



Miniature Auto Racing Club

2022 – 2023 OFFICIAL RULEBOOK

Miniature Auto Racing Club 40th Edition Official Rulebook 2022 - 2023

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Version Log

Version	Modifications	Change Identification	Effective Date
0.1	Updated with changes based on Rules Meeting	<i>Changes from previous season are Bold italicized.</i>	8/14/2022
1.0	Final edits	<i>Changes are Bold italicized.</i>	9/1/2022

A. CLUB OFFICIALS

Responsibilities

1. **Club Director:** The Club Director shall see that all MARC rules are enforced and guided by a sense of fair play. The Club Director also acts as the Club Treasurer. The Club Director will schedule and chair the annual rules meeting which is conducted for the purpose of establishing rules for the following season. In addition, the Club Director may schedule additional rules meetings as needed at his or the club's discretion. The Club Director will provide the leadership and guidance to resolve any conflicts that arise in the club.
2. **Tech Inspector:** There shall be three (3) Tech Inspectors, whose responsibility it will be to inspect all cars entered for compliance with MARC rules. The three Tech Inspectors shall confer on any rule interpretations. Any rule interpretations decided on will be noted in writing (preferably in that race's race report) for possible inclusion to the rules. Tech Inspectors will be responsible to the Club Director should any questions in the rules arise.
3. **Track Steward:** The Track Steward shall be the owner of the track where the race is being held. The Track Steward, or an appointed replacement, must run the race with no marshaling responsibilities. The Track Steward will be responsible to the Club Director on all matters concerning the track and facilities.
4. **Race Director:** The Race Director is the person responsible for running the computer or the person responsible for controlling track power and lap counters for any heat (usually the Track Owner).
5. **Communications Director:** The Communications Director is responsible for the design, publication, and distribution of the race report for each race to MARC members, and to manufacturers and media as he deems appropriate. The Communications Director will be responsible to the Club Director on all matters concerning Club communications. The Communication Director will fill the Responsibilities of the Club Director in the event he is unable to do so due to absence from a race, illness, etc. *A Webmaster may be appointed to help with the upkeep of the website (www.marcne.com)*
6. **Scribe:** The Scribe is responsible for documenting decisions made at the rules meeting. The document produced is not intended to be a transcript of a meeting, but a record of the discussions made. The Scribe will use this information to update the Rulebook for the upcoming season and provide it to the Communications Director for distribution to club members.
7. Elections for Club Officials will be conducted at the annual rules meeting.

Officials for 2022 - 2023 Season

Club Director:	<i>Tom Gray</i>
Tech Inspectors:	Jim Macartney, Ryan Archambault, <i>Hakim Harris</i>
Alternates:	Mike Tiffany, <i>Terry Ayer</i>
Communications Director:	Rob Hayes
Scribe:	Paul Ryer
HOPRA Senators:	Peter Lentros, <i>Paul Ryer</i>

B. DRIVERS

1. All drivers will be classified as Pro or Sportsman. Pros are very experienced drivers and Sportsman are working towards the goal of being a Pro driver.
2. Drivers must have their cars in Tech Inspection before closing time. No driver substitutions shall be allowed. Only one entry per class shall be allowed.
3. Once a race has begun, a driver is allowed to touch his car only to repair it. A marshal must replace the car where it was removed by a marshal in a manner that does not obstruct other drivers or cars.
4. All drivers must serve as Turn Marshals at the Race Director's request. Turn Marshals may not repair cars. Turn Marshals must turn marshal only (NO SMOKING, EATING, DRINKING, OR WORKING ON CARS). Turn Marshals should pay attention to their turn only and not be distracted by watching the race or other participants. (Spectators and participants not racing at the time should stay away from the track at least 3 feet) Marshals should take the time to place a car in its correct lane without interfering with cars that are in the correct lanes (sometimes a bit of patience and waiting a second can be the difference between a smooth marshal and havoc). Marshals not paying attention will get one warning from the race or club director, 2nd offense will be a 5-lap penalty from that person's previous heat (next heat if that person has not yet raced).
5. Drivers will be given lap penalties by the Race Director for unsportsmanlike conduct. Some examples for penalties are marshaling your own car, marshal abuse (yelling), profane language, throwing of cars or controllers etc... First offense will be a loss of 10 laps from that person's previous heat (next heat if that person has not yet raced). Second offense will cause loss of all MARC points for the day and the offending driver will be finished racing for the day. Third offense will make the driver ineligible to enter any more MARC events for the remainder of that season. This is a cumulative rule and will not be class-specific and will only reset at the end of a season.
6. Alcohol will not be permitted at or during a MARC-sanctioned race.
7. Smoking is not allowed inside at a MARC-sanctioned race.
8. MARC Membership: In order to be eligible for MARC Championship series points, each driver must have paid the \$20 yearly membership fee. Any race points prior to membership being paid will be forfeited. If a driver is unable to pay the membership fee, but would like to be a member, they should contact the Club Director. We will not turn someone away due to financial hardship.
9. Rules meeting attendance and voting eligibility are:
 - a. Anyone can attend the MARC rules meeting.
 - b. To be eligible to vote, a driver must be a paid member in good standing and have entered at least 4 of the previous season's events as a paid member.
10. A Drivers meeting will be held prior to the first race of each race day. The purpose of this meeting is:
 - a. Race Director will address rules 2,3,4,5 & 6 above along with any track-specific information that needs to be relayed to all participants (lap counter locations, marshal stations, etc.).
 - b. Club Director will:
 - i. Provide a brief Treasury report on current balance, money owed, and money owed to the club.
 - ii. Provide a forum for the discussion of any club issues, questions, etc.
 - iii. Keep the meeting as brief as possible.
 - c. **ALL DRIVERS MUST ATTEND. TRACK & PITS WILL BE CLOSED.**

C. RACE PROCEDURES

1. Practice:

- a. Doors open at 7:30 am. When racing at LenJet, volunteers will uncover and clean the tracks, and setup the computer. Practice will not start until all tracks to be used are up and running.
- b. Track power will be turned on at 8:00 am to begin practice. Practice from 8:00 – 8:30 will be reserved for drivers classified as Sportsman. Drivers who have never raced on the track will also be allowed to practice from 8:00 – 8:30 as well unless the track is new to MARC schedule. MARC Pros can begin practice at 8:30.
- c. Open practice session for the first race of the day will begin at 8:30 and will be 1 hour in length.
- d. Second race of the day practice will begin following the conclusion of the first race and will be 1.5 hours in length. Practice will not start until Club Officials have completed tasks for the first race.
- e. The only cars allowed on the track during the practice session are those eligible for the next race

2. IROC: *If there is an IROC scheduled, the event schedule will be modified as follows:*

- a. *IROC race will begin as close to 8:15 as possible*
- b. *Short practice for participants to adjust controllers*
- c. *Race will be Round Robin with 3-minute heats*
- d. *No points will be awarded for IROC races. This is strictly for FUN!*

3. Registration: All drivers must fill out and sign the MARC Official Race Entry Form.

4. Entry Fee: A non-refundable entry fee shall be paid to the Club Director before Tech Inspection. Fee for the season is \$10.00 per race day. Half of the entry fees collected will be given to the host to cover the cost of lunch provided. The fee is waived for race hosts the day of their race. ***Once a driver attends 7 events in a season, they will not be charged to their 8th event for that season.***

5. Concours d'Elegance: (as scheduled) Concours judging shall take place at the conclusion of Tech Inspection. The Club Director will select Judges for the Concours. Concours judges will use the following system to determine Concours winner:

- a. Body Detail: 0-20; areas to be considered include: bumpers, headlights, drivers, roll bars, mirrors, engines, air control devices, and/or other physical detailing of the body.
- b. Paint and Finish: 0-20; quality and application of the paint, numbering, lettering and decals. Evenness of the coat is an important feature.
- c. Overall Impression: 0-10; the general aesthetic quality of the car. Realism is considered here. Scale replicas and original paint schemes should be given equal consideration.

6. Tech Inspection: The Tech Inspectors will inspect all cars entered in a MARC race. Cars must be submitted no later than 10 minutes after the close of practice. Cars submitted 11 to 15 minutes after the close of practice incur a 5-lap penalty for that race. Cars submitted any later than 15 minutes after the close of practice will not be eligible to race. A car will only be allowed 3 attempts to pass Tech Inspection. A post race Tech Inspection is also held, with only one attempt to pass. The driver is responsible for the techability of his car. At the end of each race die will be rolled to determine if a full tear down of the top four cars. If a 3 is rolled, the tear down will occur. The tear down will include measuring the resistance of the armature, insuring the car only contains acceptable parts, and may include measuring tires sizes and measuring magnet strength.

7. Lane Change: Each driver will move to the lane designated by the race management software using European rotation with the result of driving on all lanes the same amount of time.

8. Qualifying: Auto-qualify will be used for races when appropriate.

9. **Race Procedures:**

- a. Drivers who are not members of MARC who participate in a race must declare themselves as a Pro or a Sportsman with the consensus of the Club Director or in his absence, the Race Director.
- b. There will be two races at each event, *three if an IROC is scheduled*, with the slower class being raced first. Both races will be a round robin of all participants unless:
 - i. We are at a multi-track facility and the Sportsman and Pros are racing on different tracks
 - ii. Sportsman and Pros are running significantly different classes of cars. The only exceptions are:
 1. Modified and CPM
 2. Open Weighted and G-Jet
 3. Super Stock and Spec Racer
 - iii. At the Club Director's discretion
- c. At the finish of each heat race the cars will be impounded for Post-Tech Inspection. See section C item 5 for post tech procedure.
- d. At the discretion of the track owner, a third race may be added to the event.
 - i. This will be an IROC event using cars provided by the track owner.
 - ii. Lane Rotation will be Straight Rotation and heats will be three minutes long.
 - iii. Points will not be awarded for this race

10. **Track Calls:** The only track calls are for marshal damage or a car that cannot be readily reached, which can be called in three cases:

- a. Called by the marshal who damaged the car.
- b. Called by the driver of a car that is damaged when a marshal puts the driver's car in the wrong lane.
- c. Called by a marshal to find and retrieve a car that cannot be readily reached due to it being under a bridge, lost on the floor, etc.

The driver will get time equal to the length of the segment being run to repair the car. Race director has the right to a track call in other, very limited, serious, and unfair situations.

11. **Finish:** At the conclusion of the race, the cars shall be left on the track where they stopped after the power was shut off, until the order of finish is positively determined, and the Race Director authorizes their removal. Removal of cars prior to the Race Director's authorization will result in the offending car(s) being credited with running 0 sections.

12. **Protests:** Protests must be made to the Race Director immediately or forgotten forever. Protests will be resolved by Protest Board. The Protest Board is the Club Director, and the Tech Inspectors present and if needed another Club Officer that forms an odd number quorum. The decision of the Protest Board is final.

13. **Points:** Points for each MARC class will be awarded as follows:

- a. [Finish Position - Points]: 1st - 100; 2nd - 95; 3rd - 90; 19th - 10; 20th and lower - 5
- b. MARC will crown a Pro Champion and a Sportsman Champion each season.
- c. The lowest 6 results will be dropped from all drivers point total
- d. Ties will be broken by number of wins, then by number of 2nd place finishes, etc...

14. **Awards:** Every MARC driver who starts a race will receive points for that race unless they are disqualified. Each driver's season point total will be calculated as Total Points for all races - six lowest results. Ribbons will be awarded on each race day to the top four Pro finishers and top four Sportsman finishers. A trophy, plaque, or other award will be presented to the top four Pro finishers and top four Sportsman finishers.

15. **Sportsman/Pro Status:** Racers must compete in the Pro classes if they have:
- a. Won the MARC Sportsman championship. They can remain a Sportsman if the season has been shortened or at the Club Director's discretion.
 - b. A racer may choose to move up to Pro status at any time.
 - c. A Pro can be reclassified to a Sportsman if they choose to do so, and they did not finish in the top four in the Pro group the prior year.
16. Cars will be impounded when not racing. Parts may not be taken off or borrowed.
17. Race reports and driver's points will be posted on the MARC website (www.marcne.com).
18. Rules Meetings:
- a. There will be an annual rule meeting prior to the start of the season. All proposals for rules changes must be submitted to the Director, in writing, one month prior to the chosen meeting date. Director will then create the meeting agenda based upon those proposals. The agenda must be posted on the MARC website (www.marcne.com) & emailed to the paid members no less than 3 days prior to the rules meeting. The rules meeting agenda will contain a New Business topic where items not provided in writing can be brought forth and discussed. These items should be kept as brief as possible. Agenda for this meeting will be as follows:
 - i. Director's Kick-Off
 - ii. Awards for Prior Season
 - iii. Elections
 - iv. Rules Proposals for Classes
 - v. Rules Proposals for Race Procedures
 - vi. General Rules Proposals
 - vii. New Business (Please keep these items brief)
 - viii. Determine Classes to be run for next season
 - ix. Review Schedule
 - b. A rules meeting can be called based upon a request of 5 or more current members if an issue can not be resolved by the club officers to the satisfaction of members involved in an issue. Notification will be sent, and the meeting will occur at the next race.
19. All races will be the scheduled the second Saturday of each month September through May. Exceptions to this are the East Coast Championship date, and other special event or holidays with which the club does not wish to conflict.

D. GENERAL CLASS RULES

1. These rules apply to all classes except as noted in the specific class rules.
2. The minimum allowable wheelbase is 1 3/8 (1.375") inches.
3. The maximum allowable width of the entire car is 1 5/16 (1.3125") inches. The maximum allowable length of the entire car is three (3.00") inches.
4. The maximum allowable lateral movement of the front axle is 1/32 (.03125") inch.
5. The car must be equipped with four tires which touch and roll when checked on a test track with no or low rails. If a car loses a wheel or axle, it may finish the segment without it. The car must be repaired prior to the start of the next segment.
6. Only one guide pin per car shall be allowed. Adjustable guide pins will be allowed except in Production class.
7. Except through legal openings, the body must cover the chassis when viewed from above. The bodies must be neatly trimmed as not to remove any body details.
8. The Body Style must be a scale replica of an actual car. The following Body Styles are eligible for all MARC Competition Classes:
 - a. Sport Racer: Open or Closed Cockpit prototype or similar. Specific categorizes may be stipulated such as FIA/Group C, IMSA GTP, SCCA or Can-Am Open Cockpit with driver bodies, or other recognized Sports Racers categorizes that have enough bodies available to make the class viable.
 - b. Grand Touring: All production based closed coupe sport or GT bodies. Specific categorizes may be stipulated such as FIA/Group A & B, IMSA GTO/ GTU, SCCA Trans-Am, or other recognized Grand Touring categorizes that have enough bodies available to make the class viable.
 - c. NASCAR: The type and style of bodies used in NASCAR sanctioned races. Must have numbers on each door, and number on roof, readable from the infield. Windows must be distinguishable. Window nets, hood pins, name, gas overflow cap replicas will be highly appreciated. Modern (1980 – current) or Vintage (pre-1980) categories may be stipulated.
9. All bodies shall be painted and cannot have any added air control devices. Closed cockpit bodies shall have distinguishable front and rear windows. Open cockpit bodies shall display at least the driver's head and head-high roll bar.
10. Any car without a body or with an interfering body shall not be allowed to run during practice or the race.
11. Any car or device, which is considered hazardous to the track, marshals, drivers or other cars shall be declared illegal and will not be allowed to run.
12. During a race, any individual part of the car may be replaced. The chassis and the body are not considered replaceable parts. Bulkheads are not considered part of the chassis and may be replaced.
13. If a marshal damages another car while replacing it on the track, the power and time to the track shall be turned off to allow the offended driver time to put the car back into running order with a time limit on the repairs equal to the length of the time of the segment being run.
14. The Race Director has the right to have any car inspected after repairs have been made. If repairs are necessary, they shall be made before the car may re-enter the race.
15. Every car entered may be required to submit to a post race tear-down (Tech Inspection). Failure to comply will result in an immediate disqualification of the car and entrant, and forfeiture of entry fees paid and points for that entry.
16. The driver has the final responsibility to prove the legality of all equipment used at the track, including the car and controller.
17. Driver's controller will adhere to the rules defined in paragraph 5 of Section P of this document.
18. Plating of electrical system is legal in all classes except Production.
19. No freak or irregular magnets shall be allowed (more than $\pm 5\%$ of average of field).
20. Chassis and magnets must be readily available and approved at the present season's rules meeting to be eligible for use.
21. The tech inspectors will make all final decisions regarding rule interpretations.
22. Cars may be subject to inspection/teardown before/after the race to satisfy technical inspection.
23. Lane stickers will be used by drivers to identify the lane they are currently racing in. Lane stickers must be placed on the front of the car which is from the top of the windshield forward.

E. T-Jet CLASS RULES

Track Regulations:

1. Twenty (20) volt battery power or filtered power supplies shall be used.

Complete Car Regulations:

1. The complete car must weigh at or between 19.0 grams and 24.0 grams.
2. The complete car must freely pass through a standard (1 5/16") HO Tech block.

Body Regulations:

1. The body must be a copy of a 1:1 car and/or concept cars.
2. Bodies must be manufactured by either the process of casting or injection molding and be made from resin or plastic. No feather light resin allowed.
3. Bodies with cast in handling pans or exaggerated details (such as unrealistic or inappropriate hood scoops, oversized windows, side pipes, sloped sides, or snowplow noses) are not allowed.
4. Bodies must be originally manufactured with the intention of being mounted with the use of 2 screws via 2 body mounting posts on a/an: Aurora Model Motoring (which includes: Vibrator, Thunder Jet, Wild Ones, Tough Ones, and Xlerators), Bachmann, Faller, Model Motoring Thunders Plus, Marx Eldon or Tyco S series HO chassis.
5. No Indy, Formula 1 or Formula style open wheel bodies will be allowed.
6. No ballast or fillers, other than color pigment, are allowed in the plastic or resin bodies
7. The maximum thickness of the sides of the body, including items such as fender flares and running boards, is 0.125"
8. With the body mounted securely to the chassis and viewed from above, the body must cover the chassis except through windows and vents.
9. With the body mounted securely to rolling chassis and when viewed from the side of the body: The upper edge of the top-plate, minus rail cannot be above the top of the body as measured at the rear of the gear top plate. (I.e.: The horizontal top of the gear plate (base) cannot protrude above the rear window opening).
10. The body must be fitted with the manufacturer's original or exact replica bumpers, heads, rollover bars, etc. in their stock locations.
11. Cracked or broken body mounting posts may be repaired or replaced with the use of glue or a plastic sleeve around the original post or a plastic tube in place of the broken post.
12. Other than the plastic post reinforcements stated in Body Rule 12, no additional weight can be added to the body.
13. The body may be lowered and lightened by removing material through the process of grinding, or scraping, as long as Body Rule 10 is not violated. Body cannot be heated or reshaped from the original cast of the body.
14. Bodies that have a separate roof and windshield casting/molding and have molded in interiors (also known as Hardtops, e.g., Aurora's '65 Mustang) may have the interior portion of the body completely removed.
15. Front and rear wheel wells may be opened for tire wheel-well clearance. This opening may be no larger than 1/8-inch drill bit around entire wheel-well and tire.
16. Wheel-wells must not be modified in such a way as to allow the use of any other wheelbase that is not originally intended by the manufacture of the body.
17. Any body mounting screw may be used. Non-magnetic screws are recommended.
18. Both front and rear screws must be used to always secure the body.
19. The front windshield must be plastic or resin, clear or painted, may be glued in place or molded in, and must fill the window frame. Tape windshields are not allowed. Side and/or rear windows may be removed.

Chassis Regulations:

1. Only original Aurora Thunder Jet chassis assemblies with non-plated copper electrical components are allowed. Brush springs may be bent to alter brush tension. Pickup shoe hanger plates may be bent.
2. The rolling chassis' axle and armature holes may be opened for increased clearance. Bushings are not allowed.
3. The chassis may be trimmed (no more than .010") to allow for crown gear tooth clearance.
4. Any original Aurora T-Jet pancake gray armature with two laminations or Dash armature with 2 or 3 laminations, with its original commutator, and all its original windings may be used. The armature may be balanced and trued with a minimum 16.0 ohms (measured pole to pole with armature removed from car and checked after a 5-minute cool down). Spacers may be used between the topplate and top of armature.
5. Any original Aurora magnets or Johnny Lightning/Auto World/Dash magnets may be used. Johnny Lightning/AutoWorld/Dash magnets may be sanded to fit the chassis. The distance between the magnets must be a minimum of .700; no exaggerated sanding is allowed to close the arm gap.
6. Magnet shims may be used. Shims must be non-ferrous. No shims are allowed either under or on top of magnets.
7. Any flat top and bottom carbon/copper motor brushes are allowed. Brushes may be scored with one score line or an "X". Depth of the score (or X) is of no relevance.
8. Any stock or commercially available stock replacement 14 tooth solid brass armature pinion gears, 24 tooth solid brass idler and driven gears, 9 tooth solid brass pinion gears, and 15 tooth crown gears are allowed. The crown gear boss may be trimmed, or a spacer may be added to adjust for proper gear mesh. .300" minimum diameter over the entire width on the crown gear. No lighting, no drilling or angle cutting of the crown gear.
9. Original Aurora stock drive gear shaft or magnetic replacement shaft may be used.
10. Gear tooth friction surfaces may be de-burred by polishing, filling or sanding.
11. Gears may not be chamfered, lightened, or relieved.
12. Any front and rear wheels, tires and axles may be used. Maximum lateral movement in the front wheel assembly is 0.031.
13. Front and rear axle shim washers or spacers are allowed. Front axle, shim washers or spacers must be on the outside of the frame rails. When using shim washers or spacers on the rear axle, they can be on the inside or outside of the rear frame rail. No rear wheel weights or add-on hubcaps.
14. Stock or stock replacement pickup shoes from American Line, BSRT, Slottech, and Wizzard may be used. NO ski shoes. Plated shoes allowed.
15. The pickup shoe spring may be cut, stretched, shimmed, or compressed.
16. Any amount of the vertical gear plate rails above the upper horizontal plane may be removed. The serial/patent numbers and letters must also remain intact.
17. Guide pins must be plastic and must be of a design essentially similar to the original Aurora black plastic front guide pins. Guide pin may be, trimmed or bent. Countersinking screw hole on front guide pin is allowed.
18. Glue may be used on a rolling chassis assembly only for the purposes of attaching gears or guide pin. No gluing of axles allowed. Solder may only be used to attach metal gears to their metal shafts.

F. G-Jet CLASS RULES

There will be three races for Sportsman and two for Pros in the 2022-2023 season.

General Rules

1. Cars eligible to compete in this class include the BSRT G-Jet®.
2. The chassis must be a stock BSRT G3®, G3® R, or G3® RS. The chassis cannot be modified except to add body mounts and the front axle holes may be reamed to .052". Body mounts must be located in the stock locations.
3. The armature magnets must be BSRT G3® Ceramic or BSRT G-Force™ Ceramic-Grade material and cannot be cut. Magnets must remain in their stock position.
4. Armature must be a stock BSRT G-Jet®, narrow gap design, and be a minimum of 9-ohms. BSRT G-Jet® 9-ohm Hot Stock™ armature may be substituted for the stock unit.
5. Armature bushings must be stock or BSRT stock replacement (no ball bearings allowed). Bushings may be reamed, chamfered, and polished.
6. All electrical system parts must be stock or BSRT stock replacement. Helper springs are not allowed.
7. Axles must be made of a magnetic material. Rear axles must be a minimum diameter of .059" measured with digital calipers at the points the axle contacts the chassis
8. Rear tires must be BSRT G-Jet® slip-on silicone tire part # 880 on part # 879 Double Flange rims with a minimum diameter of .450" on a stock or BSRT stock replacement rear axle. Front and rear rims cannot be drilled or lightened.
9. Gears must be stock or BSRT stock replacement. Gears may not be lightened. Axle spacers and/or gear spacer may be used to aid with gear mesh.
 - a. Pinion gear must be 7 tooth
 - b. Crown gear must be 21 tooth or 22 tooth.
10. The guide pin must be stock or BSRT stock replacement in the stock position.
11. Glues/adhesives are not allowed on the chassis except to attach the body mounting system, retain the guide pin, and to lock the screw and nut that affix the front weight.
12. BSRT G-Jet® marked handling weights must be used. Weights must be used in their stock location. Weights may not be modified. Legal front weights are:
 - a. Heavy Handling Plate
 - b. Light Handling Plate (#888)
 - c. Extra-Light Handling Plate (#887)
13. G-Jet® races shall be run at 12.0 – 14.0 volts.

Lexan Specific Rules

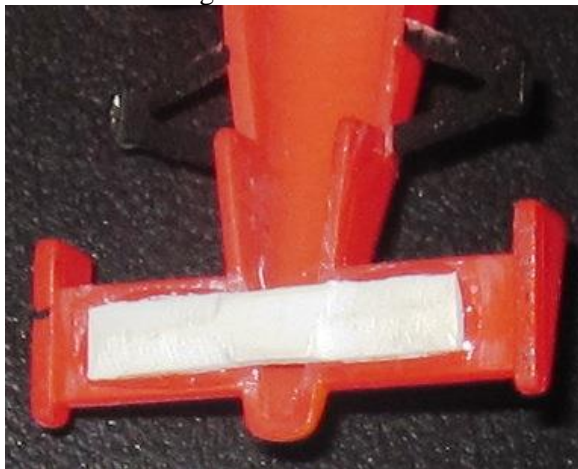
1. Front Wheels can be either one of the following:
 - a. G-Jet® front axle and non-independent G-Jet® O-ring rims must be stock and unmodified. Front O-rings must be stock and be a minimum tire diameter of .350".
 - b. G-Jet® front axle, G-Jet® front wheels (part #877) and G3 front tires (part #950) must be used with a minimum tire diameter of 0.350".
2. Any scale appearing vacuum-formed body may be used. Body class as specified in the General Class rules section may be specified for each event.

Indy/Formula 1 Specific Rules

1. G-Jet® front axle, G-Jet® front wheels (part #877) and G3 front tires (part #950) must be used with a minimum tire diameter of 0.350". The front tire, rim, and axle must be installed using the front, long wheelbase hole.
2. The body must be a Tomy snap in place stock F1/Indy injected molded body. The weight of the body must be no less than 2.1 grams. All wings, driver figures and body parts must be secured to the body. The body cannot be cut or modified except for the following:
 - a. The front wings may be repaired/reinforced by removing a small amount of plastic material under the front wing to allow .030 +/- .003 plastic styrene or plywood to be glued flat under the front wing. The plastic or plywood cannot be visible from the top. (See pictures on following page).
 - b. A very small amount of plastic may be removed on the portion of the body nose to allow for clearance of the front G-Jet weights. Excessive removal of plastic will not be allowed. (See pictures on the following page).
 - c. The adjustable wing flap must be glued into a fixed position. The glue on the wings and uprights cannot be applied in a way in which to change or modify the appearance of the car's body. The top of the wing flap cannot be higher than the wing endplates.

- d. The rear wing uprights may also be trimmed for tire clearance. Plastic can be cut from bottom edge to the underside of deck of body. The rear bottom corner must still be intact (Tech inspectors will have template).

Front Wing Reinforcement Picture 1.



Front End Modifications Picture 1.



Front End Modifications Picture 2.



G. OPEN WEIGHTED CLASS RULES

[Legal chassis are: BSRT G3/G3R/G3RS, Slottech T1/T2/T3, Wizzard Storm/Fusion and Viper Scale Racing V1.]

There will be four races for the 2022 – 2023 season.

1. Stock chassis must be used and cannot be modified in any way except to add body posts and axle retainers and front axle hole may be reamed to 0.052”.
2. Motor magnets must be the polymer magnets listed below. The definition of a polymer magnet can be found in Section O. Definitions. Magnets cannot be cut or sanded and must be in stock location.

BSRT	#290	G-Force C4 Motor Magnets	BSRT G3/G3R/G3RS, Viper Scale Racing V1
Slottech	#81C	G6 Motor Magnets	Slottech Thundercat T3
Viper Scale Racing	MAG-103-MTR	Pro 4 Motor Magnets	BSRT G3/G3R/G3RS, Viper Scale Racing V1
Wizzard	WS60	Stock Storm Ceramic Grade Motor Magnets	Wizzard Storm
<i>Wizzard</i>	<i>FS40</i>	<i>Fusion Level 4 Polymer Magnets</i>	<i>Wizzard Fusion</i>

3. Each car must have the front weights as manufactured by the chassis manufacturer for that chassis in the stock location for those weights.
4. Each car must have the rear traction magnets replaced by brass traction weights. Wizzard and Slottech cars must use the stock weights unmodified from the chassis manufacturer. BSRT and Viper cars must use unmodified light weights and spacers or heavy weights from BSRT, Viper, or Harden Creek.
5. The armature must be stock or a hot stock production *armature* with crimp/folded/welded tabs. The commutator may be trued, epoxied, and advanced timed. Small cuts or drill marks may be made for balancing only. No machining/cutting along the entire length or circumference of the lams/stacks. Excessive removal of material to reduce weight is not allowed. Minimum 5.8 ohms (measured pole to pole with armature removed from car and checked after a 5-minute cool down period). No dewinding, rewinding, or soldered tabs.
6. The electrical system must be stock or stock replacement for the car. The use of big foot brushes and twisted endbells is allowed.
7. Bushings are only allowed on the armature. Armature bushings may be metal or plastic and must be generally available. Bushings may be reamed and chamfered.
8. Ball bearings are not allowed anywhere on the car.
9. The front wheels, tires and axle may be any readily available parts except the Wizzard weighted front wheel set must be used on the Wizzard *Storm* chassis and not on any other chassis. The maximum allowable lateral movement of the front axle is 1/32 inch. Axle spacers may be used.
10. Rear tires may be readily available solid silicon/rubber replacement tires. Rear wheels must be readily available, double flanged replacement wheels. There are no restrictions on the gears, rear axles.
11. Guide pin must be a commercially available part in the stock location for that chassis. Guide pin may be glued in place but must remain in one of the stock positions.
12. The use of glue is not allowed except to mount body posts and to secure armature bushings.
13. Any scale appearing vacuum-formed body may be used. Body class (i.e. NASCAR, Can-Am, Trans-Am, etc.) may be specified for each event.
14. The maximum width of the car is 1-5/16” (1.3125”).
15. Track voltage will be 12.0 to 14.0 volts set at the discretion of the Race Director

H. PRODUCTION CLASS RULES

General Rules

1. The only cars eligible to compete in this class are the BSRT G3R #902, BSRT G3R #901, and BSRT G3 #901.
2. The chassis cannot be modified in any way and must be the soft chassis. Clip can be any hardness.
3. Front rims must be the “Marcos” 5 spoke rim that comes in the BSRT wheel sets part # 991 – 999 or the BSRT F1 front rim (#877). Front tire must be BSRT part #950. Front axle must be stock. Front axle, rim and tires must be stock with a minimum diameter of .342” (Tire must not fit through the .340 hole on MARC-owned BSRT metal tire gauge)
4. Rear rims and tires must be the “Marcos” 5 spoke rim and tire that comes in the BSRT wheel sets part # 997 – 999 or must be in the following chart:

BSRT HPS / Rim Sizes					
HPS=Hgh Performance Silicone "A" Compound (Soft)					
	Rim Part #	Rim Part #	Rim Part #	Rim Part #	*Rim Part #
	#322	#324	#326	#328	#879
	.275 Dia. Rim	.280 Dia. Rim	.285 Dia. Rim	.290 Dia. Rim	
Tire Part #	Final Dia.	Final Dia.	Final Dia.	Final Dia.	Final Dia.
335	0.424	0.428	0.432	0.436	
338	0.440	0.444	0.448	0.452	
350	0.428	0.432	0.436	0.440	
880	G-Jet Tire And Rim* "A Compound				0.450

"B" Compound (Firm)				
	Rim Part #	Rim Part #	Rim Part #	Rim Part #
	#322	#324	#326	#328
	.275 Dia. Rim	.280 Dia. Rim	.285 Dia. Rim	.290 Dia. Rim
Tire Part #	Final Dia.	Final Dia.	Final Dia.	Final Dia.
345	0.424	0.428	0.432	0.436
348	0.442	0.446	0.450	0.454

5. Any solid, magnetic steel rear axle up to .059” diameter may be used.
6. Pinion Gear must be a 7-tooth gear. Crown gear may be a BSRT 23 or 24-tooth gear only.
7. The guide pin location must be stock, and glue may be used to hold in place. Any readily available guide pin will be allowed.
8. Magnets:
 - a. Only motor and traction magnets as supplied in the BSRT G3 #901, BSRT G3R #901 and BSRT G3R #902 shall be used
 - b. Magnets shall be stock and cannot be cut
 - c. Traction magnets shall be of stock polarity
9. The armature must be stock and cannot be modified in any way. Minimum ohmage allowable shall be 6.0 ohms (measured pole to pole with the armature removed from the car after a five-minute cool down period). Only narrow window folded tab, red wire armatures will be allowed. Motors with orange wire from heat will not be allowed to enter. Motors that turn orange during an event will be subject to post race inspection where circumstances will be considered. Paint mark on stack from checking balance will be allowed.
10. The front motor bushing must be the stock bushing although it can be chamfered or reamed. The rear motor bushing can be stock or any readily available metal rear motor bushing (no ball bearing).
11. All electrical system parts must be stock current parts being supplied with cars.

- a. Plating is not allowed in electrical system parts. Tweaking & sanding of electrical parts will be allowed.
 - b. Pickup shoes must be BSRT Part #249 or #250.
 - c. Any Pickup shoe spring may be used. Helper springs are not allowed.
12. No traction glue allowed on tires or track.
13. General Rule 19 does not apply to Production class. Chassis clips may not be fastened.
14. Rear axles may be pinned.

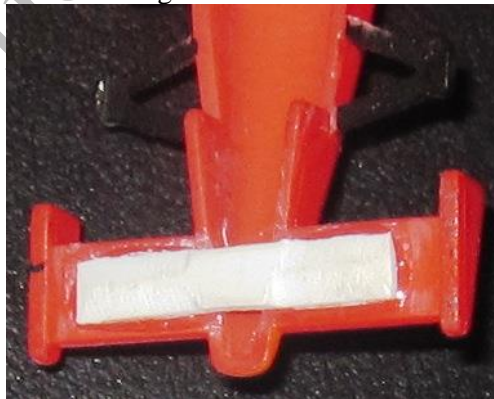
Lexan Specific Rules

1. Any scale appearing vacuum-formed body may be used. Body class (i.e., NASCAR, Can-Am, Trans-Am, etc.) may be specified for each event.

Indy/Formula 1 Specific Rules

1. The front tire, rim, and axle must be installed using the front, long wheelbase hole.
2. These rules are similar to the G-Jet Indy/Formula 1 Specific body rules. The body must be a Tomy snap in place stock F1/Indy injected molded body. The weight of the body must be no less than 2.1 grams. All wings, driver figures and body parts must be secured to the body. The body cannot be cut or modified except for the following:
 - a. The front wings may be repaired/reinforced by removing a small amount of plastic material under the front wing in order to allow .030 +/- .003 plastic styrene or plywood to be glued flat under the front wing. The plastic or plywood cannot be visible from the top. (See the picture below)
 - b. A very small amount of plastic may be removed on the portion of the body nose to allow for clearance of the front G-Jet weights. The G-Jet weights are not allowed in this class. Excessive removal of plastic will not be allowed. (See pictures below).
 - c. The adjustable wing flap must be glued into a fixed position. The glue on the wings and uprights cannot be applied in a way in which to change or modify the appearance of the car's body. The top of the wing flap cannot be higher than the wing endplates.
 - d. The rear wing uprights may also be trimmed for tire clearance. Plastic can be cut from bottom edge to the underside of deck of body. The rear bottom corner must still be intact (Tech inspectors will have template).

Front Wing Reinforcement Picture 1.



Front End Modifications Picture 1.



Front End Modifications Picture 2.



I. SPEC RACER CLASS RULES

[Legal chassis are: BSRT G3/G3R/G3RS, Slottech T1/T2/T3, Wizzard Storm/Fusion and Viper Scale Racing V1.]

There will be five races for the 2022 - 2023 season.

1. Stock flexible or medium stiffness chassis must be used and cannot be modified in any way except to add body posts and axle retainers.
2. All magnets must be stock ceramic and “HOPRA Approved” or the polymer magnets listed below. The definition of a polymer magnet can be found in Section O. Definitions. Magnets cannot be cut or sanded.

BSRT	#290 #284	G-Force C4 Motor Magnets G-Force C4 Traction Magnets	BSRT G3/G3R/G3RS, Viper Scale Racing V1
Slottech	#81C #86C	G6 Motor Magnets G6 Traction Magnets	Slottech Thundercat T3
Viper Scale Racing	MAG-103-MTR MAG-103-TRC	Pro 4 Motor Magnets Pro 4 Traction Magnets	BSRT G3/G3R/G3RS, Viper Scale Racing V1
Wizzard	WS60 WS61	Stock Storm Ceramic Grade Motor Magnets Stock Storm Ceramic Grade Traction Magnets	Wizzard Storm
<i>Wizzard</i>	<i>FS40</i> <i>FS41</i>	<i>Fusion Level 4 Polymer Magnets</i> <i>Fusion Level 4 Polymer Traction Magnets</i>	<i>Wizzard Fusion</i>

3. The armature must be stock or a hot stock production red **armature** with crimp/folded/welded tabs. The commutator may be trued, epoxied, and advanced timed. Small cuts or drill marks may be made for balancing only. No machining/cutting along the entire length or circumference of the lams/stacks. Excessive removal of material to reduce weight is not allowed. Minimum 5.8 ohms (measured pole to pole with armature removed from car and checked after a 5-minute cool down period). No dewinding, rewinding, or soldered tabs.
4. The electrical system must be stock or stock replacement for the car. The use of big foot brushes and twisted endbells is allowed.
5. Any commercially available rear axle may be used.
6. Gear ratio must be 7 tooth pinion with a 23 tooth crown gear.
 - a. Crown gear diameter may be reduced
7. The front wheels, tires and axle may be any readily available parts.
8. Rear tires may be readily available solid silicon/rubber replacement tires. Rear wheels must be readily available, double flanged replacement wheels.
9. Guide pin must a commercially available part in the stock location for that chassis. Guide pin may be glued in place but must remain in one of the stock positions.
10. The front and rear motor bushing must be stock or stock replacement. Ball bearing prohibited.
11. Bodies can be hard body (injected molded or resin) or lexan (vacuum molded) only. Open wheel bodies are not legal.
12. The use of glue is not allowed except to mount body posts and to secure armature bushings.

J. SUPER STOCK CLASS RULES

[Legal chassis are: BSRT G3/G3-R/G3-RS, Slottech Thundercat T1/T2/T3, Wizzard Storm/Fusion, Viper Scale Racing V1]

There will be six races for Sportsman and five races for Pros in the 2022 - 2023 season.

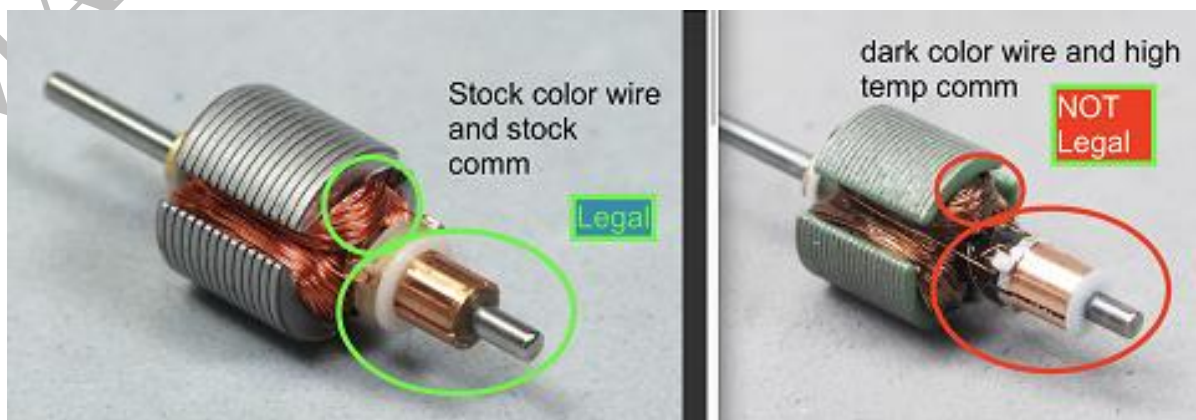
1. The following chassis with Ceramic Motor and Traction Magnets are legal:
 - a. BSRT G3/G3-R/G3-RS
 - b. Slottech Thundercat T1/T2/T3
 - c. Wizzard Storm/Fusion
 - d. Viper Scale Racing V1
2. The chassis shall be stock, readily available, and cannot be machined, sanded, or cut except to provide the following:
 - a. Add body mounts
 - b. Reinforce and/or replace pickup tabs
 - c. Add adjustable brush tension
 - d. Add axle retainer
3. Guide pin must be stock or stock replacement in a stock position
4. Use of glue is not allowed except to:
 - a. Secure body mounts
 - b. Reinforce and/or replace pickup tabs
 - c. Secure motor brushes to spring arm
 - d. Repair chassis
5. Flux collectors are not allowed
6. Axle bearings/bushings are not allowed unless they are stock for that chassis
7. Armature bearings are not allowed. Stock or stock replacement bushings must be used and may be reamed and chamfered
8. Magnets must be ceramic and as provided from the manufacturer with no modification and used in their stock position
9. Armature must be:
 - a. Stock or hot stock with crimp/folded/welded tabs
 - b. Commutator may be trued, epoxied, and advanced timed
 - c. Armature may be balanced with small cuts or drill marks on the stack
 - d. Overall armature diameter cannot be reduced
 - e. Each pole must equal or exceed 5.8 ohms when removed from the car and measured after a 5-minute cool down period
 - f. No dewinding, rewinding or soldered tabs
10. Brush tubes/ Adjustable brush tubes, endbells, and Fusion hood/bulkhead must be stock or stock replacement
11. Pickup shoes must be readily available stock or stock replacement
12. Pickup shoe springs must be readily available stock or stock replacement
13. Shunts of any kind are not allowed
14. Any readily available axles, wheels, tires, and gears may be used
15. Any scale vacuum-formed body may be used.
 - a. Body class (i.e. NASCAR, Can-Am, Trans-Am, etc.) may be specified for each event

K. MODIFIED CLASS RULES

[Legal chassis are: BSRT G3/G3R/G3RS, Slottech Thundercat T3, Wizzard Storm/Fusion, Viper Scale Racing V1].

There will be two races for Sportsman in the 2022 - 2023 season.

1. The chassis shall be stock, readily available, and cannot be machined, sanded, or cut except to provide the following:
 - a. Add body mounts
 - b. Reinforce and/or replace pickup tabs
 - c. Add adjustable brush tension
 - d. Add axle retainer
2. Only compression molded polymer magnets may be used.
 - a. The definition of a polymer magnet can be found in Section O. Definitions.
 - b. The expected gauss reading taken in the center of the traction or motor magnet shall not exceed the following criteria. The is taken after a 5-minute cool down period and at the lowest point on each magnet as it runs parallel to the rail. Any reading above these figures will be cause for disqualification or rejection at tech.
 - i. Traction: 2300 gauss maximum
 - ii. Motor: 2000 gauss maximum
 - c. See the chart in the L. CM POLYMER MODIFIED CLASS RULES section for specific approved manufacturer part numbers.
3. The use of glue shall not be allowed on the chassis, magnets, or bulkheads except for the body mounts, guide pin and armature bushings.
4. Other nonmagnetic material may be employed to restrict the movement of the magnets.
5. The use of flux collectors shall not be allowed
6. The armature must be red wire stock or a hot stock (The commutator and laminations may be trued, epoxied, and advance timed. Small cut or drill marks may be made for balancing only.) production small gap armature with crimp/folded/welded tabs. Minimum **2.4** ohms (measured pole to pole with armature removed from car and checked after a 5-minute cool down period). No dewinding or rewinding. High temperature commutators are not allowed. Examples or legal armatures are:
 - a. BSRT - #140 G3® High-Power™ Armature (fits all G3® cars) 2.6-ohm red wire
 - b. BSRT - 144 G3® High-Power™ Armature (fits all G3® cars) 2.6-ohm red wire
 - c. BSRT - BSRT Worked-up "High-Power" Tyco 440-X2 Armature
 - d. HC Slots - Viper - 2.8 Ohm Dynamically Balanced Armature for Wizzard, Slottech
 - e. HC Slots - Viper - 2.8 Ohm High Speed Armature for Wizzard, Slottech
 - f. Viper - Viper - 3.5 Ohm High Speed Armature for Wizzard, Slottech
 - g. HC Slots - Viper - 2.4 Ohm Econo Balanced HOT High Speed Armature for Viper V1, BSRT G3
 - h. Viper - Viper - 2.4 Ohm HOT High Speed Armature for Viper V1, BSRT G3
 - i. Viper - 2.8 Ohm HOT High Speed Armature for Viper V1, BSRT G3
 - j. Viper - 2.8 Ohm Dynamically Balanced High Speed Armature for Viper V1, BSRT G3



7. Electrical systems shall be stock replacement. Adjustable brush tension is allowed. Plated parts are allowed. Shunt wires and soldering of parts is not allowed. Electrical parts may be lightly sanded for cleaning purposes only.
8. Rear tires may be readily available solid silicon/rubber replacement tires. Rear wheels must be readily available, double flanged replacement wheels.
9. The front wheels, tires and axle may be any readily available parts.
10. There are no restrictions on armature bushings (may be glued in). Ball bearings are not allowed.
11. There are no restrictions on guide pin, gears, axles.

MARC Official Rules 9/1/2022

L. CM POLYMER MODIFIED CLASS RULES

[Legal chassis are: BSRT G3/G3R/G3RS, Slottech Thundercat T3, Wizzard Storm/Fusion, Viper Scale Racing V1].

There will be three races for Pros in the 2022 - 2023 season.

1. The chassis must be stock, readily available, and cannot be machined, sanded, or cut except to provide for the following:
 - a. Add body mounts.
 - b. Mount any guide pin holder - guide pin shall remain in any one of the stock positions.
 - c. Add armature bushings or ball bearings.
 - d. Drill or cut holes for adjustable brush tension.
 - e. The bottom surface of the chassis and bulkheads may be sanded flat. However, the bottom bulkhead tabs shall remain naturally connected to the end bells.
 - f. The pickup retaining tabs on the chassis may be reinforced and/or replaced in their stock position.
 - g. Real Axle retainers.
 - h. Bulkhead/Magnet Clip retaining screws.
2. Only compression molded polymer magnets may be used.
 - a. The definition of a polymer magnet can be found in Section O. Definitions.
 - b. The expected gauss reading taken in the center of the traction or motor magnet shall not exceed the following criteria. The is taken after a 5-minute cool down period and at the lowest point on each magnet as it runs parallel to the rail. Any reading above these figures will be cause for disqualification or rejection at tech.
 - i. Traction: 2300 gauss maximum
 - ii. Motor: 2000 gauss maximum
 - c. See below for specific approved manufacturer part numbers.
 - d. Magnets may be sanded flat on the bottom surface only, so they are flush with the bottom surface of the chassis and bulkheads.

Manufacturer	Part#	Description	Chassis Type
BSRT	#277 #290 #284 #276 #292 #286	G-Force C4 H-D Motor Magnets G-Force C4 Motor Magnets G-Force C4 Traction Magnets G-Force P10 H-D Motor Magnets G-Force P10 Motor Magnets G-Force P10 Traction Magnets	BSRT G3/G3R/G3RS, Viper Scale Racing V1
Slottech	#64 #81 #81C #86 #86C	T3 Motor Magnets G13 Motor Magnets G6 Motor Magnets G13 Traction Magnets G6 Traction Magnets	Slottech Thundercat T3
Wizzard	WS60 WS61 MHP060 MHP061 MHP67	Stock Storm Motor Magnets Stock Storm Traction Magnets High Level CMPM motor magnets High Level CMPM traction magnets Level 10 Storm Traction Magnets	Storm
<i>Wizzard</i>	<i>FS40</i> <i>FS41</i> <i>FS70</i> <i>FS71</i>	<i>Fusion Level 4 Polymer Magnets</i> <i>Fusion Level 4 Polymer Traction Magnets</i> <i>Fusion Level 10 Poymer Motor Magnets</i> <i>Fusion Level 10 Polymer Traction Magnets</i>	<i>Wizzard Fusion</i>
Viper Scale Racing	MAG-103-MTR MAG-103-TRC MAG-203-MTR MAG-203-TRC	Pro 4 Motor Magnets Pro 4 Traction Magnets Pro 10 Motor Magnets Pro 10 Traction Magnets	BSRT G3/G3R/G3RS
Viper Scale Racing	MAG-103-MTR MAG-103-TRC MAG-203-MTR MAG-203-TRC	Pro 4 Motor Magnets Pro 4 Traction Magnets Pro 10 Motor Magnets Pro 10 Traction Magnets	Viper Scale Racing V1

3. All magnets shall remain in their stock location.
4. The use of glue on the magnets or chassis surrounding the magnets shall not be allowed. Other nonmagnetic materials may be employed to restrict the movement of the magnets. Any chassis clip used to hold the car together must not touch the magnets or affect the magnetic field.
5. Any type of armature shall be legal
6. Electrical systems shall be stock or stock replacement parts. Shunt wires are allowed. Adjustable brush tension is allowed.
7. There are no restrictions on the armature bushings/ball bearings (may be glued in), guide pin, wheels, tires, gears, and axles.

M. NEO MODIFIED CLASS RULES

[Legal chassis are: BSRT G3/G3R/G3RS/G3RSB, Slottech Thundercat T1/T2/T3, Wizzard Storm/Fusion, Viper Scale Racing V1]

There will be one race for Pros in the 2022 - 2023 season.

1. The chassis must be stock, readily available, "HOPRA Approved" and cannot be machined, sanded or cut except to provide for the following:
 - a. Add, remove, or re-add body mounts.
 - b. Mount any guide pin holder - guide pin shall remain in any one of the stock positions.
 - c. Add motor bushings.
 - d. Drill or cut holes for adjustable brush tension.
 - e. The bottom surface of the chassis and bulkheads may be sanded flat. However, the bottom bulkhead tabs shall remain naturally connected to the end bells.
 - f. The pickup retaining tabs on the chassis may be reinforced and/or replaced in their stock position.
 - g. Real Axle retainers.
 - h. Front Axle retainer.
 - i. Bulkhead/Magnet Clip retaining screws.
 - j. Add any readily available front bumper.
2. All magnets shall remain in their stock location.
3. Rear axle bushings are allowed for the approved chassis only. Ball bearings are not allowed in the rear axle.
4. The use of glue on the magnets or chassis surrounding the magnets shall not be allowed. Other nonmagnetic materials may be employed to restrict the movement of the magnets. Any clip used to hold the car together must be non-magnetic only.
5. Any type of armature shall be legal.
6. Electrical systems shall be stock or stock replacement parts. Shunt wires are allowed. Adjustable brush tension is allowed. Glued in brushes on spring arms are allowed.
7. There are no restrictions on the armature bushings/ball bearings (may be glued in), guide pin, wheels, tires, gears, and axles.
8. There are no restrictions on the type of magnet material, cobalt, rare earth or polymer are allowed.

N. GRAVITY CLASS RULES

1. General Rules 19 and 20 are not applicable to this class.
2. There are no restrictions on chassis cutting. Scratch-built chassis are allowed.
3. Magnets are restricted to two motor magnets only. There are no restrictions to the type of magnets, magnet material, or position of the magnets. Cobalt or Rare Earth type magnets are allowed.
4. There are no restrictions on the armature, bearings, gears, wheels, axles, tires, guide pin and electrical system.
5. The car must pass the Lift Test, unless the track being raced on has non-magnetic rails. Lift Test defined as the following:
 - a. The lift testing device is a 5/16 piece of O-1 drill rod that is 1.312 inches long and has .004 of additional non-magnet surface. Typically, this additional non-magnet surface can be achieved with layers of tape.
 - b. To pass inspection, the lift testing device is placed anywhere on the bottom of the car, in a horizontal position, and cannot be held by the car. Testing may require removal of the pick-ups or tires.
6. Any car or device, which is considered hazardous to the track, the marshals, other drivers or other cars, shall be declared illegal and not allowed to run.

O. UNLIMITED CLASS RULES

1. General Class Rules are applicable and shall be followed.
2. There are no restrictions on chassis cutting. Scratchbuilt chassis will be allowed.
3. There are no restrictions on the type of magnets, magnet material, position of magnets, or number of magnets. Cobalt or Rare Earth type magnets will be allowed.
4. There are no restrictions on the type of armature, bearings, gears, wheels, axles, tires, guide pin, and electrical system.
5. Any car or device that is considered hazardous to the track, the marshals, other drivers, or other cars shall be declared illegal and not be allowed to run.

P. IROC

There will be two races in the 2022 - 2023 season.

1. *Only General Class Rules 1, 3, 5, and 6 apply to this class*
2. *IROC sets should consist of at least four cars. An additional backup car is recommended*
3. *IROC sets will be provided by MARC members*
4. *Cars do not need to conform to a specific MARC class. Guidance is that cars should not be any faster than Open-Weighted cars. Some potential cars to use are Tyco 440X2, OS3 TFX, AFX Mega G+, Life-Like, Open Weighted, G-Jet*

Q. TRACK AND EQUIPMENT RULES

1. All tracks shall have four or more color-coded lanes as defined below, in operating condition.

4 Lane Track Recommended Configuration

Lane colors and location:

Yellow	Inside Lane
Blue	
White	
Red	Outside Lane

Driver's panel layout:

Yellow	Blue	White	Red
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6 Lane Track Recommended Configuration

Lane colors and location:

Yellow	Inside Lane
Blue	
Orange	
Green	
White	
Red	Outside Lane

Driver's panel layout:

Yellow	Blue	Orange	Green	White	Red
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2. All tracks shall be equipped with alligator-type hookups with dynamic braking. These hookups shall be marked as follows:
 - a. White: Positive power from the power source.
 - b. Black: Connects to the left rail of the car as viewed from above in the direction of travel.
 - c. Red: Brakes, connects to the right rail of the car and the negative side of the power source.
3. All tracks used for MARC competition shall have clearly marked track sections for determining the number of sections run at the end of the race. It is encouraged that these sections be marked off in equal increments of lap length.
4. The track will be powered by a MARC-approved power source capable of delivering 18.0 ± 0.5 Volts DC at a minimum of 6 Amps per lane as measured across the White (power) and Red (brake) terminals at the control panel for each lane.
5. Only the track power may be used to power the cars.
 - a. The voltage output of the controller may not exceed the track voltage provided at the White driver's panel post. This can be measured as follows: red post to white = Track voltage, red post to black with full trigger = controller output voltage.
 - b. No controller output storage may be used (i.e., Capacitors attached to the controller output wire (Black Lead))" When the track power goes off the output of the controller goes off. A way to check, measure from the red post to the black post with full throttle, remove white lead, voltage should go to zero immediately.
 - c. Controllers may not have batteries.
6. All tracks shall be equipped with reliable, automatically tripped lap counters or light curtains. In all situations the lap counters or light curtains are considered correct unless it can be proven otherwise. The lap counter track section should be clearly marked.

7. Recommended power supply for all events is the MACPAC or similar.
8. Acceptable Race Management Systems are:
 - a. Lanemaster
 - b. TrakMate
 - c. SlotTrack
 - d. Race Coordinator
9. Allocation of dates vis a vis the series schedule is to be done at the time of the annual rules meeting or shortly thereafter. Club director has discretion to use other tracks as needed. Track owners who hosted a race the prior season will be granted first choice to race dates. A venue may have up to three scheduled races per season as long as it does not take that race from an owner who hosted a race the prior season and still desires to host a race. If a track owner needs to cancel a race for any reason, the Club director will work with the track owners to establish an alternative venue.
10. Track Owners wishing to get a race date on the MARC schedule will be required to:
 - a. Hold a warm-up or shakedown race attended by at least one more MARC member than the number of lanes. If possible, the race should be held prior to that season's rules meeting. However, it can be held any time at the Club Director's discretion based on what's in the best interest of the club. The race must be publicized to the MARC membership. All classes presently being run by MARC are to be run, and printouts must be made to ensure complete operation of counting and record-keeping system. This race will allow MARC to determine if the track is ready to hold a championship season date.
11. Track owners or their delegates are responsible for getting a race report delivered in digital format to the Communications Director and /or Club Director *within 10 days after the event*. The author of the race report will be identified at the drivers meeting. **Failure to comply will result in loss of race date for that track for the next season.**
12. It is recommended that all crash barriers and walls be made of a soft material.

R. DEFINITIONS

Bottom Surface - The portion of any part of the car that is closest to the track when the car is placed in an operational mode on the track after the car is built.

Concours d'Elegance - A competition to determine the best-looking cars.

Cut - Sanding, melting, trimming, drilling, i.e., to reduce. This does not include natural wear caused by track rails.

Drops - The substitution of the lowest point scores from the final total for a series championship.

Entry - One who has paid the entry and whose car has passed the technical inspection.

Extra Magnets - Any stock magnets which are not armature magnets, i.e., traction magnets.

Flux Collectors - Shim (not including a car's armature and magnets) which strengthens a magnet for horsepower or handling purposes, and/or collects magnetic flux for handling purposes.

Frame - That part of the chassis assembly that locates the magnets and axles and provides mounting for the body.

General Class Rules (GCR) - Rules which are applicable to all car classes.

Polymer Magnets - Small magnetic particles suspended in a plastic or epoxy shell and shall not be bonded nor sintered. This is considered a low heat cure process. Process of manufacture may involve injection and or compression molding, but magnet must be produced "Net Shape" as it exits the mold. No subsequent machining or sizing is allowed in the process.

Readily Available - Mass produced for H.O. Slot Racing. Items identified at a race (or previous rules meeting) as available will be legal for next race if availability satisfactory to Tech Inspectors.

Scratchbuilt - Parts or assemblies that are handmade to reinforce or supplement the original chassis.

Shall - Mandatory.

Shim - Material that exhibits magnetic attraction to a rare earth magnet.

Stock - Any part or condition that normally comes with a car.

Stock Replacement - A readily available part with similar dimensions as the stock part. Must be able to be installed without modification to chassis.

Track Call - A situation where the Race Director deems it necessary to stop the power and timer to correct an unfair situation.

Variable - To change the value of.

S. DIRECTIONS TO TRACKS

Terry Ayer's Ralph Spoilsport Speedway, 43 Blossom Rd, Windham, NH (603) 386-8904

Route 93 North in New Hampshire take Exit 3. Turn left at the light at the bottom of the ramp. Go straight through next light (Route 93 South exit 3). Straight through next light for Shaw's Market. Straight through next light for the Post Office on left. Straight through next light for the Fire Station on the left. Straight through next light for Center School on left. Straight through next light for the High School on left. Take second right turn after the light on Meetinghouse Road. Take the next right between the yellow arrow curve signs on Easy Street. Take Easy Street (steep hill) to the end and turn left onto Blossom Road. In 100 yards, bear to the left staying on Blossom Road. At the bottom of the hill bear to the right staying on Blossom Road. At the top of the steep hill is 43 Blossom on the right. Park in the driveway or on the street.

Ryan Archambault's Fast Five Raceway, 5 Madison Ave, Southamton, MA (413) 330-3698

From Hartford or south:

91 north exit 15

Left off exit

1/4 mile right onto Homestead Avenue

3/4-mile left Westfield Road route 202

4 1/4-mile right Southamton Road (rt 10)

2 1/4-mile left brickyard road

3/4-mile left grant

1/8-mile Road ends go right onto Madison.

Take Second driveway on left...1st paved driveway...directly across from a blue/gray cape. Can't see house from driveway...drive up to top...ring doorbell...

From Vermont or north:

91 South exit 16

Right off exit route 202 Cherry Street

350 feet take a left onto route 202 Homestead Avenue

1.1 miles right onto Westfield Road route 202

4 1/4-mile right Southamton Road (rt 10)

2 1/4-mile left brickyard road

3/4-mile left grant

1/8-mile Road ends go right onto Madison.

Take Second driveway on left...1st paved driveway...directly across from a blue/gray cape. Can't see house from driveway...drive up to top...ring doorbell...

From Boston or Albany

Route 90

Exit 3

Left off exit (north on Southamton Road/route 10)

5 miles left on Brickyard Road

3/4-mile left grant

1/8-mile Road ends go right onto Madison.

Take Second driveway on left...1st paved driveway...directly across from a blue/gray cape. Can't see house from driveway...drive up to top...ring doorbell...

**ROB HAYES’S CATFISH INTERNATIONAL SPEEDWAY, 31A SACRAMENTO ST., CAMBRIDGE, MA
(617) 868-5853**

Directions from the Mass Pike (I-90):

Take the Cambridge exit. After tolls, take Cambridge (right) branch. At bottom of ramp, get into left lane, and make left onto Storrow Drive, or cross the bridge, and go left on Memorial Drive. Either is OK. If you chose Storrow Drive, follow to the JFK Street/Harvard Square exit, and go right over the bridge toward Harvard Square. If you chose Memorial Drive, follow to JFK Street, and make a right. Now the directions are unified once again. Go up the hill on JFK Street, through three lights, and head through the right-hand kink in the Square, between two newsstands. Go uphill through a fourth light (Harvard is on your right), and, as you head downhill, aim for the right lane of the left fork, following up and right onto Mass Ave. If you made it this far, you’re in good shape. 4-5 blocks out Mass Ave., is Sacramento Street (“Made by Me” store is on the corner). Go right. Take the next left, Oxford St., pull into the first driveway on the left and park in the lot. You’ve arrived!

**LENJET RACEWAY IN MODELVILLE HOBBY, 280 ELIOT ST, ASHLAND, MA
(508) 881-7616**

Modelville Hobby is located at 280 Eliot Street Ashland, MA behind Lentros Engineering, across from Shaw’s Supermarket.

From Route 495:

Take exit 21A which is West Main Street, Hopkinton for 5.5 miles.
Turn right at the light onto Main Street. The light after CVS and Brooks Pharmacy.
Go south on Main Street which becomes Prospect Street for 1 mile.
Turn left onto Fruit Street. Go 0.5 miles to the end.
Bear left onto Eliot Street for 0.4 miles down on the left will be 280 Eliot Street.
Drive between the two buildings.
We are in the building on the right in the back with the door on the other side from where you are.

From the Massachusetts Turnpike East or West (Route 90):

Take the Mass Pike to exit 12 - Route 9 Framingham
Take route 9 East and turn right at the first set of lights
Drive to the stop sign and take a left onto Gates Street
Follow Gates Street for 0.5 miles until you come to an awkward intersection at The Federated Church
At the stop sign take a long right across Salem End Road onto Badger Road.
Follow Badger Road for 2 miles into Ashland. Once in Ashland Badger becomes Main Street
Go south on Main Street which becomes Prospect Street for 1.3 mile.
Turn left onto Fruit Street. Go 0.5 miles to the end.
Bear left onto Eliot Street for 0.4 miles down on the left will be 280 Eliot Street.
Drive between the two buildings.
We are in the building on the right in the back with the door on the other side from where you are.

**JOHN PILEGGI'S FIDDLEHEAD RACEWAY, 61 FIDDLEHEAD LN., ROCHESTER, NH
(508) 826-8396**

Directions from the south:
Take route 95 N into NH
Use the left 2 lanes to take exit 4 to NH-16 N/US-4 W (Spaulding Turnpike)
Follow for approx. 20 miles and take exit 13 (West 202 / Rochester / Concord)
Bear right at bottom of ramp (Washington St.)
Drive 0.5 miles and take left onto Roy St.
Follow through one stop sign to end; then turn left (Walnut St.)
Drive 1.4 miles and take left onto Fiddlehead Lane
Follow to end. Our house is the gray cape down the long driveway at very end of cul-de-sac

NOTE: BE CAREFUL OF RAISED CURB AT TOP OF BASEMENT STAIRS!

**PAUL RYER'S SOUTH SHORE SPEEDWAY, 80 WOMPATUCK RD., HINGHAM, MA
(781) 740-4491**

Route 128 South or 3 South to Route 3 South Cape Cod. Take exit 14 which will be the exits for Rockland, Nantasket, Hingham and Cohasset. At the end of the exit there will be a set of traffic lights, take a left turn. This is Route 228 North. Go straight through lights. You will not be on 228 North/Main Street. Continue straight through next set of lights. Travel .8 miles past light. You will come to an intersection with a left turn lane. Main Street will bear to the right. Get in the left turn lane and proceed across the intersection onto Central Street. It's marked as a left turn, but you go straight. Continue Central Street through 2 four-way stop signs, approximately 1 mile. St. Paul's Church will be in front of you. At the stop sign, take a left and then quickly bear right onto Lincoln Street. Follow to stop light. Take Right across RT 3A onto Downer Ave. passing Exxon station on your left. Take first left onto Planters Field Lane. Foster Elementary will be across from Planters Field Lane. Take next left onto Wompatuck Rd. At next intersection continue left to follow Wompatuck Rd. There are street signs at the intersection. Continue around sharp right turn. We are the fourth house on the left. If you pass a set of stone columns and steel gates on your left, you've gone too far.

Note: If you are using a GPS, it may try and sent you down Crown Point Ln. and onto Nokomis Rd. Do not go down Nokomis Rd. There is a gate that is sometimes closed. Go past it and your GPS should reset to take you onto Downer and then a left onto Planters Field Ln.

**JOHN STEZELECKI'S NUVOLARI & LADY GRAY, 8 FRONT ST., HULL, MA
(781) 925-4702**

Route 128 South or 3 South to Route 3 South Cape Cod. Take exit 14 which will be the exits for Rockland, Nantasket, Hingham and Cohasset. At the end of the exit there will be a set of traffic lights, take a left turn. This is Route 228 North. Follow Route 228 North all the way into Nantasket Beach. Route 228 is a long winding road that runs primarily through the town of Hingham and will extend approximately 9 miles before reaching Nantasket Beach. There are plenty of large signs. When you arrive at Nantasket Beach, Route 228 will become Nantasket Ave. Stay on Nantasket Ave., you will see a split in the road and a WW I soldier monument. Stay left on Nantasket Ave. and go 1/2 mile. You will see a road to your left called Draper Ave. Take left onto Draper. Go about 200 feet to stop sign. After coming to a stop cross intersection, go another 200 feet. Take right onto Front Street. Second house on right with cedar color garage doors. PS - Draper Ave. is 7/10 of a mile before the Nantasket Raceway location.
