends at least 6 inches from front to back and side to side; will make themselves known to the Referee and will be introduced by the Referee as rookie drivers at the drivers meeting.

5.2.3.2. Rookie drivers may participate in any event, may advance to the final at the discretion of either the Chief Referee or Race Director and are considered legal starters unless not allowed at the discretion of the Chief Referee.

## **6. General Racing**

6.1. General Racing rules take precedence over the rules for any class except those class rules that are more restrictive.

**6.1.1.** Failure of the Event Management Team or any of its appointees, to carry out any provisions of the rules or regulations, will not relieve any contestant from their obligation to obey all rules.

**6.1.2.** A boat on the water that receives outside assistance from a non-race entity will be disqualified from a heat. Only the use of radio communication is allowed.

**6.1.3.** The Referee will appoint a minimum of one (1) course judge to be positioned as the referee instructs in proximity to each turn.

**6.1.4.** The Referee may cancel a heat if less than two (2) boats cross the starting line.

**6.1.5.** No participant may be in the area used by the Event Management Team as their operations center without their specific invitation and must leave the area when requested or face a minimum team disqualification and loss of all points earned at the event; each class will appoint a Class Liaison that will be the only person who can ask the Race Director for access to the members of the Event Management Team and their appointees; each Class Liaison will personally submit their name to the Referee at the days drivers meeting.

**6.1.6.** While race boats are on the water it is asked that no red articles (i.e. clothing, umbrellas, placards) will be allowed within 50 feet of the Starter or on the water other than the official flags.

**6.1.7.** Engines may be changed during an event with the written consent of the inspector.

**6.1.8.** Radios used for communications with the occupant of the boat must not interfere with the communications of the Event Management Team and their appointees.

**6.1.9. Event Format.** May consist of Time Trials for establishing qualifying heat and lane chose and will consist of two (2) qualifying heats for each boat and a final heat. The means of determining qualifying heat and lane, the number of boats per heat, the number of boats in the event final and the running of a B-final will be decided by the Referee and announced at the end of drivers meeting. The boats earning the most points at the days event prior to the final will be in the event final. The boat having the least points will have first choice of lane in the final and so on. A B-final may be run for boats not qualifying for the event final and lanes will be selected as in the event final. Each Event Management Team may run their own race format as long as prior to the race that format is approved by the SCSC Chief Referee.

**6.1.10. Time Trials.** Rookie drivers will run the first time trials and will draw for order at the drivers meeting. Certified drivers will draw at the drivers meeting for the order of qualifying. Boats will be allowed one (1) warm up lap. The second time the boat crosses the start/finish line the white flag will drop and the green flag will be raised indicating the start of the time trial. The boat will make two (2) qualifying laps, the fastest of which will be their qualifying

time. The boat with the fastest time will be in qualifying heat 1A and have first choice of lane. The second fastest boat will be in heat 1B and have first choice of lane. The third fastest boat will be in qualifying heat 1A and have second choice of lane and so on. Boats with the highest points following heat 1 will be in heat 2A and the boat with the fastest time trial result will have first choice of lane and so on. Boats not making heat 2A will be in heat 2B and the boat with the fastest time trial result will have first choice of lane and so on. Point ties will be decided based on the highest number of SCSC Bonus Points (BP) earned in the season to date. If no BP have been awarded in the season, then the BP from the prior season will be used.

6.1.10.1. If a boat does not complete two (2) laps the owner may choose to accept the time of the completed lap, if any, or go to the end of the qualifying ladder for a second and last chance. Boats able to race but failing to complete two (2) time trail laps may be seeded into openings in Heat 1A or 1B based on a draw for heat and lane conducted by the Scorer.

**6.1.11.** Testing shall be done at times designated by the Race Director and never during a racing heat.

**6.1.12.** No heat of racing shall consist of a mix of capsule and open cockpit boats.

## **6.2. Drivers Meeting**

**6.2.1.** All participants who are to be occupants of a race boat during the event, the event Rescue Captain, divers/rescue team, Class Marshals, Risk Manager, Safety Manager, Chief Inspector and Starter must attend the drivers meeting; role will be called to confirm attendance.

**6.2.2.** The Event Manager (Race Director) or Referee or his/her designee shall conduct the drivers' meeting.

**6.2.3.** The order of business shall be up to the discretion of the Race Director or Chief Referee:

- Roll Call. Only those boats shall compete whose drivers and communications/radio crew member have answered roll call, or whose qualified representative have answered roll call after having obtained permission from the Referee to represent the driver at the drivers' meeting.
- Introduce the Class Liaison(s)
- Introduction of local race committee for necessary remarks.
- Introduction of safety officers for instructions and information.
- Information for drivers from the Referee:
  - Course rules
  - Safety regulations
  - Drivers' emergency signals
  - Course signals, flags, etc.
  - Discussion of local rules, etc.
  - Division of competing boats into qualification sections, number of boats per qualifying heat, B-Final and event final.
  - Frequency check of team radio equipment to ascertain conflicting or overlapping channels between boat camps. Each team shall provide a list of their radio frequencies prior to their first race of the season.

## **6.2.4. Change of Drivers and Riders**

- 6.2.4.1. Change of drivers and/or riders shall be permitted between heats provided that the new driver and/or rider has registered and their name was called and answered at the drivers' meeting.
- 6.2.4.2. The Referee and Chief Scorer must be notified of a change of river and/or rider during the sanctioned event or during qualifying and testing and the new driver and/or rider must sign the entry form for the boat they are driving.
- 6.2.4.3. Any change in driver and/or rider must be made 30 minutes prior to the start of each heat and must be approved by the Chief Scorer.
- 6.2.4.4. If a substitution occurs and the driver is able to drive his/her boat and a second hull during a flight of heats, the driver may only score points in his/her boat. In the event the driver is able to only drive one (1) boat, the driver earns points in that boat. A driver that has the option of driving two (2) boats in the final must notify the Chief Scorer which boat he/she will drive 30 minutes prior to the final.

### **6.3. Signal Flags and Flares**

- 6.3.1.** All signal flags shall be a minimum of 30 inches by 30 inches. Flags and flares can only be used at the instruction or lead of the Referee.
- 6.3.2.** Color, Meaning and Use when raised:
  - **Black:** Race boats must be off the water
  - **Green:**
    - Raise furled when boats enter the straightaway for the start
    - Unfurl and wave to start the race
    - From the start of race to the start of race leader's last lap
  - **White:** Course open
    - Boats may start engines and enter the course
    - Remove as boats enter the straightaway for the start
    - Race leader has started their last lap
  - **Yellow or Blue & Yellow:** Slow down, hold your position
  - **Red:** All race boat motors must stop
    - In addition, red or orange flares will be used at the instruction of the Referee
  - **Checkered:** Race heat has ended for each boat crossing the finish line

### **6.4. Starts and Finishes**

- 6.4.1.** The type of start to be used and the length of the warm up period will be determined by the referee and may vary between classes and will be announced at the drivers' meeting.
- 6.4.2.** The finish line will be the starting line.
- 6.4.3.** Boats must achieve a plan on leaving the launch ramp and maintain that plane until the start of the race. A boat that is not maintaining a plane or causing an unsafe water condition prior to the start must pull to the nearest safe position inside or well outside the course and shut down.
- 6.4.4.** The Referee may disqualify any boat not moving in a counter-clockwise direction prior to, during and following the heat.
- 6.4.5.** The Referee will disqualify any boat that does not approach the start perpendicular to the start line. Unless the individual class rule specifies, at the start all boats must hold their lane through the exit buoy of the first turn. Holding their lane means not interfering with the lane spacing established at the start including the open water to their port or starboard. The

Referee at their sole discretion shall disqualify from that heat any boat that does not hold their lane.

- 6.4.5.1. At the start the boat in lane 1 determines the location of lane 1. The outside boat sets the line of boats for the start and determines the location of the outside lane. The starter will not start the race if in their sole discretion the inside or outside lanes do not establish a safe spacing between the boats and location on the course.
- 6.4.6.** Boats may turn into the course prior to the start but must proceed directly to the opposite side of the course; boats must proceed directly through turns and any outward extension of the turn from the entrance buoy to the exit buoy.
- 6.4.7.** Any boat intentionally entering the course out of bounds area must shut off the motor and may not restart before the end of their heat. The Referee will disqualify any boat causing another boat to enter the course out of bound area.
- 6.4.8.** The start/finish line will run perpendicular to a course straightaway between the Starter's position and a white buoy on the lie of the straightaway and be sufficiently long to allow all starters in the heat to cross it at the same time.
- 6.4.9.** Any boats legally crossing the starting line at the starting signal will constitute the start of the heat. There will be only one (1) start per heat, except at the decision of the Referee.
- 6.4.10.** Only those boats that were legal starters at the time the heat was stopped will be eligible to run in the restart of that heat.
- 6.4.11.** All starts and finishes will be digitally recorded and aligned with the starting line.
- 6.4.12.** The timing of each heat will run from the official start to the finish for each boat.
- 6.4.13.** A boat starting the race after the lead boat has completed its first lap will be disqualified.
- 6.4.14.** The Referee will disqualify and boat that intentionally goes off plane or turns off its motor prior to the start of the race without an onboard emergency.
- 6.4.15.** Boats must pass all course buoys on the buoy's starboard side without contacting the buoy unless forced to miss or contact the buoy by another boat. The offending boat may be disqualified and in addition penalized if the buoy is damaged or dislodged.
- 6.4.16.** The finish of each heat will be when the last boat has crossed the finish line after completing the required number of laps. After the first boat has crossed the finish line the Referee may fall off the remaining running boats; they will receive points according to their position when flagged and not receive a finish time.
- 6.4.17.** After crossing the finish line, a boat must remain on plane and move to the outside lane until it returns to the ramp.
- 6.4.18.** A boat must finish a heat under its own power.
- 6.4.19. Clock Starts**
  - 6.4.19.1. Unless time trials are run, each event day, Certified Drivers will draw at the drivers' meeting for the order of the draw and then the qualifying heat and lane. Rookie drivers who have successfully completed their first four (4) heats will receive lane and start orders at the drivers' meeting and must line up and start at least four (4) boat lengths behind the line of Certified Drivers.
  - 6.4.19.2. The clock must be approved for use by the Referee.
  - 6.4.19.3. All boats must round all buoys in the turn following the start/finish line after the one minute signal, and make continuous progress to the start line.

6.4.19.4. **For Clock Starts only**, all boats crossing the starting line before the clock counts to zero and the start is signaled will be either disqualified from that heat or a one (1) minute or one (1) lap penalty will be given to the offending boat(s) per their class rules.

6.4.19.5. No boat shall leave the launch area after the one-minute signal has been given.

However, if the class allows, boats may enter the race course after the start after the last boat has crossed the star/finish line.

#### **6.4.20. Flag Starts**

6.4.20.1. Unless time trials are run, each event day, Certified Drivers will draw at the drivers meeting for the order of the draw and then the qualifying heat lane. Rookie drivers who have successfully completed their first four (4) heats will receive lane and start order at the drivers meeting and must line up and start at least four (4) boat lengths behind the line of Certified Drivers.

#### **6.4.20.2. Procedures**

6.4.20.2.1. All boats driven by certified drivers will key off the outside boat and form up in a line perpendicular to the course in their drawn lanes before crossing the start/finish line a second time. They will go around the course one time in line with the white flag up. They shall approach the start line at a moderate speed. If any boat's transom is ahead of the outside boat the starter will not signal a start and the boats will make another lap and approach the line again. If on the second attempt any boat's transom is ahead of the outside boat, the race will start and the offending boats will be disqualified. The start will be signaled by dropping the green flag. Within 300 feet of the starting line the Referee at their sole discretion will issue an infraction to any boat accelerating before the green flag is dropped. After two (2) attempts to start the race if a boat is still not keying up on the outside boat and "charging" the start that boat will be penalized one (1) lap or one (1) minute (discretion of class and Referee) for "charging" the start.

6.4.20.2.2. No boat shall leave the launch area after boats have crossed the start/finish line for the last time before the first start attempt.

### **6.5. Buoys**

**6.5.1.** A buoy is any inflated object used to indicate the course.

**6.5.2.** All start/finish line, turn and course out of bounds buoys are mandatory and must be in place before any heat can be started or completed.

#### **6.5.3. Color, Meaning and Location**

- **White:** Mark the two (2) ends of the start/finish line.
- **Orange:** Mark the entrance, intermediate and exit points of the turns.
- **Other Color:** Marks the course out of bounds.

### **6.6. Right of Way**

**6.6.1.** When two (2) boats are meeting bow to bow, each shall alter her course to starboard.

**6.6.2.** When two (2) are crossing, the one that has the other on their starboard side shall keep out of the way.

**6.6.3.** For Flatbottom classes, a minimum of four (4) boat lengths of space is required before the lead boat may cross in front of the trailing boat or interfere with the course of the trailing boat. This determination may be made at the sole discretion of the Referee and will result in disqualification of the offending boat.

### **6.7. Protests**

- 6.7.1.** Owners or their designee may file a written protest of any suspected violation of the rules affecting their class and produce a check or cash in the amount of \$250 payable to the suspected violator; the Class Liaison must file protest concerning actions at an event with the Referee; protests not concerning actions at an event must be filed with SCSC.
- 6.7.2.** Protests must be filed within one (1) hour of the final heat of the day suspected violation or before the class is called for the next heat in which the protested or protesting teams are involved, whichever is earlier. No protests will be accepted after the one (1) hour mark from the last heat of the day.
- 6.7.3.** Protest affecting the next or final heat of racing for the class will be decided by the Referee prior to the start of the affected heat and are not subject to appeal. Other protests will be decided by SCSC no later than 30 calendar days following the filing of the protest.
- 6.7.4.** The Referee may, with or without a protest, disqualify any boat, remove any points earned or records set at the event, should it come to his knowledge before the awarding of prizes, that the participant(s) has committed a breach of the rules.
- 6.7.5.** Owners that do not prevail on a protest will be fined \$250.00.

#### **6.8. Appeals**

- 6.8.1.** Owners or their designee may file a written appeal concerning decisions on any suspected violation of the rules affecting their class; appeals concerning actions at an event must be filed with the Referee; appeals not concerning actions at an event must be filed with SCSC.
- 6.8.2.** Appeals at event must be filed within 15 minutes of the owner receiving the official's decision.
- 6.8.3.** Appeals affecting the next or final heat of racing for the class will be decided on by the Referee prior to the start of the affected heat and are not subject to further appeal. Other appeals will be decided by SCSC no later than 30 calendar days following the filing of the appeal.
- 6.8.4.** Owners that do not prevail on an appeal will be fined \$250.00 and will be subject to any other applicable fines and discipline.

- 6.9. Suspension of Rules.** The Race Director may file a written request a minimum of 30 days before the event for event specific rules not provided in these rules with the SCSC Board of Directors. The request must give the specific rule(s) requested and the reasons for those rules. SCSC will provide a written decision to the Race Director within five (5) calendar days of receiving the request.

#### **6.10. Inspections**

- 6.10.1. Pre-Race:** All safety inspections for a class will be completed prior to the start of racing for that class.
  - 6.10.1.1. Boat Inspection:** Each year, at each boat's first race, the boat will be inspected by the Chief Inspector using the SCSC Inspection Form or an approved form submitted to SCSC. A copy of the signed Inspection Form will be given to the boat owner. The boat owner shall present a copy of the current signed inspection form to SCSC race registration prior to signing the waiver for the event and disclose in writing all changes to the boat since the date the current inspection form was completed. Failure to present a copy of the inspection form will disqualify the boat from participating in that race. Failure to disclose all changes to the boat will result in disqualification until the boat is re-inspected. Boats shall be re-inspected in the event of an accident or protest or change.

The Chief Inspector or their designee will randomly select and inspect boats at each event.

**6.10.2. Post-Race:** Inspections requested at an event by the Inspector (other than laboratory tests of fuel, etc.) will be completed by midnight of that day of the event. If the participant's equipment is available for inspection and is not inspected by this deadline, the inspection request will be withdrawn. The Chief Inspector for the race may appoint Assistant Inspectors to help with the inspection process.

**6.10.3. Championship Events or Records.** Any contestant who places first (1<sup>st</sup>), second (2<sup>nd</sup>) or third (3<sup>rd</sup>) at a championship event or sets a record will be inspected immediately following competition or the setting of the record. If the record is set before the final or remaining qualifying heat(s) then the engine will be sealed for later inspection. The sealed boat will be allowed to compete. All boats subject to inspection will be moved, as raced, at the end of the final heat to a compound area to be inspected. If the inspection cannot be completed before the next heat of racing (except laboratory test for fuel, etc.) the Inspector will seal the equipment that has not been inspected until such time, within 24 hours, that the inspection can be completed. Only the owner, crew chief and inspector shall be allowed in the inspection compound area and allowed to attend the inspection.

## 7. Prizes

7.1. No prizes shall be presented for a protested event until all protests that might affect the prizes have been decided.

7.2. Trophies will be provided for the first, second and third place finisher.

### 7.3. Prize and Tow Money

**7.3.1.** The Event Management committee determines the split and breakdown of the total purse offered at each event.

**7.3.2.** Tow money, if offered, will be paid to every boat registered for the event that makes at least one (1) legal start if applicable. Tow money payout is determined by the Event Management committee.

**7.3.3.** Prize money that is offered will be paid at the discretion of the Event Management committee. Agreement with individual class(es) must be in place prior to the race event for prize money offered.

**7.3.4.** Any fines, late fees, boat registration or entry fees due from any team will be deducted from prize and/or tow money for that team.

**7.3.5.** If not paid at the event site, prize and/or tow money paid for the event shall be mailed to the team owner approximately one (1) week after the event, however, it is at the discretion of the Event Management committee and per the agreement of the individual class(es).

## 8. Points Scoring

8.1. Classes competing at SCSC sanctioned events may use the SCSC points system, or that of their class or other sanctioning organization recognized by SCSC. Point scoring and format is up to the discretion of the event provided point scoring and format is submitted to SCSC prior to the event.

### 8.2. Competition Points

**8.2.1. Time Trials:** Points shall be awarded for qualifying as follows:

First = 40	Second = 30	Third = 23	Fourth = 17
Fifth = 127	Sixth = 95	Seventh = 71	Eighth = 53
Ninth = 40	Tenth = 30	Eleventh = 2	Twelfth = 1

**8.2.2. Qualifying Heats, B Main and Final:** Points shall be awarded as follows:

8.2.2.1. GPS-105, KRR, SE, SS, PS

First = 10	Second = 9	Third = 8	Fourth = 7
Fifth = 6	Sixth = 5	Seventh = 4	Eighth = 3
Ninth = 2	Tenth = 1	Eleventh = 1	Twelfth = 1

8.2.2.2. Comp Jet, Cracker Box, Grand Nationals, Classic Endurance, Mod VP Classic & SKI, Sportsman Limited Outboard

First = 100	Second = 95	Third = 90	Fourth = 85
Fifth = 80	Sixth = 75	Seventh = 70	Eighth = 65
Ninth = 60	Tenth = 55	Eleventh = 50	Twelfth = 45

8.2.2.3. Formula Lights, Formula 1

First = 20	Second = 19	Third = 18	Fourth = 17
Fifth = 16	Sixth = 15	Seventh = 14	Eighth = 13
Ninth = 12	Tenth = 11	Eleventh = 10	Twelfth = 9

*\*A boat must finish a qualifying heat to be scored.*

**8.2.3.** All points scored shall be cumulative.

**8.2.4.** The winner of each day or cumulative for the event will be established by the order of finish of the Final. The number of laps each boat has completed in the Final shall determine the order of finish for boats starting but not completing the Final or B-final. Boats competing in the B-final will follow the finish order and points awarded in the event final.

**8.2.5.** Competition points will be awarded in any legal heat or time trial.

**8.2.6.** If a heat is stopped by the Referee and not re-scheduled, points will be awarded on the basis of position when the heat was stopped. If time trials are stopped by the Referee and not re-scheduled then all time trial points earned for that event day will be lost.

**8.3. Bonus Points (BP)**

**8.3.1.** BP may be awarded at certain SCSC race or exhibition events in order to promote the class or develop and enhance new race sites, as determined by the Board and voted on prior to the first SCSC race of the season. BP are added to race points to determine the boats points total for the season. The SCSC President may request at least days prior to an event that the BOD vote to add BP to an event during the season.

**8.4. High Points Season Champion.** The team which accumulates the highest number of points at the end of a completed racing season shall be declared High Points Season Champion and awarded the right to bear the #1 designation the following season. The owner of the boat may request the #1 boat registration for the following year and may paint the #1 shield on the hull of their boat for that year.

**8.4.1.** High points championships will only be awarded to classes participating in 60% of the scheduled season events. A minimum of four (4) race events (“events” consist of 2 consecutive days of cumulative racing) must occur in any season to award a season High Point Championship.

**8.4.2.** To receive points towards the accumulated season high points, there must be at least three (3) bonafide starters in at least one heat for the day.

**8.5. Driver’s Championship.** The driver accumulating the highest number of SCSC Competition Points at the end of the racing season will be declared SCSC’s Driver’s Champion and shall be presented with a suitable award.

**8.5.1.** Only Competition Points will be scored for drivers on the same basis as points for boats. A driver may score points in only one (1) boat during any one (1) sanctioned event. A driver

shall declare in which boat he will be scored driver's points 30 minutes prior to the Final heat.

- 8.6. **SCSC Sponsor of the Year.** Will be determined by the sum of accumulated BP Competition Points earned by all boats that a primary sponsor is registered as a primary sponsor with at SCSC events during the season.
- 8.7. Boats competing for a points series in another sanctioning body recognized by SCSC will supply their own scorer, referee and inspector for SCSC sanctioned events.
- 8.8. If a boat is destroyed or retired, points earned by that boat, and its associated driver and sponsors can be transferred to another boat owned by the same owner.
- 8.9. If a boat is sold, points earned by that boat will not be transferred to a new owner.
- 8.10. In a dead heat, both boats will receive the same points for the heat as if they finished independently. The next boat to finish will receive the points for one less position.
- 8.11. Competition points shall not be earned by any boat and/or driver participating on a single event entry.

## **9. Championships**

- 9.1. Prior to publishing the season's events schedule SCSC may, at the sole discretion of the SCSC Board of Directors, at a minimum select events to be held as the SCSC Spring Nationals, Summer Nationals, Fall Nationals, Winter Nationals, SCSC National Championship and/or SCSC World Championship.
- 9.2. To be eligible for any championships:
  - 9.2.1.** Both owner and driver must be full members in good standing. "Single event" memberships are not eligible to participate in a championship event.
  - 9.2.2.** Boat or driver (dependent on class scoring system) must have competed in a minimum of two (2) prior events. Each individual day of racing constitutes one (1) event. Eligibility participation does not need to be contiguous.

## **10. Records**

- 10.1. Records must be set in a legal heat on course approved by SCSC for records and confirmed by an SCSC survey.
- 10.2. Records will only be awarded to a SCSC owner member.
- 10.3. Classes competing in a SCSC sanctioned event from other sanctioning organizations recognized by SCSC must accept in writing the survey and timing of SCSC, must have their organizations inspector inspect the boat and record and file their classes records.
- 10.4. A new record must exceed the prior record by a factor of 1.003 (the old record multiplied by 1.003).
- 10.5. All SCSC member records must be filed with SCSC. Filing must include the surveyor's statement, certificate of accuracy of the timing equipment, copy of the owner's entry blank, scorer's time sheet, statement of the event Referee, Inspector's report and certificate of accuracy of the scale if the class has a weight rule.
- 10.6. A Certificate of Accuracy of Timing Equipment must contain the results of accuracy checks performed on the watches or electronic timing equipment by a qualified watchmaker or timing equipment expert within 72 hours before and after the record event and must show a 24 hour rate error of no more than 26 seconds. For manually wound stopwatches, the rate must be determined with the stopwatches fully wound, after 5 minutes of running and after 10 minutes of running.

- 10.7. SCSC will submit applications and payment for new world records to UIM following approval of the application by the SCSC BOD within three (3) weeks of the record being set. However, there is no guarantee of its acceptance.

## **11. Team Responsibilities**

- 11.1. All teams competing in an event must make available to the event coordinator or the race promoter, 30 days before the event, a press kit. Minimum press kit will be one (1) 8X10 color picture and a one (1) page information sheet about the team, driver, boat and sponsors. The press kit may be submitted in electronic form as either a .doc or .pdf information sheet and .jpg color photo. A fine may be imposed if press kit is not sent or is late.
- 11.2. All competing teams are strongly encouraged to participate in event promotions such as parades, autograph sessions, sponsor parties, etc.
- 11.3. It is recommended that each team have handout pictures available at each event.
- 11.4. It is expected that each team will have at each event in which they are participating a display board at their pit presenting in photos and words the boat and team history and the specifications and accomplishments.

## **12. Dress Code and Pit Passes**

- 12.1. All SCSC member teams and all teams participating in SCSC sanctioned events shall wear appropriate attire. SCSC uniform minimum requirement will consist of a collared shirt with the team's racing identity for all crew.
- 12.2. All SCSC member teams and all teams participating in SCSC sanctioned events must abide by all SCSC rules and By-laws with regards to their behavior and conduct.
- 12.3. All SCSC member teams, officials and all teams participating in SCSC sanctioned events will be provided with their pit pass at no additional charge once their SCSC membership is received. Pit passes will be issued on site at each sanctioned event upon signing the insurance waiver form.

## **13. Discipline**

- 13.1. All decisions of the Referee shall be final regarding violations of starting, driving and course rules. There will be no appeals or protest of the Referee's decision on course infraction. Appeals will be allowed only if a suspension is involved and then only the suspension can be appealed.
- 13.2. Only an SCSC owner member may appeal a suspension of the boat or any member of the team, that suspension shall remain in force until the SCSC BOD decision on the appeal has been reached. With the Referee's permission, any member suspended for a technical violation may be allowed to enter the pit area. At the sole instruction of the Referee, an SCSC member suspended for a technical violation may perform any duties asked of him.
- 13.3. Participants who leave an event where they were required to be inspected or refuse to be inspected will be fined \$250.00 and will not be eligible for any records set or points earned.
- 13.4. A participant whose fuel is found to have concentrations of any substances found in a gasoline sample greater than that allowed in commercial gasoline by the current EPA upper limits, will cause disqualification from the race, a \$1000.00 fine and a two (2) year suspension. A second offense will result in event and season disqualification and a lifetime suspension.
- 13.5. **Striking a Buoy.** The offending boat shall pay a \$300.00 fine for dislodging or destroying a buoy. If an offending boat forces an unoffending boat into a buoy which is struck and thereby becomes dislodged or damaged, then the offending boat shall be disqualified from the heat and pay the fine as if it had struck the buoy.

- 13.6. Every boat owner, driver or member of a pit crew shall be subject to summary disciplinary action for unbecoming conduct from the date and time of arrival at the event site until 24 hours after an event shall have been completed.
- 13.6.1.** Unbecoming behavior is defined as any act or series of acts, omissions, series of omissions, appearance, whether on or away from the event or in the pits, committed prior to, during, or 24 hours subsequent to the race which: (1) tends to bring racing in disrepute; (2) endangers the person or property of others; (3) constitutes dangerous, careless or reckless operation of boats or equipment.
- 13.6.2.** Boat racing is part of a family event with all due respect being assured to the community, spectators, race participants, sponsors and event officials. In addition to any penalty provided for in the SCSC Rule Book, the President, with approval from the SCSC Board of Directors, shall have the authority to exclude, suspend, disqualify, fine or otherwise penalize at their discretion any member, participant, official, partner, agent or employee thereof determined by the Vice President to be guilty of any of the following conduct. The effected party will be given notice of and invited to appear at a hearing conducted by a committee appointed by the Vice President to consider and advise on the matter in question and the recommended penalty.
- 13.6.2.1. Any statements and/or conduct which compromises the integrity, reputation of or to discredit SCSC, or any members thereof or the sport of boat racing.
- 13.6.2.2. Improper language or conduct toward an official or any other participant or spectator at, before or after an event.
- 13.6.2.3. Commission of any assault or any assault and battery upon any official, anyone assisting an official, any participant, member of SCSC or the public at, before or after an event. Any such ruling or decision made by SCSC will be final, conclusive and cannot be appealed. Any party involved in or affected by any such decision agrees to release and waive any and all claims that such party may now or hereafter have or possess arising out of or connected with such a decision against SCSC, its officers, directors, employees and members, whether for damages or for any other remedy or relief.
- 13.7. Penalty and Fine Schedule.** Prior to the first race of each season, SCSC may publish and distribute a penalty and fine schedule to all SCSC members. The schedule shall be used where the SCSC rules do not specify a penalty for an infraction, or to supplement the Rule Book penalty. At each successive driver's meeting, penalty and fine schedule may be announced or altered.
- 13.7.1.** The Schedule shall be progress. The second and subsequent infraction of the same rule will result in a penalty that progresses at least one level higher for each subsequent occurrence. Discipline imposed will be based on three levels according to the severity of the rule's infraction.
- 13.7.1.1. **Level One:** Any infraction that impeded the progress of the event.
- 13.7.1.2. **Level Two:** Any infraction that could affect the outcome of a time trial, heat, event or result in an otherwise unnecessary stoppage of the heat.
- 13.7.1.3. **Level Three:** Any infraction that compromises the safety of other participants or is considered unsportsmanlike conduct by the Referee.
- 13.8. Any driver receiving two (2) or more driving infractions in any one event will be disqualified from the event and lose any awarded points or record for themselves, the boat and the boat's sponsor.

## 14. Class Rules

### 14.1. Inboard Racing Runabout General Rules

- 14.1.1.** Hulls: Inboard racing runabout hulls shall be a displacement or monoplane type; and shall be equipped with forward and aft decks. The combined total length of the two (2) decks shall not be less than 1/5<sup>th</sup> of Length Overall (L.O.A.).
- 14.1.2.** Longitudinal and Transverse Breaks: Hulls shall have no step and there shall be no breaks in the longitudinal or transverse continuity of the immersed surfaces other than the keel, rubbing strips, and strakes (breaker strips).
- 14.1.2.1. These shall be of no greater depth than 5/8<sup>th</sup> inch, and run in a fore and aft direction.
- 14.1.2.2. All longitudinal breaks shall be essentially parallel to the keel, from the trailing edges to amidships.
- 14.1.2.3. Strakes terminating forward of the trailing edges must do so at no more than a 45 degree angle to the adjacent bottom surface.
- 14.1.2.4. The keel shall not be higher than a straight line from chine to chine, or to any spray rails attached to chines, from the trailing edges to amidships.
- 14.1.2.5. Strake depth shall not interfere with a straightedge touching keel and chine, in the area from the trailing edges of planking surfaces, to 54 inches forward of the trailing edges. This shall be from the major trailing edges including cavitation plate(s) excluding projections, from cavitation plate.
- 14.1.2.6. There shall be no limitations to the number or width of strakes used, and they may extend to include cavitation plate.
- 14.1.2.7. There shall be allowed a 1/8" break or step in the transverse direction for the purpose of attaching hardware such as fins, water pickups, turning fins, strut, etc. to the bottom of the hull.
- 14.1.3.** Flat Keels: Hulls may have a flat keel area on both sides of centerline. The outer edges of the flat keel area shall be essentially parallel to the centerline of the hull, in the area from the transom to 54 inches forward of the transom.
- 14.1.3.1. In this flat keel area concavity (hollow) shall not exceed 1/8<sup>th</sup> inch per foot, as measured from a straight edge, running parallel to the transom, in the area from the trailing edges of planking surfaces, to 54 inches forward of the trailing edges. This shall be from the major trailing edges, including cavitation plate(s) excluding projection from cavitation plate.
- 14.1.3.2. Concavity: Hulls shall have no more than 5/8<sup>th</sup> inch concavity (hollow) from keel to chine, from trailing edges to amidships.
- a) Measurements shall be taken from a straight edge placed from keel to right and left chines, or the lower edge of any spray rails attached to chines.
- b) Any portion of the bottom width that exceeds 5/8" concavity (hollow) shall be declared illegal.
- 14.1.4.** Cavitation Plates: Hulls may be equipped with cavitation plates. Plates may be adjusted while boat is in motion. Cavitation plates shall conform with all measurements required of the hull at a given handle or foot control setting. At the point at which the cavitation plate(s) attach to the hull, there shall be a maximum recess of 1/8<sup>th</sup> inch allowed between the bottom surface of the plates and the bottom of the hull.

- 14.1.5.** For purposes of definition and measurement of the above rules strakes, breaker strips, spray rails, and rubbing strips are considered the same. The keel is the fore and aft centerline of the hull bottom.
- 14.1.5.1. Immersed surfaces are those taken with crew and fuel on board while at rest in the water.
- 14.1.5.2. Trailing edges include cavitation plate.
- 14.1.5.3. Surfaces required to be parallel to centerline shall not vary more than one (1) inch per foot.
- 14.1.5.4. Fins, Struts, and Blast Plates, located between the strut and leading edge of the cavitation plate(s), shall not be included in any measurement. The use of any side mounted fin is not allowed.
- 14.1.5.5. Hardware mounted on, projecting through or intersecting with the bottom of the boat shall not be included in any measurement nor are they considered under the rules. Any small fins located on the cavitation plate(s) will be acceptable. An offset outboard style rudder is acceptable.
- 14.1.5.6. There is no tolerance allowed for warpage, settling, etc.
- 14.1.6.** For the purpose of weighing the boats, follow the guidelines listed below:
- 14.1.6.1. Boats shall be weighed after the completion of competition with all drain plugs and excess water in the hull removed. Except for removing the water, no changes may be made after competition and before weighing the boat.
- 14.1.6.2. Drivers shall also be weighed after the completed competition with all his/her equipment on, as used during competition.
- 14.1.6.3. Weight may be added to a hull to meet the above minimum weight requirement; however, weight must be in place and securely fastened during all heats of competition.

## **14.2. K-RACING RUNABOUT (Blown Alcohol Flat)**

### **14.2.1. GENERAL RULES**

- 14.2.1.1. The KRR class letter is "K". The "K" and boat number must be a minimum of 9" high on both sides of the hull. The boats trailer and/or dolly must have the class letter "K" and boat number, a minimum of 2.5" high.
- 14.2.1.2. Boats must be raced with one (1) person on board.
- 14.2.1.3. Minimum age of driver is 21 years.
- 14.2.1.4. Maximum number of boats per heat will be determined by the Race Director.
- 14.2.1.5. Minimum weight of the boat as raced, without driver, is 2250 lbs.
- 14.2.1.6. Each K boat must be inspected and certified by SCSC prior to participating in competition. Following certification, the owner must advise SCSC of any modifications to the boat that could affect its certification. SCSC may request a certification of a boat at any time.
- 14.2.1.7. New KRR drivers are required to: 1) have driven in either the Super Stock or PS Classes for a minimum of two (2) years or 20 heats, whichever comes first, and 2) obtain a minimum of three (3) written signatures of approval by current KRR drivers in good standing, stating their approval for the applicant to drive in the KRR class, as a new applicant. To apply the applicant must present the drivers' signatures of approval, a brief summary of previous experience, and a copy of his current physical to the Referee. Upon approval, the applicant may then participate in a minimum of three (3)

heats starting behind the pack. After completing the minimum three (3) heats the applicant shall then be advised by the Referee as to the results of his application.

14.2.1.8. The objectives of the rules for K Racing Runabout Class are to govern and promote a professional class of propeller driver Inboard Racing Runabouts using unlimited and/or unrestricted engines and fuels.

14.2.1.9. All parts, including engines and hulls in their entirety, may be changed at any time, as long as said hull belongs to the same owner prior to that race.

14.2.1.10. As of 1/1/2022 it is mandated that all boats racing in the K-Racing Runabout class must have a safety capsule.

#### **14.2.2. HULL**

14.2.2.1. Hull must be a flatbottom design and conform to the Inboard Racing Runabout classes classification.

14.2.2.2. Minimum hull length shall be 17ft. L.O.A. and the maximum hull length shall be 20ft. L.O.A. not including cavitation plate(s).

14.2.2.2.1. When using the optional 21ft. rule, the following rule must be met: Maximum shall be 21 feet excluding cavitation plates and the outer edge of the flat keel area shall be essentially parallel to the centerline of hull, in the area from the transom to 65 inches forward of the transom. In this flat keel area concavity (hollow) shall not exceed 1/8<sup>th</sup> inch per foot, as measured from a straight edge, running parallel to the transom in the area from the trailing edges of planing surfaces to 65 inches forward of the trailing edges. This shall be from the major trailing edges including cavitation plate(s) excluding projections from cavitation plate. Minimum weight is 2400 lbs.

#### **14.2.3. ENGINE**

14.2.3.1. The engine must be supercharged or turbocharged. Any fuel, any modifications to the engine are allowed.

#### **14.2.4. HARDWARE**

14.2.4.1. Engines must be mounted rear of amidships and drive forward through a V-drive.

14.2.4.2. The supercharger belt(s) or chain(s) must be covered with steel or aluminum, sufficient to contain the belt(s) or chain(s) in the event of failure. Guard must continue down both sides to middle of camshaft area.

14.2.4.3. The drive line or shaft must be covered with either 1/8" steel or 1/4" of aluminum.

14.2.4.4. Parachute static lines must attach in a way to keep them free of the injector(s), linkage, drive line, prop shaft, blower belt(s). Parachutes are optional.

14.2.4.5. Electrical kill or short switch must be used at all times. There shall be a manual fuel shut off switch and a manual electric shut off switch in safe reach of the driver while the boat is underway. Only mercury type switch or doubleball (burglar alarm type) will be accepted.

14.2.4.6. Hulls must have points to attach a 3 or 4 leg sling to lift the hull. Each leg of a 3 leg sling must be certified to hold 1900 lbs. Each leg of a 4 leg sling must be certified to hold 1250 lbs. Slings must be pull tested every three (3) years. The owner is responsible for providing the sling and its certified strength. The race inspector shall determine if the sling is safe.

14.2.4.7. A safety collar, dimpled to the propeller shaft, within 0.500" of the fore end of the strut or thrust bearing is mandatory. The diameter of a collar fore of the thrust bearing must be larger than the bearing. Collars must be machined from bar stock.

14.2.4.8. Stabilizers, wing sections, or airfoils may be installed, provided they are used in a horizontal position no wider than the beam of the boat under the areas of stabilizer installation. They may not be adjusted while the boat is in motion nor will they be installed to the rear (aft) of the transom. They shall not be positioned forward of amidships. The leading edges shall be no closer than 24" from the top of the inside back of the driver's seat. The leading edge center line shall not be mounted more than 10" above the blower(s), injector(s), or top surfaces of other engine top mountings. They must pass a safety inspection before each race.

14.2.4.9. Prop releases are mandatory on all K-boats at all races.

### **14.3. PRO STOCK (PS)** *formerly Unblown Flat*

#### **14.3.1. GENERAL RULES**

14.3.1.1. The Pro Stock (PS) class letter is "PS". The "PS" and boat number must be a minimum of 9" high on both sides of the hull. The boats trailer and/or dolly must have the class letters PS and boat number a minimum of 2.5" high.

14.3.1.2. Boats must be raced with one (1) person on board.

14.3.1.3. Minimum age of driver is 21 years.

14.3.1.4. Maximum number of boats per heat will be determined by the Race Director.

14.3.1.5. Minimum weight of the boat as raced, with driver, is 1950 lbs.

14.3.1.6. Each PS boat must be inspected and certified by SCSC prior to participating in competition. Following certification, the owner must advise SCSC of any modifications to the boat that could effect its certification. SCSC may request a certification of a boat at any time.

14.3.1.7. New PS drivers are required to: 1) have competed in SE or GPS-105 for a period of no less than two (2) years or 20 heats, whichever comes first in either class or combination thereof; 2) obtain a minimum of three (3) written signatures of approval by current Super Stock or PS drivers in good standing, stating their approval for the applicant to drive in the PS class, as a new applicant. To apply the applicant must present the drivers' signatures of approval, a brief summary of previous experience, and a copy of his current physical to the Referee. Upon approval, the applicant may then participate in a minimum of three (3) heats starting behind the pack. After completing the minimum three (3) heats the applicant shall then be advised by the Referee as to the results of his application.

14.3.1.8. The objectives of the rules for the PS Class are to govern and promote a professional class of propeller driver Inboard Racing Runabouts using limited and/or restricted engines.

14.3.1.9. All parts, including engines and hulls in their entirety, may be changed at any time, as long as said hull belongs to the same owner prior to that race.

14.3.1.10. As of 1/1/2022 it is mandated that all boats racing in the Unblown Flat class must have a safety capsule.

#### **14.3.2. HULL**

14.3.2.1. Hull must be a flatbottom design and conform to the Inboard Racing Runabout classes classification.

14.3.2.2. Minimum hull length shall be 17ft. L.O.A. and the maximum hull length shall be 20ft. L.O.A. not including cavitation plate(s).

14.3.2.2.1. When using the optional 21ft. rule, the following rule must be met: Maximum shall be 21 feet excluding cavitation plates and the outer edge of the flat keel area shall be essentially parallel to the centerline of hull, in the area from the transom to 65 inches forward of the transom. In this flat keel area concavity (hollow) shall not exceed 1/8<sup>th</sup> inch per foot, as measured from a straight edge, running parallel to the transom in the area from the trailing edges of planing surfaces to 65 inches forward of the trailing edges. This shall be from the major trailing edges including cavitation plate(s) excluding projections from cavitation plate. Minimum weight is 2400 lbs.

### **14.3.3. ENGINE**

14.3.3.1. The engine must be a Single American automotive block with a maximum cubic inch displacement of 510 c.i.d. No superchargers, turbochargers, or blowers of any type. Fuels restricted to pump, aviation, and methanol blends. Additives permitted, except nitromethane or nitrous oxide.

### **14.3.4. HARDWARE**

14.3.4.1. Engines must be mounted rear of amidships and drive forward through a V-drive.

14.3.4.2. The drive line or shaft must be covered with either 1/8" steel or 1/4" of aluminum.

14.3.4.3. Parachute static lines must attach in a way to keep them free of the injector(s), linkage, drive line, prop shaft, blower belt(s). Parachutes are optional.

14.3.4.4. Electrical kill or short switch must be used at all times. There shall be a manual fuel shut off switch and a manual electric shut off switch in safe reach of the driver while the boat is underway. Only mercury type switch or doubleball (burglar alarm type) will be accepted.

14.3.4.5. Hulls must have points to attach a 3 or 4 leg sling to lift the hull. Each leg of a 3 leg sling must be certified to hold 1900 lbs. Each leg of a 4 leg sling must be certified to hold 1250 lbs. Slings must be pull tested every three (3) years. The owner is responsible for providing the sling and its certified strength. The race inspector shall determine if the sling is safe.

14.3.4.6. Couplers between in-and-out boxes and propeller shaft shall be a minimum of 3.5 inches long, be made from billet steel, and utilize a minimum of four (4) clamping bolts. Set screws shall be used in each end of the coupler. Each shaft shall be dimpled to receive the set screws.

14.3.4.7. A safety collar, dimpled to the propeller shaft, within 0.500" of the fore end of the stuffing box or thrust bearing is mandatory. The diameter of a collar fore of the thrust bearing must be larger than the bearing. Collars must be machined from bar stock.

14.3.4.8. Driver seat must be bolted in place.

14.3.4.9. Prop releases are mandatory on all PS boats at all races.

## **14.4. GPS-105**

### **14.4.1. GENERAL RULES**

14.4.1.1. The GPS-105 class letter is "GPS". The "GPS" and boat number must be a minimum of 9" high on both sides of the hull. The boats trailer and/or dolly must have the class letters GPS and boat number a minimum of 2.5" high.

14.4.1.2. Boats must be raced with one (1) person on board.

- 14.4.1.3. Minimum age of driver is 18 years.
- 14.4.1.4. Maximum number of boats per heat will be determined by the Race Director.
- 14.4.1.5. Minimum weight of the boat as raced, with driver, is 1850 lbs.
- 14.4.1.6. Each GPS-105 boat must be inspected and certified by SCSC prior to participating in competition. Following certification, the owner must advise SCSC of any modifications to the boat that could affect its certification. SCSC may request a certification of a boat at any time.
- 14.4.1.7. New GPS-105 drivers must spend a minimum of two (2) years or 20 heats in either the GPS-105 class or Sportsman Extreme Class before they are allowed to move up to the SS or PS classes, GPS-105 drivers are ineligible to drive KRR boats until the criteria of SS and PS has been fulfilled. See Super Stock or PS rules as no leapfrogging classes is permitted to drive in the KRR class. All GPS-105 drivers are required to: obtain a minimum of three (3) written signatures of approval by current Super Stock or PS drivers in good standing, stating their approval for the applicant to drive in the SS or PS class, as a new applicant. To apply the applicant must present the drivers' signatures of approval, a brief summary of previous experience, and a copy of his current physical to the Referee. Upon approval, the applicant may then participate in a minimum of three (3) heats starting behind the pack. After completing the minimum three (3) heats the applicant shall then be advised by the Referee as to the results of his application.
- 14.4.1.8. The objectives of the rules for GPS-105 Class are to govern and promote an entry level class of propeller driver Inboard Racing Runabouts using limited and/or restricted engines.
- 14.4.1.9. All parts, including engines and hulls in their entirety, may be changed at any time, as long as said hull belongs to the same owner prior to that race.
- 14.4.1.10. At the owner/driver's expense a GPS unit shall be affixed to the driver and/or hull during competition and be examined prior to and at the completion of each competition.
- 14.4.1.11. The speeds of GPS shall be strictly enforced and follow these guidelines:
  - 14.4.1.11.1. A maximum speed of 105.99 MPH. A speed of 106.00 MPH to 107.99 MPH will be considered a "break out" speed and if in such an event more than one (1) boat "breaks out", the higher place position be awarded to the competitor with the closest speed to 105.99 MPH.
  - 14.4.1.11.2. A speed in excess of 107.99 MPH will be considered a "break out" speed and that competitor will be awarded zero points for the heat, disqualified, and the boat will not be allowed to compete for the remainder of the competition.
- 14.4.1.12. It is the responsibility of the owner/driver to furnish a functioning GPS device. If that device does not register during a competition, the competitor will receive zero points for the heat and a warning similar to a violation of exceeding 105.99 MPH. A second violation will result in a disqualification, awarded zero points, and the boat will not be allowed to compete for the remainder of the competition weekend, but can be waived by the race committee.

#### **14.4.2. HULL**

- 14.4.2.1. Hull must be a flatbottom design and conform to the Inboard Racing Runabout classes classification.
- 14.4.2.2. Minimum hull length shall be 16ft. L.O.A. and the maximum hull length shall be 20ft. L.O.A. not including cavitation plate(s).

### **14.4.3. ENGINE**

- 14.4.3.1. The engine must be a Single American automotive block with a maximum cubic inch displacement of 510 c.i.d. No superchargers, turbochargers, or blowers of any type. Fuels restricted to pump, aviation, and methanol blends. Additives permitted, except nitromethane or nitrous oxide. All internal and external engine modifications accepted. All ignition systems accepted. No electric speed control devices are allowed.

### **14.4.4. HARDWARE**

- 14.4.4.1. Engines must be mounted rear of amidships and drive forward through a V-drive.
- 14.4.4.2. The drive line or shaft must be covered with either 1/8" steel or 1/4" of aluminum.
- 14.4.4.3. Parachute static lines must attach in a way to keep them free of the injector(s), linkage, drive line, prop shaft, blower belt(s). Parachutes are optional.
- 14.4.4.4. Electrical kill or short switch must be used at all times. There shall be a manual fuel shut off switch and a manual electric shut off switch in safe reach of the driver while the boat is underway. Only mercury type switch or doubleball (burglar alarm type) will be accepted.
- 14.4.4.5. Hulls must have points to attach a 3 or 4 leg sling to lift the hull. Each leg of a 3 leg sling must be certified to hold 1900 lbs. Each leg of a 4 leg sling must be certified to hold 1250 lbs. Slings must be pull tested each three (3) years. The owner is responsible for providing the sling and its certified strength. The race inspector shall determine if the sling is safe.
- 14.4.4.6. Couplers between in-and-out boxes and propeller shaft shall be a minimum of 3.5 inches long, be made from billet steel, and utilize a minimum of four (4) clamping bolts. Set screws shall be used in each end of the coupler. Each shaft shall be dimpled to receive the set screws.
- 14.4.4.7. A safety collar, dimpled to the propeller shaft, within 0.500" of the fore end of the stuffing box or thrust bearing is mandatory. The diameter of a collar fore of the thrust bearing must be larger than the bearing. Collars must be machined from bar stock.
- 14.4.4.8. Driver seat must be bolted in place.
- 14.4.4.9. Prop releases are mandatory on all GPS-105 boats at all races.

## **14.5. Sportsman Extreme Flatbottom (SE)**

### **14.5.1. GENERAL RULES**

- 14.5.1.1. The Sportsman Extreme class letter is "SE". The "SE" and boat number must be a minimum of 9" high on both sides of the hull. The boat's trailer and/or dolly must have the class letters SE, boat number a minimum of 2.5" high.
- 14.5.1.2. Boats must be raced with one (1) person on board.
- 14.5.1.3. Minimum age of driver is 16 years, unless approved by race committee.
- 14.5.1.4. Maximum number of boats per heat will be determined by the race director.
- 14.5.1.5. Minimum weight of the boat as raced, with driver, is 1850 lbs.
- 14.5.1.6. Each SE boat must be inspected and certified by SCSC prior to participating in competition. Following certification, the owner must advise SCSC of any modifications to the boat that could affect its certification. SCSC may request a certification of a boat at any time.
- 14.5.1.7. New SE drivers are required to participate in this class or GPS-105 class for a period of no less than two (2) years or 20 heats, whichever comes first in either class or combination thereof before moving up into Super Stock or PS classes. All rookie SE or

GPS-105 drivers must start a minimum of three (3) heats, starting behind the pack.

After completing the minimum three (3) heats, applicant shall then be advised by the Referee as to the results of his application to race in their draw or earned position.

14.5.1.8. The objectives of the rules for SE Class are to govern and promote an ENTRY LEVEL class of propeller driven Inboard Racing Runabouts using limited and/or restricted engines.

14.5.1.9. All parts including engines and hulls in their entirety, may be changed at any time, as long as said hull belongs to the same owner prior to that race.

14.5.1.10. The SE class was created to get new racers into the sport. To not discourage these new racers, any driver who has driven in KRR, SS, PS, or has won the SE High Points Championship for two (2) years in a row can race but will not earn points towards National High Points Championship.

14.5.1.11. Starts may be either clock start or flat start. For flag start lane selection shall be by draw.

14.5.1.12. Maximum speed of 85 mph is allowed. A speed of 86.00 mph to 87.99 mph will be considered a “break out” speed and the boat would get last place position and points for that heat or main. A speed of 88.00 mph and higher will be a disqualification for that heat or main with no points awarded.

14.5.1.13. A GPS may be run in a heat of racing to determine speeds that may require the use of a restrictor plate.

14.5.1.14. Because this is a speed limited class, there shall be no competition or kilo records kept.

#### **14.5.2. HULL**

14.5.2.1. Hull must be a flatbottom boat design and conform to the INBOARD RUNABOUT CLASSES racing classification.

14.5.2.2. Minimum hull length shall be 16 feet. L.O.A. and the maximum hull length shall be 20 feet L.O.A. including cavitation plates.

14.5.2.3. Minimum width of a SE hull is 72 inches.

14.5.2.4. Hulls under these minimums which competed in an older racing class are to be grandfathered. Contact the Class Chairman for confirmation.

14.5.2.5. SE boats are to run with only two-bladed propellers.

14.5.2.6. All fins shall be mounted between the chines on the underside of the hull.

#### **14.5.3. ENGINE**

14.5.3.1. The engine must be a Single American automotive SMALL block with a maximum cubic inch displacement – 366 C.I.D. MAXIMUM BORE X STROKE (4.065 X 3.500). No superchargers, turbochargers or blowers of any type. Fuels restricted to pump, aviation AND E85. Ignition system may be either points-type system or HEI system.

14.5.3.2. No titanium engine parts are allowed.

14.5.3.3. Bore and Stroke. Maximum Bore X Stroke is 4.065” X 3.500”

14.5.3.4. Crankshaft. Any aftermarket crankshaft may be used.

14.5.3.5. Pistons

14.5.3.5.1. Only flat top pistons with valve relief(s) are permitted.

14.5.3.5.2. Any aftermarket pistons may be used.

14.5.3.5.3. Connecting Rods. Any aftermarket steel connecting rods may be used.

14.5.3.6. Connecting Rods. Any aftermarket steel connecting rods may be used.

## 14.5.3.7. Cylinder Heads

14.5.3.7.1. Only stock GM or Ford cylinder heads with in-line valves may be used.

14.5.3.7.2. No porting, polishing, or grinding is permitted in ports or combustion chambers.

14.5.3.7.3. Heads shall have a maximum intake runner volume of 170 cc.

14.5.3.7.4. Combustion chamber volume using compressed gaskets and deck height shall meet the following values:

Combustion Chamber Volume in cc's	56 (GM 305 Head only)	62 ***	65	66	67	68	69	70	71	72	73	74	75	76
Compressed Gasket and Deck Height Combined Total in Inches*	0.100**	0.085	0.081	0.077	0.073	0.069	0.065	0.061	0.057	0.053	0.049	0.046	0.043	0.040
*Piston measurement above the deck is added to the gasket thickness to achieve the combined required total; piston measurement below the deck is subtracted from the total to get the proper gasket thickness **Minimum requirement from 56 cc to 62 cc ***Minimum cc limit of all heads except GM 305 ****Combustion chambers larger than 76 cc shall have a Compressed Gasket and Deck Height of no less than 0.040"														

## 14.5.3.8. Camshaft and Valve Train

## 14.5.3.8.1. Camshafts

14.5.3.8.1.1. Only flat tappet camshaft and lifters may be used.

14.5.3.8.1.2. Either hydraulic or mechanical lifters with a maximum diameter of 0.843" for GM or 0.876" for Ford may be used.

14.5.3.8.1.3. Maximum lift, measured at the valve, shall not exceed 0.450" (lift is to be inspected @ zero lash).

14.5.3.8.2. Timing Chain. Use of any chain set or gear drive of dual idler design only is permitted.

## 14.5.3.8.3. Valves

14.5.3.8.3.1. All steel or stainless steel valves with a minimum valve stem diameter of 11/32" with a minimum 0.340/0.341 stem diameter. Aftermarket performance valves and steel or aluminum retainers allowed.

14.5.3.8.3.2. Maximum diameter of intake valve is 1.945" for GM, GM 305 heads and Ford heads 1.845".

14.5.3.8.3.3. Maximum diameter of exhaust valve is 1.505" for GM and 1.545" for Ford.

14.5.3.8.4. Valve Springs. Valve springs shall have a maximum diameter of 1.260" for GM and 1.445" for Ford with an allowable tolerance of  $\pm 0.040$ ".

## 14.5.3.8.5. Rocker Arms

14.5.3.8.5.1. Roller type rocker arms with a maximum ratio of 1.52 for GM or 1.60 for Ford may be used (lift at cam X 1.5 for GM or 1.60 for Fords helps determine legal rocker ratios).

14.5.3.8.5.2. Studs and/or guide plates with 5/16" pushrods may be used.

14.5.3.8.6. Adjusting Nut. Any adjusting nut, posi loc, strut girdle may be used. No shaft type rocker assembly.

## 14.5.3.9. Intake System

- 14.5.3.9.1. Intake Manifold
  - 14.5.3.9.1.1. Any production style as cast/as produced iron or aluminum intake manifold may be used.
  - 14.5.3.9.1.2. Sheet metal or tunnel ram style intake manifolds are expressly prohibited.
- 14.5.3.9.2. Other Intake System
  - 14.5.3.9.2.1. A carburetor spacer is required; it shall have a minimum thickness of 0.500" (including gaskets) and a maximum thickness of 2.25" (including gaskets). The spacer may be wedge shaped, if desired, providing it fits within the above envelope. A restrictor plate, if required, shall be in addition to this thickness.
  - 14.5.3.9.2.2. The intake manifold may be matched or blended to the carburetor spacer.
  - 14.5.3.9.2.3. Use of any intake scoop, velocity stack, and/or air cleaner is permitted.
- 14.5.3.10. Fuel System
  - 14.5.3.10.1. Carburetor
    - 14.5.3.10.1.1. Carburetor is to be a Holley manufacturer #4776 (all series). The center section/main body must remain stock and as furnished by Holley. The choke mechanism and related components may be removed. The air horn can be milled off. No HP center section/main body allowed. Only the following dimensions are to be inspected/measured: Primary/Secondary venturi @ 1.265/1.3275 maximum. Throttle plate bore @ 1.5675 maximum. All other modifications permitted.
    - 14.5.3.10.1.2. Maximum venturi diameters: Primary/Secondary = 1.265"/1.3275"
    - 14.5.3.10.1.3. Maximum throttle plate bore is 1.5675"
  - 14.5.3.10.2. Fuel and Fuel Systems
    - 14.5.3.10.2.1. Any pump gas may be used, including E85.
    - 14.5.3.10.2.2. Any fuel pump is permitted.
- 14.5.3.11. Ignition
  - 14.5.3.11.1. Ignition system may be either points-type system or HEI system.
  - 14.5.3.11.2. Electronic ignition systems are not permitted. Pertronix distributor points conversions may be used.
  - 14.5.3.11.3. Any plug wires may be used.
  - 14.5.3.11.4. Firing order is to be 18436572 for GM and 13726548 for Ford.
- 14.5.3.12. Exhaust
  - 14.5.3.12.1. Any manifold or steel header with a collector of the standard straight style may be used.
  - 14.5.3.12.2. No multi-step or 180 degree systems may be used.
- 14.5.3.13. Lubrication System
  - 14.5.3.13.1. A wet sump system with the oil pump mounted in the stock location is required.
  - 14.5.3.13.2. Any oil pan is permitted.
  - 14.5.3.13.3. Accusump systems are permitted.
- 14.5.3.14. Other Specifications
  - 14.5.3.14.1. Any gasket set may be used.
  - 14.5.3.14.2. Vacuum pumps are not allowed.
  - 14.5.3.14.3. Use of a heavy/duty SFI flex plate or aluminum flywheel is recommended.

#### **14.5.4. HARDWARE**

- 14.5.4.1. Engines must be mounted rear of amidships and drive forward through a V-drive.
- 14.5.4.2. The drive line or shaft must be covered with either 1/8" steel or 1/4" aluminum.
- 14.5.4.3. Parachute static lines must attach in a way to keep them free of the injector(s), linkage, drive line, prop shaft, blower belt(s). Parachutes are optional.
- 14.5.4.4. Electrical kill or short switch must be used at all times. There shall be a manual fuel shut off switch and a manual electric shut off switch in the safe reach of the driver while the boat is underway. Only mercury type switch or doubleball (burglar alarm type) will be accepted.
- 14.5.4.5. Hulls must have points to attach a 3 or 4 leg sling to lift the hull. Each leg of a 3-leg sling must be certified to hold 1900 lbs. Each leg of a 4-leg sling must be certified to hold 1250 lbs. Slings must be pull tested every three (3) years. The owner is responsible for providing the sling and its certified strength. The race inspector shall determine if the sling is safe.
- 14.5.4.6. Couplers between in-and-out boxes and propeller shaft shall be a minimum of 3.5 inches long, be made from billet steel and utilize a minimum of four (4) clamping bolts. Set screws shall be used in each end of the coupler. Each shaft shall be dimpled to receive the set screws.
- 14.5.4.7. A safety collar, dimpled to the propeller shaft, within 0.500" of the fore end of the stuffing box or thrust bearing is mandatory. The diameter of a collar fore of the thrust bearing must be larger than the bearing. Collars must be machined from bar stock.
- 14.5.4.8. Driver seat must be bolted in place.
- 14.5.4.9. Prop releases are mandatory on all SE boats at all races.
- 14.5.4.10. SE boats are to run with only two-bladed propellers.

### **14.6. Crackerbox**

#### **14.6.1. GENERAL RULES**

- 14.6.1.1. The Crackerbox PRO™ class letter is "P". The "P" and boat number must be a minimum of 9" high on both sides of the hull and be followed by the letters "PRO" at least 3" high. The boats trailer and/or dolly must have the class letters P, boat number, and "PRO" a minimum of 2.5" high.
- 14.6.1.2. Boats must be raced with two (2) living persons on board, no use of sand bags or any other ballast material is permitted during racing, however ballast is allowed for testing and practice purposes.
- 14.6.1.3. Minimum age of driver is 18 years and rider is 16 years.
- 14.6.1.4. Maximum number of boats per heat will be determined by the Race Director.
- 14.6.1.5. Minimum weight of the boat as raced, without driver and rider, is 1250 lbs.
- 14.6.1.6. The Crackerbox PRO™ class is further governed by the Crackerbox PRO™ Inspection Guide.
- 14.6.1.7. Each Crackerbox PRO™ boat must be inspected and certified by SCSC prior to participating in competition. Following certification, the owner must advise SCSC of any modifications to the boat that could effect its certification. SCSC may request a certification of a boat at any time.

#### **14.6.2. HULL**

- 14.6.2.1. The hull must comply with the measurements and tolerances in the TABLE of OFFSETS and associated drawings.

- 14.6.2.2. The maximum inclusive longitudinal deviation from station 4 to 13 must not exceed one (1) inch.
- 14.6.2.3. The cockpit must be located between 9.5" and 53.0" forward from the transom.
- 14.6.2.4. The bottom must not have longitudinal or transverse steps, transverse breaks, relieved chine or concavity (except for allowed tolerances).
- 14.6.2.5. Maximum bottom concavity tolerance:
  - 14.6.2.5.1. From the centerline of the keel or keel break to the chine: .250" + 0" measured perpendicular to the keel.
  - 14.6.2.5.2. In any flat keel area: .125" + 0" measured perpendicular to and between the longitudinal keel breaks.
  - 14.6.2.5.3. Maximum hardware mouting tolerance: .125" + 0" longitudinal and/or transverse step.
- 14.6.2.6. Wood hulls must have a wood frame covered with a minimum .250" thick plywood.
- 14.6.2.7. There must be a deck from the rear of the cockpit to the transom and side decks along each side of the cockpit and engine compartment, and a fore deck from station 5 to the bow.

#### **14.6.3. ENGINE**

- 14.6.3.1. The engine shall be mounted ahead of station 9. The crankshaft tip must be 53.0" or more from the transom.
- 14.6.3.2. One internal combustion four-cycle engine. The block must be cast iron. The heads may be aluminum. The block and heads must be based on a U.S. automotive production design. There shall be no more than two (2) valves per cylinder. No superchargers or overhead cams are allowed.
- 14.6.3.3. Engine Options:
  - 14.6.3.3.1. 275 cu in maximum – Carburetor(s) or fuel injection. Fuel is gasoline available for automotive, marine, and aviation use, or methanol.
  - 14.6.3.3.2. 314 cu in maximum – the carburetor must be one 650 CFM Holley model# 4150, part# 4777C (classic) 4777S (shiny) or 4777, and all dash numbers and must remain as furnished by manufacturer except: epoxy may be used to secure the booster venturi; the choke assembly and unused linkages may be removed; the power valve may be blocked; accelerator pump nozzles and inlet jets may be changed; any float may be used; any device to prevent fuel sloshing may be used. The following are maximum dimensions: throttle bore 1.688", primary venturi 1.250" and secondary venturi 1.313". Fuel is gasoline available for automotive, marine, and aviation use.

#### **14.6.3.4. HARDWARE**

- 14.6.3.4.1. Hardware mounted on, projecting through or intersecting with the bottom of the boat shall not be included in any measurement nor are they considered under the rules.
- 14.6.3.4.2. Adjustable plates and the shaft angle must not be adjustable while participating in a racing heat.
- 14.6.3.4.3. V-drives or gear boxes are not allowed.
- 14.6.3.4.4. Hulls must have points to attach a 3 or 4 leg sling to lift the hull. Each leg of a 3 leg sling must be certified to hold 1900 lbs. Each leg of a 4 leg sling must be certified to hold 1250 lbs. Slings must be pull tested each three (3) years. The

owner is responsible for providing the sling and its certified strength. The race inspector shall determine if the sling is safe.

14.6.3.4.5. An electrical kill(s) capable of stopping the engine and electric power to a fuel pump if the driver is separated from the boat is mandatory.

14.6.3.4.6. Couplers between in-and-out boxes and propeller shaft shall be a minimum of 3.5 inches long, be made from billet steel, and utilize a minimum of four (4) clamping bolts. Set screws shall be used in each end of the coupler. Each shaft shall be dimpled to receive the set screws.

14.6.3.4.7. A safety collar, dimpled to the propeller shaft, within 0.500" of the fore end of the stuffing box or thrust bearing is mandatory. The diameter of a collar fore of the thrust bearing must be larger than the bearing. Collars must be machined from bar stock.

14.6.3.4.8. Driver and rider seats must be bolted in place.

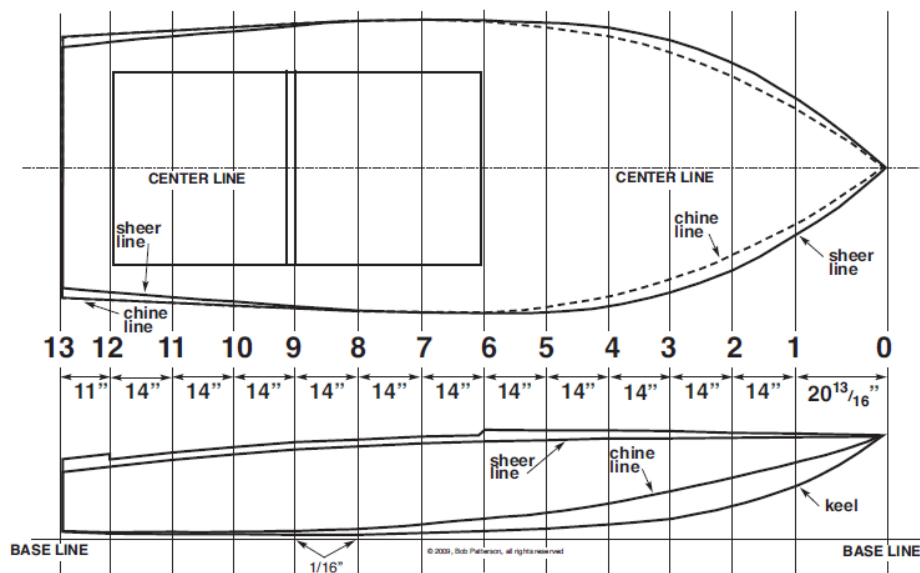
#### 14.6.3.5. TABLE OF OFFSETS

**TABLE OF OFFSETS:** measurements are in inches a sixteenths of inches.

Station	13	12	11	10	9	8	7	6	5	4	3	2	1	0
<b>Base to Keel</b>	0-10	0-6	0-4	0-2	0-1	0-1	0-4	0-8	1-0	1-15	3-12	6-12	11-0	22-10
<b>Base to Chine</b>	1-1	1-0	0-15	1-0	1-4	1-11	2-6	3-6	4-12	6-10	9-0	12-1	15-15	22-10
<b>Base to Sheer</b>	15-0	16-11	18-7	19-12	20-12	21-8	22-0	22-6	22-10	22-13	22-14	22-12	22-12	22-10
<b>Base to Deck</b>	18-2	19-11	21-1	22-12	23-11	24-5	24-10	24-13	24-13	24-12	24-6	23-15	23-8	22-10
<b>CL to Chine</b>	29-7	30-3	31-0	31-12	32-6	32-14	33-1	32-11	31-11	29-11	26-1	20-8	13-4	0-0
<b>CL to Sheer</b>	27-7	28-11	30-1	31-3	32-3	32-14	33-5	33-7	33-0	31-8	28-10	23-9	16-00	0-0

All dimensions in the Table of Offsets are to the outside of planking and have a tolerance of plus or minus 1 inch.

Measurement from base line to keel at stations 8 and 9 must be one sixteenth of an inch.



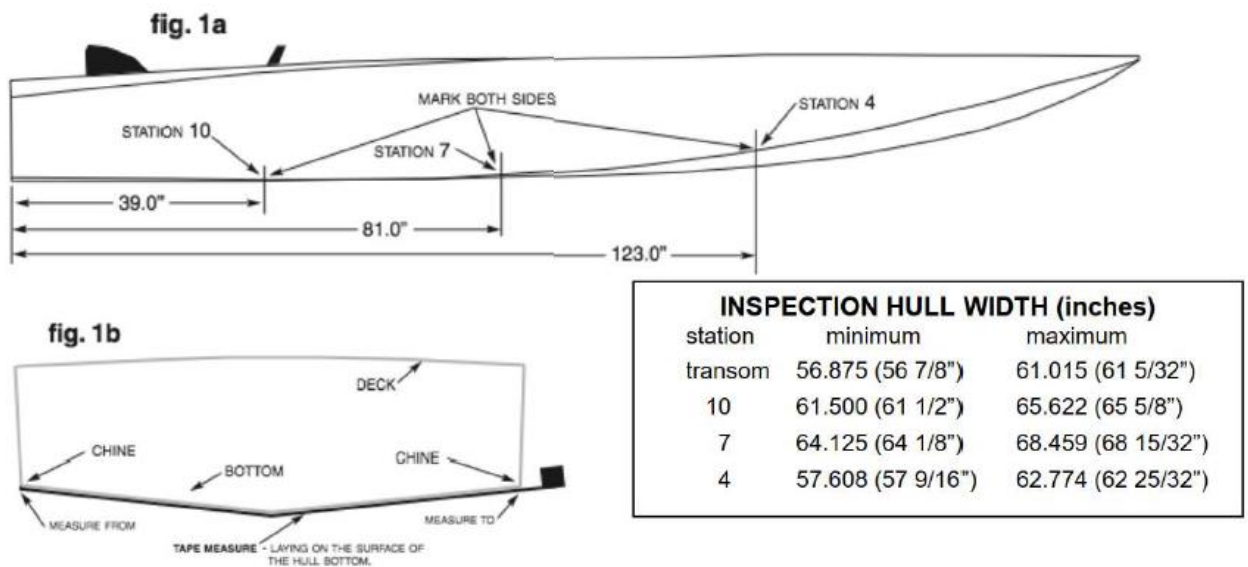
14.6.3.6. **Inspection Guide:** This guide specifies the procedures to be used to inspect the HULL, ENGINE, and HARDWARE for compliance with rules for the CRACKERBOX

PRO™.

*Note to Inspector:* Prior to lifting a hull for inspection, verify that the lifting slings used are in compliance with Rule 14.6.3.4.4.

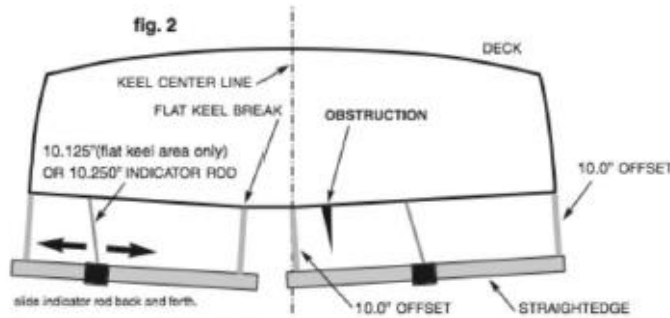
#### 14.6.3.6.1. Hull

14.6.3.6.1.1. Hull Width Measurement: Lift the hull. Measure perpendicular from the aft edge of the hull bottom toward the bow. Place masking tape on the keel centerline or keel breaks, and chine and mark the tape at 39" (station 10), 81" (station 7), and at 123" (station 4) on both sides of the boat (see Fig. 1A). Measure the width of the hull from chine to chine at each set of station marks by holding a tape measure at one station mark and measuring across the bottom of the hull to the other station mark (see Fig. 1B). The minimum and maximum distances at each station are:



14.6.3.6.1.2. Bottom Concavity: Lift the hull. Use the marked points from the Hull Width Measurement (transom, 39", 81", 123"). Place a straight edge flat on the bottom from the keel centerline or keel break to the chine at each marked location. A .250" dowel must not fit between the hull bottom and the straight edge at any of the marked locations. Repeat this process on both sides of the keel.

- Flat Keel Area: Place a straight edge against the hull bottom perpendicular from keel break to keel break. A .125" dowel must not fit between the hull bottom and the straight edge.
- Obstructions: Attach the 2 X 10.0" offsets to the straight edge. Place one 10" offset on or as close as possible to the keel centerline or keel break and place the second 10" offset on the chine. At each of the marked locations move the 10.250" indicator rod transversely along the straight edge. The indicator rod must contact the bottom on both sides of all obstructions. Repeat this process at the marked locations on both sides of the keel (see Fig. 2).



#### 14.6.3.6.1.3. Establishing the Location of the Transom:

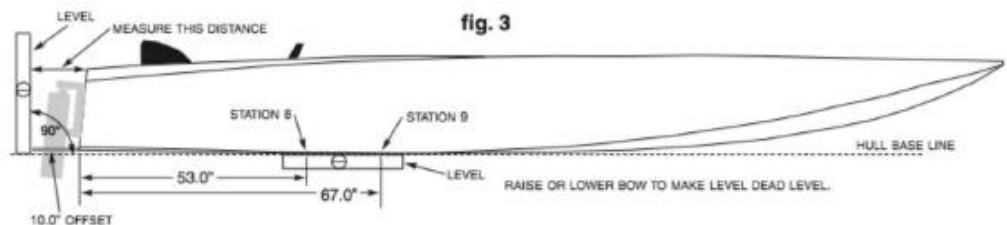
**Transom Definition** – The hull has two (2) transoms, these are:

**1 – Hull Transom (HT)**

**2 – True Transom (TT)** - the vertical plane perpendicular to both the base line plane and the hull centerline plane at the farthest aft point on the hull bottom.

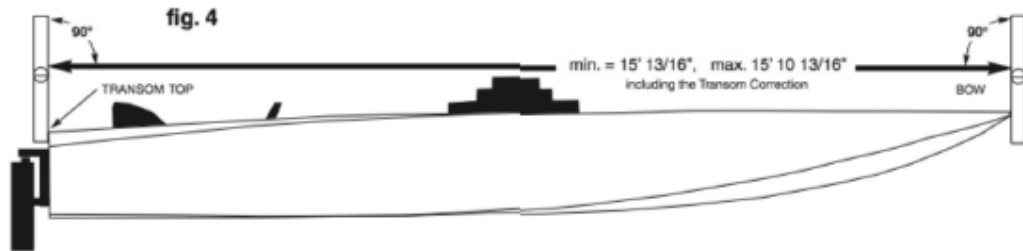
**Transom Correction** – It is likely that the top of the hull transom (HT) leans fore or aft from the farthest aft point on the hull bottom relative to the hull's base line. The Transom Correction (TC) is the number of inches of this lean. The TC needs to be determined to establish the location of the true transom (TT). Measurements taken forward for the top of the hull transom can then be corrected to inspect against the requirements in the Table of Offsets. The procedure to measure the TC is (see Fig. 3).

- 1 – measure perpendicular forward from the farthest aft point on the hull bottom to 53.0" (station 9) and 67.0" (station 8) and mark these locations with a washable marker as close to the keel centerline as possible. Do not mark on tape or any other material applied to the hull.
- 2 – hold a level against the hull bottom over the marks at 53" and 67".
- 3 – accurately level the hull fore and aft until the level reads dead level and secure the hull in this position.
- 4 – attach the 10.0" offset to the level.
- 5 – touch the offset to the farthest aft point on the hull bottom as near to the hull bottom centerline as possible.
- 6 – vertically level the level and measure the perpendicular distance to the top of the hulls transom.
- 7 – the **Transom Correction** is equal to the distance from the level to the top of the hulls transom minus 10".

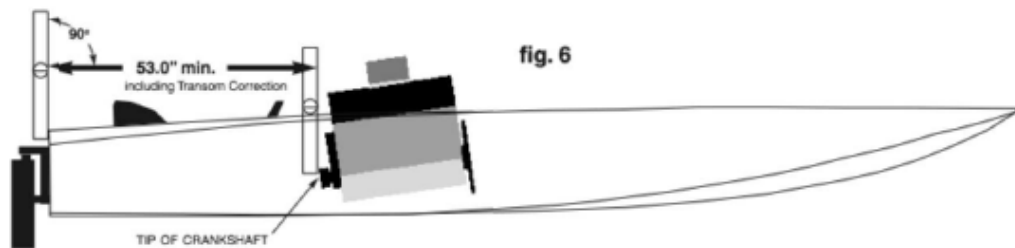


14.6.3.6.1.4. **Hull Length:** Hold one level where the hull transom meets the deck at the hull centerline. Hold a second level at the center of the bow. With both

levels vertically level measure perpendicular between the two (2) levels. Add the Transom Correct to the measured hull length. The total measurement must be between 15' 13/16" and 15' 10 13/16" (see Fig. 4).

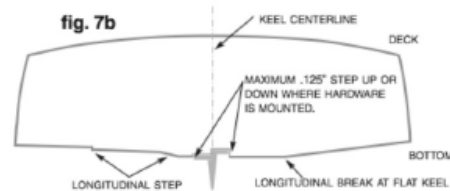
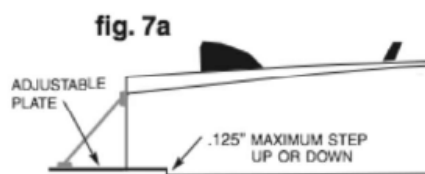


14.6.3.6.1.5. **Engine Location:** Hold one level where the hull transom meets the deck at the hull centerline. Hold a second level at the aft tip of the engine crankshaft. With both levels vertically level measure perpendicular from the fore side of the aft level to the fore side of the fore level (see Fig. 6). Add the Transom Correction to this measurement. The minimum total dimension is 53.0". (Note: If the measurement was taken from the aft end of a coupler mounted on the crankshaft and the total dimension is less than 53.0", then measure the distance from the aft face of the coupler to the aft tip of the crankshaft and add this measurement to the total dimension.)



14.6.3.6.1.6. **Visual Bottom Inspection:** Visually inspect the hull bottom.

- There can be no transverse or longitudinal steps except as allowed for hardware installation. All hardware mounted on, projecting through, or intersecting with the bottom has a maximum 1/8" transverse and longitudinal step tolerance (see Fig. 7A).
- There can be no transverse breaks. Longitudinal breaks must be immediately associated with installed hardware or flat keel areas (see Fig. 7B).



#### 14.6.3.6.2. Engine

14.6.3.6.2.1. All Engines: Confirm the following:

- 4 cycle internal combustion engine
- Place a magnet on the block to confirm it is cast iron
- Block and heads are based on U.S. automotive production design
- Remove a valve cover and confirm a maximum of 2 valves per cylinder and no overhead cam
- No supercharger
- Maximum cubic inch using a P and G, measure the cubic inch displacement of one (1) randomly selected cylinder. The cubic inch displacement is equal to the measured displacement multiplied by the number of cylinders in the engine.

14.6.3.6.2.2. 275 cubic inch option: Confirm the following:

- Maximum 275 cubic inch
- Fuel – Using a Digitron confirm that the declared fuel is either methanol or a gasoline available for automotive, marine, or aviation use.

14.6.3.6.2.3. 314 cubic inch option: Confirm the following:

- Carburetor – Single 650 cfm Holley model# 4150, part# 4777C (classic) 4777S (shiny) or 4777 and all dash numbers as furnished by the manufacturer, except;
  - Booster venturi may be secured with epoxy
  - Choke assembly and unused linkages may be removed
  - Power valve may be blocked
  - Any accelerator pump nozzles and inlet jets may be used
  - Any float may be used
  - Carburetor Bores – Using a carburetor test gauge kit, 7864 for Holley 0-4777 series 650 cfm carburetor's available from BLP Products, confirm the following:
    - Throttle bore maximum diameter 1.688"
    - Primary venturi maximum diameter 1.250"
    - Secondary venturi maximum diameter 1.313"
- Maximum 314 cubic inch
- Fuel - Using a Digitron confirm that the declared fuel is a gasoline available for automotive, marine, or aviation use.

14.6.3.6.3. **Hardware** — Confirm the following:

- Adjustable plates and shaft angle are not adjustable while participating in a race
- There is no V-drive or gear box
- The 3 or 4 lifting straps are individually certified for 1900 lbs. (3 straps) or 1250 lbs. (4 straps) or more.
- The drivers kill switch(es) shuts off the engine and electric fuel pump (if used) in an engine on test.
- Couplers between crankshaft coupler, in/out box, and propeller shaft:
  - Minimum of 3.50" long

- Secured with a minimum of four (4) bolts
- Are made from billet steel
- Each end has a set screw and that each shaft is dimpled to accept the set screws.
- Safety Collars
  - Minimum of one (1) safety collar located within .50” on the fore side of the stuffing box
  - Are made from billet steel

#### 14.6.3.6.4. **Hull Definitions**

- Background: Some words are critical to the understanding of a rule. If there is a lack of clarity then it can result in different interpretations of a rule. Differences in interpretation can be between teams in a class or between inspectors and the class. In either event coalitions start to form on the different interpretations and conflict results. Many conflicts are not avoidable, but conflicts that stem from lack of clarity in the definition of a key word can and should be avoided.
- SHEER – Where the deck joins the side of the hull (see Fig. 1)
- CHINE – Where the bottom joins the side of the hull (see Fig. 1)
- KEEL – The area on the bottom of the hull that is closest to the base line of the hull (see Fig. 1)
- BASE LINE (plane) – The line (datum) located on a horizontal plane under the hull used for hull design and measurement purposes (see Fig. 1). When the base line is extended horizontally and perpendicular to the Hull Center Line Plane it becomes the Base Line Plane (see Fig. 3).
- LONGITUDINAL – Running parallel to the keel (see Fig. 2)
- TRANSVERSE – Running perpendicular to the keel (see Fig. 2)
- HULL CENTER LINE – The line (datum) located on a vertical plane for the hull. It is drawn from the center of the bow to the center of the transom (see Fig. 3). (Comment: The hull center line is a datum plane used in lofting a hull. It is not the same as the bottom center line or the keel center line. These 2 lines will vary depending on design location of the keel and how symmetrical the hull bottom is relative to the hull center line).
- KEEL CENTER LINE – The longitudinal center of the bottom of the hull that is equal distance from the port and starboard chines (see Fig. 4). (Comment: On a hull whose bottom is symmetrical about the HULL CENTER LINE both the BOTTOM CENTER LINE and the HULL CENTER LINE have the same location on the hull bottom. On a hull whose bottom is not symmetrical about the HULL CENTER LINE this is not the case. There is no rule that requires a CRACKERBOX PRO™ to be symmetrical around the HULL CENTER LINE.).
- BREAK – In the area from the center line of the keel to the chine, two (2) planes meeting to form an angle (see Fig. 5).
- STEP – In the area from the center line of the keel to the chine, three (3) planes meeting to form two (2) angles (see Fig. 6).

- STRAKE – In the area from the center line of the keel to the chine, four (4) or more planes meeting to form three (3) or more angles and including a plane surface that is greater than 15 degrees to the vertical (see Fig. 7A and Fig. 7B).
- FIN – Three (3) planes meeting to form three (3) or more angles with no plane surface that is greater than 15 degrees to the vertical (see Fig. 8A and 8B).

## **14.7. Grand National (GN)**

### **RULE 1 • GENERAL RULES**

1. Numbers shall be no less than 10 inches high, shall be painted on both sides of the boat, and shall contrast strongly in color with background upon which they are painted.
  - A. A 3-inch high (min.) class prefix is required: “GN” for the Grand Nationals.

### **RULE 2 • ENGINE, BOAT AND SAFETY REQUIREMENTS**

1. It is recommended that fuel lines should be seamless rubber, synthetic rubber or plastic, providing any of these materials are reinforced with braiding or webbing (internal or external).
  - A. It is recommended that no non-reinforced hoses will be used anywhere in the pressure system. All fuel tanks will be vented overboard. Fuel lines will be secured in a workmanlike manner. All fuel lines on the pressure side of the fuel system shall be swedge-type fittings or two hose clamps where push-on fittings are used. There shall be no glass components in the fuel system.
2. P&G Inspection will be the accepted official method of measuring cubic inches of engines. On championship races, a minimum of two cylinders must be measured, and choice of cylinders will be determined by the inspector. This method should be applied in protest situations, to as many cylinders as necessary.
3. At the discretion of the owner, use of a device which uncouples the engine and propeller shaft in the event of an engine failure which causes the engine to “lock up”, should be seriously considered. Such a device must function automatically.
4. Drive shaft (torque tube) shall be completely enclosed, including U-joints. Recommended specifications are: ¼ inch thick aluminum of no less than 45,000 psi tensile strength, or 3/8 inch of 35,000 psi or 1/8-inch steel of 90,000 psi, or 3/16 inch of 35,000 psi.
5. All boats must be equipped with positive return throttles, ensuring an engine idle condition when throttle pressure is released or with throttle cable detached.
6. Adjustable cavitation plates, air foils and wings will be allowed on Endurance boats. Wings will be secured and safety inspected.
7. No loose gear shall be in the cockpit at any time.
8. All Endurance events shall include a rigid safety inspection. Note that this inspection is in no way to be construed as verifying your craft is legal for the class in which it is entered nor in lieu of your due diligence in maintaining your entry in safe racing condition. At minimum, boats will be inspected for the following general condition:
  - A. Rudder fastening
  - B. Seat fastening
  - C. Wiring
  - D. Steering, cable, pulley, brackets, seat, rod-ends, and general overall condition
  - E. Fuel tank mounting
  - F. Wired or lock-netted turnbuckles
  - G. Obstructions that would prove detrimental to the safe operation or abandonment of the craft.

- H. Securely fastened bow eye or tow hook.
- 9. It is strongly suggested that boats shall be equipped with a securely fastened paddle and a 10-foot tow rope of 2,000-pound test strength attached or stowed.
- 10. Fuel shall be restricted to any type of gasoline. This includes marine, aviation, or automotive racing gas. E-85 is approved to be a legal fuel in the IE Category, the fuel must be less than E-90 tested by the Quick Fuel Water Test Part #36-E-85.
- 11. NO additive power boosters will be permitted.
- 12. A fully-charged, minimum 2-1/2 pounds of CO2 or dry chemical fire extinguisher must be in the pit area at all times.
- 13. In non-reinforced cockpit boats the driving cockpit must accommodate the driver safely in his seat without physical restrictions.
- 14. All boats must be equipped with a positive safety switch that will break the ignition circuit in the event a driver is thrown from his boat, and switch shall be properly attached to driver prior to starting the engine. A break-cable or release must not be more than 10 pounds pull maximum.
- 15. Paramedic team presence during testing and competition at all times shall be mandatory. The presence of a doctor is also strongly advised. An ambulance, air or ground vehicles properly equipped under existing state laws, as applicable, shall be present during all published test periods and competition. If a ground vehicle ambulance is used, a properly instructed ambulance crew will remain with the ambulance at all times.
- 16. In boats equipped with reinforced cockpits and restrained drivers the following guide lines must be met:
  - A. All boats must be equipped with a roll-over type switch that will shut off the ignition and electric fuel pump (if so equipped) in the event of a roll-over.
  - B. All boats shall be equipped with a proper set of rear-view mirrors.
  - C. It is strongly recommended that all boats be equipped with an onboard driver breathing system.
  - D. A lifting ring must be mounted and identified as such on the capsule/driver restraint unit. This lifting ring must be capable of supporting the capsule area above the waterline during a rescue operation.
- 17. All drivers driving boats equipped with any type of capsule must wear a FULL-TIME permanent AIR SYSTEM. An ambient air valve IS allowed.
  - A. The driver's mask must cover the driver's nose and mouth and be designed to be watertight. The mask must be attached in such a way as to prevent its being dislodged or removed inadvertently.
  - B. The mask must be worn by the driver(s) anytime the boat is under power.
  - C. All GN boats with permanent onboard air systems shall carry a minimum of 30 cubic feet of air. All air delivery systems shall carry air in a vessel approved and certified for the delivery of breathing air. Said vessel must meet D.O.T. (Department of Transportation) standards or T.C. (Transportation Canada) standards for such devices. The vessel must also be stamped showing it has been inspected and certified to meet the above D.O.T. and T.C. standards. All components of the air system shall be rated for use with compressed air and or the pressures that they will be subject to.
  - D. Air hoses must be between ten (10) and fifteen (15) feet long; measured starting at the center of the steering wheel.
  - E. A quick release coupler must be installed in the air supply between the first stage regulator, located between ten (10) and fifteen (15) inches from the driver's mask or helmet. The coupler / nipple highly recommended is a Parker stainless steel fluid

connector, part number SH1-62/SH1-63, with the male nipple on the mask side and the female coupler end mounted on the air supply side.

- F. All connections in the air system must be done with commercially accepted or SCUBA type, high pressure crimped ends. Hose clamps are not allowed.
18. All drivers of Inboard Endurance boats with restraint capsules will be required to successfully complete an Inboard Capsule Training Program. Training programs will be approved by SCSC. Capsule training certification is good for a period of three (3) years from the year it was performed.
  19. Non-Destructive Testing (NDT), such as magnetic particle, dye penetrate, or other processes is recommended annually for propellers, shafts, couplers, rudders, skid fins, brackets, struts, and other critical hardware. In the event of an accident, it is recommended that NDT be performed prior to competition.
  20. Couplers and Safety Collars: Couplers between the gearbox shaft and the propeller shaft on runabouts shall be a minimum of 4.75 inches long and utilize a minimum of five (5) clamping bolts. Set screws shall be used in each end of the coupler or at least one (1) clamping bolt on each shaft must pass tangentially through the shafts. Each shaft shall be dimpled or grooved to accept these bolts or set screws. In addition to the required safety collar between the coupler and the shaft log, a safety collar of the propeller shaft, within 0.5 inches of the leading end of the strut, is mandatory on all Grand National classes. Safety collars must be configured so they will prevent the shaft and propeller from sliding back and hitting the rudder. Safety collars shall be machined from steel bar stock, no pressed metal (sintered iron).
  21. Flotation: For runabouts with restraint capsules, it is recommended that the flotation be placed in the drivers/capsule area to help right the hull. The use of air bag rollover systems is highly recommended.
  22. Restraint capsules are highly recommended for all boats competing in the GN class. A bottom hatch is not required for any type restraint capsule used in GN.
  23. It is highly recommended that all drivers of open cockpit boats wear cut-resistant uniforms.

### **RULE 3 • DRIVER, PERSONAL EQUIPMENT AND MEDICAL DATA**

1. Drivers must have a current physical or a current D.O.T, FAA Class 3 or better medical certificate for each racing season. No other statement of physical condition will be accepted. SCSC physical form is found at <http://www.scsracing.com> under the “Forms” tab; please see “Inboard Physical Form”.
2. Minimum age of contestants shall be 18 years.
3. New or inexperienced drivers shall be fully examined as to driving ability and experience by the Referee prior to the first competition.
4. Drivers not in Restraint Capsules shall wear a neck collar device (i.e. helmet support collar).
5. Drivers wearing corrective lenses or glasses, sunglasses, goggles, or shields must use lenses made of plastic or heat-treated glass lenses. No metal frame goggle or untreated glass lenses will be allowed.
6. Prior to the race all drivers’ and co-drivers’ equipment shall be inspected by the Safety Official assigned. This equipment includes:
  - A. Helmet
  - B. Googles, shield, and protective lenses
  - C. Life jackets
  - D. Racing uniform and footgear (appropriate and proper attire).
7. An approval slip must be presented by the driver when registering and/or showing credentials for the event.

## **RULE 4 • STARTS, DISQUALIFICATIONS, FLAG SIGNALS, COURSE AND RACE SAFETY**

1. The course shall be laid out in reasonably protected waters free from debris and turns are practicable. The finish line shall be at the starting line. Each lap will not be less than one mile. When possible, all starts will be “dead in the water” or modified “LeMans” type. The race timing begins and ends at the start/finish line after at least one turn has been rounded. In the event a clock start is used, standard inboard clock start rules will be used, except that jumping the gun will result in a one-lap penalty. The starts will be fully explained at the drivers’ meeting. Starts differing from these, such as pace boat starts, may be used providing permission is granted by the Chairman of the Inboard Endurance Racing Commission or the Regatta Race Committee with unanimous drivers’ consent.
  - A. During the LeMans start after the one minute notice for the start of the race, you may not start your engine until the start flag drops. A one lap penalty will apply.
2. Maximum number of boats to be run on the following courses:
  - A. One mile course – 20 boats
3. The number of boats in Section 2 may be adjusted by the Referee, if in his judgment, the course is wide enough to accommodate more boats or narrow to a point that would make excessive numbers of boats hazardous.
4. When the winning boat crosses the finish line, all boats will complete the lap they are on and be scored for the same.
5. Any boat breaking down on the course may take a tow without penalty and any may re-enter the race after repairs have been made. A boat may enter the race course anytime during the race and be scored accordingly.
6. There shall be no limitations as to repairs. However, complete change of engine or boat after the race has officially started is not permitted. A boat or engine may be changed between heats or days of racing, unless prohibited by the rules posted for “special events”.
7. Any boat taking a tow must negotiate on the outside of the course to the pit, or the closest ramp or designated pick-up area from the point of pick-up.
8. Any boat drifting into the infield after breakdown and subsequently regaining power may continue the lap by re-entering the course from the approximate point where the boat left the course.
9. Any boat under power of under tow which for any reason cuts across the infield at any point for purpose of making a pit stop shall be disqualified.
10. In the event of a rescue operation or danger on the course, a caution flag may be flown. Colors are to be designated by the race officials (blue and white diagonal preferred). Race will continue as usual, but drivers must drive wide and slow down in accident area. Driver’s failure to be cautious or driving in a hazardous manner in the accident area can cause a one-lap penalty or complete disqualification if, in the opinion of the Referee, such driving warrants such action.
11. Scoring shall continue under caution flag condition. At the conclusion of a rescue operation or elimination of a dangerous condition or situation on the course, a GREEN flag will be flown to so indicate, and the race will then be continued as normal.
12. The race may be completed under the caution flag.
13. All flags are to be explained at the beginning of the driver’s meeting.
14. A penalty of one (1) lap shall be assessed for damaging, dislodging, or missing a marking buoy unless forced to do so by another boat in which case the other boat shall receive the penalty.

15. If a buoy is missed, the driver shall be obligated to circle back and pass the buoy on the proper side or receive the above stated penalty of one (1) lap. On race courses with single pin turns or no infields, circling back to pick up missed buoys is not permitted.
16. Disqualification infractions include, in addition to violations of all rules, the following:
  - A. Any U-turn on the race course
  - B. Running the wrong way on the race course
  - C. Helmets and Life Jackets: A driver (and passenger, if any) when operating registered equipment at any time while at a sanctioned regatta, must wear complete safety equipment, including helmet and life jacket.
  - D. Failure to fasten chinstraps or cups, leg straps or safety switch before leaving pits or any time on the course.

#### **RULE 5 • PATROL BOAT OPERATION**

1. Patrol boat crews must have a safety meeting prior to the event. These crews must answer a roll call, and be on the course during all testing and competition.
2. Patrol boats must meet the safety requirements.
  - A. Boats must have a sharp knife to cut driver's parachute or lanyard that may become entangled in the boat or for any other emergency. Patrol boats must be equipped with fire extinguisher of 10 pounds minimum dry chemical, CO2 or Halon.
  - B. Patrol boats must be equipped with 50 feet of 3,000-pound rope.
3. Patrol boat meeting must cover the following:
  - A. Speed of the boat must not create large waves or rollers.
  - B. Boats must be large enough and capable enough to pull a boat out of the water after it has sunk.
  - C. Boats must pull across the course at an angle so as not to obstruct oncoming boats.
  - D. Boats must not be overcrowded.
  - E. No drugs or intoxicating beverages on the patrol boat.
  - F. Boat crew must be prepared to go into the water immediately with a flipped driver.
  - G. Minimum age on a patrol boat is 16 years of age.
  - H. Must be advised on driver first aid, meaning: what to do with an injured driver, recovering him from the water, and transporting him to the physician or first aid facility.
  - I. At least one SCUBA diver per race, is to be assigned to one patrol boat, and be readily available should an accident occur.

#### **RULE 6 • STOPPING THE RACES-RESTARTS**

1. A race may be stopped with RED flag and/or flare, anytime the Referee deems it necessary for any safety issue. After the race has started, it, for any reason such as accident or inclement weather, it becomes necessary to stop a race, the following rules and procedures will apply:
  - A. Upon display of the RED flag and/or flare, all boats will come to a complete STOP as soon as possible and in such a position as not to hinder a rescue operation.
  - B. Upon display of the BLACK flag, the boats will slowly return to the pit or start area.
2. Restarting the race after a discontinuation, such as outlined in #1 of this Rule, following rules apply:
  - A. If 50% of the laps have been completed by the lead boat, the race committee may declare there will be no restart and the race shall be declared finished. In some cases, prize money will be paid on the basis of laps completed.
  - B. If less than 50% of the laps have been completed, the race may be restarted that day if conditions allow.

- C. In the event a race is stopped prior to the completion of 50% of the total laps and the sponsor deems it necessary to cancel any attempt to restart on the day or on a succeeding day.
  - D. In the case of a restart, boats shall line the beach according to the position held and proceed to have a modified LeMans style start. If this is not possible, boats shall leave the pits in their order of position in the race, under a caution flag, with the leader setting the pace. When all entries have had sufficient time to fall-in under the caution flat, the Race Chairman, at his discretion, will call for a GREEN flag to signal the official restart.
3. The following rules apply to a boat or boats that cause a race to be stopped due to a flip, etc.:
- A. They will receive an automatic 3-lap penalty.
  - B. Boat must be inspected for safety before re-entering the race.

#### **RULE 7 • SCORING REQUIREMENTS**

1. Scoring for each boat shall be, at the discretion of the race committee, either accomplished by official scoring designees or assigned to an individual selected by each boat owner.
2. If requested, each entry must furnish an acceptable scorer who shall report to the Chief Scorer.
3. All individual scorers are to be considered a crew member of the boat they represent. The actions and conduct of the scorer can reflect directly upon the boat they are scoring, causing penalties of their particular entry. They will be governed accordingly by the Chief Scorer or Referee.
4. Scorers must record each official lap in the official score sheet at the time displayed by the official clock. Each scorer must turn in a score sheet to the Chief Scorer at the conclusion of the race or the scorer's entry will be disqualified.
5. Scorers shall be subject to discipline by the Referee as recommended by the Chief Scorer for the event. Any scorer deemed guilty of misconduct, disruption, or acts of unsportsmanlike conduct in or about the scoring area may cause disqualification of the scorer's entry and be subject to further discipline.
6. Other scoring systems may be used provided prior permission is granted by the Chairman of the Inboard Endurance Commission.
7. Should the race be stopped for any reason and less than 50% of the scheduled racing has transpired, the Inboard Endurance Commission shall make a decision as to whether to award National High Points after reviewing the facts with a majority of the commissioners.

#### **RULE 8 • RACE QUALIFICATIONS, HIGH POINTS, CHAMPIONSHIPS**

1. An endurance race must be run on a closed course under one of the following formats:
  - A. 100 miles or more
  - B. 20 lap duration which may comprise two (2) lap heats with point accumulation to determine the final order of finish.
  - C. 5 miles
2. The following minimum number of starters is required.
  - A. Grand National must have a minimum of three (3) bona fide starters (must legally start the race).
3. Overall points will be scored on the final position as follows:
 

1 <sup>st</sup> .....100	6 <sup>th</sup> .....75	11 <sup>th</sup> .....50	16 <sup>th</sup> .....40
2 <sup>nd</sup> .....95	7 <sup>th</sup> .....70	12 <sup>th</sup> .....45	17 <sup>th</sup> .....40
3 <sup>rd</sup> .....90	8 <sup>th</sup> .....65	13 <sup>th</sup> .....40	18 <sup>th</sup> .....40
4 <sup>th</sup> .....85	9 <sup>th</sup> .....60	14 <sup>th</sup> .....40	19 <sup>th</sup> .....40
5 <sup>th</sup> .....80	10 <sup>th</sup> .....55	15 <sup>th</sup> .....40	20 <sup>th</sup> .....40

- A. Any boat that starts a race by distance or time will be given points for the complete event according to the boat's finish although the boat need not be running at the end of the race.
- B. Each boat that makes a legal start will receive a minimum of 40 points.
- C. If more than one heat is run a day, the scorer will add points from all heats together. The final position for the day is then based on total point accumulation for the day, with 100 points the maximum for one day of racing.

#### **RULE 9 • NEW DRIVER RULES**

- 1. A driver who is driving for the first time in an Endurance race must do the following:
  - A. Drivers must be quizzed by a qualified official on safety rules.
  - B. Start in the back of the pack.
  - C. Driver will be judged on how he drives the race in order to receive his license approval, which consists of the Referee's membership number and signature on the face of the card.
- 2. New drivers and their boat numbers must be pointed out to all contestants at the drivers meeting.
- 3. New drivers will be eligible for prizes and trophies.

#### **RULE 10 • OFFICIALS, PROTESTS AND APPEALS**

- 1. At all regattas a minimum of two course judges shall be required. Preferably, however, there should be a course judge stationed at the entrance and exit buoys of each turn. To qualify as a course judge, and individual must have had driving or officiating experience.
- 2. All decisions of the Referee shall be final regarding violations of starting, driving, and course rules. Appeals will be allowed only if a suspension is involved. Technical questions about the legality of a boat or engine shall be referred to the appropriate Technical Committee.

#### **RULE 11 • TIME TRIAL AND RECORDS**

- 1. Any boat, to be eligible to compete in time trials for records, must first qualify by finishing third or better in an Inboard Endurance race within the previous 12 months. Qualifications may also be made at the same regatta on the same weekend as the time trials are being held.
  - A. To qualify, a GN boat must have permanently attached fuel capacity of fifty (50) gallons.
- 2. The following records can be established:
  - A. Kilo
  - B. 1 Hour

#### **RULE 12 • INBOARD ENDURANCE TECHNICAL RULES GRAND NATIONAL (GN) DIVISION**

- 1. Any hull meeting the General Endurance Racing Rules, providing the overall length is not more than 25 feet down the centerline, including extensions, will be acceptable if determined to be safe and manageable. Strakes (breaker strips) of not greater depth than 1-1/2 inches and running in a fore and aft direction, shall be allowed.
  - A. The keel of the boat cannot be more than 1 inch above the chine. The bottom configuration cannot produce a tunnel hull of a depth greater than 1 inch. No hydroplane or step-type hulls will be allowed and at no time can the strakes fore and aft, with no restriction, be over 1-1/2 inches in depth.
- 2. Only one (1) inboard engine mounted rear of amidships, driving an external propeller through a stationary strut, using a V-drive mounted forward of the engine to transmit power through a straight drive shaft to a propeller shall be permitted. Steering is to be accomplished using a

blade rudder mounted rear of the propeller and rotated to affect steering. Gearboxes shall be permitted.

3. Definition of Grand National (GN) Division:

- A. Allowable engine designs will consist of the following American made automotive or light truck engines, including aftermarket parts:
  - 1) Chevrolet big block-based engines must use common well intake port cylinder heads designed and machined for use with a 4.840" bore spacing.
  - 2) Chrysler B/RB based engines with non-hemispherical combustion chambers must use common wall intake port cylinder head designed and machined for use with a 4.8" bore spacing.
  - 3) Chrysler Hemi-based engines with hemispherical combustion chambers must use cylinder heads designed and machined for use with a 4.8" bore spacing.
  - 4) Ford "385 series" based engines must use wedge style heads designed and machined for the standard 4.9" bore spacing.
- B. Naturally aspirated, 545 cubic inches, max
- C. Cast iron engine blocks only. Aluminum heads are allowed.
- D. A maximum of 2 valves per cylinder is allowed. No overhead cams allowed. Any form of carburetion or fuel injection is allowed. All supercharged intake manifold bases must be cast for a minimum distance of 3" from the intake to cylinder head interface or spacer plate; except the 545 NA engine can run a sheet metal intake manifold. No restrictions on valve train or oiling systems.
- E. Other manufacturers' engines will have cylinder head guidelines developed for them as the need arises.
- F. Forced induction (with blower), 475 cubic inches max. All other naturally aspirated engine and cylinder head rules apply.
- G. Blower design, size and overdrive limited to the following options:
  - 1) GMC 6-71 design series (includes aftermarket replacements in 6 through 14-71 sizes). Only standard helix rotors will be allowed (max. 4 degrees of twist per inch of length). **Whipple Marine Screw Compressor with STD 1:36 pressure ratio discharge (compressor will be certified and stamped "GN" from the factory at Whipple).**
  - 2) **Sizing baseline for all blowers will be a STD 8-71 driver at 1:1 crankshaft speed, which is 470 cubic inches of air per revolution of 7.7 liters of air per revolution. 14.7 @ 0.80:1 or 10.7 @ 0.92:1 or 6.7 @ 1.08:1 or 3.0 liter Whipple @ 2.5:1 (7.5 liters per revolution) or 3.8 liter Whipple @ 2.0:1 (7.6 liters per revolution). Whipple Superchargers will run race gas or pump gas ONLY – NO E85.**
  - 3) Forward facing blower drives must have belt covers.
- H. The commission will address the parity of the two engines options by adjusting the blower size/overdrive limits (up or down) as required to maintain the competitive nature of the naturally aspirated vs. each of the forced induction packages.

## 14.8. Competition Jet (CJ)

- 14.8.1. V bottom hulls only.
- 14.8.2. A maximum overall length of 24 feet, including pump and extensions is allowed.
- 14.8.3. Hull depth would be a maximum of 28" from keel to deck seam.
- 14.8.4. Hull deadrise angle to be a maximum 20\* or 40\* total angle at the transom.

- 14.8.5.** All boats must be equipped with a minimum of two (2) visible continuous stringers from transom to bulkhead.
- 14.8.6.** The drivers seat and frame must be thru bolted to at least one (1) stringer (No Lag Bolts allowed).
- 14.8.7.** The engine will be mounted to the stringer also.
- 14.8.8.** Power to be supplied by one (1) U.S. built automotive or light truck engine, including aftermarket parts, with a maximum displacement of 515 cubic inches. OEM Aluminum Blocks are allowed with a maximum displacement of 475 cubic inches and a maximum bore spacing of 4.400". Aftermarket Aluminum Blocks are not allowed.
- A. Chevrolet big block engines must use common wall intake port cylinder heads designed and machined for use with 4.849" bore spacing.
  - B. A maximum of two (2) valves per cylinder is allowed. No Overhead Cams allowed. No restrictions on valve train or oiling systems. All intake manifold bases must be cast for a minimum distance of three (3) inches from the intake cylinder head or spacer plate.
  - C. Engine will be bolted and mounted forward of the Jet drive.
  - D. Engine will be Naturally Aspirated, any form of carburation or fuel injection is allowed.
- 14.8.9.** Single Jet Drive Only, used for marine application only.
- 14.8.10.** No Jet-a-Way or Driveline shield/guard required.
- 14.8.11.** Impeller and impeller housing must be mounted above keel as measured at centerline.
- 14.8.12.** Must be equipped with a turning rudder with a minimum of sixteen (16) sq. inches and extend at least four (4) inches below the lowest point of the jet nozzle.
- 14.8.13.** Place Diverter or Jet-O-Vator adjustable nozzles may be used. A positive diverter stop is required, and a rooster tail will not exceed four (4) to five (5) feet above the water line. This includes all fixed nozzle boats. The diverter shall remain in the full down position at all times on or near the launch ramp or pit area. Failure to do so in the opinion of the referee will result in a one (1) lap penalty.
- 14.8.14.** A thru bolted loader will be securely attached to the jet intake using four (4) 5/16" black oxide or grade eight bolts.
- 14.8.15.** The driver must be seated forward of the engine.
- 14.8.16.** Competition Jets will maintain their respective lanes from the Start of the race through the first turn. The lead boat must ensure that a four (4) boat length overlap condition applies prior to changing lanes. A violation of this rule in the opinion of the referee will result in a one (1) lap penalty or disqualification.

## **14.9. Classic Classes**

### **14.9.1. Classic Endurance**

- 14.9.1.1. Any hull built before 1982 or splash off of a hull built before 1982, with a length not more than 23'. This will include flat bottoms, v-bottoms, runner bottoms or tunnel bottoms.
- 14.9.1.2. Any powerplant, gas, diesel, with carburetors, injectors, blowers, turbochargers. No nitrous.
- 14.9.1.3. Propulsion systems include; direct drive, v-drive, in/out, outboard, and jet.

### **14.9.2. Classic Flatbottom**

- 14.9.2.1. Same requirements in year built and less than 23', flat bottom, runner bottom.

14.9.2.2. Engines, gasoline only. Any carb/induction/blower/turbos.

14.9.2.3. Propulsion system to include direct drive or v-drive.

**14.9.3. Classic Jet**

14.9.3.1. Any jet hull built before 1982 or replica.

14.9.3.2. Engines, gasoline only. Any carb/induction/blowers/turbos.

14.9.3.3. Any jet propulsion drive. The drive will not utilize any jet-o-vator that impairs driver visibility for a following boat.

**14.9.4. Speeds**

14.9.4.1. Maximum speed of 85.9 mph as recorded by a handheld GPS unit affixed to the boat or driver.

14.9.4.1.1. The GPS unit will be examined prior to the start of each individual heat and immediately after that heat. If the GPS unit does not register any speed or an obvious lower speed, that competitor will be penalized one (1) lap.

14.9.4.1.2. Additionally, if the speed recorded is 86-88 mph that competitor will be penalized one (1) lap.

14.9.4.1.3. If the speed is faster than 88 mph that competitor will be disqualified and at the discretion of the race officials will not compete in the classic class for the remainder of the event.

**14.9.5. Safety and Sportsmanship will be paramount and fostered at each and every event.**

14.9.5.1. It is the intention and goal of the "Classic" classes and competitors to have a safe and rewarding experience, and to allow as many Classic racers to bring what they have to race.

14.9.5.2. It will be the competitor's responsibility to have equipment that will pass a safety inspection prior to each event as required by race officials.

**14.9.6. The "Classic" classes will be run as a local class through an SCSC sanctioned event. Any questions or additional requirements will be addressed through the sanctioning organization(s) prior to the event.**

## **14.10. 1 Litre Hydroplane**

**14.10.1. GENERAL RULES**

14.10.1.1. The 1 Litre Hydroplane class letter is "Y". The "Y" and boat number must be a minimum of 9" high on both sides of the hull. The boats trailer and/or dolly must have the class letter "Y" and boat number, a minimum of 2.5" high.

14.10.1.2. Boats must be raced with one (1) person on board.

14.10.1.3. Minimum age of driver is 16 years.

14.10.1.4. Maximum number of boats per heat will be determined by the Race Director.

14.10.1.5. Minimum weight of the boat as raced, with driver, is 825 lbs.

14.10.1.6. Each 1 Litre Hydroplane boat must be inspected and certified by SCSC prior to participating in competition. Following certification, the owner must advise SCSC of any modifications to the boat that could affect its certification. SCSC may request a certification of a boat at any time.

14.10.1.7. The objectives of the rules for 1 Litre Hydroplane Class are to govern and promote an entry level class of propeller driver Inboard Racing Runabouts using limited and/or restricted engines and fuels.

14.10.1.8. All parts, including engines and hulls in their entirety, may be changed at any time, as long as said hull belongs to the same owner prior to that race.

**14.10.2. HULL**

Minimum Length	Maximum Length	Maximum Width
13'6"	14'6"	9'6"
14'6"+	17'6"	9'6"

**14.10.3. ENGINE**

14.10.3.1. Competing boats will be powered by one (1) internal combustion piston motor which complies with one of the following descriptions:

14.10.3.1.1. Maximum displacement, including clearances: 4 cycle – 1030cc.

Fuel: Gasoline or Methanol. Unlimited modifications

14.10.3.1.2. Maximum displacement, including clearances: 2 cycle – 1160cc.

Fuel: Gasoline, carburetors only, only a single expansion chamber exhaust system allowed. Unlimited modifications

14.10.3.1.3. Maximum displacement, including clearances: 4 cycle – 1260cc.

Fuel: Gasoline, carburetors only. Unlimited modifications

14.10.3.1.4. Maximum displacement, including clearances: 4 cycle – 1315cc.

Fuel: Gasoline, carburetors only, 1 venturi per cylinder. Unlimited modifications

14.10.3.1.5. Maximum displacement, including clearances: 124.7ci. Ford Pinto. Boats using this motor must conform to all the rules of the 2.5 Litre Stock Class.

14.10.3.1.6. No multi-speed or variable speed gear box, clutch or belt drive system allowed.

14.10.3.2. Blowers, superchargers and outdrives are prohibited.

14.10.3.3. No more than one (1) intake and one (1) exhaust valve per cylinder.

**14.11. 2.5 Litre Hydroplane****14.11.1. GENERAL RULES**

14.11.1.1. The 2.5 Litre Hydroplane class letter is "S" or "F". The boat number must be a minimum of 9" high on both sides of the hull. The boats trailer and/or dolly must have the class letter and boat number, a minimum of 2.5" high where possible, within three (3) feet of the trailer tongue.

14.11.1.2. Boats must be raced with one (1) person on board.

14.11.1.3. Minimum age of driver is 16 years.

14.11.1.4. Maximum number of boats per heat will be determined by the Race Director.

14.11.1.5. Minimum weight of the boat as raced, with driver, is 1025 lbs.

14.11.1.6. Each 2.5 Litre Hydroplane boat must be inspected and certified by SCSC prior to participating in competition. Following certification, the owner must advise SCSC of any modifications to the boat that could affect its certification. SCSC may request a certification of a boat at any time.

14.11.1.7. The objectives of the rules for 2.5 Litre Hydroplane Class are to establish a low cost stock class engine for racing using limited and/or restricted engines and fuels. To be eligible in the 2.5 Litre Stock Class, a boat must be powered by one stock automotive engine as furnished by the motor manufacturer.

14.11.1.8. All parts, including engines and hulls in their entirety, may be changed at any time, as long as said hull belongs to the same owner prior to that race.

**14.11.2. HULL**

Minimum Length	Maximum Length	Maximum Width
13'6"	17'6"	9'6"

**14.11.3. ENGINE**

14.11.3.1. Competing boats will be powered by one (1) internal combustion piston motor which complies with one of the following descriptions:

14.11.3.1.1. Ford 2300cc OHC Cast Iron Engine

14.11.3.1.2. Ford 2.0L DOHC Duratec Engine

**14.11.3.2. Ford 2300cc OHC Cast Iron Engine Specifications.**

14.11.3.2.1. Grinding, polishing or blasting any internal part that results in smoothing, re-contouring or enlarging is prohibited. Configuration changes in any way on the Ford 2.3 Litre engine are prohibited. Parts must be used as furnished by Ford or OMC. No alterations permitted except as specified herein.

14.11.3.2.2. Bore 3.825 maximum and stroke 3.126 maximum. Windage tray and/or crankshaft wipers are permitted. Water passages may be blocked.

14.11.3.2.3. **Cylinder Heads:** Only flat milling is allowed, angle milling is not permitted. Bronze wall valve guides are permitted. Valve guides may be machined to accept any stock or stock replacement valve stem oil seals. Replacement valve seats are permitted (must meet OEM specifications).

14.11.3.2.4. **Head Option 1:** Esslinger Ford Aluminum D-port, Ford part number M-6049-E23A. Heads must have the official ACHA stamps on at all times. Head must remain unaltered in any way except for the following: Casting and machining mismatch in the area under the valve cover may be contoured to allow for better oil return. No changes are permitted in the valve area. Combustion chamber volume: 61cc minimum. Intake and Exhaust valve seats may be reworked (valve job) but touching and/or altering the aluminum part of the bowl is prohibited. **Valves: Exhaust:** Manley # 11793 and 11795 (dia. 1.590"  $\pm$  0.010"). Single 45 degree angle only. **Intake:** Manley # 11792 and 11794 (dia. 1.890"  $\pm$  0.010"). Single 45 degree angle only. **Valve Springs:** Maximum spring O.D. 1.460", no conical springs permitted. Any steel replacement retainer (1.460" max diameter) and keepers permitted, no titanium. Spring seat may be machined to accept hardened spring seats and 1.460" valve springs.

14.11.3.2.5. **Head Option 2:** Any cast iron cylinder head supplied by Ford with correct valve size may be used that meets the minimum chamber volume (heart shaped chambers do not meet the minimum). Dual plug heads prohibited. Intake and Exhaust valve seats may be narrowed by cutting at 90 degrees or less, not to exceed .250 from combustion surface into bowl area. The following Ford 2.3 conversion head plates may be used: Goodson Automotive part number FAP-2300-EFI or K-Line part number KL9661. This plate may be fitted to the cylinder head. Total thickness of adapter mounting flange and two (2) gaskets (1 each side) not to exceed .500" total combined. **Valves:** Valve head diameter: Intake valve 1.735". Intake valve may have 20 degrees back cut, not to exceed .205 in width. Exhaust valve 1.500" with no back cut. Minimum valve stem diameter: 0.340". **Valve Springs:** Any spring that fits the head without machining. Maximum spring O.D. 1.460", no conical springs permitted. Any stock or stock steel replacement

retainer that fits the stock keepers may be used. Retainer must not be modified.  
Cylinder head chamber volume 61cc minimum.

- 14.11.3.2.6. **Head Internals: Camshaft:** Any aftermarket cam can be used providing it meets profile under these class rules. Maximum lift at valves 0.406 inches (+1% or 0.410" max. for tolerance) (See inspection procedure to check camshaft). Suggested camshafts are CamCraft 38 or Melling SFP-2. **Lifters:** Any stock or stock replacement hydraulic lifter may be used. Anti-pump up lifters is permitted. **Rocker Arms:** Stock or stock replacement with a ratio of 1.64 to 1. Stock replacement followers with wear pads such as Esslinger E2293, Race Engineering cr-66993-8, or Racer Walsh RWA 1484 can be used and are considered stock replacement. Adjustable cam gears are permitted. Dual plug heads or roller rocker arms are prohibited.
- 14.11.3.2.7. **Pistons:** Federal Mogul #H453P or #495P, additionally SRP #148221 or #148222. Pistons may not be reversed. The minimum distance from the top of the piston to the top of the first ring shall be no less than: Federal Mogul: 0.245", SRP: 0.195". Straight walled piston pins as received from the piston manufacturer shall be used. Piston rings must be of the type supplied by Ford. The first and second rings (compression) must be one piece design. The third ring must be a three piece design consisting of two rails and one expander. Top of piston must be below the top surface of the compressed head gasket a minimum of 0.040".
- 14.11.3.2.8. **Intake Manifold:** OMC part number #912470 or Esslinger engineering part #2724.5 (626-444-4919). When using the Esslinger intake, matching of the intake and the spacer is allowed by contouring the inside of the intake to a maximum of 0.750" deep. No other modification to the inside of the intake is permitted. The use of any deflector is prohibited.
- 14.11.3.2.9. **Carburetors:** Any Rochester 2 GC carburetor will be allowed as long as the throttle bore diameter is no larger than 1.690 and venturi diameter is no larger than 1.320. Additionally, Holley model 2300 part #0-4412 and HP 0-80583-1 venturi diameter 1.380 max., throttle bore diameter 1.690 max. Holley #2300, part #0.7448 and HP 0-80787-1 two jet venturi diameter 1.190 max., throttle plate size 1.502 max. 350 CFM carburetor. Removal of air cleaner base for installation into boat is permitted. Must be a booster type carburetor. No polishing allowed. The carburetor must have a choke horn and it must remain untouched, however the choke plate may be removed. Only the original components of the carburetor manufacturer may be used (No billet metering blocks, or boosters), however, Holley jets may be used in the Rochester carburetor. Fine tuning of jets, power valves, float bowl, metering block, accelerator pump and nozzles is permitted. A carburetor wedge may be used. The total dimension of wedge and gaskets measured from the intake manifold to carb base shall not exceed 1.250 inches.
- 14.11.3.2.10. **Fuel Pump:** Must be original stock or stock replacement mechanical or electric fuel pump sold on open market for general automobile trade. A fuel pressure regulator may be used.
- 14.11.3.2.11. **Distributor:** Any single fire electronic or points distributor that fits the engine without modification is permitted. Magneto crank triggered or multiple spark discharge systems are not permitted.

- 14.11.3.2.12. **Flywheels:** Aluminum flywheels are mandatory. The ring gear shall remain stock with 132 teeth or the 2000 Pinto ring gear with 135 teeth and a minimum wall thickness of 0.468 inches must be maintained throughout the aluminum plate except for pilot and mounting holes. No additional holes permitted. Spot removal of material for balancing purposes only is permitted.
- 14.11.3.2.13. **Starter:** Any starter that functions like the stock starter. Blocks, may be clearanced to allow for starter installation only.
- 14.11.3.3. **Ford 2.0L DOHC Duratec Engine Specifications**
- 14.11.3.3.1. Engine must be a 2005-2009 Ford “Duratec 20” 2.0L, 4 cylinder, DOHC (non-direct injected, non-variable valve timing), block casting 2.0L. Parts must be used as furnished by Ford. No alterations permitted except as specified herein. No grinding of factory cast parts. Bore maximum: 3.464” (88.0mm) (this is .5mm or .020” overbore) and Stroke maximum 3.279” (83.3mm). Maximum compression ratio of 10.3:1. Oil pan, pick up, and filter system may be altered to fit boat and incorporate baffles, windage tray and/or crankshaft wipers. Oil pan must remain a wet sump system.
- 14.11.3.3.2. **Cylinder Head:** Minimum distance from top of piston at TDC to top of must compressed head gasket .040”. Minimum combustion chamber volume: 42.0cc. Head must remain unaltered in any way except the following: only flat milling is allowed and intake and exhaust valve seats may be reworked (valve job) but touching and/or altering the aluminum part of the bowl is prohibited. Any stock or equivalent stock replacement head gasket may be used, recommend Ford Part Number: 1S7Z-6051-AA. Minimum compressed gasket thickness of .022”.
- 14.11.3.3.3. **ECU:** Engine to be controlled and run with an unaltered OEM powertrain control module (PCM). OBDII port MUST be retained and function properly (this is recommended for diagnostic purposes as well). Wiring harness may be modified or custom made to use any fuse/relay system to power the engine. Unused circuits into or out of the ECU may have the wire/pins removed but remaining pins must be in the factory locations, in other words, the pin-out locations must remain as from the factory. Any sensor may be removed or disconnected, but shall not be modified or altered to perform or record values in anyway other than its OEM intended method with the following exceptions: Downstream O2 sensor (#2) may be “tricked” to report exhaust gasses as if a catalytic converter were present. Output Shaft Speed sensor (transmission) may be mounted in such a way as to report a theoretical speed to the PCM thereby “tricking” the PCM into allowing the fuel injectors to actuate.
- 14.11.3.3.4. **Ignition System:** Crank trigger wheel must be factory 36-1 configuration and remain in stock position relative to crank. No altering or clocking to adjust timing is allowed. Ignition coils must be OEM or OEM equivalent replacement coil-on-plug. No “performance” versions may be used. To prevent tampering with the programming within the PCM (computer), a modified “claimers” rule may be enacted by a person who suspects cheating. The accused boat will be made to replace the existing PCM in the boat with another known good “sealed” PCM. Because tuning the PCM requires a VIN number from the vehicle it was removed from, it will prevent further tampering as the new VIN will be unknown.

- 14.11.3.3.5. **Fuel System:** Any electric fuel pump sold on open market for general automobile trade may be used. A fuel pressure regulator must be used. Fuel pressure must be between 45-75psi (recommend 55psi). Return type fuel pressure regulator is allowed in lieu of factory return less fuel system. Fuel injectors must be 12ohm resistance, have a flow rate of 240cc/min (22.83lb/hr) @ 43.5psi and be Bosch EV6.
- 14.11.3.3.6. **Intake Manifold:** Must be factory Ford plastic manifold. No alterations allowed except the following: Vacuum ports may be used as reference for fuel pressure regulator. Unused vacuum ports may be plugged. Intake Manifold “tumbler flaps” may be removed to avoid potential failure and subsequent engine damage. Any aftermarket intake tube and/or air filter may be used in combination with factory Mass Air Flow Sensor. The inside diameter of the tube or insert must be 2.362” (60mm) at the location of the MAF Throttle body must remain as from the factory, no modifications allowed. Inside diameter of throttle body at opening must be between 2.55-2.60”.
- 14.11.3.3.7. **Exhaust System:** EGR (Exhaust Gas Recirculation) valve/system may be removed and blocked off. Any exhaust header type/style may be used.
- 14.11.3.3.8. **Starting System:** Any starter that functions like the stock starter may be used in the stock location.
- 14.11.3.3.9. **Cooling System:** Cooling system parts may be altered, removed and/or blocked off in favor of typical “forced raw water cooling”. Flywheel – must be Ford OEM flywheel or flex plate. Flywheel or flex plate may be balanced only. Ring gear must have 112 teeth and OD must be 11.125” minimum.
- 14.11.3.3.10. **Oil System:** Oil filter may be relocated to suit fitment to boat. Any aftermarket oil filter system/relocation kit may be used.

## 14.12. 5 Litre Hydroplane

### 14.12.1. GENERAL RULES

- 14.12.1.1. The 2.5 Litre Hydroplane class letter is “E” or “H”. The boat number must be a minimum of 9” high on both sides of the hull. The boats trailer and/or dolly must have the class letter and boat number, a minimum of 2.5” high where possible, within three (3) feet of the trailer tongue.
- 14.12.1.2. Boats must be raced with one (1) person on board.
- 14.12.1.3. Minimum age of driver is 18 years.
- 14.12.1.4. Maximum number of boats per heat will be determined by the Race Director.
- 14.12.1.5. Minimum weight of the boat as raced, with driver, is 1525 lbs.
- 14.12.1.6. Each 5 Litre Hydroplane boat must be inspected and certified by SCSC prior to participating in competition. Following certification, the owner must advise SCSC of any modifications to the boat that could affect its certification. SCSC may request a certification of a boat at any time.

### 14.12.2. HULLS

Minimum Length	Maximum Length	Maximum Width
16”	21”	11”

### 14.12.3. TECHNICAL RULES

- 14.12.3.1. **General Motors 305 Cu. In. Engine**

- 14.12.3.1.1. The engine must be a General Motors V-8 305 cubic inch 2 barrel carburetor motor.
- 14.12.3.1.2. Grinding, polishing or blasting any internal part that results in smoothing, recontouring or enlarging is prohibited.
- 14.12.3.1.3. Parts must be used as furnished by General Motors. Alterations are not permitted except as specified herein.
- 14.12.3.1.4. Bore 3.771 max. This allows the use of .030 oversized dished pistons. Stroke 3.480 plus or minus .010.
- 14.12.3.1.5. **Valves:** Head diameter: Intake 1.720, Exhaust 1.500. Back cutting of the intake and exhaust valves up to the valve stem is permitted.
- 14.12.3.1.6. **Cylinder Head:** Any cylinder head that was supplied by General Motors on a 305 2 barrel motor with the correct valve size may be used. The minimum combustion chamber volume is 59cc. Angle milling is not permitted.
- 14.12.3.1.7. Any aftermarket cam may be used providing it meets OEM profile under these class rules.
- 14.12.3.1.8. **Rocker Arms:** Stock or stock replacement.
- 14.12.3.1.9. Pistons must be stock General Motors dished piston or TRW part# 3028F or casting# 454NP on side of pin boss. It is important to note that the pistons manufactured after 5/95 are being sipped with the dish “as cast.” This means the dish area is of the piston must be machined before the piston will meet the requirements of the rule. See drawing for dish dimensions. Pistons may be balanced and the dish machined, no other modifications will be allowed. The pistons listed above may be reversed. In addition to the above-mentioned pistons, the following parts may be used:  
J/E Piston Part# 174002 Pin# 9272850-1551S. Manley Part# 14112A8  
Eagle part# SIR5700BPLW, Lunati part# LHAF, Scat part# 2ICR5700P, Scat part# 3ICR5700P 34 Crower part# SP91200  
No changes or alterations can be made to these parts, this includes balancing.
- 14.12.3.1.10. **Piston Rings:** Must be of the type supplied by General Motors. The 1<sup>st</sup> and 2<sup>nd</sup> rings (compression) must be 1 piece design, .078 +.003 wide. 3<sup>rd</sup> ring (oil) must be 3 piece design, consisting of 2 rails and 1 expander.
- 14.12.3.1.11. **Carburetors:** Rochester OEM 2 Jet. Venturi size 1.190” max. Throttle plate size 1.688” max. Holley 2 bbl – part# 4412, and alternate part# HP O-80583-1. No polishing or other modifications allowed, including the following parts:
- Accelerator pump
  - Power valve (may not be removed)
  - Float assembly and float bowl (except adjustment of float lever)
  - Throttle plate, throttle shaft and screws
  - Air horn
- Holley replacement parts may be used that were designed and sold for the 4412 carburetor; and require no modifications for their use. Venturi dimension: 1.380” maximum; Throttle bore/plate dimension: 1.690” maximum; Throttle plate/shaft combined thickness dimension: 0.187” minimum. Booster – ID: 0.380” (±0.03”), OD: 0.620” (±0.10”). Only the following metering blocks can be used, with no

modifications allowed: Holley part# 5924 / 5925 / 10570 / 12201. Manual choke mechanism may be removed and choke assembly holes plugged.

**OR** Carburetor/Spacer per rule 3.4.12 provided engine 2.1 with this option is declared prior to inspection.

- 14.12.3.1.12. **Lifters:** Stock or stock replacement. Solid lifters may be substituted for hydraulic lifters. No mushroom or roller lifters.
- 14.12.3.1.13. **Valve Springs:** Any valve spring may be used that fits the stock retainer. Spring retainer must be stock or stock replacement.
- 14.12.3.1.14. **Intake Manifold:** Stock 2 barrel cast part# 346260, aluminum part# 373598, the manifold may be milled on head mating surface and may be milled on carburetor mounting surface to compensate for engine angle.  
**OR** Intake manifold per rule 3.4.12 provided engine 2.1 with this option is declared prior to inspection.
- 14.12.3.1.15. **Distributor:** Any single fire electronic or points distributor that fits the engine without modification is permitted. Magneto crank triggered or multiple spark discharge systems are not permitted.
- 14.12.3.1.16. **Flywheel:** Any type – 11,000 minimum diameter.
- 14.12.3.1.17. Camshaft sprockets, crankshaft sprockets and chain may be any “chain type.” No belt or gear drives.
- 14.12.3.1.18. **Fuel Pump:** Any mechanical diaphragm type. No pressurized fuel tanks.
- 14.12.3.1.19. **Oil Pump:** Any General Motors oil pump that fits in the stock location without modification may be used. Oil pickup tube and bypass spring may be modified.
- 14.12.3.1.20. **Push Rods:** Stock or stock replacement.
- 14.12.3.1.21. **Starter:** Any starter that functions like the stock starter. No pressurized fuel tanks.
- 14.12.3.1.22. **Oil Pan:** Any oil pan or baffles may be used. No dry sumps.
- 14.12.3.1.23. The following items may be of any manufacture: gaskets, spark plugs, wires, bearings, filters, fuel lines, hoses, fittings, valve covers, timing chain covers, breathers, nuts, bolts, washers, fittings and exhaust system.
- 14.12.3.1.24. The following machining procedures and parts are permitted:  
Engines may be clearanced. Rotating and reciprocating parts may be balanced. The block may be decked. Top of piston must be below the top surface of the compressed head gasket a minimum of .030. Intake and exhaust valve seats may be narrowed by cutting below the top surface of the compressed head gasket a minimum of .030. Intake and exhaust valve seats may be narrowed by cutting at 90 degrees or less, not to exceed 1” from combustion surface in bowl area on intake and exhaust side of seat. Inner intake seat diameter not to exceed 1.625. Intake and exhaust valve parts may not be altered in any way. Polylocks are permitted. Bronze wall valve guides are permitted. Valve guide seals are permitted. Push rod guide plates are permitted. Rocker arm studs may be pinned or screw in studs used. Cylinder walls may be sleeved. Water and oil passages may be blocked. Removal of air filter hold down in top of carburetor is permitted. A carburetor wedge may be used. Max thickness 1.000 with gaskets and spacer

(exhaust gas diverter, commonly known as a spacer). A velocity stack or tube may be affixed to the carburetor. Valve spring seats may be machined.

14.12.3.1.25. **Fuel:** All stock classes and classes that designate “gasoline” as a fuel without additives must use unleaded fuel corresponding to petroleum based fuel as defined by American Society for Testing and Materials (ASTM), designation: D4814, with the following clarifications:

- a. The specific gravity must fall within the range: .715 to .765 at 60°F.
- b. The maximum oxygen content is 4.0% by weight.
- c. The only allowable oxygenates are ether and alcohols, as listed and characterized for oxygen mass fraction in ASTM D4814.
- d. The ethanol content must be less than 25% by volume.
- e. Epoxides (i.e. propylene oxide) will not be considered ethers. Nitrogen bearing compounds are not allowed.
- f. Lubrication additives are permitted, provided the resulting mixture would meet all other requirements.

14.12.3.1.26. The Inspector shall reserve the right to have any part or parts removed from the engine for inspection. Any parts in question must be sent to the SCSC Technical Committee for review.

14.12.3.1.27. In the event that a record is established, the engine must be dismantled to determine the legality of the parts. The valve train system will be checked using the following method. Engine builders are urged to use this same method as machining and part replacement can have an effect on valve lift and duration.

- Tools Required: One (1) 6” or 8” degree wheel attached to rotor button in distributor; one (1) 500 thousandths travel dial indicator and a wire pointer.
  - *Inspectors Note:* If the engine to be inspected is using hydraulic lifters, the inspector should have in his list of inspection tools two (2) solid lifters to use during this procedure.
- Procedure:
  - Rotate engine in normal direction until the lifter is on the heel of the camshaft lobe.
  - Set dial indicator on valve spring retainer.
  - Adjust valve lash until dial indicator reads .001.
  - Set dial indicator back to zero.
  - Rotate engine in normal direction until dial indicator reads .050 stop.
  - Set degree wheel to zero degrees or TDC mark on degree wheel.
  - Rotate engine in normal direction and check every .050 thousandths lift.
  - Read degrees on degree wheel.

	Exhaust Lobe		Intake Lobe		
	<u>Lift</u>	<u>Degrees</u>	<u>Lift</u>	<u>Degrees</u>	
s	0.050	0.0	0.050	0.0	s
	0.100	6.0	0.100	6.5	
	0.150	12.0	0.150	12.0	
opening	0.200	17.0	0.200	17.0	opening
ramp	0.250	22.0	0.250	22.0	ramp
	0.300	28.0	0.300	28.0	

	0.350	35.0	0.350	35.5	
	0.400	46.5	0.400	50.0	
t	0.410	54.0	0.402	53.0	t
stays open	0.410	57.5	0.402	56.0	stays open
s	0.400	63.5	0.400	58.0	s
	0.350	74.5	0.350	72.0	
	0.300	81.0	0.300	79.0	
closing	0.250	87.0	0.250	85.0	closing
ramp	0.200	92.5	0.200	90.0	ramp
	0.150	97.5	0.150	95.0	
	0.100	103.0	0.100	100.5	

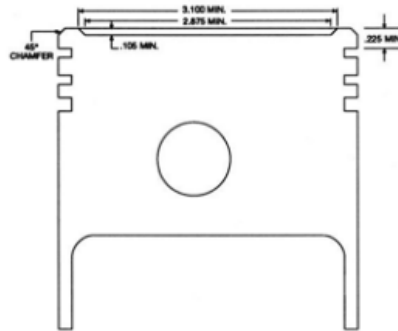
**305 GM MOTOR**

t	0.050	110.0	0.50	107.0	t
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**Piston Dish Dimensions**

Maximum lift at valve: Exhaust .414 Intake .403

To check lobe spacing open exhaust valve to .250 thousandth lift. Set degree wheel to zero. Open intake valve to .250 thousandths lift. The degree wheel should read 116 degrees to 232 crankshaft degrees

**14.12.3.2. Ford Motor Company 302 Cu. In. Engine**

14.12.3.2.1. The engine must be a Ford Motor Company V-8 302 cubic inch 2 barrel carburetor motor.

14.12.3.2.2. Grinding, polishing or blasting any internal part that results in smoothing, recontouring or enlarging is prohibited.

14.12.3.2.3. Parts must be used as furnished by Ford Motor Company. Alterations are not permitted except as specified herein.

14.12.3.2.4. Bore 4.065 max. This allows the use 0.060" oversized flat top pistons. Stroke 3.000"  $\pm 0.010$ ".

14.12.3.2.5. **Valves:** Head diameter: Intake 1.788 maximum, Exhaust 1.455 maximum.

Back cutting of the intake and exhaust valves up to the valve stem is permitted.

14.12.3.2.6. **Cylinder Head:** Must be Ford Motor Company casting# E5AE CA or D8OE AB, with 1.788 intake and 1.455 exhaust. Minimum combustion volume is 69cc.

14.12.3.2.7. **Camshafts:** Any after market cam can be used providing it meets OEM profile under these class rules.

14.12.3.2.8. **Rocker Arms:** Stock to stock replacement.

14.12.3.2.9. **Pistons:** Must be stock cast flat tops with four (4) valve reliefs or TRW# L2488 F may be used.

14.12.3.2.10. **Piston Rings:** Must be of the type supplied by Ford Motor Company. The 1<sup>st</sup> and 2<sup>nd</sup> rings (compression) must be 1 piece design, 3<sup>rd</sup> ring (oil) must be 3 piece design consisting of 2 rails and 1 expander.

14.12.3.2.11. **Carburetor:** Holley 2 barrel #0-4412 or HP 0-80583-1. No polishing or other modifications allowed, including the following parts.

- Accelerator pump
- Power valve (may not be removed)
- Float assembly and float bowl (except adjustment of float lever)
- Throttle plate, throttle shaft and screws
- Air horn

Holley replacement parts may be used that were designed and sold for the 4412 carburetor; and require no modifications for their use. Venturi dimensions: 1.380" maximum, Throttle bore/plate dimension: 1.690" maximum, Throttle plate/shaft combined thickness dimension: 0.187" minimum. Booster: ID: 0.380" ( $\pm 0.03$ "), OD: 0.620" ( $\pm 0.10$ "). Only the following metering blocks can be used, with no modifications allowed: Holley part# 5924 / 5925 / 10570 / 12201. Manual choke mechanism may be removed and choke assembly holes plugged.

**OR Carburetor/Spacer per rule 14.12.3.4.12**

14.12.3.2.12. **Lifters:** Stock or stock replacement. Solid lifters may be substituted for hydraulic lifters. No mushroom or roller lifters.

14.12.3.2.13. **Valve Springs:** Any valve spring may be used that fits the stock retainer. Spring retainer must be stock or stock replacement.

14.12.3.2.14. **Intake Manifold:** Stock cast iron or aluminum 2 barrel. The intake manifold may be milled on the head mating surface. OR Edelbrock 7121 dual plane aluminum intake manifold is allowed. Cooling bleed lines allowed. Any evidence of sanding, polishing, relieving, grinding, porting, chemical treating, abrasive blasting, ceramic work, addition of material or any alteration and modification of the original form is prohibited.

14.12.3.2.15. **Distributor:** Any single fire electronic or points distributor that fits the engine without modification is permitted. Magneto, crank triggered or multiple spark discharge system are not permitted.

14.12.3.2.16. **Flywheel:** Any type 11.000 minimum diameter.

14.12.3.2.17. Camshaft sprockets, crankshaft sprockets and chain may be any "chain type." No belt or gear drives.

14.12.3.2.18. **Fuel Pump:** Any mechanical diaphragm type. No pressurized fuel tanks.

14.12.3.2.19. **Oil Pump:** Any Ford Motor Company oil pump that fits in the stock location without modification may be used. Oil pick-up tube and bypass spring may be modified.

14.12.3.2.20. **Push Rods:** Stock, stock replacement or after market adjustable.

14.12.3.2.21. **Starter:** Any starter that functions like the stock starter. No inertia starters.

14.12.3.2.22. **Oil Pan:** Any oil pan or baffles may be used. No dry sumps.

14.12.3.2.23. The following items may be of any manufacture: gaskets, spark plugs, wires, bearings, filters, fuel lines, hoses, fittings, valve covers, timing chain covers, breathers, nuts, bolts, washers, fittings and exhaust system.

14.12.3.2.24. The following machining procedures and parts are permitted.

**14.12.3.2.25. Fuel (See Rule 14.12.3.1.25)**

14.12.3.2.26. The Inspector shall reserve the right to have any part of parts removed from the engine for inspection. Any parts in question must be sent to the SCSC Technical Committee for review.

14.12.3.2.27. In the event that a record is established, the engine must be dismantled to determine the legality of the parts. The valve train system will be checked using the following method. Engine builders are urged to use this same method, as machining and part replacement can have an effect on valve lift and duration.

Method for checking the camshaft profile and rocker arm ration in the engine:

- Tools Required: One (1) 6" or 8" degree wheel attached to rotor button in distributor; one (1) 500 thousandths travel dial indicator and a wire pointer.
  - *Inspectors Note:* If the engine to be inspected is using hydraulic lifters, the inspector should have among his inspection tools two (2) solid lifters and two (2) adjustable push rods.
- Procedure:
  - Rotate engine in normal direction until the lifter is on the heel of the camshaft lobe.
  - Set dial indicator on valve spring retainer.
  - Adjust valve lash until dial indicator reads .001.
  - Set dial indicator back to zero.
  - Rotate engine in normal direction until indicator reads .050 stop.
  - Set degree wheel to zero degrees or TDC mark on degree wheel.
  - Rotate engine in normal direction and check every .050 thousandths lift.
  - Read degrees on degree wheel.

Exhaust Lobe			Intake Lobe		
	<u>Lift</u>	<u>Degrees</u>	<u>Lift</u>	<u>Degrees</u>	
s	0.050	0.0	0.050	0.0	s
	0.100	7.0	0.100	6.0	
	0.150	13.0	0.150	11.0	
opening	0.200	19.0	0.200	16.0	opening
ramp	0.250	25.0	0.250	21.0	ramp
	0.300	30.0	0.300	26.0	
	0.350	37.0	0.350	32.0	
	0.400	45.0	0.400	41.0	
t	0.440	62.0	0.431	53.0	t
s	0.440	64.0	0.431	56.0	s
	0.400	77.0	0.400	68.0	
	0.350	85.0	0.350	76.0	
	0.300	91.0	0.300	83.0	
closing	0.250	96.0	0.250	88.0	closing
ramp	0.200	101.0	0.200	93.0	ramp
	0.150	106.0	0.150	97.0	
	0.100	111.0	0.100	103.0	
t	0.050	118.0	0.050	109.0	t

\*Maximum lift at valve: Exhaust .440, Intake .431

To check lobe spacing open exhaust valve to .250 thousandth lift. Set degree wheel to zero. Open intake valve to .250 thousandths lift. The degree wheel should read 118 degrees or 236 crankshaft degrees.

14.12.3.3. **General Motors 350 cubic inch engine**

Below are the engine rules for the 350 engine option, stating specifically what is allowed for its use. Any modification or components not listed are not allowed.

14.12.3.3.1. **Engine parameters:** Maximum displacement: 358 cubic inches, Compression ratio: 9.19:1 ( $\pm 0.1$  or 9.29:1 Max)

14.12.3.3.2. **Block:** Stock cast iron production GM V-8 style block with standard external measurements only, no V-6 or 4 cylinder blocks allowed. Identification numbers may not be removed. No grinding or lighting allowed.

14.12.3.3.3. A maximum of three cylinder bores and/or a maximum of seven lifter bores may be sleeved. (No indexing lifter bores)

14.12.3.3.4. Only aftermarket engine block permitted: Dart SHP# 31161111.

14.12.3.3.5. **Crankshaft:** Steel magnetic crankshafts only, minimum weight: 50 lbs. including balancing. Unaltered in any way except for normal cleanup and balancing. May not be contoured or sculptured. Stock aftermarket "as cast" (over the counter) "knife edge" from major manufacturer is allowed. No modifications after purchase allowed. Stroke: 3.480"  $\pm 0.010$ ". Stock main journal (2.4450") and rod journal (2.100") sizes only (undercut maximum: 0.030").

14.12.3.3.6. **Connecting Rods:** Any large journal magnetic steel type connecting rods only. Maximum length: 5.700"  $\pm 0.010$ ". Minimum weight: 600 grams including cap, bolts and/or nuts. Must use full floating pins. No titanium or aluminum rods.

14.12.3.3.7. **Pistons:** Any piston may be used. Pistons must remain in stock configuration. Piston skirt must be a full round. No FSR style pistons. No portion of the piston may protrude above the top of the block (measurement excludes head gaskets). No gas porting of piston ring lands and no top of piston coating of any kind. Ring lands must remain in standard location. Minimum distance between top of piston and top of first ring (compression): 0.180". The weight of each piston should not be less than 590 grams including the wrist pin and "C" clips and rings. Maximum size over standard piston allowed (0.040").

14.12.3.3.8. **Piston Rings:** Must be of the type supplied by General Motors. The 1<sup>st</sup> and 2<sup>nd</sup> rings (compression) must be 1 piece design, 3<sup>rd</sup> ring (oil) must be 3 pieces design, consisting of 2 rails and 1 expander. Moly file fit rings allowed. Minimum thickness of rings 1/16" for top and second, 3/16" for oil control ring. No gapless rings allowed.

14.12.3.3.8.1. **Option 1 Camshaft:** During the inspection process the maximum valve lifts are as follows: Intake: 0.467" Exhaust: 0.480".

14.12.3.3.8.2. **Option 2:** Comp Cams part# 12-675-4

14.12.3.3.9. **Valvetrain:** Stock diameter magnetic steel hydraulic or solid flat tappets with a maximum diameter of 0.842". Stock sized push rods only. Size 5/16" all the way (no titanium or exotic material). No mushroom or roller tappets. No rev kits. Double roller or standard timing chain only, no gear drive or belt drive systems. Roller rocker arms allowed. No shaft rocker arm systems. 1.50 Ratio only. Stud girdles allowed. Valve Springs: Any valve spring may be used, maximum

diameter: 1.250" ( $\pm 0.010$ "). Spring retainer: Steel only, no exotic material. Standard diameter cam bearing only, no cam roller bearing allowed.

14.12.3.3.10. **Head:** The only allowable head for use is Dart part# 10021070 Dart Iron Eagle S/S 165. Heads must remain unaltered in any way except for flat milling of deck. (No angle milling allowed). Machining outer edge of valve guide for smaller valve seals and bronze linear allowed. Combustion chamber, intake and exhaust ports must be in the original "as cast" configuration Minimum volume of the combustion chamber: 64cc. Head intake runner volume: 175cc ( $\pm 2$ cc). Head exhaust runner volume: 70cc ( $\pm 2$ cc). Valves must be in stock location and at stock angle. Screw in studs (maximum size 0.4375") and guide plates allowed. No gasket matching. Any evidence of sanding, polishing, relieving, grinding, porting, chemical treating, ceramic work, abrasive blasting and alteration to the original form or the addition of material to the ports or combustion chambers are prohibited. Dart Iron Eagle S/S 165 tech sheet will be used for thorough inspection.

14.12.3.3.10.1. **Gasket/Port Matching:** It shall be permissible to perform a minor port match on the intake ports of the heads and intake manifold at the flange mating surface of each if a minimum hull weight of 1,700 lbs with driver is met. The heads shall meet rule 2.3.10 in its entirety other than this modification. The intake shall meet rule 3.3.12 in its entirety other than this modification. Dimensions shall be as follows:

- Maximum width to the outside wall of both ports shall be 2.70"
- Maximum width of each port wall to wall shall be 1.25" each
- Minimum width of port dividing wall shall be .200"
- Maximum height of each port shall be 1.975"
- Maximum port intrusion measured from the flange face of heads/intake shall be .625"
- Maximum Intake port volume will be 178cc
- There will be no tolerance to the above max/min measurements

14.12.3.3.11. **Valves:** Any manufacturer may be used, no titanium or exotic material. Seat angle must be 45 degrees. Swirl polish allowed. Maximum exhaust diameter: 1.500" with a minimum stem diameter of 0.340". Maximum intake diameter: 1.940" with a minimum stem diameter of 0.340". Valve stem must remain the same size all the way. No back-cut allowed.

14.12.3.3.11.1. **Valve Modification:** It shall be permissible to back cut valves that meet rule 3.3.11 above in its entirety if a minimum hull weight of 1,700 lbs with driver is met. The maximum distance of the required 45\* seat angle and the back cut may not exceed more than .250" as measured from the edge of the valve.

14.12.3.3.12. **Intake Manifold:** Only an Edelbrock 7101 dual plane aluminum intake manifold is allowed. Cooling bleed lines allowed. Any evidence of sanding, polishing, relieving, grinding, porting, chemical treating, abrasive blasting, ceramic work, addition of material or any alteration and modification of the original form is prohibited.

14.12.3.3.13. **Carburetor/Spacer:** Holley 4412 carburetor or Holley HP #80583-1 allowed. Venturi size: 1.375", Throttle bore: 1.687". The carburetor must pass top and bottom dimension tool specs. Choke plate may be removed but no removal of choke housing. No other visible modifications allowed on or inside the carburetor. Standard boosters only and must be tightly mounted. No annular boosters. Epoxying or safety wiring of boosters recommended. No vacuum leaks. No turtles or other induction performance enhancing devices. No other systems allowed. The use of two return springs is mandatory. An over-center throttle stop is recommended. Carburetor adapter (spacer) Bicknell #376 (maximum 1.00") only, no modification allowed to adapter except for attaching hardware such as a throttle bracket. An additional maximum size thickness straight bore spacer of 1.00" may also be used. Maximum of 3 gaskets for a total thickness of 0.266" allowed.

14.12.3.3.14. **Method for checking the camshaft profile for the 350 cam:**

- Tools required: One 6" or 8" degree wheel attached to rotor button in the distributor; one 500 thousandths travel dial indicator and a wire pointer
  - *Inspectors Note:* If the engine to be inspected is using hydraulic lifters, the inspector should have among his inspection tools two solid lifters and two adjustable push rods.
- Procedure:
  - Rotate engine in normal direction until the lifter is on the heel of the camshaft lobe.
  - Set dial indicator on valve spring retainer.
  - Adjust valve lash until dial indicator reads .001.
  - Set dial indicator back to zero.
  - Rotate engine in normal direction until indicator reads .050 stop.
  - Set degree wheel to zero degrees or TDC mark on degree wheel.
  - Rotate engine in normal direction and check every .050 thousandths lift.
  - Read degrees on degree wheel.

- Lobe separation: Comp Cam: 110° ACHA Cam: 112°

Exhaust	Comp		ACHA	Intake	Comp		ACHA
0.050	0		0	0.050	0		0
0.100	6		5.5	0.100	6		5
0.150	11		10.5	0.150	11		10
0.200	16		15.5	0.200	16		15
0.250	21		20	0.250	20.5		19.5
0.300	26		25.5	0.300	25.5		24.5
0.350	31		30.5	0.350	30.5		30.5
0.400	37		37	0.400	37		37.5
0.450	44.5		47	0.450	45		49.5
<b>0.488*</b>	51	<b>0.471**</b>	59.5	<b>0.477*</b>	51	<b>0.458**</b>	57.5
0.450	77		72	0.450	73		66
0.400	85		81	0.400	81		77.5
0.350	91		87.5	0.350	87.5		84

0.300	96	93	0.300	92.5	89.5
0.250	101	98	0.250	97	94.5
0.200	105.5	103	0.200	102	99
0.150	110.5	108	0.150	107	10
0.100	115.5	113	0.100	112	109
0.050	122	119	0.050	118.5	114.5

\*Measured Max lift and degree of Comp Cam

\*\*Measured Max lift and degree of ACHA Cam

14.12.3.3.15. **Ignition:** Any factory stock HEI type ignition only. No crank triggers. No external super coils. No aftermarket multiple spark discharge control boxes. Firing order must remain stock GM: 1.8.4.3.6.5.7.2.

14.12.3.3.16. **Oil System:** Aftermarket oil pans and breather allowed. Wet sump oil pump must remain in stock location. Dry sumps allowed. Maximum three stages only. Oil coolers allowed. "Aeroquip" type oil lines only.

14.12.3.3.17. **Fuel (See Rule 14.12.3.1.25)**

14.12.3.3.18. **Fuel & Oil Lines:** Fuel lines must mount in a position to reduce damage, usually on front side of pump. No fuel lines shall pass through the driver's compartment. No plastic fuel filters. No plastic pressure lines. No pressurized fuel tanks. Any type of fuel pump is allowed. (Electric pump must be connected to oil pressure switch).

14.12.3.3.19. **Miscellaneous:** The following items may be of any manufacture: gaskets, spark plugs, wires, bearings, filters, fuel lines, hoses, fittings, valve covers, breathers, nuts, bolts, washers, fittings and exhaust sytem unless specified in these rules.

#### 14.12.3.4. **General Motors 305 cubic inch engine – Modified**

Below are the engine rules for the 305 – Modified engine option, stating specifically what is allowed for its use. Any modification or components not listed below are not allowed. The word "stock" as used in these rules is understood to mean the part in question will be used as it was supplied to the general public by the original motor manufacturer. The term "stock replacement" is understood to mean the part is sold to the pubic as a direct replacement for a stock part, without modification. Its marketed purpose must be for use in rebuilding an engine to stock specifications; not to increase power. The intent of stock replacement parts being included in these rules is to keep cost down and allow the use of readily available part. No tintanium parts are permitted.

14.12.3.4.1. Maximum displacement: 313 cubic inches.

14.12.3.4.2. **Block:** The engine must be a General Motors V-8 305 cubic inch 4 barrel carburetor motor. Grinding, polishing or blasting any internal part that results in smoothing, recontouring or enlarging is prohibited. Parts must be used as furnished by General Motors. Alterations are not permitted except as specified herein. Bore 3.781" max. This allows the use of .040" oversized dished pistons. Stroke 3.480" ± .010. Block may be bored, honed, align bored, deburred and resurfaced in order to achieve the desired deck height or protrusion of the pistons. The block may be decked. Top of piston must be below the top surface of the compressed head gasket a minimum of .030". Deburring is not to be confused with grinding/polishing. Grinding and polishing are prohibited. For the purpose of

salvaging a damaged cylinder block, a maximum of four cylinders and/or a maximum of four lifter bores may be sleeved. Engines may be painted internally to enhance oil flow. External parts may be painted or chromed to enhance appearance. All unnecessary parts outside of the engine may be removed to permit installation into the boat. Water and oil passages may be blocked, water passages may be modified. Lifter valley baffles, stand pipe and/or screens are permitted. Water and oil passages may be blocked.

- 14.12.3.4.3. **Crankshaft:** Crankshaft main bearing journals and rod journals may be reground. Stock configuration of crankshaft counterweights must be maintained in the balancing process. Knife edging and chamfering of these weights are prohibited.
- 14.12.3.4.4. **Connecting Rods:** The following Big Journal I Beam press fit rods will be permitted: Manley part# 14112A8, Eagle part# SIR5700BPLW, Lunati part# LHAF, Scat part# 2ICR5700P, Scat part# 3ICR5700P, Crower part# SP91200.
- 14.12.3.4.5. **Pistons:** Pistons must be stock General Motors dished piston or TRW part# 3028F or casting# 454NP on side of pin boss. It is important to note that the pistons manufactured after 5/95 are being shipped with the dish "as cast." This means the dish area of the piston must be machined before the piston will meet the requirements of the rule. See drawing for dish dimensions. Pistons may be balanced and the dish machined, no other modifications will be allowed. The pistons listed above may be reversed. In addition to the above-mentioned pistons, the following parts may be used: J/E Piston part# 174002 pin# 9272850-1551S. No changes or alterations can be made to these parts, this includes balancing.
- 14.12.3.4.6. **Piston Rings:** Must be of the type supplied by General Motors. The 1<sup>st</sup> and 2<sup>nd</sup> rings (compression) must be 1 piece design, .078" +.003" wide. 3<sup>rd</sup> ring (oil) must be 3 piece design, consisting of 2 rails and 1 expander.
- 14.12.3.4.7. **Camshaft:** Only Crane Cam part# 113941 allowed and must remain unaltered in any way. Maximum valve lift: Intake .0454", Exhaust 0.480".
- 14.12.3.4.8. **Valvetrain:** Rocker Arms: Stock or Roller Rocker allowed. 1.550 ratio. Lifters: Stock or stock replacement. Solid lifters may be substituted for hydraulic lifters. No mushroom or roller lifters. Valve Springs: Any valve spring may be used that fits the stock 1.260" retainer. Spring retainer must be stock or stock replacement. Push Rods: Stock or stock replacement. Push rod length in non inspectable but must be steel or chrome moly and stock diameter. Camshaft sprockets, crankshaft sprockets and chain may be any "chain type." No belt or gear drives.
- 14.12.3.4.9. **Head:** Any cylinder head that was supplied by General Motors on a 305 2 barrel motor with the correct valve size may be used. The minimum combustion chamber volume is 59cc. Angle milling is not permitted. Cylinder heads may be flat milled in order to achieve allowable combustion chamber volume. Machining of valve seats and valves must meet class specifications as well as all components used in the head and alve train. Intake and exhaust valve seats may be narrowed by cutting at 90 degrees o less, not to exceed 1" from combustion surface in bowl area on intake andn exhaust side of seat. Inner intake seat diameter not to exceed 1.625". Intake and exhaust valve parts may not be altered in any way. Polylocks are permitted. Bronze wall valve guides are permitted. Valve guide seals are

permitted. Push rod guide plates are permitted. Rocker arm studs may be pinned or screw in studs used. Stud girdles allowed. Valve spring seats may be machined.

14.12.3.4.10. **Valves:** Intake Valves: Ferrea# 5161-8 only. No modification allowed.

Exhaust Valves: Any stock or stock replacement steel valve may be used as long as the stock stem diameter is maintained throughout (no reduced diameter, undercut stems). Face Angle: 45° only. Intake and exhaust head diameter tolerance  $\pm 0.005$ " unless otherwise noted. Stainless steel valves are not permitted. Maximum size 1.500" cutting the valve (relief angle) is permissible. Titanium, hollow stem or sodium filled valves are not permitted. Maximum size 1.500".

14.12.3.4.11. **Intake Manifold:** Edelbrock# 7101 only, the manifold may be milled on head mating surface.

14.12.3.4.12. **Carburetor/Spacer:** Carburetor: Holley 4 barrel 600 CFM# 0-4776C Venturi size: primary 1.250", secondary 1.312" Throttle bore: primary and secondary 1.562". No polishing or other modifications allowed, including the following parts:

- Accelerator pump
- Power valve (may not be removed)
- Float assembly and float bowl (except adjustment of float lever)
- Throttle plate, throttle shaft and screws
- Air horn

Only carburetor choke mechanism components may be removed. No machining to choke horn allowed. 1 One Canton spacer 1.000" #85-160 may be used (no modifications allowed). An additional 1" maximum height straight bore spacer may be used which can be milled to compensate for engine angle. A maximum of 3 gaskets for a total thickness of 0.266" allowed. A velocity stack of tube may be affixed to the carburetor. Fuel Pump: Any mechanical diaphragm type. No pressurized fuel tanks

14.12.3.4.13. **Ignition:** Distributor: Any single fire electronic or points distributor that fits the engine without modification is permitted. Magneto crank triggered or multiple spark discharge systems are not permitted.

14.12.3.4.14. **Oil System:** Oil pan, oil pump and oil pickup may be modified as necessary. Remote filter oil cooler and oil accumulator are permitted. One oil accumulator with two quart maximum volume is permitted, connected by a single oil line. Oil Pump: Any General Motors oil pump that fits in the stock location without modification may be used. Oil pickup tube and bypass spring may be modified. Oil Pan: Any oil pan or baffles may be used. Wet sump oil pump must remain in stock location. Dry sumps allowed. Maximum 3 stages.

14.12.3.4.15. **Fuel (See Rule 14.12.3.1.25)**

14.12.3.4.16. **Fuel & Oil Lines:** Fuel lines must mount in a position to reduce damage, usually on front side of pump. No fuel lines shall pass through the driver's compartment. No plastic fuel filters. No plastic pressure lines. No pressurized fuel tanks.

14.12.3.4.17. **Miscellaneous:** Flywheel: Any type 11.000" minimum diameter. Starter: Any starter that functions like the stock starter. No inertia starters. The following items may be of any manufacture: gaskets, spark plugs, wires, bearings, filters,

fuel lines, hoses, fittings, valve covers, timing, cabin covers, breathers, nuts, bolts, washers, fittings and exhaust system. Rotating and reciprocation components of the engine may be balanced. Total assembly may not be lightened in an effort to gain added performance.

14.12.3.5. Chrysler 273 cubic inch engine may also be used.

## 14.13. **Classic Modified VP/SKI Race**

### **CLASSIC MOD VP/SKI RACE RULE 1 ◦ CLASS OBJECTIVE**

The Mod VP Classic class may best be described as a throwback to the outboard pleasure craft class of racing in the 1970s and 1980s. The Ski Race class is an offshoot of the water ski racing world with V-bottom boats sporting 300 HP engines. The target speed for these classes is in the low 80 MPH range.

### **CLASSIC MOD VP RULE /SKI RACE 2 ◦ CLASS OVERSIGHT**

The Mod VP Classic classes compete under general rules for the “Racing Organization” conducting the race as well as these rules listed herein. All references to the Mod VP Classic, Mod VP and SKI Race shall constitute the classes. There shall be two (2) classes, one for Mod VP boats and one for SKI Race boats. They will have separate races and be scored separately. Three (3) or more boats will make a class. If one class has less than three (3) boats, then both classes will run together with the SKI Race boats starting on the outside. *The SKI Race class is probationary for the 2021 season and shall not be eligible for any divisional or national championship.*

Boat Owners are defined as someone who owns or owned a legal Mod VP/Ski Race boat that completed a minimum of one (1) CIRCLE RACE points race in that racing year. Boat Owners are granted one (1) vote. Boat Owners are granted a vote on new Mod VP/Ski Race Chairman and any proposed changes to the rules on an annual basis. Rule changes will be made once a year, according to a simple majority of boat owners who have raced a legal boat in the classes in the preceding year. Each class will vote on their own class rules regarding technical matters. All other matters will be a joint vote.

A minimum of two-thirds of the votes are required for a rule to be put forward to the “Racing Organization”. A tie vote means the vote failed to pass. The Chairman will record and present the votes.

The boat owners can and should change the rules if the speeds and control of the boats compromise the safety of an individual racer or group. If the class is in danger of failing due to the actions of a boat or driver, the racers, with a simple majority vote, can act subjectively to penalize said boat or driver. Furthermore, rule changes will be allowed during the race year if safety is compromised. The rules can be modified at any time to include GPS limited speeds, rev limiters or any other reasonable method to control boat speeds and corresponding safety.

Robert’s Rules of Order will generally be used to run meetings and conferences effectively and fairly.

Force Majeure is in effect. A party is not liable for failure to perform the party’s obligations if such failure is as a result of Acts of God.

### **CLASSIC MOD VP/SKI RACE RULE 3 ◦ GOVERNANCE**

The most current “Racing Organization” GENERAL SAFETY RULES are in effect for the Mod VP Racing class.

Race day decisions within the purview of the Race Officials are made by the Race Officials.

Participants compete at their own risk and are responsible for their actions.

### **CLASSIC MOD VP/SKI RACE 4 ◦ NUMBERS AND DECALS**

Racing numbers shall be not less than 10 inches high. The numbers shall be visible on both sides of the boat by the scorers and shall be dark on a plain light background or vice versa. Available one, two, or three digit numbers are issued by the Chairman. Zero numbers such as 04, 004, and 4 are recognized as the same number “4”, so no duplicate numbers will be allowed.

Suggested boat numbers be black in color on a white background. The legality of any boat numbering is the responsibility of the Scorer and the Referee only and cannot be protested by other teams. The Referee has the power to disqualify a boat that races with improper or illegible numbers.

### **CLASSIC MOD VP/SKI RACE RULE 5 ◦ GENERAL SAFETY**

Engines run “out of the water” must be in neutral and remain in neutral while the engine is “turning over” with the prop removed. Boats must be equipped with a positive throttle return to the closed position when throttle pressure is released or with throttle cable detached.

Trim switches must be operational without removing your hands from the steering wheel. Negative trim angles are not allowed to be more than 5 degrees from level trim.

Boat must be equipped with a safety switch that will kill the ignition if the driver is thrown from the boat. The kill switch must be attached to the driver prior to starting the engine and must not exceed approximately 10 lbs. of pull to activate.

Steering may be actuated by cable/pulley, double push pull, or hydraulic method.

A charged fire extinguisher must be in the pit area at all times. It is recommended that you have a paddle, towline and fire extinguisher in the boat.

The maximum engine setback allowed is no more than 38 inches from the running surface to the prop shaft thrust washer at neutral trim.

The minimum age for competing in the Mod VP class is 18 years of age.

The gearcase must be shiftable from the driver’s seat with a working forward and reverse gear. Lower unit Skeg: Mercury stock fishing lower unit (135, 150 or 200 HP) is the smallest allowable skeg area. Left hand turning lower units are prohibited.

All crew members are required to wear closed footwear. All drivers must wear long sleeves and pants with cuffs at the ankles and wrists.

All drivers must wear helmets and racing life jackets in accordance with the most current “Racing Organization” GENERAL SAFETY RULES.

## **CLASSIC MOD VP RULE 6 ◦ TECHNICAL RULES – MOD VP CLASSIC**

**ENGINES:** Engines manufactured must have been made available to the general public. Engines built and designed by the manufacturer strictly for racing shall be prohibited. The engines must be naturally aspirated and run on gasoline containing no oxygen-carrying additives introduced to the combustion chamber in any way. All engines must adhere to the midsection, lower unit measurements and weight as specified in the CLASSIC MOD VP rules.

1. **MERCURY V-6 2.0 Liter POWERHEADS:** V-6 Mercury engines must be of a standard production design. Special purpose engines shall not be allowed. Ports may be modified, raised or enlarged but shall remain in their original positions. Additional ports may not be added to the cylinders. “Behind the Liner” engines shall be prohibited, as shall finger porting and Bridgeport exhausts. Heads shall consist of a flat surface with the only deviation being the “pocket” or combustion chamber that shall measure no less than 24 cc’s using a surface gap plug. Only replacement head gaskets may be used as a sealing agent between the head and block. The head gasket must measure no less than .030 at the crush ring when removed for inspection. The use of “O” rings as a sealing agent is not allowed. Pistons must be of a flat top design with no dome or modifications made to increase compression. The top of the piston may protrude beyond the deck of the block no more than .010” to provide for deck “clean-up” purposes. The engine may have no more than six (6) carburetor venturis, measuring no more than 1.327 at the venturi. EFI (Fuel Injected) engines are not allowed. All critical or performance related parts/components (except pistons, rings, bearings, reeds, replacement electronics, and sealing components) shall be made by the OEM. Parts may be exchanged from other years or horsepower models. No other aftermarket parts or mixing of parts from other manufacturers shall be allowed.
2. **Stock MERCURY 2.4 Liter 2-stroke outboards** (chrome bore with 3 or less iron sleeves) are allowed. Must run stock OEM carburetors with maximum venturi size of 1.327 inches. Boring up to .030 is allowed. OEM or stock equivalent aftermarket replacement parts are allowed. Aftermarket reed materials are allowed. Cylinder head volumes reduced to no less than 32 cc’s with head gaskets .035 inch or greater are allowed (the flat plate method with a surface gap spark plug installed will be used to measure). Mercury Racing flywheels weighing at least 6.7 lbs. are allowed. Airbox may be removed. Porting, grinding, machining allowed. Cross-drilled manifolds, as delivered from Mercury, with ½ holes are allowed. Upgraded rod bolts are allowed. Bleed lines can be blocked and removed. Carbs with slosh tubes and baffles as delivered from Mercury are allowed. No other alterations are allowed to any powerhead components.
3. **Stock OMC, Yamaha and Suzuki 3.0 Liter (or less) 2-stroke outboards** are allowed. Boring up to .030 is allowed. OEM or stock equivalent aftermarket replacement parts are allowed. Aftermarket reed materials are allowed. Cylinder head volumes reduced to no less than 42 cc’s with head gaskets .035 inch or greater are allowed (the flat plate method with a surface gap spark plug installed will be used to measure). No other alterations are allowed to any components. Porting, grinding, machining and polishing are not allowed. Engines in this class shall be production stock motors up to 250 HP. They may be carbureted or fuel injected but the computer cannot be modified in any way. No modifications to the rev limiter, the block or the combustion chamber. Engine displacement will be limited to 3.0 liters or below. No race motors. All stock motors must run on pump gas only with a maximum of 91 octane. “Green” motors such as

Mercury Optimax, Evinrude Etc and Yamaha DFI and all four strokes will remain as delivered from the factory, with one exception, lower units may be modified with nose cones and/or replaced with units from another manufacturer. This rule is adapted to improve the handling and safety at anticipated class speeds. Lowers must have a working Forward, Neutral and Reverse. Must be large gearcase, no XR4 or inline cases allowed.

**WEIGHT:** Minimum weight allowed is 1,300 lbs. for 2 Liter and 1,400 lbs. for 2.4 Liter and 1,500 lbs. for 3.0 Liter reference above as the boat comes off the race course with deduction for remaining fuel, water drained from the boat and no driver. Ballast can be added but must be securely anchored in the boat for safety reasons. No piece of ballast shall weigh more than 50 lbs.

All areas of the boat must be available for safety inspection including steering system, foot throttle, kill switch, shiftable gearcase, prop shaft heights, fuel tanks, batteries, seat, trim pumps, running surfaces and fixed jackplates.

Capsules are allowed in accordance with SCSC safety rules. For construction layup schedule, etc. please visit [www.scscracing.com](http://www.scscracing.com).

**MIDSECTIONS/LOWER UNITS:** OEM shifter-type gearcases with working forward, neutral and reverse controlled from the driver's seat.

1. 2.0, 2.4 lower units must measure at least 4 ½ inches in diameter just forward of the propeller. XR6 gearcases are not allowed. Mercury 15 and 20-inch midsections and tuners are allowed. The water pick-ups must be on the gearcase.
2. OMC, Yamaha, Suzuki may modify OEM mid-sections, turners and lower units including the installation nose cones with low-water pick-ups.
3. Prop shafts must be at least ½ below the lowest part of the last 3-feet of the running surface/center pod/pad, including wedges. Wedges on this area of the pad restricted to four (4) inches wide and a depth of 3/16. The prop shaft must be parallel to that running surface at the time of measurement.
4. Engine jacks must be disabled and through-bolted with a 3/8" Grade 8 or better self-locking bolt and must be marked by the inspector prior to racing.

**MIDSECTIONS:** All powerheads must be mounted on an exhaust adapter plate sold by the OEM. Modifications are allowed. Midsections must be a minimum of 15 inches and made by the OEM. The swivel bracket attaching the engine assembly to the boat must be made by the OEM for an engine with same configuration as the powerhead used. Modifications are allowed. All Mod VP Classic engines must exhaust no higher than the midsection. Power trim systems may use any type of component.

**PROP SHAFTS:** The prop shaft centerline shall be no higher than 1/2-inch below the bottom most portion of the aft planning surface of the boat. The measurement for the height of the prop shaft shall be measured with a straight edge placed on the bottom, 36 inches forward of the transom and parallel to the flat portion of the boat. Any rocker in the bottom of the boat aft of this point shall be disregarded in the measurement as the straight edge runs on out to the prop shaft for measuring purposes. A boat with a built-in "hook" shall be measured in the same manner; however, the straightedge will be placed in the area 36 inches

forward of the transom and will again contact the bottom in the aft area of the “hook” running on out to the prop shaft.

**HULL:** All boats shall be at least 17’10” in length and must be Mod VP boats as defined in the Mod VP Classic rules with sponsons to end with a point nose up to 19’ but no greater than 21’6”. No true tunnel hulls are allowed. Open sponson boats (pickle forks) must be at least 19’ in length. All boats must have an open cockpit area and may not be cowled-in. An open cockpit shall consist of an undecked area that is at least 36” wide and 48” long. Minimum boat length shall be 17’10” measured from the bow to and including the transom. Nonstructural protrusions may not be added to boats to comply with the minimum length rule such as setbacks or jackplates. Boats must have a center pod extending below or at least even with the outside sponsons. Starting at the transom, the pod must be a minimum of 8” wide with a cross section width taken from the plane between the tips of each sponson carrying forward for 36” in the same plane as developed between sponson tips. The planning surface of the pod must not vary more than ¼ inch when measured across in the last 36” of the boat.

#### **CLASSIC MOD VP/SKI RACE RULE 7 ◦ EQUIPMENT**

A safety inspection of each entry may be made by the Inspector or his designee to determine whether the boat is of safe construction and that all mechanical devices for steering, throttle, etc. are in good safe working order. An inspection of the driver’s helmet and life jacket may also be done before an entry will be allowed to race or test.

If, in the judgment of the Inspector or Referee, a boat is unsafe, he/she may refuse to allow the boat to start. If, in the Inspector or Referee’s judgment, the entrant, driver or owner, has failed to live up to the spirit or letter of the rules prior to the race, he/she may refuse to allow the boat to start, except as hereinafter provided: Before a race, and after the owner or the driver has been notified in writing to comply with any rule, the owner or his representative may file an appeal with the Referee prior to the start of the race, in which case, the Referee shall, except in cases where the boat has been determined to be unsafe, allow the boat to start in a sanctioned race and shall withhold announcing the results of the race until a hearing has been held by the appropriate Racing Commission of the respective category, and an opportunity given to both sides to be heard. In case the appropriate Racing Commission rules that the appeal is justified, the performance of the boat should be considered as official; should the Racing Commission rule that the Referee or Inspector was justified in his action, then the performance of the boat in all races shall be recorded as “disqualified”.

The use of oxygen tanks in connection with the performance of motors is specifically prohibited.

#### **CLASSIC MOD VP/SKI RACE RULE 8 ◦ STARTING METHODS**

Clock (sweep hand or digital), Flag or Modified Le Mans starts may be used. Starting method is at the discretion of the Race Officials.

#### **CLASSIC MOD VP/SKI RACE RULE 9 ◦ START AND FINISH**

Lane positions must be held at the start of Flag or Clock starts until the last exit buoy of the first turn.

The start of handicap races may be in accordance with the handicap time allowance in which the Race Committee starts each boat separately, the scratch boat being last away; or all may start together, the winner being calculated at finish of the race.

In the event of a clock start, the starting time of a race is when the clock hits zero.

The time of finish of each boat shall be taken when the boat's bow crosses the finish line.

The finish of each heat shall be when the last boat in its class has crossed the finish line after completing the required number of laps. In the event a majority of the boats still running have crossed the finish line, the Referee shall, at his discretion, flag off the remaining boats still running, and they shall be scored according to their positions. Boats not running at the time the boats are flagged from the course shall receive no points for the heat. Any boat still running that has not crossed the finish line at said time shall not receive a time for its finish.

The number of boats crossing the starting line before the lead boat has completed the first lap during the first heat of a race shall determine the number of boats starting the race.

A boat working into position from the wrong side of the line after the first starting signal has been given, must keep clear of, and give way to all boats in the race.

No boat shall be allowed to start in any particular race or heat after the leading boat has completed one lap of the race course. No boat will be allowed to leave the pits after the one-minute signal, except in marathon racing. No boat other than those entered in the heat shall leave the pits after the three-minute signal.

All boats required for inspection immediately after finishing must report to the inspection area at a place designated by the Inspector.

Boats crossing the starting line during the last minute before the official start will be penalized pursuant to the category rules. MOD VP/Ski Race Rule: A one-lap penalty will be assessed.

The Referee shall have the power to annul any start and request a restart. In the event a restart is caused by a boat(s), the Referee shall determine if those boat(s) will be allowed to run.

A boat shall be disqualified that approaches the starting line at other than a right angle, or nearly so, within 500 feet of the starting line. A buoy shall be located as near as possible at a point 500 feet from the starting line.

On a clock start, milling around the 500-ft. buoy and the starting line shall be permitted unless specifically forbidden by the Referee and so announced at the Driver's Meeting. All turns must be made to the left in any area while approaching the starting line and maneuvering for a start.

A drawing for lane positions shall be conducted prior to the start of the race. Lane positions shall rotate after each heat, i.e. first moves to outside position, second position moves to first, etc. Lane position must be held until after the last buoy of the first turn.

Course rules will remain the same for Mod VP and Ski Race with one exception; that is when the two classes are run in a single heat together, the Ski Race class boats will be forced to the outside lanes for the start.

### **CLASSIC MOD VP/SKI RACE RULE 10 ◦ BUOYS**

A buoy is any vessel, or other object, used to indicate the course.

Should any buoy be absent or moved from its proper position during a race, the Race Committee shall, if possible, replace it. If failing thus to replace a buoy, the race may be ordered rerun or not, at the option of the Race Committee.

The buoy must be so constructed as to inflict no major damage to racing craft striking said buoy.

All turning buoys and course buoys shall be passed on the driver's left-hand side unless otherwise indicated and announced at the Driver's Meeting.

### **CLASSIC MOD VP/SKI RACE RULE 11 ◦ RIGHT OF WAY**

When two (2) boats are approaching one another so as to involve risk of collision, one of them shall keep out of the way of the other as follows: (A) When two (2) boats are meeting end on, each shall alter her course to starboard; (B) When two (2) boats are crossing, the one that has the other on her starboard side shall keep out of the way.

Every boat that is directed by these rules to keep out of the way of another boat shall, if the circumstances of the case allow, avoid crossing ahead of the other.

Every boat that is directed by these rules to keep out of the way of another boat shall, on approaching her, if necessary, reduce her speed, stop, or reverse.

Every boat overtaking any other shall keep out of the way of the overtaken vessel.

In obeying and contructing these rules, due regard shall be had to all dangers of navigation and collision, and to any special circumstances that may render a departure from the above rules necessary in order to avoid immediate danger.

### **CLASSIC MOD VP/SKI RACE RULE 12 ◦ OVERLAP**

Two (2) boat lengths are required for a lead boat to change lanes, move over on, or move in front of another boat. This rule is in effect starting from the exit of the first turn thru the entire duration of the race. Each lane violation called by the Race Officials is a one (1) lap penalty.

### **CLASSIC MOD VP/SKI RACE RULE 13 ◦ BEARING AWAY**

A boat shall not bear out of her course so as to hinder another in passing to starboard or port. MOD VP Rule: Each bearing away violation called by the Race Officials is a one (1) lap penalty.

### **CLASSIC MOD VP/SKI RACE RULE 14 ◦ OTHER PENALTIES**

Every boat must go fairly around the course without destroying, damaging, or dislodging any buoy unless forced to do so by another boat. In that event, only the offending boat will be penalized in accordance with the category rules. MOD VP Rule: A one (1) lap penalty will be assessed.

### **CLASSIC MOD VP/SKI RACE RULE 15 ◦ SCORING POINTS**

There should be at least three (3) bonafide starters in at least one of the heats of the race day, all of whom must be MOD VP class boats unless otherwise determined by the Race Official.

Scoring is in heats of racing per day. Points will be awarded based on finishing order for each heat.

First	100		Eighth	65
Second	95		Ninth	60
Third	90		Tenth	55
Fourth	85		Eleventh	50
Fifth	80		Twelfth	45
Sixth	75		Thirteenth	40
Seventh	70			

In case two or more drivers have scored the same number of points for the series, thus establishing a tie, the winner will be one of the tied boat drivers with the least elapsed time for the combined heats. If the tie can't be broken by the least elapsed time then the one with the fastest heat will be declared the winner.

If an entry is disqualified, the points for that heat will be awarded to the legal boats in the corrected order of finish. If inspection reveals that a boat or motor is illegal, the entry will be disqualified for each heat in which it raced, and the order of finish shall be corrected for each heat. Overall positions shall be obtained by adding the points from the heat after the order of finish has been corrected for each heat.

For the purpose of tabulating annual driver high points, the racing year shall be from Jan. 1 through the following Dec. 31. All Mod VP Classic points races will be counted for the purpose of accumulating high points for the year.

CLASSIC MOD VP Divisional and Nationals will be single points races and may be held on separate weekends per year. Promoters will bid on holding the MOD VP Nationals. These races will be awarded based on proximity, prize money, promotion, and fan base.

Points go to the owner/boat number.

#### **CLASSIC MOD VP/SKI RACE RULE 16 ° PROTESTS**

Drivers shall have the right to protest any violation of the rules from sanctioned regattas affecting their particular class.

When the alleged violation, concerns the sanction or method the regatta is being conducted, said protest shall be filed within sufficient time to allow the appropriate persons to correct their error.

If the protest concerns the eligibility or legality of an entry, the protest must be filed in writing with the Referee no later than one (1) hour after the finish of the inspection in question or no later than one (1) hour after the finish of the last heat of racing on that day, whichever comes later. If the protest concerns the eligibility or legality of an entry, the complainant must post a fee, in accordance with the category rules. CLASSIC MOD VP Rule: \$100.

If the racer is found illegal the \$100 is returned to the competitor that filed the protest. If the racer is found legal, he is given the \$100 to defray the cost of rebuilding his engine.

#### **CLASSIC MOD VP/SKI RACE RULE 17 ° APPEALS**

All decisions of the Referee regarding violations of starting, driving, and of course rules shall be final, and appeals will be allowed only if disqualification is involved.

Any contestant who wishes to appeal a disqualification of a boat, motor, or suspension may do so by filing with the Referee a written statement accompanied with a fee in accordance with the category rules. MOD VP Rule: \$100.

The Referee and MOD VP Classic Chairman will then settle the matter. Under no circumstances will an appeal be entertained unless it is filed with the Referee no later than one (1) hour after the finish of the last heat of racing of the day or within one (1) hour of the adverse decision whichever comes later.

### **SKI RACE RULE 18 • TECHNICAL RULES SKI RACE**

V-Bottom Outboard “Ski Race” boats shall conform to the following Speed Racing rules as well as the applicable rules stated in the MOD VP Rules 1 through 5 and 7 through 17.

1. Engines limited to a maximum of three (3) liter single outboards that are listed as stock per advertised in the basic catalog. NO factory racing engines or detuned racing engines.
2. Engine capacity limited to a maximum of 300 HP as measured at the prop shaft.
3. Stock exhaust only. V-bottom hulls only with a minimum of 18’ and maximum of 21.35’. Removal of any equipment (ski pole, seats, etc.) is prohibited.
4. All motors must have an operational forward-neutral-reverse while underway.
5. No modified lower units. Standard lower unit only that is part of the original engine package.
6. No mechanical means for height adjustment. Any jack plate system shall be locked out.
7. To restrict the height of a single outboard, the center prop shaft shall be no higher than the bottom of the hull (plank or V). Prop shaft height limited to even with the last 3’ of the running surface. No removal of metal from the skeg and no modifications to the water pick-up.
8. No after market nose cones. All nose cones to be standard as part of the original engine package. Exception: On a 300R, the lower unit can be changed to a Torque master and a nose cone can be added. This is for safety reasons. No modification to the water pick-up is allowed.
9. An observer is permitted in the boat, but is not mandatory.

## **14.14. Modified VP Pro**

### **MOD VP PRO • CLASS OBJECTIVE**

Another division of MOD VP boats to run concurrently with the current MOD VP boats (known as 2-liter class or Mod VP Classic). The two classes will run together but be scored separately until each class has at least four (4) boats. Then classes will run separately and be scored accordingly.

### **MOD VP PRO RULE 1 • GOVERNANCE**

Rule changes will be made once a year, according to a simple majority of racers who have raced a legal boat in the classes in the preceding year.

### **MOD VP PRO RULE 2 • EXCEPTIONS FOR MOD VP PRO**

All boats shall be at least 17 feet 10 inches in length and must be Mod VP boats as defined in the Mod VP Classic rules. Open sponson boats (pickle forks) must be at least 19 feet in length.

Engines in this class shall be production stock motors up to 250 hp. They may be carbureted or fuel injected but the computer cannot be modified in any way. No modifications to the rev limiter, the block or the combustion chamber. Engine displacement will be limited to 3.0 liters or below. No race motors. All stock motors must run on pump gas only with a maximum of 91 octane. "Green" motors such as Mercury Optimax, Evinrude Etec and Yamaha DFI and all four strokes will remain as delivered from the factory, with one exception, lower units may be modified with nose cones and/or replaced with units from another manufacturer. This rule is adapted to improve the handling and safety at the anticipated class speeds. Lowers must have a working Forward, Neutral and Reverse. Must be large gearcase, no XR4 or inline cases allowed.

Minimum Boat weights are based on engine displacement.

2.4 liter dry weight.....	1400
2.5 liter dry weight.....	1500
3.0 liter dry weight.....	1500

This is a provisional class; the rules are greatly expanded to provide a wide variety of acceptable boats and engines. The racers, can and should change the rules if the speeds and control of the boats compromise the safety of an individual racer or the group. If the class is in danger of failing due to the actions of a boat or driver, the racers, with a simple majority vote, can act subjectively to penalize said boat or driver. Furthermore, rule changes will be allowed during the race year if safety is compromised. The rules can be modified at any time to include GPS limited speeds, rev limiters or any other reasonable method to control boat speeds and corresponding safety.

Course rules will remain the same for Mod VP Pro with one exception; that is when the two classes are run in a single heat the Pro class boats will be forced to the outside lanes for the start and until the first turn exit buoy. Thereafter, there will be a two-boat length move over rule. To improve the safety of two classes moving at different speeds the Pro class will be forced to outside passes only when passing a Mod VP Classic boat. When passing a boat of similar class all types of safe passing will be allowed. In all passes the overtaking boat has the responsibility to pass cleanly without interfering with the overtaken boat, this includes "washing down" your competitor. A one (1) lap penalty will be enforced, on any pass that fails to allow the overtaken boat to maintain his current lane or course without danger of collision.

All boats in the Mod VP Pro class will be limited to a GPS verified speed of 90 mph. A GPS will be attached to the boat where the driver cannot reach or reset it from the driver's seat.

## 14.15. Western Formula Light Tunnel Boat

### TECHNICAL RULES:

MANUFACTURER OMC – DBA JOHNSON / EVINRUDE

DISPLACEMENT MAX 44.9 NUMBER OF CYLINDERS 2 MIN. VOLUME OF COMBUSTION CHAMBER (INCLUDING SPARK PLUG HOLE) cm<sup>3</sup> 35.0 CARBURETOR .015 in 1.250± VENTURI .015 in 1.500± BORE QUANTITY PER ENGINE 2 POWERHEAD SPECIFICATIONS .005 in 3.187 +.035 OEM + .030 piston is Approved± G CYLINDER BORE .011 in 2.820± J PISTON STROKE .006 in 4.750± L ROD LENGTH .012 in 7.575 7.563 Min.± K DECK HEIGHT .030 in 2.973± F PISTON LENGTH .030 in 2 @ .615± M PORT HEIGHT NUMBER OF PORTS PER CYLINDER A TRANSFER 3 B EXHAUST 1 C PISTON – PORT HEIGHT .035 in 2 @ 0.584; 1 @ .546± A TRANSFER .035 in 1.107 (plus chamfer) See note #2± B EXHAUST .035 in See Table in Notes± B1 EXHAUST .035 in --± C PISTON PORT TIMING°; 1 @ 120° ATC 2 @ 118°2± A TRANSFER ° ATC 92°2± B EXHAUST ATC --°2± C PISTON REED BLOCK (ONE CYLINDER) # OF PORTS 8 LENGTH x WIDTH SIZE OF PORTS MAX in 1.41x0.675 REED MAT'L STAINLESS STEEL See Note # 3 .001 in .010± REED THICKNESS H REED STOP HGT. MAX in .268 See Notes # 1 & # 3 .030 in 1.427± Y CHECKING DIS. WEIGHT (ONE SET) FLYWHEEL MIN lbs. 9.1 PISTONS, RINGS, ROD, WRIST PIN, SPACERS, BEARINGS MIN lbs. 1.7 Date: 02-25-2015 Model Year: WARNING! FOR INSPECTION ONLY! These specifications are not intended as a guide for modification or “blueprinting” and are subject to change as needed.

MANUFACTURER OMC GEARCASE MODEL IDENTIFICATION DR-39M ADVERTISED SALES NAME JOHNSON / EVINRUDE 45SS GEARCASE SPECIFICATIONS GEAR RATIO 18:18 X EXHAUST TUBE LENGTH POWERHEAD BASE TO PRIMARY TUBE END .25 in 9.37± Measurement does not include 3/8 plate. Pipe only Q TORPEDO LENGTH (W/ PROPSHAFT) MAX in 16.3 R TORPEDO WIDTH MIN in 2.35 S STRUT WIDTH MIN in 1.40 S2 STRUT WIDTH (2” FORWARD OF TRAILING EDGE MIN in -- W DIS. FROM PROPSHAFT TO .2 in 4.16± CAVITATION PLATE Y LENGTH OF SKEG FROM .2 in 4.54± PROPSHAFT .2 in 13.7± Z TORPEDO LENGTH V PROPSHAFT CENTERLINE TO POWERHEAD BASE LONG .2 in --± SHAFT SHORT .2 in 17.1± SHAFT Y1 SKEG THICKNESS MIN in .21 See note # 4 Y2 SKEG THICKNESS MIN in -- Y3 SKEG THICKNESS MIN in .34 See note # 4 .2 in 3.950 See note # 4± Z1 SKEG CORD LENGTH .2 in --± Z2 SKEG CORD LENGTH .2 in 5.700 See note # 4± Z3 SKEG CORD LENGTH .01 in .685± DIA PROPSHAFT DIA .01 In± Adaptor Plate Water Outlet Hole (DIA) . .190 Date: 02-25-2015 Model Year: WARNING! FOR INSPECTION ONLY! These specifications are not intended as a guide for modification or “blueprinting” and are subject to change as needed. SST-45 NOTES 1. Incorporates .012 shims under one or both reed stops. 2. B1 dimension to top of chamfer = 1.624 minimum. 3. Standard SST 45 reed material is Steel .010 thick. H = .268 maximum. .003, H = ±.003; top reed .017± Alternate reed for SST-45 may be used: OMC P/N 568427, bottom reed = .028 .290 maximum. 4. Or per OMC P/N 561086 template, included in Kit P/N 568053. 5. Crankcase thickness (split line to reed gasket surface) 4.355” minimum. 6. Approve Replacement Ignition parts are: Repair Parts, Stator 173-2926K1, Charging Coil 173-1670, Power Pack 113-2285, Rectifier 153-1778, Coil 183-2508, Trigger 133-3387 7. The Compression Volume is 35cc installed to top of plug hole. 8. The only legal Cylinder heads have casting numbers of 325602 or 325603 9. Head Gasket minimum thickness is .042 10. Standard SST 45 connecting rod has no oiling hole in the rod cap. Alternate connecting rod (fishing motor rod) for WESTERN FORMULA LIGHT may be used: this rod has an oiling hole in the rod cap. It is permissible to chamfer (radius) the edges of the oiling hole. (See Photo's Below) 11. The use of new larger spine cranks and Drive Shafts is permitted. 12. Port Measurements from Block Deck to top to Port. (See Table Below) 13. New design Upper Cowling, Lower Pan and Throttle Bracket as

supplied by Sea-Way Marine are approved replacements. Throttle bracket may be used with any cover/pan. 14. The electric start flywheel is the only legal flywheel, min. weight 9.1 lbs. 15. Brass bushings for the midsection as supplied by Sea-Way Marine are approved replacements. The bushing used in the top and bottom of the swivel bracket may be plastic (OMC) OR brass (Sea-Way Marine). Date: 02-25-2015 Model Year: WARNING! FOR INSPECTION ONLY! These specifications are not intended as a guide for modification or “blueprinting” and are subject to change as needed. SST 45 Ports Port Measurements from Block Top Deck down to Top of Port SST 45 Minimum Maximum Inches A Deck Height 7.563 7.587 B Exhaust Port 1.730 1.765 C Exhaust Port Chamfer 1.624 1.720 E Exhaust Port Width 1.910 F Transfer Port 2.228 2.280 G Transfer Width 1.470 H Boost Port 2.250 2.325 J Boost Port Width 1.210 Date: 02-25-2015 Model Year: WARNING! FOR INSPECTION ONLY! These specifications are not intended as a guide for modification or “blueprinting” and are subject to change as needed. Standard SST45 Connecting Rod: Alternate (fishing motor rod) Connecting Rod: Date: 02-25-2015 Model Year: WARNING! FOR INSPECTION ONLY! These specifications are not intended as a guide for modification or “blueprinting” and are subject to change as needed. Lower Pan PN 560500\* Lower pan is completely sealed at base and has three openings. Outlet Water Hose from PH – 13/16” (Note Sealed by outlet hose -reference) 3/8” Drain hole in back of pan. (Reference) Opening for cable in front of pan (Approximately 1.4” – but may vary - reference) \*These parts supplied by Sea-Way Marine, Inc. Date: 02-25-2015 Model Year: WARNING! FOR INSPECTION ONLY! These specifications are not intended as a guide for modification or “blueprinting” and are subject to change as needed. Upper cowling PN 560500\* Vent in back of cover top - PN 560401\* (Hole Diameter 2” reference) Vent in front of cover – PN 560402\* (Vented opening 3.55” x 2.4” reference) Total size of vent plate 4.55” H x 5” W (Reference) Opening for Throttle Cable (Approximately 1” W x 2.5” H reference) Opening for Cables (Approximately 1.4” – But may vary - reference) \*These parts supplied by Sea-Way Marine, Inc. Date: 02-25-2015 Model Year: WARNING! FOR INSPECTION ONLY! These specifications are not intended as a guide for modification or “blueprinting” and are subject to change as needed. Throttle Bracket PN 560330\* Thickness – 3.75” +/- .005” (Reference) Opening – 1.500” +/- .010” (Reference) (Note: 1/32 Edge on opening – otherwise straight in - reference) \*These parts supplied by Sea-Way Marine, Inc. Midsection Bushings Current PN New PN (NO Photograph of bushing) Upper Bushing 309967 560100\* Lower Bushing (Lg) 332663 560101\* Upper Cover 309966 309966 Lower Cover 397736 560102\* Upper O’Ring 301917 201875 Complete Bushing Replacement Kit 560202\* \*These parts supplied by Sea-Way Marine, Inc. Date: 02-25-2015 Model Year: WARNING! FOR INSPECTION ONLY! These specifications are not intended as a guide for modification or “blueprinting” and are subject to change as needed. Rev:04-10-13 Note #10 revised to allow use of alternate connecting rod (fishing motor rod). Rev:02.25.15 Note #6 revised to correct terminology and part numbers. Note #13 added to allow new style upper cowling, lower pan and throttle bracket as supplied by Sea-Way Marine and approved by MTC & Commission April 1, 2014. Photo's included. Note #14 added to update/correct specification: rope flywheel 8.1 lbs. reference removed from chart. Only the electric start flywheel is allowed. Note #15 added to allow use of brass bushings as supplied by Sea-Way Marine and approved by MTC in top and bottom location of swivel bracket. The OMC plastic parts are no longer available, this is a replacement. Either type or combination may be used.

### **Point Scoring and Gary Areas Defined:**

Restart: In the case of a restart, the boat(s) causing the stoppage of the heat may either be assessed a one (1) lap penalty and they must re-start at the end of the lineup or at the race

committee/referee's discretion may hold the boat during the restart until the last running boat crosses the start/finish line then the penalized boat(s) may fall in behind the field and no further penalty is assessed. For all restarts, the rest of the field will line up in the running order, of the last completed lap before the stoppage.

The flipped boat is not disqualified; however, driver and boat must be cleared to return to the race by the Inspector and the Referee.

In the event of the stoppage of a heat the lead boat will not run more than the prescribed laps in that heat.

Driving Violations: i.e. overlap, bearing away, etc., shall be a one (1) lap penalty, assessed at the end of the race. However, if there is a race stoppage after the offense/penalty but before the race is completed, the Referee or race committee may elect to have the offending boat start at the end of the lineup or hold the boat during the restart until the last running boat crosses the start/finish line then fall in behind the field and no further penalty is assessed.

Lane Change: Boats changing lanes before passing the commitment buoy on a start, or failure to pass through the prescribed gate buoy, shall receive a one (1) lap penalty except in the event of restart before completion of the first lap. Then the race committee/referee may, at their discretion, either penalize the racer one (1) lap or elect to hold the boat during the restart until the last running boat crosses the start/finish line then the penalized boat(s) may fall in behind the field and no further penalty is assessed.

Breakdown: A boat that "breaks down" during a heat, will be scored through their last completed lap. However, to win a race, you must take the checkered flag. For example: if a driver has a four (4) lap lead and flips on the last lap, causing the race to be stopped (as it must be), and the race is not restarted for whatever reason; then the 2<sup>nd</sup> place boat on the previous lap wins the race and the flipped boat takes second (because even with his 2 lap penalty, he still beats the other boats), but he does not win.

Disqualified in Technical Inspection: The driver receives no points for the weekend. Underweight, disqualified from the heat preceding the weigh-in.

Note: Fuel should be approved by the Inspector before the first heat of the weekend.

Note: Technical disqualifications can only be appealed to the SCSC Western Formula Light Technical Committee.

6. Damaging, dislodging, or destroying a buoy: A one (1) lap penalty will be assessed for each infraction, and a fine determined by the Race Committee and/or sanction club (unless forced to do so by another driver and if judged so by the Referee).

7. Weighing in: A boat that 'flips', 'barrel rolls', or sustains substantial damage in a heat, does not have to meet minimum weight requirements for the heat in which they damage was sustained. This is at the Inspector's discretion.

8. Changing powerheads or gearcases: It is allowed at any time, providing the powerhead or gearcase was not being used by another competitor in the same heat. For example, if you blow up your engine in a heat that is to be restarted for any reason, you cannot "borrow" a powerhead or gearcase from another driver who started that heat. If you do change any part of your engine, both the old and new parts must pass technical inspection at the conclusion of the race or heat. Again, you must receive permission from the inspector if the powerhead and/or gearcase has already been sealed.

9. You can change boats at any time except during a restart as outlined in #8 above.

10. Substitution of Drivers or Equipment

1. Series points are scored to the boats, boat numbers, or owners of the equipment
  - a. The Driver of Record is the driver that starts the first heat of the Weekend, and in order to earn Series Points, he/she must be a Driver in good standing under the Series Rules, i.e., annual membership must be paid in full. This means that a non-series driver can race as an 'associate member' but he does not accumulate series points and neither does the boat that he/she drives. The entry is still eligible for Weekend Prize money or Appearance money. Substitution of Driver or Equipment is allowed after the start of the Weekend Series, using standard penalties, i.e., 'back of the pack' for equipment change. There is no penalty for a Driver starting the Weekend Series with a boat other than his own, providing the equipment meets all Series Requirements for entry. Boat must be registered for the series.
  - b. If a substitute driver is employed after the start of the first race of the weekend the points will be scored to the boat number.
  - c. Scoring of the Series: Points are awarded for finishing positions, and are awarded to the boat number. The substitution of both a boat and driver is permitted, as it is the boat that scores points. If a team starts moving drivers around among multiple boats after racing has started for the Regatta, they must inform the Race Committee of all changes. Points will be awarded to the boat numbers only.

11. Non-members who compete for non-series points, will be allowed to compete in W.F.L.S. races, but they will not receive W.F.L.S. points. Non-members may be eligible for prize money upon payment of a nominal fee to R.P.M. Racing Enterprises at registration (varies per race and is at the discretion of the series owner).

12. The Second Qualifier heat lineup in all W.F.L.S. races will be the invert of the draw for the first heat.

13. Series Championship Points: At the completion of the season, all drivers will be allowed to "throw out" one (1) "race" as per definition of "Race" outlined in the "definitions" portion in the "rules and regulations" provided the series has a minimum of seven (7) or more races during the racing season. An 80 point bonus may be awarded at the end of a race season to driver's that compete in ALL series races for that season. This is at the discretion of RPM Racing. In order to add a race or cancel a scheduled race a recorded vote of current owners of record must be taken.

14. Fines: Any Technical Violation will result in Disqualification for that heat. Any protocol violations will result in a fine with possible point loss at the Referee/Race Committee discretion. Any Unsportsmanlike Conduct will result in a fine of \$250.00. Your second offense will result in expulsion from the series for the year, and loss of all points earned for the season. (YELLING, THREATENING, ABUSIVE LANGUAGE, USE OF EXPLETIVES, ETC., ARE ALL CONSIDERED UNSPORTSMANLIKE CONDUCT).

15. Video Review: The Chief Referee may make use of W.F.L.S. or RPM Videotape footage or any video footage that the referee deems acceptable and necessary to make, or review calls.

16. Gate Buoy: At the discretion of the Referee and Race Committee, a gate buoy may be used for the start. The gate buoy will be approximately the same distance from the start dock or beach as the commitment buoy. The Race Committee and Referee shall determine the number of boats that must pass through the gate, prior to the start of each event.

17. Start Dock/Beach: Minor adjustments and safety issues are permitted, i.e. tightening loose bolts or screws, adjusting mirrors, rear cowling and motor cowling adjustments, inspection of propeller. Major adjustments/repairs are to be approved by the referee or inspector. The penalty for a “major repair” may be one or a combination of the following: move the boat to the end of start line, lap(s) penalty and/or a fine.

During a Red Flag stoppage, only the following are allowed: Hold boat, adjust mirror, give driver a beverage, and tighten loose things.

When the black flag is displayed after a race stoppage, should any driver(s) fail to return to the start dock or beach under his or her own power, and paddles in, or must be towed in for the re-start; the boat shall start at the end of the lineup, and may be penalized further for delaying the event. Any boats that are not lined up within five (5) minutes of the last boat that lines up for the start may be assessed an additional penalty at the discretion of the race committee and/or referee. This penalty, if assessed, may be one (1) lap penalty or start and fall in last after re-start of heat as defined in item #2 above.

Any and All repairs must be done under a Black flag with referee or inspector approval.

18. Lifting: Lifting of the boat shall be deemed legal and acceptable under the following terms and conditions:

- A maximum of 2 boat holders.
- The Cavitation plate or the lower unit shall never break or exit the waterline.
- No mechanical devices of any nature, affixed or placed on, near or under the boat, shall be allowed to aid in the lifting of the boat.

A breach of any of the above terms and conditions shall be punishable by a one (1) lap penalty.

19. Fire Extinguishers: All drivers are to have a fire extinguisher in their trailer/pit area.

20. Fuel of the Day: When at all possible, a list of gas stations that have been approved by the Inspector before the event, will be listed on the circular, the website ([www.rpmracingent.com](http://www.rpmracingent.com)) or sent via email.

21. Dress Code: All drivers, owners and crew members shall wear appropriate attire (i.e., Crew Shirts and shorts, polo shirts, etc.). T-Shirts are not deemed proper attire. Anyone not in compliance with the dress code shall be subject to a monetary fine of up to \$150 per event.

22. Awards: Drivers placing in the 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> Position must attend the awards ceremony. (Unless extenuating circumstances are deemed acceptable by Race Committee or Series Owner) and must look professional. Failure to show up for Awards or failure to meet the dress code (see item #21) shall subject the offending participant to the forfeiture of prize money for that event. It is highly recommended that all participating teams attend the Year-end Banquet and Championship Awards Ceremony.

## MEMBERSHIP

To establish an operating budget, and to ensure a commitment to participate, there shall be a requirement for an Annual Registration Fee (ARF). The ARF will be levied on a per boat basis. An owner may register more than one boat but the ARF applies to each boat registered. The ARF is \$150 per boat and is due no later than July 1<sup>st</sup>. A late penalty of \$25 will be levied for any registration received after that date. The ARF for a new registration (a boat

that has not been registered in the two prior years) shall be \$150 regardless of when that registration is filed during the WFLS season.

All participating boats must be registered with SCSC and comply with SCSC Safety rules.

All participating drivers must comply with SCSC capsule certification.

3. All drivers must be racing member in good standing with the SCSC.

### RACING REQUIREMENTS

All Boats and Team members must conform to SCSC Rules and Race Sanction directives. Failure to conform is grounds for termination of WFLS Membership. In the event of termination, the offending boat owner shall forfeit all WFLS rights and monetary credits. All SCSC Safety, Dress Codes and Rules of Racing will apply.

### ADMINISTRATION

RPM Racing will administer the WFLS. All WFLS monies are the property of RPM Racing. RPM Racing will appoint an Administrative Committee to operate the WFLS. A Committee of five (5) registered Owners, selected by a blind draw at the first race of the season, will arbitrate disputes related to the WFLS. All decisions by that Committee shall be final.

### RACING RULES

All races will be governed by the SCSC rules (even at Non-SCSC events) and event Sanctions. As all Races in the WFLS are SCSC governed events, non-WFLS boats may participate. However, non-qualified boats, will not share in any Tow Money or Prize Money, unless a nominal fee is paid to RPM Racing prior to the start of the event.

### ENTRY FEES

The WFLS will be made up of an agreed number of Regattas. Each Regatta will normally be made up of two (2) Races, (two – 10 lap qualifiers and one – 25 lap final per weekend). The Entry Fee per Regatta is \$50/boat. The WFLS Entry Fee is separate, and in addition to all other fees that are required under the SCSC Sanction. The WFLS Committee must receive the WFLS Entry fee, along with a copy of the completed SCSC race application form, 20 days prior to the regatta date. A late penalty of \$20 may be levied against any entry received after the cut-off date.

WFLS Entry Fees will be distributed as per these rules. All Entry Fees are Non-Refundable. The only exception is if a race is cancelled, or if there are extenuating circumstances, i.e. illness, injury, family or medical emergency. If a cancellation occurs, at the Series owner's discretion, the WFLS Entry Fees may be refunded to the registered owners. Any monies kept shall be used to pay any WFLS expenses for that Race or Regatta, and any remaining Entry Fee funds will be credited to the Series prize pool (see below).

### POINTS SCHEDULE

All WFLS point awards will be based upon points earned by each qualified boat. The qualifier and final heat point's formula is outlined on page 4.

There are three exceptions to the SCSC Points Rule:

1. Any boat that DNF's (leaves the trailer, lines up for the start, but doesn't complete a lap) will receive minimum points from their event (5 points for a qualifier or 10 points for a final).
2. Boats that DNS (boat does not leave the trailer and no attempt is made to line up) shall receive no points.

3. Boats that break down, flip, etc., and do not finish a heat, but have completed more than one (1) lap, shall receive their final place points as calculated by the scorers at the end of the heat. All points will be tallied by the WFLS from the SCSC Scorers summary. WFLS points are separate from SCSC National Points. The Final Heat (25 laps), will be the only points sent in to SCSC for high point calculation.

Should the WFLS have seven (7) or more series races during a given season, a maximum of one (1) event's race points will be deducted from the final points tally at the end of the year. The racer with the most points, after "throwing out" the score from one (1) race and adding the 80 points for competing in ALL races in that season, if applicable shall be declared the series overall winner. Note: No "race" will not be thrown out in the event of six (6) or less series races for a given season.

#### **DISTRIBUTION OF FUNDS**

The Entry Fees, Sponsor Contributions and Registrations Fees will be distributed as follows:

Series Operations: 10% of all monies collected will go to the General Fund to cover Series expenses. Money left in the General Fund at the end of the Series will either be retained by the Committee as a reserve or applied to the Total Point Award Fund (herein TPAF).

Total Points Award Fund: 90% of the WFLS entry fees at each race will be credited to the Total Points Award Fund (TPAF).

Prize Money: Any Sponsor or Promotional Funds paid to the WFLS as "Prize Money" will be distributed in the following manner: 50% paid as Race or Regatta Prize Money to the qualified boats at the Race where those funds were collected; the remaining 50% shall be credited to the Total Points Award Fund. A maximum of 10% of the gross shall be "taken off the top" and placed in the administrative fund.

### **14.16. Formula 1**

#### **14.16.1. General Rules**

14.16.1.1. Minimum age of driver is 18 years.

14.16.1.2. Minimum weight

<b>Motor</b>	<b>Minimum weight</b>
APX 200	1225 lbs.
200 FF	1200 lbs.
200XS	1200 lbs.
SST120	1150 lbs.

#### **14.16.2. Engine**

14.16.2.1. Eligible Motors

- APX 200 as homologated
- Mercury 200 FF block per Powerboat Championship specs
- Mercury 200XS as homologated
- Mercury SST120 per Powerboat Championship specs

**14.16.3. Fuel:** Fuel of the day determined by inspector

### **14.17. Tri Hull**

#### **14.17.1. General Rules**

14.17.1.1. Minimum age of driver is 18 years.

14.17.1.2. Minimum weight of the boat as raced, without driver, is 1250 lbs.

#### **14.17.2. Hull**

14.17.2.1. Minimum hull length shall be 15 ft.

#### **14.17.3. Engine**

14.17.3.1. Must not exceed 100 cubic inches in displacement as originally manufactured. 3ci tolerance allowed for overbore.

#### **14.17.4. Roll Cage**

14.17.4.1. Tri-hulls must use a roll cage with driver restraint instead of a reinforced cockpit.

14.17.4.1.1. The roll cage must be constructed so as to protect from front, side, rear and top impact. Recommend that cage be constructed of chromoly, mild steel or aluminum of sufficient gauge to withstand expected impact.

14.17.4.1.2. All joints must be welded

14.17.4.1.3. The cage must be attached in such a manner to prevent it from being dislodged in the case of an impact.

14.17.4.1.4. It may be bolted in. Bolts must be backed with a minimum of a 4-inch diameter round or 4 x 4" square washer having radiused edges. The washer must be a minimum of 3/16" aluminum or 1/8" steel.

14.17.4.1.5. All other safety measures applicable to reinforced cockpit boats.

14.17.4.2. All boats are required to have a backboard (bulkhead behind seat) of reinforced material equaling the side in height. The reinforcement must extend past the driver's compartment area and conform to the normal sides of the boat.

14.17.4.3. Boats equipped with reinforced cockpits, that have head protection over the head of the driver, must use a driver restraint system.

14.17.4.4. All boats are required to have an electrical shut-off switch that will disable the engine located on the port (left) side of the boat. Recommended to be located outside of the steering wheel area.

#### **14.17.5. Flotation Requirements**

14.17.5.1. Must contain the volume of permanently attached flotation foam in noted in rule 1.5.3. Two (2) pounds per cubic foot, closed cell U.S.C.G. approved flotation foam is recommended. Its volume should be easy to measure for purposes of inspection.

14.17.5.2. If a reinforced cockpit/driver restraint system is used, the cockpit structure must include the listed volume of same foam. It must be capable of floating the cockpit, driver, engine and any other attached structures. The foam must be permanently attached (i.e., glassed in) to the rear area of the cockpit.

14.17.5.3. Foam requirements for flotation purposes only.

14.17.5.3.1. Tri-Hull: Total cubic feet foam including cockpit: 6 ft.

### **14.18. Sportsman Limited Stock Outboards**

#### **14.18.1. Drivers and Rescue/Safety Personnel**

**14.18.1.1. New Drivers:** Drivers new to outboard racing shall adhere to the following:

- a) Study SCSC safety and racing rules as related to their class.
- b) Prior to racing, report to the designated official for oral instruction and questioning.
- c) Be identified for the safety of all racers. Drivers who have not competed in 10 closed course competition heats shall wear a white cross on their helmet. The

cross is to be approximately 2” in width, start at one ear and extend to the other ear, then from the front of the helmet to the rear of the helmet.

- d) Stay to the rear of the pack until cleared for open competition by the designated official

#### **14.18.1.2. Rescue/Safety Personnel**

##### **14.18.1.2.1. Minimum Rescue/Safety Personnel:**

###### **14.18.1.2.1.1. Rescue Boat Staffing**

- 1 – Operator
- 1 – Assistant
- EMT is recommended
- No excessive personnel

###### **14.18.1.2.1.2. Prohibited Items**

14.18.1.2.2. SCSC officials shall place a rescuer/safety personnel “out of service” if the rescuer/safety personnel fails to perform effectively or is endangering themselves or others.

#### **14.18.2. Rescue/Safety Equipment**

##### **14.18.2.1. Minimum Rescue Boats**

14.18.2.1.1. A minimum of two (2) rescue boats are required during Sportsman Limited Outboard racing.

##### **14.18.2.2. Required Rescue Boat Equipment**

###### **14.18.2.2.1. Rescue Boat Required Equipment:**

- PDF (Personal Flotation Device) for each occupant
- Backboard or Stokes Basket (or similar)
- Fire Extinguisher
- Functioning communications equipment

##### **14.18.2.3. Recommended Rescue Boat Equipment**

###### **14.18.2.3.1. Rescue boats should also contain:**

- Belt cutters or similar knives
- Hand tools capable of cutting cut-resistant clothing

#### **14.18.3. Rescue Operations**

##### **14.18.3.1. Inspections and Checks**

14.18.3.1.1. Equipment should be inspected prior to each day’s racing by a designated race official.

14.18.3.1.2. Radio equipment should be checked prior to each day’s racing and throughout the event.

##### **14.18.3.2. Rescue/Safety Team Meeting**

14.18.3.2.1. Rescue/safety personnel shall meet with the designated race official(s) prior to the beginning of the race event. All rescue/safety personnel will be given the following instructions:

- Expectations of conduct
- Areas of concern
- Meanings of signal flags
- Assigned position on the course
- Expected response in case of emergency

##### **14.18.3.3. Rescue/Safety Team Expectations**

14.18.3.3.1. Rescue Boat Operator Responsibilities:

- Safe operation of the vessel
- Safety of the racer and rescue/safety team
- Safe transportation of patient to shore in concert with the rescue/safety team
- Knowledge of potential hazards on the water
- Knowledge of submerged hazards

14.18.3.3.2. Rescue personnel shall immediately notify the judge's stand if the course is unsafe or when life or property is in danger.

14.18.3.3.3. Contestants with potential injuries shall be lifted from the water horizontally (as possible) on a rigid body immobilization device.

14.18.3.3.4. Outside of an emergency response or a direction from race control, rescue boats shall be operated in a manner that avoids creating excessive wakes.

**14.18.4. General Racing Rules**

14.18.4.1. Racing shall be governed by the SCSC Board of Directors under the authority of the By-Laws.

14.18.4.2. Interpretations of these rules are to be determined by the event race committee. All appeals from owners, drivers, shall be made to the BOD in writing. The decisions of the SCSC BOD shall be final.

14.18.4.3. Radio communications may be used between driver and crew members during competition.

14.18.4.4. Promoter may require drivers and crew members to wear uniforms such as shirts with racing identifications and long pants. Teams shall be notified of this requirement prior to the event.

14.18.4.5. Unless directed by an SCSC official, no driver may receive outside assistance prior to completion of the race heat.

14.18.4.6. Corrective lenses are required to be worn if the competitor is required to wear such lenses while driving an automobile.

14.18.4.7. SCSC highly encourages interaction between the fans and racers. When fans are in attendance, racing teams shall keep their pit area in a safe, clean, and organized manner. Racers are encouraged to clean their equipment in-between heats.

**14.18.5. Racing Events**

**14.18.5.1. Rules and Requirements**

14.18.5.1.1. At least one (1) turn judge at each turn. Judge shall understand the overlap rule for each class and notify the judge's stand of any violations.

14.18.5.1.2. No "step ups" allowed, classes may be combined.

14.18.5.1.3. Same boat and motor shall be used in all heats of the same class for the race day. A change of boat and/or motor shall be approved by an SCSC official.

14.18.5.1.4. No handicap racing.

14.18.5.1.5. The race shall consist of up to three (3) heats. SCSC officials shall determine the maximum number of boats per heat.

14.18.5.1.6. If the total number of entries exceeds the safe limit, teams shall draw lots. The race committee reserves the right to fill the final field by selecting additional boats.

- 14.18.5.1.7. The race committee will determine the course and number of laps. Maximum distance of approximately five (5) miles and shall be a minimum of three (3) laps.
- 14.18.5.1.8. If notice is provided in the race circular or circumstances are beyond the control of the race committee, single heat races are permitted.
- 14.18.5.1.9. If notice is provided in the race circular, the race committee may run two (2) races in one (1) day. If circumstances are beyond the control of the race committee, the second race day may be cancelled.

#### **14.18.6. Passing, Overtaking, Turning and Safe Driving**

##### **14.18.6.1. Rules and Requirements**

- 14.18.6.1.1. There shall be one (1) boat length maintained between the boat in front and the boat in the rear in order to pass or overtake. The lead boat shall not interfere with the lane of the boat behind it if the distance is less than one (1) boat length.
- 14.18.6.1.2. The inside boat shall be provided room from the outside boat to avoid hitting course markers.
- 14.18.6.1.3. A driver who misses a turn should return to the marker and legally complete the course.
- 14.18.6.1.4. Drivers shall not damage or dislodge course markers causing a race delay.
- 14.18.6.1.5. Drivers who violate the above rules shall be disqualified from the heat.
- 14.18.6.1.6. Driver is responsible for the cost of repair or replacement of course markers.
- 14.18.6.1.7. In the event of a boat blowing over or a collision, the boat(s) involved shall be inspected and be given approval from a designated official before returning to the water.
- 14.18.6.1.8. During competition, drivers are not to drag their appendages in the water.
- 14.18.6.1.9. Drivers coming on-plane in an unsafe manner shall be disqualified from the heat.
- 14.18.6.1.10. All race officials have the authority to stop a heat if a driver is being unsafe. The driver responsible for the stoppage shall be disqualified for the heat. If on the last lap, the finishing order will be determined by the prior lap finish. If not on the last lap, if possible, the heat shall be rerun.

##### **14.18.6.2. Starting, Stopping and Finishing**

- 14.18.6.2.1. Three (3) legal boats of the same class are required for a legal start in at least one (1) heat of the day.
- 14.18.6.2.2. Starts may be by flag or clock as stated in the race circular. In the event of technical or equipment availability issues, the race committee reserves the right to change the use of flags or clocks.
- 14.18.6.2.3. Flag starts to be conducted per established SCSC rules. The rules shall be reviewed during the driver's meeting.
- 14.18.6.2.4. Clock Start Sequence:
  - 14.18.6.2.4.1. Horn sounds three (3) minutes before the start of the heat, a green flag goes up.
  - 14.18.6.2.4.2. After two (2) minutes has elapsed, the green flag goes down and the white flag goes up.
  - 14.18.6.2.4.3. At fifteen (15) seconds, boats between the last turn pin and the start line shall maintain their lanes.

- 14.18.6.2.4.4. There is only one (1) start per race. It begins when the clock reaches 00:00. At that moment, the green flag shall be dropped.
- 14.18.6.2.5. Start violations resulting in driver being penalized or disqualified from the heat:
- 14.18.6.2.5.1. Jumping the Start – Crossing the start line thirty (30) seconds before the race begins will result in a one (1) lap penalty. If all boats jump the start, the race shall continue, and the boats are to be scored in their finishing order.
- 14.18.6.2.5.2. Safety Violation – A driver creates an unsafe condition resulting in the stoppage of the start, they shall be disqualified for the heat.
- 14.18.6.2.5.3. Commitment Buoy to Start Line – If a driver exits the “chute” between the commitment buoy and the start line during the last 15 seconds of the start, they shall be disqualified for the heat.
- 14.18.6.2.5.4. Exiting the Pit Lane – Boats are strictly prohibited from leaving the pit after two (2) minutes has elapsed on the clock, when the green flag goes down and the white flag goes up is a disqualification.
- 14.18.6.2.5.5. Improperly Entering the Course – All boats entering the course must enter in a counterclockwise direction and not cut the course or mill until on plane. If a boat has left the pit but has not gotten on plane, they can attempt to get on plane in a safe manner towards the outside of the course. At no time shall a boat reverse direction or cut the course and return to the pit once the race has started. This will be a disqualification.
- 14.18.6.2.6. If all boats jump the start, the heat may be cancelled if a legal heat has already completed for the class that race day.
- 14.18.6.2.7. Once a legal heat has started, it shall not be cancelled. A heat may be stopped if necessary. The driver causing the stoppage shall be disqualified from the heat. If on the last lap, the finishing order will be determined by the prior lap finish. If not on the last lap, if possible, the heat shall be rerun.
- 14.18.6.2.8. Restart is permitted by the officials for any of the following conditions:
- Failure to accurately document start violations.
  - Equipment or official errors or malfunctions.
  - After a stoppage for an accident or incident on the course. Drivers who jumped the start may join the restart. All other disqualified violators may not join.
- 14.18.6.2.9. Video equipment used to record the start is highly recommended. The video shall include a method to record with the race has started. Normally this is a light in view of the camera.
- 14.18.6.2.10. Boats shall finish under their own power.
- 14.18.6.2.11. Driver(s) creating the need for officials to use excessive flares in order to stop a heat shall be responsible for the costs.
- 14.18.6.2.12. ***Junior Hydroplane Only.*** If a driver is ejected from the boat, the race is to be blacked flagged and rescue is to immediately retrieve the driver. The ejected driver is not eligible for the rerun if one is conducted.

## **14.18.7. Racing Equipment**

### **14.18.7.1. Safety Requirements**

#### **14.18.7.1.1. Pit Safety**

- a) No smoking
- b) No non-prescribed drugs
- c) No prescribed medications that affect the performance of a crew member
- d) No open toe shoes
- e) A fire extinguisher is required to be in the area
- f) A fire extinguisher to be manned and at the ready during fueling
- g) Fuel to be stored in double containment
- h) Drain pans or buckets are to be used under the outboard engine as much as possible.
- i) Above the waterline, installed propellers are to be covered as much as possible.
- j) Motors are not to be started above the water line unless the propeller, pin, washer and nut are removed. A warning shall be given to those in the area prior to starting.

**14.18.7.1.2. Driver Safety – On the Water**

- a) Closed toe shoes required. Cut socks and/or sturdy boots and cut level 5 or higher gloves are recommended.
- b) Eye protection required.
- c) Cut-resistant sleeves, wrist length.
- d) Cut-resistant pants, ankle length.
- e) Cut-resistant gloves and cut-resistant boots and/or socks are recommended.
- f) Life jackets are to be constructed in compliance with industry standards dated March 1, 2013 and be a type category “A” or “A-100”. Jackets to have impact/flak protection.
- g) Life jackets to be identified by permanent manufacturer’s tag indicating company name and date of manufacturer or re-inspection.
- h) Life jacket upper colors to be 70% international yellow or orange.
- i) Full shell helmet meeting Snell 2010 or newer, recommended to be high visibility yellow, red, orange, or lime green. Other helmet specifications allowed:
  - SFI competition 31.1 and 31.2
  - SFI spec 24.1 youth helmet for drivers age 16 and under
- j) The helmet shall remain on and properly strapped unless the driver is instructed to remove the helmet by a race official or rescuer or if boat is under tow and racing has ceased.

**14.18.7.1.3. Boat Safety**

- a) Functional kill switch, lanyard adjusted to appropriate length.
- b) Taped spring clip openings.
- c) Properly installed steering system.
- d) Fuel system to prevent the driver from being exposed to the fuel.
- e) No exposed sharp edges.
- f) Hull shall be seaworthy and properly maintained.
- g) Engine to be tied off as to prevent the outboard engine from lifting.
- h) Engine trim shall not exceed  $\pm 2.54$  degrees ( $\pm 0.25^\circ$ ).

- i) Unsafe equipment shall be promptly reported to the designated race official. Immediate action shall be taken.

#### **14.18.7.2. Legal Equipment**

##### **14.18.7.2.1. Inspections**

- 14.18.7.2.1.1. Hulls, outboard engines, and related equipment are subject to inspection in order to verify compliance with these rules.
- 14.18.7.2.1.2. To reduce cheating, with the approval of the race committee, and outboard may be torn down for inspection. The purpose of the inspection is to enforce existing rules and assist with developing new rules to maintain parity.
- 14.18.7.2.1.3. Safety inspections shall be conducted by a designated official prior to each race event.
- General seaworthiness of the boat.
  - Kill switch verification & lanyard length check.
  - Exposed sharp edges.
  - Properly tied outboard motor.
  - Throttle cable operation.
- 14.18.7.2.1.4. Rule compliance inspections shall be conducted at the direction of the designated official at the conclusion of each heat. A violation of the following rules shall result in disqualification for the heat. Additional violations may result in further disciplinary action up to suspension from racing:
- Engine height
  - Trim
  - Weight
  - Fuel
  - Restrictors (as required)
- 14.18.7.2.1.5. Boats shall be weighed with drain plugs out and the water drained.
- 14.18.7.2.1.6. Weights shall be secured inside the boat. Unsecured weight shall be removed before weighing.
- 14.18.7.2.1.7. A driver failing to report with his equipment for inspection is subject to discipline including but not limited to disqualification from the event and/or suspension from SCSC races.

<b>Class</b>	<b>Motor</b>	<b>Minimum Weight</b>
J Hydro	OMC	315 lbs.
	Mercury/Mariner	325 lbs.
A Hydro	OMC	345 lbs.
	Mercury/Mariner	330 lbs.
A Runabout	OMC	350 lbs.
	Mercury/Mariner	335 lbs.
C Hydro	Yamato 102,302,321	440 lbs.
C Runabout	Yamato 102,302,321	475 lbs.
20 Hydro	Yamato 102,302,321	400 lbs.
300 Hydro	Yamato 302, 321	420 lbs.
350 Mod Hydro	Yamato 80	420 lbs.

750 Mod Hydro	Mercury 44 ci	470 lbs.
	Mercury 40 ci	475 lbs.

#### 14.18.7.2.2. Junior Hydroplane (Ages 9 to 16)

##### 14.18.7.2.2.1. Engines

- Johnson (OMC) JKT 15 hp (with 0.650" restrictor)
- Evinrude (OMC) EKT 15 hp (with 0.650" restrictor)
- OMC 9.9/15HP from 1974 thru 1992 J15E, J15R, E15E and E15R type engines.
  - i. The OMC JKT and EKT 15A design were produced from 1986 thru 1992 and are specific to racing. They are preferred OMC models.
  - ii. Electronics/ignition, flywheel, tune pipe/resonator and carburetor can be changed to match JKT/EKT or 1986 J15/E15.
  - iii. 9.9HP must use 15HP carburetor and tune pipe/resonator.
  - iv. SCSC Officials reserve the right to refuse to allow any non-JKT/EKT engine to compete if it is determined the engine does not conform to the intent of this rule.
- Mercury/Mariner 15 hp (No restrictor)

##### 14.18.7.2.2.2. Engine Details:

- Shaft center height = 1-3/4" minimum
- Racers shall not modify their outboards for speed advantages.
- OMC outboards shall be in the spirit of the race engines produced in the mid 80's.
- Mercury engines shall be in the spirit of the currently produced race engines.
- Removal of material from moving parts is prohibited.
- Surfaces without defined dimensions shall not be altered.
- Engines may be "blue printed" however they shall comply with known dimensions.
- Up to 40 over pistons are allowed, any commercially available brand.
- Carburetor butterfly screws shall be stock.
- Fixed jets shall be used, no adjustable jets.
- Remote "Dead Man's" throttle shall be used, no tillers.
- Outboards shall be equipped with steering bars, no tillers.
- Engine covers shall be installed, holes to the front are to be covered or proper knobs installed.
- OMC – The water slot hole at the bottom of the cylinder block may be blocked.
- OMC – The small hole at the top of the water passages around the exhaust ports may be blocked.
- Mercury/Mariner – Carburetor shall not be modified.
- Stock gear foos may be used if stated in the race circular.
- Racing gear foos shall meet the BTM profile template.

- After-market parts are legal as long as they are considerably similar to OEM parts and readily available.

**14.18.7.2.2.3. Boat Measurements**

- OMC minimum weight = 315 lbs
- Mercury/Mariner minimum weight = 325 lbs

**14.18.7.2.3. Sportsman Limited “A” Hydroplane (Ages 12+, unless approved by race committee)**

**14.18.7.2.3.1. Engines**

- Johnson (OMC) JKT 15 hp
- Evinrude (OMC) EKT 15
- OMC 9.9/15HP from 1974 thru 1992 J15E, J15R, E15E and E15R type engines.
  - v. The OMC JKT and EKT 15A design were produced from 1986 thru 1992 and are specific to racing. They are preferred OMC models.
  - vi. Electronics/ignition, flywheel, tune pipe/resonator and carburetor can be changed to match JKT/EKT or 1986 J15/E15.
  - vii. 9.9HP must use 15HP carburetor and tune pipe/resonator.
  - viii. SCSC Officials reserve the right to refuse to allow any non-JKT/EKT engine to compete if it is determined the engine does not conform to the intent of this rule.
- Mercury/Mariner 15 hp

**14.18.7.2.3.2. Engine Details**

- Shaft center height = 1” minimum
- Racers shall not modify their outboards for speed advantages.
- OMC outboards shall be in the spirit of the race engines produced in the mid 80’s.
- Mercury engines shall be in the spirit of the currently produced race engines.
- Removal of material from moving parts is prohibited.
- Surfaces without defined dimensions shall not be altered.
- Engines may be “blue printed” however they shall comply with known dimensions.
- Up to 40 over pistons are allowed, any commercially available brand.
- Carburetor butterfly screws shall be stock.
- Fixed jets shall be used, no adjustable jets.
- Remote “Dead Man’s” throttle shall be used, no tillers.
- Outboards shall be equipped with steering bars, no tillers.
- Engine covers shall be installed, holes to the front are to be covered or proper knobs installed.
- OMC – The water slot hole at the bottom of the cylinder block may be blocked.

- OMC – The small hole at the top of the water passages around the exhaust ports may be blocked.
- Mercury/Mariner – Carburetor shall not be modified.
- Stock gear foos may be used if stated in the race circular.
- Racing gear foos shall meet the BTM profile template.
- After-market parts are legal as long as they are considerably similar to OEM parts and readily available.

**14.18.7.2.3.3. Boat Measurements**

- Last 18” of the bottom of the boat shall be flat ( $\pm 1/16$ ”)
- Maximum air trap depth of 5/8” at stern and 1-5/8” depth 18” forward
- Maximum air tram width, 7/8”
- OMC minimum weight = 345 lbs
- Mercury/Mariner minimum weight = 330 lbs

**14.18.7.2.4. Sportsman Limited “C” Hydroplane (Ages 16+)**

**14.18.7.2.4.1. Engines**

- Yamato Model #102
- Yamato Model #302
- Yamato Model #321

**14.18.7.2.4.2. Engine Details**

- Shaft center height =  $3/4$ ” minimum
- Racers shall not modify their outboards for speed advantages

**14.18.7.2.4.3. Boat Measurements**

- Minimum weight = 440 lbs

**14.18.7.2.5. Sportsman Limited “20” Hydroplane (Ages 15+)**

**14.18.7.2.5.1. Engines**

- Yamato Model #80
- Yamato Model #102, w/ 7/16” restrictor
- Yamato Model #302, w/ 7/16” restrictor
- Yamato Model #321, w/ 7/16” restrictor

**14.18.7.2.5.2. Engine Details**

- Shaft center height =  $1/2$ ” minimum
- Racers shall not modify their outboards for speed advantages

**14.18.7.2.5.3. Boat Measurements**

- Minimum weight = 400 lbs

**14.18.7.2.6. Sportsman Limited “300” Sealed Hydroplane (Ages 14+)**

**14.18.7.2.6.1. Engines**

- Yamato Model #302
- Yamato Model #321
- Engines are to be sealed

**14.18.7.2.6.2. Engine Details**

- Shaft center height =  $3/4$ ” minimum

- Racers shall not modify their outboards for speed advantages

#### 14.18.7.2.6.3. **Boat Measurements**

- Minimum depth at sponson trailing edge = 1-3/4" (difference between bottom of hull and bottom of sponson)
- After plane  $\geq 5'9"$
- Minimum sponson and air trap = 35"
- Minimum bottom length = 8'9"
- Minimum weight = 420 lbs

#### 14.18.7.2.6.4. **Propellers**

- Must race propellers provided with the engines
- Drivres are to turn in a propeller for the draw
- Once concealed, a drawing will take place at the driver's meeting
- No trading or returning allowed
- The drawing is to be performed each race day

### 14.18.7.2.7. **Sportsman Limited "A" Runabout (Ages 14+)**

#### 14.18.7.2.7.1. **Engines**

- Johnson (OMC) JKT 15 hp
- Evinrude (OMC) EKT 15
- Mercury/Mariner 15 hp

#### 14.18.7.2.7.2. **Engine Details**

- Shaft center height = 1" minimum
- Racers shall not modify their outboards for speed advantages

#### 14.18.7.2.7.3. **Boat Measurements**

- Minimum beam = 44"
- Minimum length = 9'5"
- OMC minimum weight = 350 lbs
- Mercury/Mariner minimum weight = 335 lbs

### 14.18.7.2.8. **Sportsman Limited "C" Runabout (Ages 16+)**

#### 14.18.7.2.8.1. **Engines**

- Yamato Model #102
- Yamato Model #302
- Yamato Model #321

#### 14.18.7.2.8.2. **Engine Details**

- Shaft center height =  $\frac{3}{4}$ " minimum
- Racers shall not modify their outboards for speed advantages

#### 14.18.7.2.8.3. **Boat Measurements**

- Minimum beam = 48"
- Minimum length = 11'5"
- Minimum weight = 475 lbs

### 14.18.7.2.9. **Sportsman 350 Modified Hydroplane (Ages 16+)**

Engine	Boat Measurements
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Yamato Model #80	Minimum weight = 420 lbs
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- 14.18.7.2.9.1. This powerhead shall be raced as furnished by the manufacturer along with the stock gear housing with a 14:16 ration
- 14.18.7.2.9.2. Only OEM parts are allowed except where specifically allowed in these rules.
- 14.18.7.2.9.3. Any type of make of spark plug, gasket, bearing seal, ignition component, propeller, piston ring, external nut, bolt, washer, and driveshaft housingn may be used provided other parts are not altered to accommodate them.
- 14.18.7.2.9.4. Only the following material may be removed: gas tank, tank brackets, any or all of the cowlings, standard exhaust system, fuel lines and fittings, clamp brackets, and driveshaft housing. It is allowed to remove the carburetor spray shield mounting lugs and the removal of the spark advance handle on the magneto.
- 14.18.7.2.9.5. Any propellar shaft is permitted. Diameters may be altered and shear pin holes may be drilled or relocated. However, only one (1) shear pin hole is permitted.
- 14.18.7.2.9.6. Only the following material may be added: Any type of spray shield (carburetor intake turning is prohibited), spark plug shield, throttle controls, kill switch hookup, chamber supports and controls, expansion chamber or tuned muffler, fuel pump, fuel filter, fuel pressure regulator, fuel lines and fittings, ignition advance and/or lockdown (provided that other parts are not altered to accommodate them).
- 14.18.7.2.9.7. Any swivel, clamp brackets and tilt pin are permitted.
- 14.18.7.2.9.8. All water plumbing modifications to move and/or vent water shall be off and through the exhaust stack plate. Water cooled filler blocks are permitted however not modifications may be made to motor block to accommodate these. Additional water vents off of the top of the stack plate are permitted and sealers may bee used to seal the base of the filler block. It is permitted to bring extra water into the block via the stack plate and a water pickup attached to the boat. It is not permissible to block any water passages in the block to reroute water, etc.
- 14.18.7.2.9.9. It is permitted to use the stock tuned exhaust system and it may be modified within the above rules.
- 14.18.7.2.9.10. No open or open tuned exhaust stacks or megaphones are permitted.  
The intent of this is to keep the noise reduced in this class.
- 14.18.7.2.9.11. The oversized pistons provided by the manufacturer are permitted.
- 14.18.7.2.9.12. Either 14 mm or 18 mm head is permitted.
- 14.18.7.2.9.13. Holes may be drilled into the mag. Plate, coil plate and end cap to drain water and holes may be filled, drilled and tapped, etc.
- 14.18.7.2.9.14. There are no measurements on the reed port size in the OEM reed cage, however, no alterations are allowed to the cage, reed or shim and they must remain stock OEM parts.
- 14.18.7.2.9.15. Any make drive shaft housing of any length is allowed. The powerhead may be rotated provided the powerhead is not altered to accomplish this. A

boat pitot water pickup may be used to feed water in to powerhead cooling system. Water lines, inlets and outlets may be plugged and/or added. If the stock drive shaft housing is used it may be altered in any way provided that the spirit of rule 10 is not violated.

- 14.18.7.2.9.16. It is permitted to alter the shape and size of the gear housing by addition or removal of material, internally or externally. “R & S” dimensions must be maintained but no other dimensions apply. You may alter the housing to include a water pickup in the nose.
- 14.18.7.2.9.17. It is permissible to mill the cylinder head. Motors must meet the cc specifications. No combustion chamber shape or configuration changes except for volume are permitted. It is allowable to machine the squish band on both Model 80 cylinder heads (18 mm and 14 mm) provided the new dimensions H equals 2.335 – 2.365 and H1 equals 13 degrees min – 17 degrees max angle are adhered to. It is not permitted to remove any of the squish band from the head. A detectable edge must surround the squish band.
- 14.18.7.2.9.18. Top fill and/or “floatless” carburetors are permitted, provided that the carburetor body is not altered in any way (i.e. filing, drilling, sanding or polishing).
- 14.18.7.2.9.19. It is permissible to notch, drill or slot the top and bottom ends of the connecting rod at the crankshaft end of the rod for the purpose of improved lubrication.
- 14.18.7.2.9.20. It is permissible to use repaired or “after-market” crank pins and bearings so long as the stroke and other specifications are maintained.
- 14.18.7.2.9.21. Permissible Modifications and Restrictions
- 14.18.7.2.9.22. Internal machine surfacets may be re-machined as long as minimum and maximum dimensions are maintained.
- 14.18.7.2.9.23. Aftermarket cylinder sleeves for the Yamato 80-M are legal provided the sleeves meet all applicable Yamato 80-M 350 cc class specifications.
- 14.18.7.2.9.24. Aftermarket gear set with the same 14:16 ratio is legal. The pinion gear must have 14 teeth and the propeller shaft gear must have 16 teeth.
- 14.18.7.2.9.25. The Yamato 302 gear housing using 14:15 or 14:16 underdrive and meeting the R specification of 2.250 minimum is legal. Internal machine work to accommodate gear set is specifically allowed.
- 14.18.7.2.9.26. The oversize Wiseco piston part# 10186M06046 is legal for the Yamato 80-M. The standard Wiseco piston part# 10186M06008 is also legal for the Yamato 80-M. 0.030 oversize pistons are allowed.
- 14.18.7.2.9.27. Aftermarket ignition coils may be mounted in any location external of the OEM location. Addition of coil mounting brackets or coil mounting plates must not require internal modifications to the powerhead.

#### 14.18.7.2.10. Sportsman 750 Modified Hydroplane (Ages 16+)

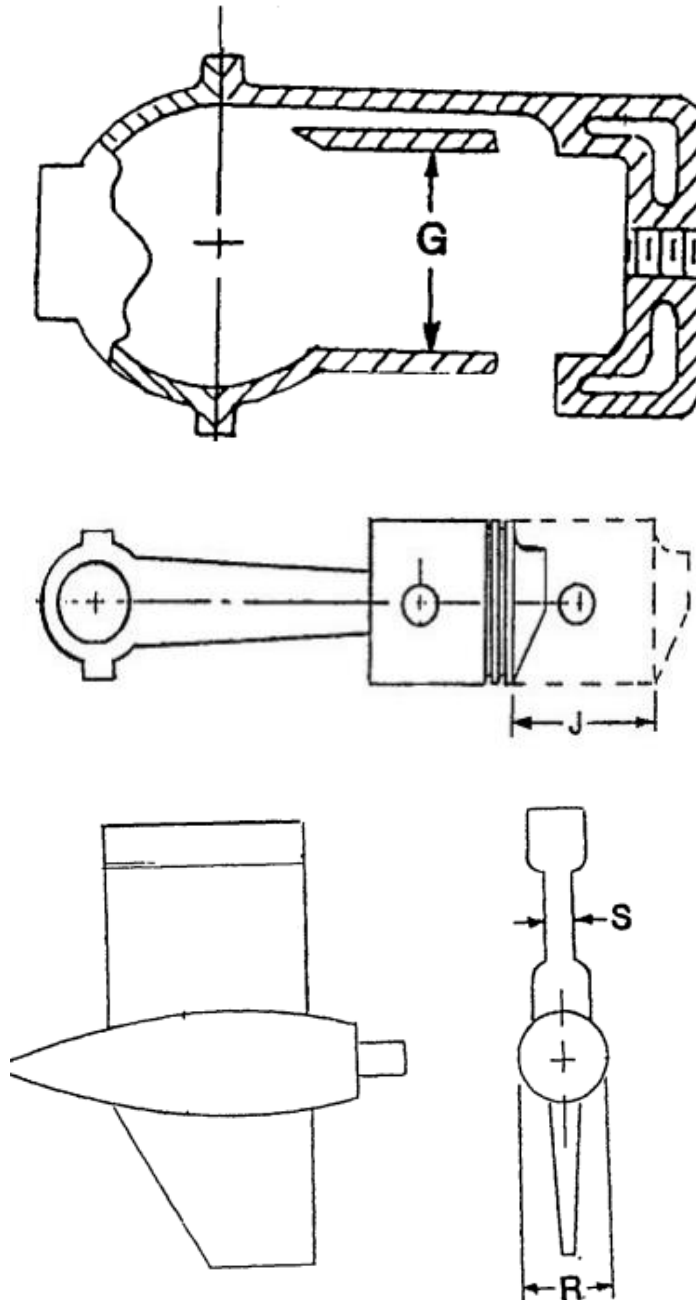
Engine	Boat Measurements
Mercury 44 cu in	Minimum weight = 470 lbs.
Mercury 40 cu in	Minimum weight = 450 lbs.

- 14.18.7.2.10.1. Pistons may be polished, knurled or bead blasted. Diameters may be altered by machining. After market pistons are permitted for use, however, they must meet all specifications for the class.
- 14.18.7.2.10.2. New type magneto adaptors for the 400 and 450 Mercury motors are permitted for use on 4-cylinder engines. Machining and installation of a snap ring or comparable device on any magneto adapter is permitted.
- 14.18.7.2.10.3. On 750 cc Modified motors one (1) or two (2) fuel pumps of any type may be used.
- 14.18.7.2.10.4. Any material may be used for reeds.
- 14.18.7.2.10.5. Any ignition system and/or flywheel is approved and modifications to adapt such system are permitted on 750 cc Modified motors.
- 14.18.7.2.10.6. There are no restrictions on removal of material from approved 750 cc Mod parts and there shall be no specifications except the following:
  - a) Minimum cc's at TDC shall be 21.5 for 44 cu in motors and 20.5 for 40 cu in engines.
  - b) Carburetors: two (2) front mounted.
  - c) Bore: 2.561 in to a maximum of 2.611 for 44 cu in engines
  - d) Bore: 2.441 in. to a maximum of 2.491 in. for a 40 cu in engine.
  - e) Stroke: 2.125 in. plus 0.004, minus 0.010 in
  - f) There shall be no addition of material to motor parts except those specifically permitted within these rules.
  - g) There shall be no additional ports or passages added to the powerhead.
- 14.18.7.2.10.7. It shall be permitted to remove the float assembly and/or install an overflow (floatless) system on any 750 cc Mod carburetors.
- 14.18.7.2.10.8. In 750 cc Mod material may be added to install a restrictor ring (flow enhancer) in the Venturi section of Tillotson model "KC" carburetors.
- 14.18.7.2.10.9. Modification by addition of material to extend the length of the high speed nozzle on 750 cc Mod carburetors is permitted.
- 14.18.7.2.10.10. It is permitted to add a velocity stack (forced Venturi) to 750 cc Mod carburetors.
- 14.18.7.2.10.11. Any gearcase that meets the "R" and "S" dimensions in either gear ration 1:1 or 1 tooth reduction is permitted in the 750 cc Mod class.
- 14.18.7.2.10.12. It is permissible to add material to fill the OEM water intake holes in the Mercury lower unit gear housings.
- 14.18.7.2.10.13. Permissible Modifications and Restrictions
  - a) Addition of material to the outside of piston skirts is approved, specifically meaning "coating" of skirts OD with a material to increase diameter.
  - b) Addition of thermal barrier coatings to piston crowns is approved. However, crown dimensions must remain as manufactured.
- 14.18.7.2.10.14. The only restriction to a 750 Mod cc motor reed cage is 4 openings per cylinder.

### 750 cc Modified Mercury Motors

Engine	40 cu in Mercury	44 cu in Mercury
Min. cc's top of plug hole	20.5	21.5

G	2.436 – 2.491	2.567 – 2.611
J	2.115 – 2.129	2.115 – 2.129
R/S Min.	1.750/0.875	1.750/0.875
# and thickness of rings	1 to 3/0.062	1 to 3/0.62-0.057
# of holes per cylinder in reed cage	4	4
# intake ports per cylinder	3	3
# exhaust ports per cylinder	3	3
Gear Ration	See Rule #14.18.7.2.10.11	
Carburetors	2 KA, 2KC, 2 Carter N, 2 Any Merc 44 cu in w/no venturi or throat dimensions or restrictions	



#### **14.18.7.2.11. Outlaw “A” Hydroplane (Ages 16+)**

14.18.7.2.11.1. **Safety and General Rules:** The same rules for Sportsman Limited Outboard unless specified below

- a) **Legal Equipment:** Same as Sportsman “A” Hydroplane except the following:
  - a. Minimum Weight = 365 lbs with gear and driver
  - b. Shaft center height = ¾” minimum
- b) **Starting, Passing, Overtaking, Turning and Safe Driving:** The same rules as Sportsman “A” Hydroplane except the following:
  - a. Notwithstanding any other overlap rule, there must be enough distance maintained between the boat in front and the boat in the rear in order to safely pass or overtake. The lead boat shall not intentionally make erratic changes in its course to interfere with the lane of the boat next to it or behind it while being passed or overtaken.
  - b. Starts are to be a flag start. Lane selection shall be by draw. Drivers are to hold their lane until the exit of turn one.

#### **14.18.7.3. Fuel Requirements**

14.18.7.3.1. A baseline fuel shall be identified for each race event. This fuel will be used to set the maximum acceptable level of the Digitron reading. Baseline fuel readings shall be taken with a 20:1 mix of AMSOIL Dominator 2 cycle oil or equivalent.

14.18.7.3.2. The Digitron should be used according to the owner’s manual.

14.18.7.3.3. Authorized fuel providers for each race venue, 87 octane will be sampled

14.18.7.3.4. Authorized fuel providers may change if announced in the race circular or at the race site.

14.18.7.3.5. Allowable fuel types:

- Pump gasoline
- Aviation gasoline
- Automotive racing gasoline
- The above may be mixed together

14.18.7.3.6. Minimum Specific Gravity for fuel is .700.

14.18.7.3.7. Fuel and additives shall not be water-soluble

14.18.7.3.8. Fuels shall not contain the following:

- Alcohol
- Substances other than oil
- Dioxane
- Other industry banned substances

#### **14.18.7.4. Numbering**

14.18.7.4.1. Boat Numbering Specifications:

- The number one (1) shall be reserved for the prior year class high points winner.
- Legal numbers are 2-999, SCSC members have first rights to numbers.
- A single letter at the end of the number(s) is optional.
- 1” stroke, spacing, and border.

- 6" height.
- Contrasting black and white.
- Solid background
- Both sides of the boat are to be numbered.
- Driver is responsible for numbering to be legible from the start/finish line to the judge's stand.

## **14.19. Super Stock (Local Class)**

### **14.19.1. GENERAL RULES**

- 14.19.1.1. The SS class letter is "SS". The "SS" and boat number must be a minimum of 9" high on both sides of the hull. The boats trailer and/or dolly must have the class letters SS and boat number a minimum of 2.5" high.
- 14.19.1.2. Boats must be raced with one (1) person on board.
- 14.19.1.3. Minimum age of driver is 21 years.
- 14.19.1.4. Maximum number of boats per heat will be determined by the Race Director.
- 14.19.1.5. Minimum weight of the boat as raced, without driver, is 1950 lbs.
- 14.19.1.6. Each SS boat must be inspected and certified by SCSC prior to participating in competition. Following certification, the owner must advise SCSC of any modifications to the boat that could affect its certification. SCSC may request a certification of a boat at any time.
- 14.19.1.7. New SS drivers are required to: obtain a minimum of three (3) written signatures of approval by current Super Stock or PS drivers in good standing, stating their approval for the applicant to drive in the SS class, as a new applicant. To apply the applicant must present the drivers' signatures of approval, a brief summary of previous experience, and a copy of his current physical to the Referee. Upon approval, the applicant may then participate in a minimum of three (3) heats starting behind the pack. After completing the minimum three (3) heats the applicant shall then be advised by the Referee as to the results of his application.
- 14.19.1.8. The objectives of the rules for SS Class are to govern and promote a professional class of propeller driver Inboard Racing Runabouts using limited and/or restricted engines.
- 14.19.1.9. All parts, including engines and hulls in their entirety, may be changed at any time, as long as said hull belongs to the same owner prior to that race.

### **14.19.2. HULL**

- 14.19.2.1. Hull must be a flatbottom design and conform to the Inboard Racing Runabout classes classification.
- 14.19.2.2. Minimum hull length shall be 17ft. L.O.A. and the maximum hull length shall be 20ft. L.O.A. not including cavitation plate(s).

### **14.19.3. ENGINE**

- 14.19.3.1. Block Assembly. Any cast iron, short deck GM block, Dart Block part# 31273344, or Merlin Block part# 081100 may be used. Bore spacing: 4.840"  $\pm$  .005" – Nominal Deck Height: 9.800" (reference) measured from crankshaft centerline. Any cast iron or steel main caps may be used. Blocks may be modified to facilitate their use.
- 14.19.3.2. Crankshaft. Any stock, or stock replacement, steel crankshaft produced for the 427 Chevrolet engine with a stroke of 3.766" max. Journals may be cross drilled, chromed, or nitrided. Minimum journal diameters; mains – 2.712", rods – 2.162".

Counterweights must remain full diameter and thickness, with no knife edging or contouring.

- 14.19.3.3. Pistons. No modifications may be made to the piston except for balancing. Wrist pins must be made of steel and have a minimum wall thickness of 0.150". No tapered pins. No modifications to the wrist pins are allowed.
- 14.19.3.4. Connecting Rods. Any stock OEM or steel aftermarket rod may be used. It may be ground, polished, bushed and shot peened. Oil holes in the small end of the connecting rod may be added. Rod length =  $6.135 \pm 0.010$ .
- 14.19.3.4.1. Balancing of rotating and reciprocating parts are permitted as per stock class rules.
- 14.19.3.5. Cylinder Heads. Only the following are allowed:  
Chevrolet Part# 3946072 with casting# 3946074  
Chevrolet Part# 14011076 with casting# 1401107  
Chevrolet Part# 6260482 with casting# 14096188 or 6272990  
Chevrolet Gen V head Part# 14096802 with casting# 14097088  
Dart Part# 19100070  
Minimum Combustion Chamber Volume 116.
- 14.19.3.5.1. No modifications to the head or valve seat. The head may be machined for PC seals and valve springs. Head studs are permitted. No internal porting, polishing, or abrasive cleaning is permitted. When repairing damaged heads, no more than two (2) chambers per head may be repaired and must meet original stock specifications. Cylinder heads may be flat milled in order to achieve allowable combustion chamber volume. Angle cutting is not permitted. Three angle valve jobs permitted.
- 14.19.3.6. Camshaft and Valve Train
- 14.19.3.6.1. Camshafts. Any camshaft may be used. Any follower constructed entirely of steel (solid or roller) with a diameter of 0.842" + 0.003" not having more than a 0.10" convex shape on the lifter face may be used, however mushroom lifters are prohibited.
- 14.19.3.6.2. Timing Chain. Any timing chain and sprocket is permitted. Gear, belt, or variable drives are not permitted.
- 14.19.3.6.3. Valves. Intake valve: 2.200 max; Exhaust valve: 1.890 max. Swirl polished valves are permitted. Minimum stem dia.: 11/32" (0.340). Minimum stem dia. from valve face to 2.00 inches up the stem: 0.295.
- 14.19.3.6.4. Valve Springs. Any valve spring, valve spring spacer washer, valve spring retainer, and push rods may be used.
- 14.19.3.6.5. Rocker Arms. Any stamped steel rocker w/ball, or stud mounted roller rocker may be used providing no changes are made to the method and location of attachment. Shaft mounted rockers are permitted.
- 14.19.3.6.6. Adjusting Nut. Any adjusting lock or posi-lock permitted. Stud Girdles are permitted.
- 14.19.3.7. Intake Manifold. GM part# 3933163 or 6269318 only. Internal porting, polishing, or abrasive cleaning is not permitted. The plenum divider may be modified but must remain no more than .190" from the top of the manifold. The opening or notch in the

plenum divider must not be larger than 2.250" wide x 2.375" deep. Dart manifold, Part# 41114000, will be legal for all SS runabouts.

- 14.19.3.8. Carburetor. Any American made carburetor having four (4) venturis. The carburetor throttle plate shall have no more than four (4) holes. If throttle bore restrictors are used there shall be no more than one (1) per hole and must be located in the throttle plate area. Those holes shall be no larger than 1 11/16" (1.693") inside diameter. A wedge, spacer, adapter, bracket, gasket(s) or any combination thereof shall be permitted. Maximum distance allowed between the carburetor and intake as measured at the thin edge of the opening(s) is 1.500".
- 14.19.3.9. Fuel System. Any fuel pump may be used. Fuel (See General Technical 40.18.12).
- 14.19.3.10. Ignition. Any distributor that fits in the conventional manner is permitted. A battery-powered ignition must be used. Devices reading directly from the crankshaft are not allowed. No multi-spark ignition systems may be used. The firing orders permitted are 18436572 and 18736542.
- 14.19.3.11. Exhaust. Any exhaust pipes or headers may be used, provided that there is no change in the place or method of attaching to the cylinder head.
- 14.19.3.12. Lubrication System. Any wet sump pan and internal oil pump mounted in the stock location. No dry sump oil systems allowed. Crank wipers, windage trays, and oil coolers are allowed. The use of externally mounted, mechanically driver, vacuum pumps is not allowed. Plugs may be used to restrict the flow of oil to the rocker arms.
- 14.19.3.13. Gaskets. Any gaskets may be used.
- 14.19.3.14. The use of small block engines is not allowed.
- 14.19.3.15. All parts used shall be stock as furnished by the engine manufacturer except as noted: fuel pump, exhaust manifold, flywheel, oil pan, camshaft, valve covers, timing chaing, timing chain cover, air scoop velocity stack, spark plugs, coils, condenser, cam bearing, rod bearings, main bearings, oil filter, gaskets, harmonic balancer and starter. All stock replacement parts used must conform to the engine manufacturer's equipment specifications, and be listed in a parts manual for that engine. However, parts for different years or models may be mixed regardless of model year, provided they are available through normal dealer channels (See specifications below). Titanium parts are strictly prohibited, the only exception being valve spring retainers.
- 14.19.3.16. There shall be no modifications allowed on SS engines other than those detailed below and elsewhere in these rules. The following automobile parts may be removed: fuel pump, exhaust manifolds, water pump, thermostat, vacuum spark controls, choke, shutters, shafts, bell housing, generator or alternators, and supporting items such as braces, controls and gaskets for same.

#### **14.19.4. HARDWARE**

- 14.19.4.1. Engines must be mounted rear of amidships and drive forward through a V-drive.
- 14.19.4.2. The drive line or shaft must be covered with either 1/8" steel or 1/4" of aluminum.
- 14.19.4.3. Parachute static lines must attach in a way to keep them free of the injector(s), linkage, drive line, prop shaft, blower belt(s). Parachutes are optional.
- 14.19.4.4. Electrical kill or short switch must be used at all times. There shall be a manual fuel shut off switch and a manual electric shut off switch in safe reach of the driver while the boat is underway. Only mercury type switch or doubleball (burglar alarm type) will be accepted.

- 14.19.4.5. Hulls must have points to attach a 3 or 4 leg sling to lift the hull. Each leg of a 3 leg sling must be certified to hold 1900 lbs. Each leg of a 4 leg sling must be certified to hold 1250 lbs. Slings must be pull tested each three (3) years. The owner is responsible for providing the sling and its certified strength. The race inspector shall determine if the sling is safe.
- 14.19.4.6. Couplers between in-and-out boxes and propeller shaft shall be a minimum of 3.5 inches long, be made from billet steel, and utilize a minimum of four (4) clamping bolts. Set screws shall be used in each end of the coupler. Each shaft shall be dimpled to receive the set screws.
- 14.19.4.7. A safety collar, dimpled to the propeller shaft, within 0.500" of the fore end of the stuffing box or thrust bearing is mandatory. The diameter of a collar fore of the thrust bearing must be larger than the bearing. Collars must be machined from bar stock.
- 14.19.4.8. Driver seat must be bolted in place.
- 14.19.4.9. Prop releases are mandatory on all SS boats at all races.

## **14.20. Special Events**

### **14.20.1. Needles River Racing Association**

#### **Driver Requirements and Equipment**

- 1. Minimum age for boat drivers is 18.
- 2. All drivers must wear helmets that protect the head, temple, ears and neck. All helmets must be in good condition and be 2010 Snell or newer.
- 3. All drivers must wear life jackets having leg straps.
- 4. Minimum clothing for drivers will be long sleeve shirts, long pants and closed toe shoes.
- 5. Drivers may not remove helmets, life jackets or any safety equipment until boat reaches the out ramp.
- 6. The use of alcohol and any other controlled substance is strictly prohibited before or while operating a boat during the water portion of the event. Failure to adhere to this policy will result in immediate disqualification and removal from the event.
- 7. Smoking is strictly prohibited in the "pit area" as defined anywhere the boat is parked and being worked on within the area of the event. Failure to adhere to this policy will result in immediate disqualification and removal from the event.

#### **Tech Inspection**

- 1. Boat registration will not be completed until the boat has successfully passed a technical inspection for the event.
- 2. All boats must be in safe mechanical condition as determined by NRRA Inspector. This applies particularly to steering, throttle linkage, U-joints, motor mounts and bolts, seat mounts, wiring and fuel systems.
- 3. On all motor mounting hardware, a minimum of two (2) threads of fastener must be exposed past the end of the nut.
- 4. All boats must have a 360-degree flywheel cover made of production aluminum or the equivalent material.

5. All boats must have a throttle return spring, which will insure an idle condition when the linkage is disconnected or fails. The spring may not be connected to ballpoint.
6. All boats driven in excess of 100 MPH must have a “throttle stop” that prevents the throttle cable or carb/injection linkage from going past center.
7. All boats must have a “kill switch” connected to the driver that will shut off the engine in the event the driver is thrown out of his seat. This device shall be mounted or release routed so as to disconnect should driver’s posterior move more than 18” in any direction from the driver’s seat. Steel clips only on kill switch lanyard. No plastic hooks permitted.
8. All boats with cable steering must have a minimum of two (2) clamps on each cable.
9. All boats must have a fully charged minimum 5 lb. fire extinguisher in the parking area and tow vehicle, with a current certification tag.
10. All boats driven in excess of 100 MPH must have a prop release mechanism.
11. Chrome rudders or struts are not allowed on boats driven in excess of 100 MPH. It is recommended, on flatbottoms, that a split style safety collar is used on the rudder shaft which will prevent the rudder from moving downward.
12. All hydro rudders must extend at least 1 ½” below the prop when the prop is in a vertical position.
13. All hydro rudders shall be a minimum of ½” thickness at the clam shell.
14. All boats are required to utilize a safety collar, split style, located just ahead of the shaft seal which will prevent the propeller shaft from moving rearward.
15. The minimum prop shaft diameter through the back of the strut shall be 1 inch.
16. All prop driven boats are required to have a drive line guard. The drive line guard is defined as being fully enclosed from the V-drive to the center of the rear coupler of U-joint of the engine within 2 ½” of the flywheel adapter and secured in such a manner that it will retain the drive shaft, in the event of failure. No perforations will be allowed in the drive line guard. Material must be ¼” aluminum or 1/8” steel.
17. All blown, injected or fuel boats must have a fuel shut off valve controllable from alongside or in front of driver. The valve shall be located between the main fuel pump and the injectors.
18. Every attempt will be made to get you and your boat on the water. Decision of the Technical Official on rule interpretation is FINAL.

### **Racing Portion of Event**

1. Single Passes. No side by side.
2. Course is 660 feet. 40 foot commitment area.
3. Timing lights & buoys. ET only. All set up by Dave Lipinski.
4. Classes are Blown & Unblown
5. Competition is from 10:30 a.m. to 3:00 p.m. on Friday and 10:30 a.m. to 3:00 p.m. Saturday.
6. Tech will be handled by Dave Sammons. Tech inspections will be on Thursday late afternoon for early arrivals and on Friday morning.

### **14.20.2. Outlaw Jet Sprints Exhibition Rules**

- All Outlaw Jet Sprint boats are max 14 feet and must be all aluminum, must have conventional automotive V-8s powerplant with direct drive into jet pump unit.
- Classes:
  - Super Mod: Maximum of 367 C.I.
  - Group A has a maximum of 412 C.I.
  - Unlimited Super Boats can run any configuration and has no maximum C.I. but Nitrous is illegal.
- Rubber “O” ring in fuel cap to be in good condition to prevent leaks.
- Fuel tank must be securely mounted.
- Steering should not bind and turn freely.
- Reverse bucket shall not interfere with steering nozzle while deployed.
- Helmets, fire suits and gloves shall be worn.
- Life jackets are optional.
- Power kill switch must be mounted within reach of driver.
- Safety limiter chain or block on trailer

### **14.20.3. Parker Enduro**

**SCSC Membership:** All participants and crew members that are directly involved (i.e. fueling, turning, wrenches, driving tow vehicle) must be SCSC members. A one day “single event” membership can be obtained and will provide **Secondary Participant Insurance Only!**

**Personal Insurance:** It is highly recommended that all competitors have their own primary medical insurance in addition to the insurance provided by SCSC.

#### **Safety Equipment:**

- All helmets and life jackets must meet SCSC standards (e.g. Ski-type life jackets will not be acceptable).
- Each pit shall have one **40BC fire extinguisher** fully charged and readily available.
- All boats shall have a **20 foot tow line** attached to the bow.
- All boats shall have a **paddle** secured safely inside the cockpit.
- **Auxiliary fuel tanks**, added to the boat, must be properly secured and will be subject to inspection.
- All boats must be equipped with a **throttle return device** (bungees on the hand throttle will be an acceptable return device).
- All boats must be equipped with a **kill switch**, automatically actuated should the driver unintentionally leave the seat of the boat.

**Competing Boats** shall be of a “production type” as judged by the race committee. There shall be no “full race” type boats such as SST, Formula, Mod U, F1-Champboat, Inboard Hydrowplane, etc. However, Flatbottom, V-Bottom, Mod VP & Jet boats are legal. All boats shall have identification numbers, not to exceed 3 digits, attached firmly and in a manner that can be seen from either side of the boat. The numbers must be at least 12 inches in height, in contrasting colors (preferred black on white or white on black numbers) and legible. In the case of duplicated numbers, either the returning entry has first right or if

both are new entries, the earliest posted entry shall have the right to “the number” and the later entry shall be required to change numbers.

**Drivers** must be 18 years of age or older or cleared by the Race Director. A competing boat may have as many drivers as desired. Drivers may drive more than one boat, however, the driver must commit to that boat prior to final registration, before the start of the race or during roll call at the drivers meeting on Friday evening and the driver **must** let the judge’s stand/chief scorer know when changing boats during the event.

## **DEFINITIONS**

**Division**: A minimum of four (4) boats shall be considered a “DIVISION”. If there are less than four (4) boats registered for a division start, the required “field” shall be considered not met and boats will automatically be placed in the next division, except Division VII, which if the minimum is not met will only be eligible for the overall win, no division win/division prize money will be awarded. However, the referee/race committee may consider allowing a handicap for the class to be combined.

**Dry Weight**: Weight of boat and engine, less driver and fuel.

**Engine Change**: Engine change is strictly prohibited and will result in immediate disqualification; however, every part on an engine may be changed out except the original block during the race.

**Fire Extinguisher**: One 40BC fire extinguisher shall be required in each pit and shall be manned during all fueling operations.

**Fueling**: Fueling may be performed using approved overhead fueling rigs with double safety valves, one at the fueling tank and one at the nozzle. The fueling nozzle shall be of the gas station type with a maximum of one-inch opening. All fueling rigs must be properly grounded. **NO SMOKING IN PIT AREA.**

**Electric fuel pumps** must have a shut off valve at the nozzle and must be properly grounded.

**Hand operated pumps** may pump directly into the tank with no nozzle required.

**Fuel Spills**: Each team is responsible and must clean up any fuel spills immediately. There shall be appropriate equipment for fuel clean-up in each pit provided by each team, including but not limited to: towels (paper or cloth) fueling “diapers” (i.e. Zuck ups), etc.

**Fuel Additives**: The use of Nitrous, Nitrous oxide or any other oxygen carrying additives is strictly prohibited for this race. Violation of this rule will result in immediate disqualification.

**GPS**: Any portable or affixed mounted GPS device (i.e. Garmin E-Trex, Magellan, Leyzene, etc.) that records top speed and miles. It must be able to be fix mounted inside hull out of the reach of the driver during racing and removable to check during pit stops. It is required equipment for all participating boats in Division IV through VII.

**Incident:** Any driver involved in an incident must be cleared by medical before re-entering the race. Any boat involved in an incident must be cleared by the Chief Inspector before re-entering the race.

**I/O:** A driver unit located outside of the transom of a boat, driven by an engine located inside the boat.

**Jacks:** An engine lifting device used to raise and lower the engine.

**Lanes:** A lane shall be considered to be 20-foot-wide in accordance with the dimensions of the “RED ZONE”. A passing boat shall be responsible for establishing the clearance and remaining out of the red zone of the boat being passed. The boat being passed shall maintain a steady course in his/her established lane. The turn within the red zone shall be made in a “gentlemanly manner” and all boats shall control their speed so that they can maintain their lane around all of the buoys.

**Maximum Speed:** For all divisions, the Parker Enduro shall have a maximum speed of 110.999 mph (break out is 111 mph, which will incur penalties – see below). This shall be enforced with a GPS that will be affixed to the boat prior to the start of the race that must be cleared and reset or “zeroed out” for both speed and miles travelled. During each pit stop/any and all stops made by the boat, the pit manager will check the GPS recall for top speed and miles accrued and then the GPS will be reset. In the event of GPS failure, it is the responsibility of the driver to replace the broken GPS during the pit stop where the GPS is deemed not working or a minimum five (5) lap penalty will be assessed. Intentionally damaging the GPS unit will result in an immediate disqualification.

The GPS will be checked during every pit stop or every time the boat enters the pit area by the pit steward. The Pit Steward will record the top speed and mileage each time the boat is checked. It is the responsibility of the driver(s) to show the GPS to the Pit Steward upon entering the pits during a stop (scheduled or otherwise). Failure to show the GPS to the Pit Steward will result in a minimum five (5) lap penalty depending on the severity of the violation. Failure to show the Pit Steward a second time will result in a disqualification.

**Penalty Area:** An area that a competitor who has been black flagged for a violation of the rules shall proceed to and remain for a period of time established at the time of the violation, this can be the pit stall or adjacent to the launch ramp area. The penalty area shall be in the vicinity of the judge’s stand as designated by either the Race Director or Referee. No maintenance, including re-fueling shall be done while the boat is in the designated water penalty area. A driver change while in the penalty box shall be permissible.

**Pit Area:** This is the only area the boat may be fueled or maintenance performed.

**ABSOLUTELY NO SMOKING/ALCOHOL IN THE PIT AREA!** If you must smoke, go to the designated areas (fire lane) to smoke. Note: Your crew is your responsibility, if they choose to smoke and/or drink alcohol in the pit area, they do so at your peril. You can be fined, penalized or disqualified for the actions of your crew members. Holders are required to be a minimum of 16 years of age. Spotters are required for all teams when entering the ramp areas to assist with backing up the trailer and making sure the area is

clear and safe. All outboard propellers are to be covered while the boat is being transported to and from the launch ramp.

**Pit Lane/Row:** Boats entering the designated pit lane shall slow to a no wake condition or safe speed (**approximately 5 mph**). Boats traveling in excess of the pit lane speed may be “docked” one (1) lap or assigned to the penalty area depending upon the magnitude of the violation. At any time during the race all boats must exit the pit lane (to re-enter the course) as prescribed. Failure to do so will result in a minimum one (1) lap penalty. The “pits” are designated as from the pit entrance buoy to the pit exit buoy. Once a boat crosses into pit lane, regardless of reason, he/she is considered “entering the pits” and boats will NOT be allowed to be worked on in this area or any other area of the pits except in their designated pit stall during the race. You may work on the boat on either side of the “pits” should a breakdown occur, however, no fueling may occur anywhere except the pits. Failure to do so will result in a minimum of five (5) minutes added to the pit stop.

**Pit Stops:** There shall be **two (2) mandatory pit stops of at least eleven (11) minutes each**. All pit stops shall require trailering of the boat at the out ramp, proceeding to the assigned pit area for refueling/maintenance, the boats shall then be allowed to go to the launch ramp. Penalty for not taking one (1) pit stop is a four (4) lap reduction. Penalty for not taking two (2) pit stops is automatic disqualification. The time (11 minutes) shall start when a crew member or boat touches the trailer. One (1) minute of the 11 minute pit stop is to insure the pit steward can check the GPS.

**Race Course:** The race course shall be an approximately six (6) mile course with three (3) buoy turns at either end. There will be an entrance to pit lane/row running the length of the pits and beyond which all boats shall enter and exit “off plane” or safely making minimum wake (approximately 5 mph).

**Red Zones:** There shall be two (2) **RED ZONES** on the course. One relates to the area around each competing boat; the second relates to the turn buoys, pit lane, entrance and exit.

- A. **Boats:** Each boat shall have a “red zone” established around it when on the course. The “red zone” shall be an area of one hundred (100) feet in front, one hundred (100) feet behind and twenty (20) feet on either side. (A passing boat may not enter the “red zone” of a competing boat).
- B. **Turn Buoys:** The red zone with regard to turn buoys shall be one hundred (100) feet prior to the turn, continuing through the entire turn, until one hundred (100) feet past the exit buoy. All competing boats shall establish a lane prior to entering the red zone (established one hundred feet prior to the entrance buoy) and shall maintain that lane until exiting the red zone (one hundred feet past the exit buoy). E.G. if you enter the the red zone of a turn in lane five (5) you must control the speed of your boat so that you remain in lane five throughout the red zone associated with the turn. A boat may change lanes in the turn if it is the only boat in the turn from the time it enters the “red zone” until it exits.

Red Zone penalties are listed and will be enforced, however, if a boat spears a buoy and the buoy is attached to the boat, the driver **MUST** enter the pit through pit lane to have the buoy removed on the lap that the buoy was speared. Any boat that crosses the start finish line with a buoy attached, lap and proceeding laps will not count, and the boat is subject to disqualification. Any boat that spears a buoy and does come in to be removed on the lap it was speared, the Red Zone penalty will apply.

In the interest of safety, it is felt that a 4-hour marathon on a six mile course offers a multitude of opportunities for passing safely outside of any red zone. The referee shall be the final authority on reported lane changes with the red zones.

**Start: All Divisions:** The start shall be of a modified LeMans start. One or more holders per boat shall be responsible for holding the boat in a proper position parallel to the other boats on the starting line. Upon receiving the start signal, these drivers should start their engines, accelerating and angling out to the center of the race course. The race director shall give the lineup for the divisions prior to the start.

**Finish:** The first boat to complete four (4) hours plus one (1) lap shall be declared the overall winner. All boats following the winner shall be allowed to complete the lap they are on when the checkered flag is given to the winning boat. (e.g. a boat in front of the boat receiving the checkered flag shall be allowed to complete the lap and will be scored for that lap. A boat behind the boat receiving the checkered flag will be scored as he crosses the finish line and may not continue in the race). Simply stated, every competitor that crosses the finish line while the checkered flag is flying will be finished racing and will be scored for laps completed. A boat on the course has 15 minutes to finish the race after the checkered flag has been flown (to be scored for that lap). If a boat is not running at the end of the race, the boat will be scored on laps completed. It is not necessary for a boat to be running in order to be scored.

The Parker Enduro shall be considered finished when the first boat has completed four (4) hours plus one (1) lap, after the first start, at which time all boats shall be scored based on laps completed at the time of the race stoppage.

**Re-starts:** All restarts shall be a modified LeMans start with positions based on laps completed at time of race stoppage.

**Race Stoppage:** If the race must be stopped due to weather or circumstances beyond the control of the Race Committee, the “Enduro” will be considered complete and a winner shall be declared if the race leader has completed more than three (3) hours of the race. If there is a stoppage prior to the aforementioned, an attempt to complete the race will be made on Sunday. All boats competing in the re-start shall receive start positions based on laps completed at time of race stoppage. The restart shall be of a modified LeMans start in running order.

**Non-continuance:** If for any reason the race cannot be completed over the weekend, Division winners will be declared based on laps completed. There will be no OVERALL winner. Trophies and monies shall be adjusted accordingly.

**Scorers:** The scoring of the race will be done by a group of scoring officials.

**Scoring:** A competing boat must cross the start/finish line under its own power in order to be scored for that lap. A boat will NOT receive a lap score if towed over the start line. Race numbers must be legible and either white numbers on a black background or black numbers on a white background. If numbers are not legible you may not be scored.

## INFRACTIONS

Depending upon the severity of the infraction committed by the driver, member of the pit crew or immediate associates (friends, relatives, etc.) of the team involved, the boat shall be black flagged and assigned to the penalty area or disqualified. If a driver ignores the black flag, scoring for that boat shall stop immediately and the penalty shall be “served” at the next pit stop. An additional penalty may be assessed at this time.

**Top Speed Break Out Violation:** The “Top Speed” limit of the Parker Enduro is 110.999 mph. During a pit stop or any other stop where the boat returns to the pits, it is the responsibility of the driver to show the pit manager the reading of the GPS. If the boat has exceeded 110.999 mph that boat will be deemed to have “broken out” and given a **two (2) lap penalty**. If the boat violates the top speed rule a second time a **five (5) lap penalty** will be immediately assessed. A third time violation results in immediate disqualification from the race. The race committee is placing radar guns throughout the course to look for speed violators.

**Unsportsmanlike Conduct:** Unsportsmanlike conduct of any kind by any owner, driver, crew or anyone affiliated with a said team will not be tolerated and can result in a disqualification for the said team. This includes but is not limited to; threats, fighting, vulgarity, yelling, intoxication, etc. while the event is in progress.

**Course/Turn Judges:** Shall be placed in every patrol/safety boat and shall be responsible for reporting all violations to the Chief Referee who shall, in conjunction with the Race Committee, reach a rapid decision as to the severity of the violation. The violator shall be black flagged, assigned to the penalty area or receive a loss of laps already completed.

**Patrol/Safety Boats:** Shall be equipped with both red and yellow flags and upon receipt of orders from the Chief Referee shall attempt to fly the appropriate flag. Note to all participants, you must maintain a safe distance from all patrol/safety/rescue boats. Do Not “buzz” any patrol/safety/rescue boat or you may be fined up to \$500 or penalized laps.

**Protests:** All protests must be received in writing with a check or cash in the amount of \$300 **within one (1) hour** of the finalized announced results of the race. After this time has expired NO protests will be allowed and race results will be considered certified. If you win the protest the check/money will be refunded, if you lose the protest the money will be awarded to the protested.

***Note:*** *There is no further need to express our desire for a Safe Race! This race will not be won in the first turn, nor will it be won by an unsafe pass, violating any of the RED ZONES. The Officials would like to remind you that they will do everything to keep you legal but have no choice in the matter should a driver or team exhibit*

*unsafe/unsportsmanlike practices while on or off the course. Our theme of “Let no boat be left behind” will continue as long as we can keep it SAFE!*

In the interest of safety and to maintain parity with all of the divisions and boats of different speeds, handling characteristics, etc. it is most important that we officially interpret the **spirit of the rules and the concept of the Parker Enduro**, rather than the strict letter of the rules. Therefore, if you feel you have found a “loop hole” in the rules, check with the rules chairman before you get creative and waste your good time and money. If you have a boat that doesn’t fit into any racing divisions, please contact/email the race chairman your boat specs and the race committee will find a division for you to race.

### **The Referee’s decision is final in all matters!**

Race Chairman: Ross Wallach (310) 318-4012

Rules & Technical Committee Chair: Dave Rankin (818) 468-2379

Outboard Technical Rules Chair: Troy Nelson (720) 270-7529 Ken Scoville (303) 440-0854

*Note: Please refer inboard technical questions to Dave Rankin & outboard technical questions to Troy Nelson or Ken Scoville.*

### **RULES Approved 05/15/2022**

WHEREAS it has been the intention of the rules committee to make “minor” adjustments to the rules each year so that no boat shall be left behind because of a said rules change.

## **DIVISION I**

**A. V-drives B. Comp Jet C. Crackerboxes D. I/O V-Bottom. Capsules allowed.**

### **A. V-Drives**

1. Engine
  - a) Any four (4) or six (6) or eight (8) cylinder engine of less than 410 c.i. (naturally aspirated). A 650 CFM or less, unmodified OEM style carburetor only. Cast iron heads only, no aluminum heads, as produced for vehicle or marine use. Any non-production configuration shall be evaluated by the rules committee and may be assigned to a more suitable division in an effort to maintain parity.
2. Hull: Minimum length 15’, flat bottom or V-bottom
3. Weight: Minimum of 1,850 lbs with driver
4. Drive: Straight shaft or V-drive
5. Capsules are allowed in accordance with SCSC safety rules. For construction layup schedule, etc. please visit [www.scsracing.com](http://www.scsracing.com).

*\*Note: Boats may be allowed to race in Div. I that don’t comply with the current rules at the discretion of the Tech Director/Race Director.*

### **B. Jet Drive Boats**

1. Engine: Max 515 c.i., naturally aspirated. NO “Z” drives permitted. (Must comply with SCSC Comp Jet rules).
2. Hull: Minimum length 16’, any type bottom
3. Weight: Unrestricted
4. Drive: Must be equipped with a rudder that extends a minimum of four (4) inches below the bottom of the jet nozzle and has a minimum surface area of sixteen (16) square inches. Adjustable style nozzles may be used but must be limited to 5 degrees above the planning surface of the boat and shall remain in the full down position at all times when operating in or near pit row. Upon departure from pit row, the nozzle shall remain in the full down position until safely on the race course. (Safety item: violation subject to disqualification).
5. Capsules are allowed in accordance with SCSC safety rules. For construction layup schedule, etc. please visit [www.scscracing.com](http://www.scscracing.com).

### C. Crackerboxes

In accordance with SCSC Crackerbox Pro class rules. For rules, please visit [www.scscracing.com](http://www.scscracing.com).

### D. I/O V-bottom boats

1. Engine: Any four (4) or six (6) or eight (8) cylinder engine of less than 410 c.i. (naturally aspirated). A 750 CFM or less, unmodified style carburetor only. No blowers, turbo chargers allowed. Aftermarket heads, hydraulic roller cam, intake manifolds, ignition is allowed
2. Hull: Maximum length 20’, V-bottom
3. Weight: Unrestricted
4. Drive: Any “shifter as in “Bravo style” type outdrive with a working forward and reverse.

*Note: Any non-production configuration shall be evaluated by the rules committee and may be assigned to a more suitable division in an effort to maintain parity*

**Length of Boat** – shall be measured from bow to transom (including set back). Maximum length shall be 24.99 feet.

**Weight** – boat shall be weighted without driver.

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## DIVISION II

2, 2.4, 2.5, 3.0 Liter Outboards. Mod VP or B-Bottom Hulls. Capsules allowed.  
No True Tunnels.

### Single Engine Mod VP Hull

Boats: Single outboard Mod VP style boats

1. Minimum hull length allowed is 17’9” and includes v-bottoms, flat bottoms and Mod VP bottoms. No true tunnel hulls are allowed.
2. Minimum weight allowed is 1,300 lbs. as the boat comes off the race course with remaining fuel, water drained from the boat and no driver. Ballast can be added but must be securely anchored for safety reasons. No piece of ballast shall weigh more than 50 lbs.
3. All areas of the boat must be available for safety inspection including steering system, foot throttle, kill switch, shiftable gearcase, prop shaft heights, fuel tanks, batteries, seat, trim pumps, running surfaces and fixed jack plates.

4. Capsules are allowed in accordance with SCSC safety rules. For construction layup schedule, etc. please visit [www.scscracing.com](http://www.scscracing.com).

## **Engines**

Outboards: 6-cylinder (or less) 2-strokes with stock OEM carburetors.

1. Modified Mercury 2.0 Liter 2-stroke outboards with original steel sleeves are allowed. Must run the three stock OEM carburetors with maximum Venturi sizes of 1.327 inches. Ports may be modified. Parts from other Mercury high performance outboards or equivalent aftermarket replacement parts are allowed. Boring up to .060 is allowed. Cylinder head volume may be reduced to no less than 22 CCs with head gaskets .030 inch or greater. O-ring head volume may be reduced to no less than 27 CCs. The flat plate method with a surface gap spark plug installed will be used to measure. Mercury Racing flywheels are allowed but must weigh at least 6.7 lbs.
2. Stock Mercury 2.4 Liter 2-stroke outboards (chrome bore with 3 or less iron sleeves) are allowed. Must run stock OEM carburetors with maximum Venturi size of 1.327 inches. Boring up to .030 is allowed. OEM or stock equivalent aftermarket replacement parts are allowed. Aftermarket reed materials are allowed. Cylinder head volumes reduced to no less than 32 CCs with head gaskets .035 inch or greater are allowed (the flat plate method with a surface gap spark plug installed will be used to measure). Mercury Racing flywheels weighing at least 6.7 lbs. are allowed. Airbox may be removed. Porting, grinding, machining and polishing are not allowed. 7-petal engines are not allowed. Bridgeport blocks are not allowed. Cross-drilled manifolds with ½ holes are not allowed. Upgraded rod bolts are allowed. No other alterations are allowed to any powerhead components.
3. Stock OMC, Yamaha and Suzuki 3.0 Liter (or less) 2-stroke outboards are allowed. Must run stock carburetors. Boring up to .030 is allowed. OEM or stock equivalent aftermarket replacement parts are allowed. Aftermarket reed materials are allowed. Cylinder head volumes reduced to no less than 42 CCs with head gaskets .035 inch or greater are allowed (the flat plate method with a surface gap spark plug installed will be used to measure). No other alterations are allowed to any components. Porting, grinding, machining and polishing are not allowed.

Mid-sections/Lower units: OEM shifter-type gearcases with working forward, neutral and reverse controlled from the driver's seat.

1. 2.0, 2.4 and 2.5 Liter lower units must measure at least 4 ½ inches in diameter just forward of the propeller. XR6 gearcases are not allowed. Mercury 15 and 20-inch midsections and tunners are allowed. The water pick-ups must be on gearcase.
2. OMC, Yamaha, Suzuki may modify OEM mid-sections, tuners and lower units including the installation nose cones with low-water pick-ups.
3. Prop shafts must be at least ½ below the lowest part of the last 3-feet of the running surface/center pod/pad, including wedges. Wedges on this area of the pad restricted to 4 inches wide and a depth of 3/16. The prop shaft must be parallel to that running surface at the time of measurement.
4. Engine jacks must be disabled and through-bolted with a 3/8" Grade 8 or better self-locking bolt and must be marked by the inspector prior to racing.

**Length of Boat** – shall be measured from bow to transom (including set back). Maximum length shall be 24.99 feet.

**Weight** – boat shall be weighted without driver.

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## DIVISION III

### V-Bottom Outboard “Ski Race” boats

#### A. V-Bottom Outboard “Ski Race” Boats

1. Engine: Any engine allowed in accordance with the current “Ski Race” rules.
2. Hull: Any V-Bottom hull allowed in accordance with the current “Ski Race” rules.
3. Drive: Any drive in accordance with the current “Ski Race” rules. Prop shaft height limited to even with the last 3’ of the running surface.

**Length of Boat** – shall be measured from bow to transom (including set back). Maximum length shall be 24.99 feet.

**Weight** – boat shall be weighted without driver.

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## DIVISION IV

**A. Inboard V-Drive (gas or diesel) B. Unlimited Jets C. Small Block I/O with a V-Bottom style hull only. Capsules allowed. GPS Required.**

#### A. Inboard V-Drive

1. Engine
  - a. Gas: 540 c.i. maximum, and naturally aspirated in accordance to the current SCSC Grand National rules.
  - b. Blown Gas: 475 c.i. in accordance to the current SCSC Grand National rules.
  - c. Diesel: Unrestricted and diesel fuel only
2. Hull: Minimum length 17 ft., V-Bottom or Flat Bottom
  - a. Capsules are allowed in accordance with SCSC safety rules. For construction layup schedule, etc. please visit [www.scscracing.com](http://www.scscracing.com).
3. Weight: Unrestricted
4. Drive: V-Drive only

#### B. Jet Drive Boats

1. Engine: Unrestricted internal combustion
2. Hull: Minimum length 16 ft., any type of bottom
3. Weight: Unrestricted
4. Drive: “Z” drives are permitted. Jets must be equipped with a rudder that extends a minimum of four (4) inches below the bottom of the jet nozzle and has a minimum surface area of sixteen (16) square inches. Adjustable nozzles may be used but must be limited to 5 degrees above the planning surface of the boat and shall remain in the full down position at all times when operating in or near pit row. Upon departure from pit row, the nozzle shall remain in the full down position until safely on the race course. (Safety Item: violation subject to disqualification)

#### C. Small Block I/O

1. Engine: Any 410 c.i. “small block” production made engine (naturally aspirated). No nitrous oxide.
2. Hull: Any Tri or V-Bottom with a minimum length of 16 ft.
3. Weight: Unrestricted
4. Drive: Any shifter type drive with a working forward and reverse and no height limitation.

**Length of Boat** – shall be measured from bow to transom (including set back). Maximum length shall be 24.99 feet.

**Weight** – boat shall be weighted without driver.

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## **DIVISION V**

Unlimited Single Engine V-Drive Boats. Capsules allowed. **GPS Required.**

1. Engine: Unrestricted
2. Hull: “Flat”, “V”, “Mod-V” or Production Tunnel (not true tunnel race boat). (Minimum length 16’, Maximum length 24.99’)
3. Weight: Unrestricted
4. Capsules: Capsules are allowed in accordance with SCSC safety rules. For construction layup schedule, etc. please visit [www.scsracing.com](http://www.scsracing.com).

**Length of Boat** – shall be measured from bow to transom (including set back). Maximum length shall be 24.99 feet.

**Weight** – boat shall be weighted without driver.

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## **DIVISION VI**

Single Engine Modified & Green Outboard Mod VP or V-Bottom Hulls only.  
Capsules allowed. No true tunnels. **GPS Required.**

### **Mod VP – Single Engine Outboards**

Boats: Single outboard Mod VP style boats, GPS required.

1. Minimum hull length allowed is 17’9” and includes v-bottoms, flat bottoms and Mod VP bottoms. No true tunnel hulls are allowed.
2. Minimum weight allowed is 1,300 – 1,450 lbs. (see below) as the boat comes off the race course with remaining fuel, water drained from the boat and no driver. Ballast can be added but must be securely anchored for safety reasons. No piece of ballast shall weigh more than 50 lbs.
3. All areas of the boat must be available for safety inspection including steering system, foot throttle, kill switch, shiftable gearcase, prop shaft heights, fuel tanks, batteries, seat, trim pumps, running surfaces and fixed jack plates.
4. Capsules are allowed in accordance with SCSC safety rules. For construction layup schedule, etc. please visit [www.scsracing.com](http://www.scsracing.com).

Outboards: Modified 2-strokes, green direct-injection, and 4-strokes, no superchargers.

1. 2-Strokes must be naturally aspirated. No nitrous oxide and must use gas with oil mix only. All fuel oil mix is subject to a digitron reading of 0 or below. A reading of +1 or above is deemed illegal and is subject to disqualification. Tech Inspector will be available on Friday from 1:00 p.m. until driver’s meeting to check fuel and

again from 7:30 a.m. to start of the Parker Enduro on Saturday morning. The inspector reserves the right to randomly check fuel during pit stops.

2. Mercury 2.4 Liter outboards may be modified, however, are limited to 30 cc heads with head gaskets .035 inch or greater (the flat plate method with a surface gap spark plug installed will be used to measure). Minimum weight is 1,300 lbs.
3. Mercury 2.5 Liter outboards may be modified, however, are limited to 32 cc heads with head gaskets .035 inch or greater or 37 cc for "O" ring type heads (the flat plate method with a surface gap spark plug installed will be used to measure). Carbureted minimum weight is 1,300 lbs. EFI minimum weight is 1,400 lbs. Any stock carbureted 2.5 Liter with steel sleeves & 36 cc heads has minimum weight of 1,300 lbs.
4. 4-Stokes and Green outboards must remain as delivered from the engine manufacturer. Porting, grinding, machining and polishing are not allowed. The only engine modifications allowed are an ECU reflash and air horn alteration. Aftermarket steering attachments are permitted. A pump gas reading from Running Man Gas Station, 1115 Mohave Rd., Parker (adjacent to the Casino) will be taken for all three levels of fuel (86/89/91) Friday, prior to inspection. This shall serve as a baseline reading for fuel check. Should Running Man gas station be closed or out of fuel, VP Fuels (formerly Woody's) on AZ 95 will be used for baseline fuel reading. A +5 will be allowed. Any fuel testing higher than the baseline reading +5 will be subject to disqualification, fine or both. The Tech Inspector will be available on Friday from 1:00 p.m. until driver's meeting to check fuel and again from 7:30 a.m. to start of the Parker Enduro on Saturday morning. The inspector reserves the right to randomly check fuel during pit stops during the race. E85 is deemed illegal for all Division VI classes. Minimum weight is 1,450 lbs.

Mid-sections/Lower units: OEM shifter-type gearcases with working forward, neutral and reverse controlled from the driver's seat.

1. 2.4 and 2.5 Liter lower units must measure at least 4 ½ inches in diameter just forward of the propeller. XR6 gearcases are not allowed. Mercury 15 and 20-inch midsections and tuners are allowed. The water pick-ups must be on gearcase.
2. Green direct-injection and 4-stroke lower units must remain as delivered from the manufacturer. Must run the original stock tuner with 20-inch factory mid-section.
3. Prop shafts must be at least ½ below the lowest part of the last 3-feet of the running surface/center pod/pad, including wedges. Wedges on this area of the pad restricted to 4 inches wide and a depth of 3/16. The prop shaft must be parallel to that running surface at the time of measurement.
4. Engine jacks must be disabled and through-bolted with a 3/8" Grade 8 or better self-locking bolt and must be marked by the inspector prior to racing.

**Length of Boat** – shall be measured from bow to transom (including set back). Maximum length shall be 24.99 feet.

**Weight** – boat shall be weighted without driver.

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## **DIVISION VII**

Single Engion IO above 500 C.I Any Hull & Any Boat Motor Configuration not mentioned in prior 6 Division rules. No true tunnels. Capsules allowed.

**GPS Required.**

**A. Single Engine Out Drive (565 CI) Max**

1. Engine: 565 max cubic inches, naturally aspirated. No blowers or turbo chargers.
2. Hull: Any V-bottom hull, including Mod VP (Minimum length 16', Maximum length 24.99')
3. Weight: Unrestricted
4. Drive: Any "shifter" as in "Bravo style" type outdrive with a working forward, neutral and reverse.
5. Height restriction: Prop shaft even or below the last 3' of running surface.
6. Capsules are allowed in accordance with SCSC safety rules. For construction layup schedule, etc. please visit [www.scscracing.com](http://www.scscracing.com).

**B. Single Engine Out Drive (565 CI) Max**

1. Engine: Any Big Block maximum of 565 c.i. Blowers or turbo chargers allowed. Must use pump gas.
2. Hull: Any "V", flat, no Mod VP hulls
3. Weight: Unrestricted
4. Drive: Any "shifter" as in "Bravo style" type outdrive with a working forward and reverse.
5. Height restriction: Prop shaft 2" below the last 3' of running surface.
6. Capsules are allowed in accordance with SCSC safety rules. For construction layup schedule, etc. please visit [www.scscracing.com](http://www.scscracing.com).

**Length of Boat** – shall be measured from bow to transom (including set back). Maximum length shall be 24.99 feet.

**Weight** – boat shall be weighted without driver.

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\*\*\*Note: If no division rule is available for hull/engine configuration, please email [rpmpacingent@yahoo.com](mailto:rpmpacingent@yahoo.com) with exactly what is proposed so a decision by the Tech Committee can be reached.