

# 2016 INBOARD ENDURANCE RACING RULES **NEW FOR 2016 SEASON**

Refer to APBA General Racing and Safety Rules, which appear in *italic* in the Inboard rules. Any changes made to the APBA General Racing and Safety Rules must also be incorporated into the corresponding Category rules. Conversely, no change should be made to these rules that contradicts the APBA General Racing and Safety Rules.

## **RULE 1 • GENERAL RULES**

1. Classes can be combined at the discretion of the Referee.
2. Racing numbers shall be not less than 10 inches high, shall be painted on both sides of the boat, and shall contrast strongly in color with the background upon which they are painted.
  - A. A 3-inch high (min.) class prefix is required: “GN” for the Grand Nationals, “ET” for Endurance Tunnels and “CJ” for Competition Jet.
3. The requirements for a Pro Series event will be determined by each Endurance Class. Special permission for these events can be received by the IERC Chairman.
4. Any temporary rule deviation requested in writing by the technical committee, regatta promoter, or race chairman, for the success of a particular regatta, can be approved by the Chairman of the Inboard Endurance Racing Commission and a majority vote of the Inboard Endurance Racing Commission, on a one-time basis in writing per regatta.
5. A \$20 National registration fee per entry per weekend will be charged.

## **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 swaged-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. If no P & G gauge is available, normal teardown procedure will be used. For records and/or protests, the conventional method will be used.
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: 1/4 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, insuring 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. 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 locknetted 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 minimum 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. No additive power boosters will be permitted. See **Inboard rule 33.18. E 85 is approved to be a legal fuel in the IE Category.**
11. Any race over 100 miles must have a fuel stop and a quantity of fuel must be taken on.
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 crew 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 for 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 and the second 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 APBA Approved Inboard Capsule Training Program. Training programs will be approved by the Inboard Endurance Racing Commission and conducted by an approved APBA Inboard Endurance Rescue Team.
  - A. When capsule training is completed prior to October 1, capsule training documentation shall be valid for the racing season in which the training was taken and also for the following racing season ending October 31.
  - B. When capsule training is completed during October, capsule training documentation shall be valid for the racing season in which the training was taken and also the following two (2) racing seasons ending October 31.
  - C. To avoid expiration, it is recommended that training be done annually.
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. 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
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 5 clamping bolts. Set screws shall be used in each end of the coupler or at least one 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 shaft log, a safety collar on 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, not pressed metal (sintered iron).
21. Flotation: For runabouts with restraint capsules, it is recommended that 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. Unless specifically stated otherwise, the General Safety Rules will apply as applicable.
2. Drivers must have an APBA or DOT physical or a current FAA Class 3, or better medical certificate. No other statement of physical condition will be accepted.
3. Minimum age of contestants shall be 18 years.

4. New or inexperienced drivers shall be fully examined as to driving ability and experience by the Referee prior to the first competition.
5. Drivers not in Restraint Capsules shall wear a neck collar device (i.e. helmet support collar). The device shall be secured to the driver's body as required. The use of helmet support straps (lanyards) is mandatory.
6. 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.
7. Prior to the race all drivers' and co-drivers' equipment shall be inspected by the Safety Official assigned. This equipment includes:
  - A. helmet
  - B. goggles, shield, and protective lenses
  - C. life jackets
  - D. racing uniform and footgear (appropriate and proper attire).
8. An approval slip must be presented by the driver when registering and/or showing credentials for the event.
9. In the event of a long enduro, etc., the Race Committee may allow co-drivers. All qualified drivers who sign official entry forms and attend drivers' meeting will be qualified to drive any boat in the regatta, after endorsing that boat's official entry form and notifying the chief scorer of their intentions. If co-drivers are not to be allowed, it should be so stated in the race circular.

#### **RULE 4 • STARTS, DISQUALIFICATION, FLAG SIGNALS, COURSE and RACE SAFETY**

1. The course shall be laid out in reasonably protected waters free from debris and turns as 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. On 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
  - B. Comp Jets will maintain their lanes from the start of the race (flag or clock) through the first turn. A 4-boat overlap (per Inboard Racing Rule 20.5) will apply after that. Any violation will result in a 1-lap penalty
2. Maximum number of boats to be run on the following courses:
  - A. One mile course -20 boats
  - B. One and one-half mile course -30 boats
  - C. One and two-thirds mile course -40 boats
  - D. Two and one-mile and up over 40 boats, if course permits, in the opinion of the Referee
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. In all events, one-half (50%) of the starting positions will be filled by the top three APBA point leaders, plus the last World and National Champions. If entries exceed the safe limit allowed on the particular course, the boats will be qualified in the following manner: All other entries must qualify through a heat race, which is to consist of at least 5 laps or 5 miles. The rule will apply only after the starting field is filled by the point leaders and the World and National Champions.
5. When the winning boat crosses the finish line, all boats will complete the lap they are on and be scored for same.
6. 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.
7. 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. (Refer to Rule 8, section 8 for scoring.)
8. Any boat taking a tow must negotiate on the outside of the course to the pit, or to the closest ramp or designated pick-up area from the point of pick-up.
9. 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.
10. Any boat under power or under tow, which for any reason cuts across the infield at any point for purpose of making a pit stop shall be disqualified.
11. In the event of a rescue operation or danger on the course, a caution flag may be flown. Colors are to be designated by 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.
12. 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.
13. The race may be completed under the caution flag.

14. All flags are to be explained at the beginning of the driver's meeting.
15. 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.
16. 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 racecourses with single pin turns or no infields, circling back to pick up missed buoys is not permitted.
17. 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, except where exempt, with the following exception: Helmets may be removed only (1) when the boat is stopped or operated off-plane at idle speed and (2) when there are no other race boats operating on plane on the race course or in the vicinity so as to create a danger.*
  - D. Failure to fasten chinstraps or cups, leg straps or safety switch before leaving pits or at 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 in number and equipment as described in the APBA General Safety Rules.
  - 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, if, 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 will 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 that day or on a succeeding day, the APBA Referee shall determine whether or not the event shall be declared a complete race.
  - 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 flag, 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 done by an individual selected by each boat owner.

2. Each entry must furnish an acceptable scorer who shall report to the Chief Scorer at the time and place announced on the APBA race circular. Failure to appear at proper time shall be grounds for disqualification of the entry concerned.
3. All individual scorers are to be considered as crew members of the boat they represent. The actions and conduct of the scorer can reflect directly upon the boat they are scoring, causing penalties on 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. A three (3) lap penalty shall be assessed for each lap falsely recorded, if such lap was not completed by the entry at the time entered on the lap sheet.
7. Other scoring systems may be used provided prior permission is granted by the Chairman of the Inboard Endurance Commission.
8. 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) 10 lap heats with point accumulation to determine final order of finish.
  - c. 5 miles.
  - d. Any combination of heats and/or finals when approved by the IERC as the format of a recognized racing series.
2. The high point championship is awarded for the highest number of points scored in all races run between November 1st and the following October 31st.
3. In order to qualify for National High Points, a boat must compete in at least three APBA sanctioned races during the racing year.
4. The following minimum number of starters is required.
  - A. Grand National and Comp Jet: must have a minimum of four (4) bona fide starters (must legally start the race).
    - 1) A GN, CJ and GPS95 Nationals or World Championship must have a minimum of four (4) bona fide starters.
  - B. Endurance Tunnel: must have a minimum of three (3) boats running per race.
5. All qualified boats competing in APBA sanctioned Endurance races shall receive regular APBA points for 1st through 20<sup>th</sup> place (Refer to General Racing Rule 21) with a maximum of 100 points per day for a first place finish (plus the allotted bonus points if the race is deemed as such with approval of the IERC and stated on the sanction).
  - A. Overall points will be scored on the final position as follows:  
 Regional Events (under 100 miles or 1 hour duration): Final Heat/Combined heats  
 Regional Events (under 100 miles or 1 hour duration): Final Heat/Combined heats  

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

 Divisionals -Nationals -World Championships and designated series events -  
 Events over 100 miles or 1 hour duration: Final Heat/Combined heats  

1st.....150	6th.....113	11th.....75	16th.....60
2nd.....143	7th.....105	12th.....68	17th.....60
3rd.....135	8th.....98	13th.....60	18th.....60
4th.....128	9th.....90	14th.....60	19th.....60
5th.....120	10th.....83	15th.....60	20th.....60
  - B. Bonus point races are to include championship races and any race scheduled to cover a minimum of 100 miles or run for 1 hour or more. A bonus point race may also be scheduled for promotional reasons with a majority vote of the IERC. Minimum prize money for any bonus point race will be \$1000.00.
  - C. 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.
  - D. Each boat that makes a legal start will receive a minimum of 40 points.
  - E. If more than one heat is run in 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.
6. Endurance Tunnel Points: Each ET Division will receive individual APBA points. Separate summary sheets are required for each ET Division (I and II). When the two divisions are combined, place and points are to be computed for each Division as if they were separate classes. Points cannot be transferred between Divisions. Example: 10 ETs -6 Division I; 4 Division II. Division I ETs get place and points 1st through 6th; and Division II ETs get place and points 1st through 4th.

- A. All boats will run together unless quantity results in unsafe conditions. This situation will be determined by the referee.
  - B. All ET boats must register in the Division in which they are to receive points. A change in Division will require additional registration fee.
  - C. An ET Pro Series race will constitute a minimum of \$5,000 in cash prize money distributed to racers.
7. Points shall be accumulated for one boat only. If a boat becomes damaged beyond repair and a second or replacement boat is used, all accumulated points from the first boat shall be transferred to the replacement boat, providing that the original boat is not used in competition by the same owner for the remainder of the season. If the first boat returns to competition, all previous points are forfeited and anew point total begins.
8. Championship Races will be Eastern and Western Nationals, World Championships and Pro Series Races. World Championships may be held at any time during the year that is most advantageous, but they must meet UIM requirements.
- A. Bids for National and World Championship races must be received at APBA Headquarters prior to November 1 of the preceding race year. If no bids are received or accepted by the IERC, then bids will be open up to 90 days prior to any National or World event.
  - B. A race cannot be scheduled two weeks prior to a National or World Championship race of that particular class unless approved by the Chairman of the Inboard Endurance Racing Commission.

### **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, flag and APBA overlap rules prior to the event.
  - B. Start in back of the pack 10 seconds after the starting gun.
  - C. In case of a running start, he must be 10 boat lengths in back of the pack.
  - D. Driver will be judged on how he drives the race in order to receive his license approval, which will consist of the Referee's membership number and signature on the face of the card.
2. Drivers who already have an APBA driver's license, but who have not run an Endurance race, must do the following:
  - A. They must start in the last position.
  - B. They must be quizzed prior to the event.
3. New drivers and their boat numbers must be pointed out to all contestants at the driver's meeting.
4. 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, an individual must have had driving or officiating experience in APBA sanctioned regattas. Approval of qualification of course judges shall be the responsibility of the Referee.
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 and IERC.
3. If a contestant appeals a suspension, that suspension shall remain in force until a decision on the appeal has been reached by the IERC. A contestant under suspension shall give his APBA membership card to the Referee. The referee shall forward the card to the Chairman of the IERC, who will return it to the contestant at the termination of the suspension and shall also give the APBA boat registration card to the Referee for forwarding to the Chairman of the IERC.
4. Protests filed against another competitor must be accompanied by a protest fee of \$250.00. If the protest is found to be invalid the IERC may forward all or part of this fee to the protested boat's owner to offset costs involved with defending this protest. If the protest is upheld, then the fee shall be returned to the protestor.
5. Appeals pertaining to disqualifications other than violations of starting, driving and course rules shall be accompanied by an appeal fee of \$100.00. The original appeal, as written and filed with the Referee plus the findings and/or recommendations of the officials at the event, shall be sent to the Chairman of the IERC immediately following the event. The IERC Chairman shall consult with and otherwise direct inspection data and/or engine size, drawings, etc., to the Chairman of the Technical Committee governing the class concerned. The appeal fee shall be used to defray the expenses of the IERC in processing the appeal.
6. The contestant shall have one hour after disqualification and/or suspension to file an appeal or an "intent to appeal" which is filed within the one-hour allotted. If an "intent to appeal" is filed, the formal written appeal shall be submitted to the Referee within one week of the disqualification and/or suspension. If a contestant who has filed an "intent to appeal" does not file the formal written appeal, the \$100.00 shall be returned.
7. Referees must also be completely familiar with Endurance races by the IERC.
8. Unless otherwise stated by IERC Chairman, the owner of any boat found to be in violation of any of the class rules governing the owner's equipment, shall be disqualified for a period of 50 days. A second violation of class rules within the same racing year as the first violation shall result in a one-year automatic suspension from the date of the second infraction or violation. Equipment owned by the suspended owner shall not be eligible for registration by another until such time as the suspension period has terminated. If an entrant has multiple infractions at one race, it shall constitute a single infraction.

## **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. Qualification may also be made at the same regatta on the same weekend as the time trials are being held.
  - A. To qualify, a GN or ET boat must have permanently attached fuel capacity of fifty (50) gallons.
  - B. A qualifying Comp Jet boat will have no minimum fuel capacity.
2. The following records can be established by approval of the IERC. These speed records are for each Class, APBA, and World Recognition.
  - A. Kilo
  - B. 1 Hour
  - C. Any multiple of 50 miles
  - D. 20 laps on a 1.25 mile course
  - E. 20 laps on a 1 mile course
  - F. Fifteen (15) Minutes
  - G. 5-Mile/ 4-Lap
  - H. 1/4 Mile Straightaway
3. The course for any APBA/UIM record attempt must be surveyed and must be less than 5 miles around.

## **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 wall 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 heads 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.
  - B. Naturally aspirated, 540 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 intake manifold bases must be cast for a minimum distance of 3" from the intake to cylinder head interface or spacer plate; except the 525 NA engine can run a sheet metal intake manifold. No restrictions on valvetrain or oiling systems.
  - E. Forced induction (with blower), 475 cubic inches max.
  - F. 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).
    - 2) **1471 @ .80 to:1 or 1071 @ .92 to 1 or 871 @ 1 to 1** (Max. Blower Rotor RPM to Crank RPM)
    - 3) Any other blower combinations see the IE Category Chairman
  - G. All other naturally aspirated engine and cylinder head rules apply.
  - H. The Commission will address the parity of the two engines by adjusting the overdrive limits (up or down individually) as required to maintain the competitive nature of both packages. Other manufacturers' engines will have cylinder head guidelines developed for them as the need arises.

### **ENDURANCE TUNNEL (ET) DIVISION I AND II**

1. An ET hull is defined as a hull with a continuous air flow chamber that compresses the air from the bow to the stern with no steps or breaks to spill the air other than the transom. It is a two-point hull that rides on the two after-points of the sponson at the transom. Breaks or steps (1 inch maximum) that are used to break water at low speed are acceptable. All hulls are subject to the General Endurance Racing Rules.

2. ET hulls measuring from the furthest point forward to the aftermost riding plane of no more than twenty-five (25) feet including extensions, will be acceptable, if determined to be soft and manageable. Breakaway steering and cowlings are recommended to eliminate restriction over driver's legs.
3. Definition of Endurance Tunnel ET Division I and II.
  - A. Division I Endurance Tunnel ET boats are limited to 500 cubic inches maximum, including overbore, with carburetors or fuel injection ONLY. NO BLOWERS. Gear boxes are permitted.
  - B. Division II Endurance Tunnel (ET) boats are limited to 400 cubic inches maximum, including overbore, with carburetors or fuel injection ONLY. NO BLOWERS or 230 cubic inches maximum including overbore, which may use turbocharger.
  - C. Only a single engine application will be allowed in these Divisions.
4. Engines for this class must be manufactured for standard production automobile, marine or truck use. Component parts may be changed or altered and alloy blocks and heads of the same design will be allowed.

### **APBA COMPETITION JET DIVISION**

1. Any hull with a maximum length of 24 feet, including pump and extension, is allowed. All boats must be equipped with two (2) stringers and must be one (1) piece from transom to the bulkhead that is in front of the driver, and have engine mounted to them. Stringers must be visible for inspection. The driver's seat and or frame of seat must be through-bolted to at least one (1) stringer. NO LAG BOLTS ALLOWED.
2. Power to be supplied by one (1) U.S. built automotive or light truck engine including aftermarket parts, with a maximum displacement of 515 cu. in. Cylinder block is limited to cast iron; aluminum heads are optional.
  - A. Chevrolet big block engines must use common wall intake port cylinder heads designed and machined for use with 4.849" bore spacing. OEM aluminum engine blocks with a maximum displacement of 475 cubic inches and a maximum bore spacing of 4.400" are allowed, after market aluminum blocks are not allowed.
  - B. A maximum of two valves per cylinder is allowed. No overhead cams allowed. All intake manifold bases must be cast for a minimum distance of three (3) inches from the intake cylinder head interface or spacer plate. No restrictions on valve train or oiling systems.
  - C. Naturally aspirated, any form of carburetion or fuel injection is allowed.
  - D. Engine is to be located forward of the jet drive.
3. The driver must be seated forward of the engine.
4. Single jet drive only used for marine application.
  - A. Impeller and impeller housing to be mounted above the keel as measured at centerline.
  - B. No Jet-A-Way or Driveline guard required.
  - C. Must be equipped with a turning rudder that extends at least four inches below the lowest point of the jet nozzle and have a minimum surface area of sixteen (16) sq. in.
  - D. Jet-O-Vater or Place Diverter adjustable nozzles may be used. A diverter stop is required, and the roostertail is not to exceed four (4) to five (5) feet above the water. This includes fixed nozzle boats. Diverter shall remain in the full down position at all times in or near the pit area or launch ramps until safely on the race course. Failure to do so in the opinion of the referee will result in a one (1) lap penalty.
  - E. A through-bolted loader must be securely attached, using four 5/16" or larger grade eight or black oxide bolts.

### **GPS 95**

- 00.1 As an entry level and safe alternative to flatbottom capsule racing, the following rules shall dictate:
- 00.2 Hull Configuration
  - 00.2.1 Minimum hull length shall be 16 feet L.O.A. and the maximum shall be 20 feet L.O.A. including cavitations plates. Minimum beam width of 72 inches wide.
  - 00.2.2 The minimum weight of the boat complete in racing trim with driver shall be 1950 lbs. and with all excess water removed.
  - 00.2.3 The hull shall be a flatbottom boat design and conform to the GENERAL RULES FOR INBOARD RUNABOUTS, and SAFETY RULES, racing classification.
  - 00.2.4 Year of manufacturing shall have no limit.
  - 00.2.5 Propulsion shall be of single direct drive or single v-drive and single propeller with a maximum of four blades.
- 00.3 Engine Specification
  - 00.3.1 Block-Single American automotive block with a maximum cubic inch displacement of 500.
  - 00.3.2 Induction-No superchargers, turbochargers, blowers of any type or forced induction shall be used. Naturally aspirated induction by use of carburetor, mechanical injection or electronic injection allowed.
  - 00.3.3 Fuel-Gasoline, methanol, ethanol, aviation, or a combination are permitted. Additives allowed except nitro methane and/or nitrous oxide and adhere to Inboard Rule 33.18.
  - 00.3.4 Ignition-All are accepted.
  - 00.3.5 No electric speed control devices are allowed.
- 00.4 Safety Considerations
  - 00.4.1 The general condition of the installation, lamination, fuel tank/cell, underwater gear should be inspected. Any component found to be not in a satisfactory condition by an inspector shall not be allowed to compete until the violation be corrected.



- 00.4.2 A propeller shaft release shall be functional and be used during any competition.
- 00.4.3 The drive line shall be covered with 1/8-inch steel or 1/4 inch aluminum.
- 00.4.4 Any boat involved in an accident/collision must be inspected immediately after, if possible, by the Inboard Inspector. The Inboard Inspector shall document all damage and instruct boat owner of the mandatory repairs needed before competing again. A post repair inspection by the Inboard Inspector shall be conducted and documented prior to the next competition.
- 00.4.5 A tethered kill switch shall be used at all times while underway in addition to a manual electric shutoff switch within the operators' reach.
- 00.4.6 No coating of any kind be applied to underwater gear to hinder the inspection for defects.
- 00.4.7 Safety Collars shall be placed in the following positions: (2) collars between the shaft log and shaft coupler, (1) above the rudder box and above the steering mechanism, and (1) placed in a position not to allow the steering shaft/hub to become disengaged.
- 00.4.8 Key ways shall be placed in the following positions: (1) on the steering shaft as to keep the steering gear stabilized on the steering shaft and (1) on the propeller shaft at the coupler.
- 00.5 Speeds/Qualifications/Disqualifications/Starts
- 00.5.1 At the owner/driver's expense a GPS unit shall be affixed to the driver and/or hull during competition and be examined prior and at the completion of each competition.
- 00.5.2 The speeds of GPS shall be strictly enforced and follow these guidelines.  
 A maximum speed of 95.9 MPH. A speed of 96.0 to 99.9 MPH will be considered a "break out" speed and if in such an event more than one boat "breaks out", the higher place position be awarded to the competitor with the closes speed to 95.9.  
 A speed in excess of 99.9 will be considered a "break out" speed and that competitor be awarded zero points for the heat, disqualified and the boat will not be allowed to compete for the remainder of the competition. Refer to rule 23.8.4. of the inboard racing rules.
- 00.5.3 In the event that a clock start (recommended) is not used there will be 2 options to be decided at the drivers meeting by the drivers and or race committee.
- Option 1: A drawing of lane positions will be pulled from a hat for as many first round qualification heats as needed. After the qualification heat, the top finisher will be considered first to draw from the hat for his next position, the second finisher shall draw next and so on. In the event there is more than one qualification heat ran or a two-day event be combined, each competitor s hall only be allowed to draw #1 lane once.
- Option 2: The qualifying heat will be drawn from the hat. Then there will be an inverted start procedure for following heats thereafter where:  
 The first place winner of the qualifying heat moves to the outside lane.  
 The second place finisher moves to the second to outside lane.  
 The third place finisher moves to the third from outside lane.  
 The last place finisher moves to the inside lane.  
 The second to last place finisher moves to the second from inside lane  
 The third to last place finisher moves to the third from inside lane, and so on.
- 00.5.5 All National and Divisional events will have a clock start
- 00.5.6 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 95.9 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.

Example:

Grounds for Disqualification

1: A racer obviously running well over the 95.9 MPH break out rule constantly and resetting the GPS prior to inspection.

Grounds for race committee waiving disqualification.

1: A racer running well within the rules (visually) but has a faulty GPS

GPS (95)

Class letter=GPS

Min. age= 16

Max. boats per heat = 8

## **APBA/UIM 6.0 LITER DISPLACEMENT RULES**

### **904 INBOARD RACING DISPLACEMENT CLASS RULES**

#### **1. CLASSES**

RD6000 maximum cylinder capacity 6.0 liters

#### **2. HULL**

The hull shall be displacement or monoplane type in which the continuity of the portion of the hull immersed, at rest, in racing trim with the driver on board, shall not be interrupted longitudinally or transversely by any form of break, step or device of construction or hydrofoil, that would provide multiple planing surfaces.

Hulls are permitted to be either mono V hulls or flat bottom hulls. The term hull shall include all additions and attachments below the waterline with the exception of the shaft, strut, propeller, rudder, fin and such that are usual and necessary. Cavitation plate, trim tabs and after planes that are fixed or adjustable whilst underway shall be permitted.

Lap strake or reverse lap strake construction may be used provided the immersed portion of the strakes (planks) be approximately parallel with the centre line of the hull and the depth of the strake (plank) be no greater than 35 mm. (1 3/8") Planing strakes (planks) unless continuing to the tuck (transom) must finish on an angle being not less than 450 mm (17 3/4") from the point of commencement of the angle to flush with the hull bottom and the angles not to be concave to the hull bottom. Non-trip chines with a rise of not less than 75 mm (3") in 300 mm, (12") vertical sided keels and skid fins shall be allowed.

At the option of the owner or the builder, that point where the planking meets the non-trip chine can be rounded or left square regardless of the thickness of the planking.

The depth (thickness) of the strake (plank) is to be taken by stretching a wire or similar material around the bottom of the hull, at right angles to the centerline on the point being measured. The depth (thickness) is to be measured at right angles to the hull surface and this depth must not be more than 35 mm (1 3/8") at any point. The length must be measured between perpendiculars at the foremost and utmost rigid part of the hull. Any extending parts such as rubbing strakes, fenders, stabilizing or trim tabs, rudder, skeg or cavitation plate, are not to be included in the length measurement.

### **3. MINIMUM DIMENSIONS**

Hull length, 5.2 M (17')

Reinforced cockpit 5000N (1124 psi)

Weight limits, None

The length must be measured between perpendiculars at the foremost and aftmost rigid part of the hull.

Any extending parts such as rubbing strakes, fenders, stabilising or trim tabs, rudder, skeg or cavitation plate, are not to be included in the length measurement.

The minimum weights mentioned here are the weight of a complete rig weighed directly after the race including driver, personal safety equipment, residual fuel but without residual water.

### **4. ENGINE**

Maximum capacity of motor is 366 cubic inches.

Stroke/Bore is of any type that meets the cubic inch capacity.

Camshafts to be in engine block (No overhead camshafts).

Cylinder heads must be of over rocker design, push rod articulated and 2 valves per cylinder.

No pneumatic springs allowed. Must be a conventional valve spring

Intake system must be naturally aspirated (no forced induction supercharged or turbocharged).

### **5. FUEL**

All fuel must be methanol or petrol based, as supplied by the promoter. (no additives allowed).

### **6. BOAT SAFETY**

904.1.2 -

A safety collar on the propeller shaft, within 0.5 inches of the leading end of the strut and a safety collar within 0.5 inches of the shaft log assembly, is mandatory on all runabout classes. Safety collars must be configured so they will prevent the shaft and propeller from sliding back and hitting the rudder should the thrust bearing come apart or loose on the shaft. The safety collar must have two set screws or be of the split-type configuration. If placed forward of the thrust bearing, the collar must be larger than the bearing.

904.1.3

V Drives must be fitted with a Whirlaway (Prop release) and a retainer type device is fitted between the clutch housing and log, to stop the clutch housing from moving back so the prop or prop shaft does not move back far enough to hit the rudder, due to bolt failure of the clutch housing or gearbox. The drive shaft must pass through this retainer type device with minimum clearance.

The owner/pilot is entirely responsible for the effectiveness, suitability and adequacy of the retaining device.

904.1.4

All boats must be equipped with a positive return throttle, insuring that the throttle plate returns to a normally closed position when throttle pressure is released. Springs should be mounted at throttle shaft assembly. All boats must have suitable flotation which will float the hull, motor and driver in a swamped state. It will be the responsibility of each owner to verify if his craft's flotation is adequate. It is recommended that flotation be placed in location to help upright capsized hulls. Flotation should be provided in at least 4 separate flotation unit.

## **NONDESTRUCTIVE TESTING**

### 904.1.5

(NDT), such as magnetic particle, dye penetrant or other processes, are recommended regularly for propellers, shafts, couplers, rudders, fins, brackets, struts and other critical hardware. Following an accident, it is mandatory that NDT be performed prior to competition

## **AIR SYSTEM**

### 904.2.1

A fulltime onboard air system is mandatory for all boats. The following guidelines must be followed.

### 904.2.2

The pilot'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 and must be worn by the pilot anytime the boat is under power.

### 904.2.3

All boats must carry a minimum of 30 cubic feet of air, regardless of mask type. All air delivery systems, whether permanent or part time, shall carry air in a vessel approved and certified for the delivery of breathing air. All components of the air system shall be rated for use with compressed air and for the pressures to which they will be subject.

## **CAPSULE TRAINING**

### 904.2.4

All capsule pilots are required to successfully complete a National Authority Approved Inboard Capsule Training Program.

### 904.2.5

In addition, at race sites or other location, a referee or inspector may require the pilot to:

- Demonstrate that he can adequately extricate themselves from a safety team test cell, both on land and underwater.
- Demonstrate that he can extricate themselves from the cockpit of the boat he intends to pilot prior to any event.
- Complete any further test, including a driving test, under the supervision of the Inboard Racing Commission or their designee, to demonstrate that the said person can participate in an event without representing an unjustifiable risk or endangerment to themselves or others.

## **CAPSULE**

### 904.3.1

All hulls must be fitted with a reinforced cockpit [per rule 509] with a minimum strength of 5000 Newtons (1124 psi)

Mandatory standards for all restraint capsules include:

- Openings for restraint harnesses, wiring, cables, hoses, etc. must be kept to a minimum. The use of grommets or other types of sealing devices are recommended around these openings.
- All canopies must have an external handle or hand hold opening. • All boats must have a rollover lift bracket or eyelet permanently attached to the rear area of cockpit. The bracket or eyelet must have at least a 3/4" hole and be strong enough to support the weight of the boat should it need to be righted for rescue purposes.
- Positive air flow ventilation.

### 904.3.2

Right and left hand rear view mirrors are required on all boats.

### 904.3.3

All boats must have the official Inboard manufacturer's label permanently attached and visible inside the cockpit. It is the boat owner's responsibility that this label be present and legible.

Manufacturers will receive an acknowledgement from the Federation Inboard Racing Commission stating that the company is registered to build restraint capsules for the Inboard Category

## **SEAT BELTS**

### 904.3.4

- The use of an approved seat belt with a quick opening clasp is mandatory. Both the fastening design and condition of the belt is subject to inspection. Belts must meet the following requirements:
- Minimum width: 2 inches.
- Minimum tensile strength: 8000 pounds (loop test).
- Polyester belt material is mandatory.
- Belt material to be as short as practical.
- Metal to metal quick release buckle.
- A high strength, highly visible lanyard will be attached to the release lever of the lever/latch system.

## **RESCUE SAFETY TEAM CRITERIA**

### 904.4.1

The following are the standards for rescue safety teams working events.

- The name of the safety/rescue team selected to work each event must be listed on the race circular for events.
- Rescue personnel shall contact potential receiving hospitals prior to the event day in order to familiarize the facility with particulars about the event.
- The ambulance, emergency medical staff, and dive team and all rescue team members in attendance shall be dedicated to provide service to the race for the duration of the event, and will not be on call or otherwise responsible for other duties.
- The rescue team must have communication equipment sufficient to ensure adequate communication between rescue boats, race officials and the Race Rescue Director. The rescue boats shall have radio communications with the Officer of the Day, or his designee. Radio communications specific to patient condition shall be kept at a minimum. Rescuers should bear in mind at all times that radio frequencies may be monitored. Condition of patient shall only be discussed with the Officer of the Day.

## **PERSONNEL AND STAFFING**

An individual member of the rescue team must be clearly identified as the Race Rescue Director. He or his designee shall be the lead person at all rescue scenes and shall direct all rescue operations. He will take direction from and report to the Referee.

The Race Rescue Director shall meet daily with the Officer of the Day or his designee for instruction prior to beginning the day's events. The Race Rescue Director shall immediately advise the Officer of the Day if, in his/her opinion, any unsafe course conditions (including swimmers in the water, alcohol consumption on the course boats, underage children on course boats, lack of PFD use, debris on course, etc.) exist.

No heat shall be started at an Event in the absence of a licensed physician, registered nurse, paramedic, or an EMT in attendance. An ambulance will be authorized to transport injured individuals from the race course to the assigned hospital, and the medical attendant will be trained and authorized to use all the equipment in the ambulance.

There shall be a minimum of four divers certified by an accredited certifying agency present on the water at all times. Prior to each race day, divers shall familiarize themselves with driver safety equipment and structural characteristics of each boat. Divers shall be fully suited and ready to enter water at any time a race boat is present on the water. The divers may or may not be on the official rescue boat but cannot be on either of the turn judge boats.

## **7. RACING FORMAT**

Races to be run as four lap heats and ten lap endurance finals except when promoter and/or conditions suit alternative racing formats. Types of starts to be determined.

**RULES MAY BE MODIFIED AS THE INBOARD ENDURANCE CATEGORY DEEMS NECESSARY.**

## **RULE 13• INBOARD ENDURANCE HALL OF CHAMPIONS SELECTION CRITERIA**

1. The IERC will determine the nominee for the Hall of Champions from the drivers placing 1st, 2nd or 3rd in each class in the APBA Inboard Endurance High Point standings at the end of the racing year