

GREENPOWER USA

FORMULA F24



2023-2024 Rules and Regulations

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OVERVIEW

All vehicles entered for any Formula 24 and Formula 24+ event in the 2023 – 2024 school year organized by the Greenpower USA Foundation will comply with the following Technical and Sporting Regulations.

All changes from 2022 – 2023 Technical and Sporting Regulations are highlighted in red text.

RULE BOOK DISCLAIMER

The rules and/or regulations set forth herein are designed to provide for the orderly conduct of racing events and to establish minimum acceptable requirements for such events. These rules shall govern the condition of all events, and by participating in these events, all participants are deemed to have complied with these rules. **NO EXPRESSED OR IMPLIED WARRANTY OF SAFETY SHALL RESULT FROM PUBLICATIONS OF OR COMPLIANCE WITH THESE RULES AND OR REGULATIONS.** They are intended as a guide for the conduct of the sport and are in no way a guarantee against injury or death to a participant, spectator, or official.

The race director shall be empowered to permit reasonable and appropriate deviation from any of the specifications herein or impose any further restrictions that in his/her opinion does not alter the minimum acceptable requirements. **NO EXPRESSED OR IMPLIED WARRANTY OF SAFETY SHALL RESULT FROM SUCH ALTERATION OF SPECIFICATIONS.** Any interpretation or deviation of these rules is left to the discretion of the officials. Their decision is final.

The Management of the Greenpower USA Foundation

Remember that the project is for the benefit of the young people involved. It is important to ensure that they are as involved in as much of the design and build of the vehicle as possible and that technology used is relevant and accessible to the age group of the category in which you are participating.

Please note: Images within this document unless specifically referenced, are for illustrative purposes only and should not be considered as guidance on regulatory compliance.



GREENPOWER USA CALENDAR OF EVENTS

RACE CATEGORIES

Age Classification

F24 Intermediate
Grades 6 – 8

F24 Advanced
Grades 9 – 12

Car Classification

Stock Division

A car will compete in the F24 Stock Division when it has been built using the materials given by Greenpower USA when the kit was delivered to your location. **The Stock car must be built per the kit car manual except for the listed allowed modifications.** The gearing system (6:1) supplied with the kit **MUST** be used in competition. Allowed modifications to remain in this division include: adding a heat sink to the motor, creating a custom steering wheel, **installing a new safety harness**, installing a new LED brake light, relocating the horn button, and **installing tires that must have a sidewall PSI rating that cannot exceed 70 PSI. In addition, the measured PSI cannot exceed the maximum rating as noted on the sidewall of the tire.**



Modified Division

A car will compete in the F24 Modified Division if it has made any modifications to the Greenpower USA kit. This includes, but is not limited to, tire improvements, gear/sprocket changes, controllers, etc. If a team has “stitch-drilled” holes in the chassis to reduce weight, Greenpower race officials reserve the right to deem the car unsafe from taking part in an event.



Custom Division

A car will compete in the F24 Custom Division if the chassis has been made from scratch. **Teams wishing to compete in this division MUST submit a one-page persuasive argument for competing in this division. In addition to the one-page argument, proof of student involvement in the design and build stages must be provided via pictures, drawings, diagrams, etc.**

TECHNICAL

T1 - MOTOR

- T1.1. The vehicle will only be powered by one 24-volt DC electric motor supplied by Greenpower. No hybrid systems are allowed.
- T1.2. The motor is sealed and must not be opened or modified.
- T1.3. Motor cooling is only permissible using passive or forced air, without any prior energy input or power from batteries other than the main vehicle batteries.

NOTE: Water cooling is not permitted.

- T1.4. The motor must be easily accessible for inspection. Greenpower reserves the right to remove motors either for inspection by the manufacturer or by race officials (pre/postrace).

T2 - BATTERIES

- T2.1. Two 12-volt Greenpower USA-approved, unmodified batteries (Interstate Battery DCM0035 and YUASA REC36), referred to as the 'main batteries', will be used on each vehicle during each Greenpower USA race. No external energy source may be used. Energy recovery systems are permitted.

Note: Only one set of two main batteries will be used during a 90-minute race session. If a battery change is needed, you must inform the Race Director immediately and your car's lap count will be frozen at the time of the battery exchange. **The Race Director MUST perform the battery change on your car.**





T2.2. Auxiliary batteries for powering devices on the car must not exceed one PP3 or six AA cells per car. Coin or button cells are permitted as a power source for brake lights but also to allow control systems to retain settings whilst main batteries are changed. Proprietary unmodified electronics with self-contained batteries, e.g. speedometers, watches, radios are permitted so long as they're not connected to any of the car control systems. All other devices including motor controllers must be powered off the main batteries. If in doubt consult Greenpower.

NOTE: Rechargeable battery pack may be used ONLY if purchased from the Greenpower USA Online Store - available after September 1.

T2.3. Out of the car, the main batteries must be kept separate and lifted independently of one another.

Safety Note - Due to their weight, appropriate safe manual handling practices should be observed when handling batteries. Batteries that are dropped may cause injury or suffer internal damage.

T2.4. Outside of the race vehicle, charging of the batteries is only allowed up to a designated time at the event. There will be a designated cutoff time at which all batteries must be removed from their chargers. This information will be provided via Supplemental Regulations provided by the Race Organizer.

A battery quarantine/charging area will be identified at all race sites to ensure safety.

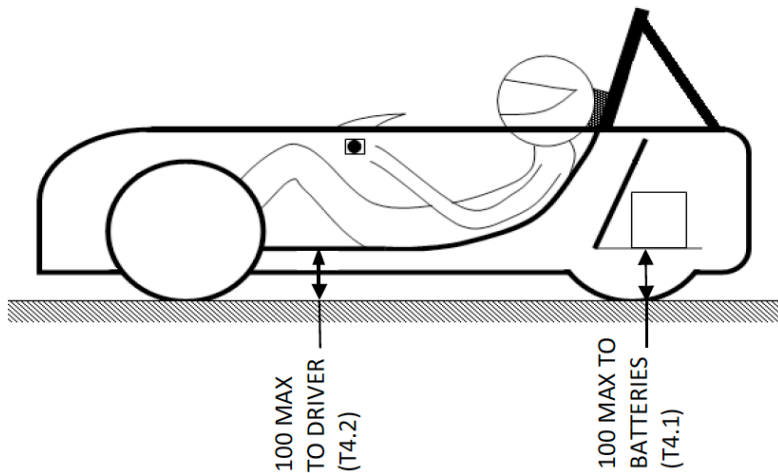
T2.5. The main batteries must be firmly secured to the chassis of the vehicle using rigid fixings – i.e. no webbing, elastic straps, or zip ties, and must not be able to move in any direction in those fixings. Plastic threads on fixings are not permitted. Over center clips must be security pinned.

NOTE: Suitable CFRP of a suitable strength may be used and is at the discretion of the Head Scrutineer or Race Director.

- T2.6 The main batteries may be mounted upright or on any side but must not be inverted, i.e. terminals must not point towards the ground.
- T2.7. The main batteries must be separated from the driver by a bulkhead, sufficient to restrain the batteries from the driving compartment. This bulkhead must not be able to short circuit the battery terminals. Batteries must be located inside the vehicle's bodywork.
- T2.8. Batteries must have quick release connections to enable rapid disconnection in the event of an emergency. They must not be liable to disconnect or short against metal parts. Quick release connector locations must be clearly labeled, "Battery Disconnect". Connections must be accessible and operable without the need for tools.
- T2.9. The main batteries in vehicles at the start of practice sessions or races will not exceed 77°F or ambient temperature plus 9 Fahrenheit when ambient is above 68°F as measured by Greenpower.
- T3 - **WHEELS AND TRACK**
- T3.1. Tires must not be less than 12 in. (300 mm) nor greater than 20 in. (520 mm) in diameter.
- T3.2. There must be four wheels located as a matching front and matching rear pairs, symmetrically about the longitudinal centerline of the vehicle.
- T3.3. The track of the vehicle must not be less than 19.685 inches (500 mm) front or rear. The track is deemed as the measured width between centers of tires where they contact the ground. The track may vary front to rear.
- T3.4. Tires must be pneumatic.
- T3.5. Plastic spoked wheels are not permitted.



Figure 1



T4 - CENTER OF GRAVITY

- T4.1. The base of the main batteries must be at or below 3.9 in. (99 mm) from ground level. A 0.25 in (6 mm) diameter hole should be drilled through any solid floors adjacent to the batteries to allow height measurement. See Figure 1
- T4.2. The driver's seat, including any padding, must be at or below 3.9 in (99 mm) from ground level. A 0.25 in. (6 mm) hole should be drilled through the base of the seat to allow height measurement. See Figure 1

T5 - DIMENSIONS

- T5.1. The vehicle must not exceed 110 in. (2800 mm) in length, 47 in. (1200 mm) in width, and 47 in. (1200 mm) in height.
- T5.2. **Ground clearance (where adjustable on a kit car) must not be less than 1.25 in.**
- T5.3. No part of the vehicle may extend more than 31.5 in. (800 mm) behind the center point of the rear wheels.

T6 - DRIVER AND SEATING

- T6.1. The vehicle will have one seat for the driver firmly fixed to the vehicle chassis.
- T6.2. The driver must be seated in a feet forward, reclined position. Drivers may not kneel, sit astride a seat, or lie down in any way such that their chests and head are forward of their waist.
- T6.3. The driver must be able to demonstrate a rapid and safe exit from the vehicle unaided.
- T6.4. There must be a solid floor under the whole of the driver, to prevent ingress of debris.
- T6.5. There must be a padded head rest behind the driver's helmet to prevent whiplash.

T6.6. All parts of the vehicle's seat which are in contact with the driver must have some form of protective padding.

T7 - DRIVER'S CELL

T7.1. There will be a solid bulkhead rigidly mounted forward of the driver's feet forming the front-most part of the driver's cell. This bulkhead must be vertical and parallel to the front axle center-line. Securely attached to the front of this bulkhead will be a solid foam structure at least 7.87 in. (200 mm) long x 7.87 in. high x 7.87 in. wide and with a compressive strength of 300 – 700 kPa. A means of access to this foam must be available at scrutineering.

NOTE: A scratch-built car (custom car) foam structure must be solid and at least 7.87 in (200 mm) long and with a compressive 300-700 kPa.

T7.2. There will be a rigid driver's cell extending from the bulkhead in T7.1 to the driver's back. Between the harness lap strap mounting points and the driver's back, it will extend to a height of 10 in. (250 mm) above the seat base or above the driver's elbows, whichever is greater. The driver's cell height, forwards of the lap strap mounting points, may be less than 10 in. (250 mm) but must exceed the highest part of the driver in this area.

T7.3. The skin of the driver's cell in T7.2 must be constructed of rigid sheet material such as aluminum; rigid plastics; carbon fiber; glass reinforced plastic or other composites of at least 0.06 in. (1.5 mm) thickness. Plywood products must be at least 0.12 in. (3 mm) thick. The skin must form a continuous protective layer and be securely attached directly to the driver's cell so as to be unlikely to fail as a result of an impact. Teams must provide a sample (6 in x 6 in) of the material if requested.

NOTE: Corrugated plastic will not be a suitable side body material during the 2023-2024 Race Season and beyond. Corrugated plastic can be used on the nosecone, the "hood" and rear covers.

T7.4. The driver's cell opening will accommodate a rectangle of at least 23.5 in x 14 in (600 x 350 mm) with no intrusions.

T7.5. The driver's helmet must be positioned at the rearmost point of the opening in T7.4 to create a clear space in front of the helmet.

T7.6. Inner faces of the driver's cell sides will be lined with a minimum of 1 in. (25 mm) thick closed cell foam from the floor to the driver's cell opening to protect a substantial part of the driver's body. This foam MUST cover both side areas between the front bulkhead to the rearmost point of the driver's seat.

T7.7. Any sharp edges or protrusions in the driver's cell must be padded.

T7.8. There will be a bulkhead separating the driver from any accidental contact with the wheels.

T8 - BODYWORK

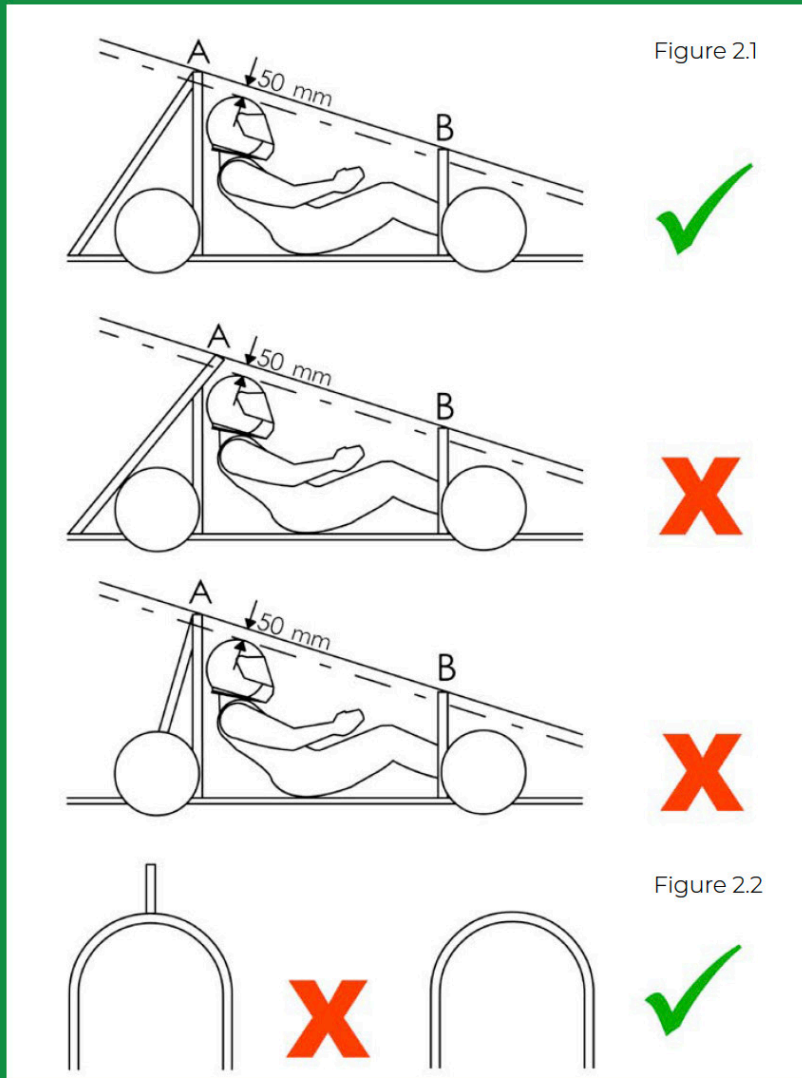
T8.1. Anything forward of the bulkhead in T7.1 must be easily deformable.

T8.2. Bodywork to the front or sides of the driver's helmet will be lower than the bottom of the driver's helmet visor aperture.

T8.3. No bodywork will be higher than 6 in. (150 mm) below the top of the rear roll hoop.

T9 - BRAKES

T9.1. Brakes will be subject to a force test of 300 N (67 lbf) applied horizontally forwards from the top of the roll bar with the car situated on a flat tarmac/concrete surface. There must be no movement of the car. All drivers must be capable of producing this braking force. This will be subject to spot checks outside of scrutineering.



- T9.2. A minimum of two independent brake systems must be fitted, such that there is still some braking if one system were to fail. These systems may be operated by a single dual system lever.
- T9.3. Both wheels on either front or rear axles must have the same type of brake such that the car brakes in a straight line. This is in addition to any electrical braking system that might be incorporated.
- T9.4. The driver must be able to operate the brakes without removing either hand from the steering mechanism.
- T9.5. Braking systems must be operated by hand only. Foot operated brakes are prohibited.
- T10 - ROLL BARS**
- T10.1. The vehicle must have front and rear roll bars offering protection in accordance with the diagrams shown here the helmeted head of all drivers must be at least 2 in. (50 mm) below the line A-B as shown. See Figure 2.1
- T10.2. Roll bars must be firmly secured to the chassis of the vehicle using mechanical fixings or welding. Roll bar to chassis mountings and points on the chassis to which roll bars connect must be suitably strong and where necessary reinforced to prevent failure in the event of a roll over incident. Gluing/bonding of roll bars to chassis with no mechanical fixings or welding is not permitted.
- T10.3. One central triangulated brace or two side triangulated braces must connect the rear roll bar to the chassis. These braces must attach, behind the rear roll bar, to the chassis of the vehicle at one end, to not more than 7.87 in. (200 mm) from the top of the roll bar at the other, must be capable of taking loading in all directions and must be rigidly mounted. The angle between the rear roll bar and brace(s) must be at least 25 degrees.

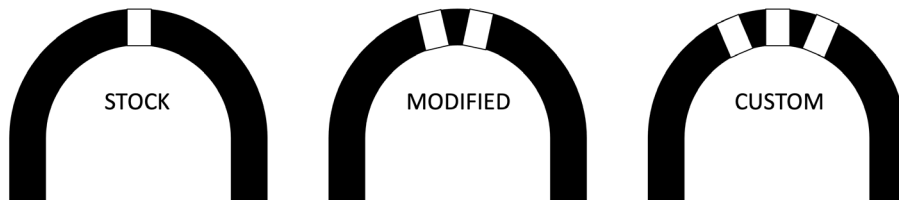
T10.4. All rear roll bars & braces must be produced from circular section steel, with minimum outside diameter of, main hoop – 0.98 in (25 mm), braces – 0.75 in (19 mm) and minimum wall thickness of 0.06 in (1.5 mm).

Safety Note – Greenpower reserves the right to drill a 4 mm diameter hole in any roll bar for the purpose of inspection. Teams should avoid drilling roll bars as it weakens the structure.

T10.5. Non-structural bodywork along with front and rear wheels must not be regarded as part of the roll protection. The top 6 in. (150 mm) of the roll bar must not have any attachments (fairings, aerodynamic aid, or cameras). See Figure 2.2 on Page 10

T10.6. The rear roll bar and bracing structure must extend down into the car to at least the level of the driver's shoulder strap mounting points.

T10.7. Stock Cars will have one 1-inch wide white (or contrasting color) stripe painted or taped on the top center of the roll bar. Modified will have 2 stripes with each stripe separated by 1 inch, Custom will have 3 stripes separated by 1 inch.



T11 - SAFETY EQUIPMENT

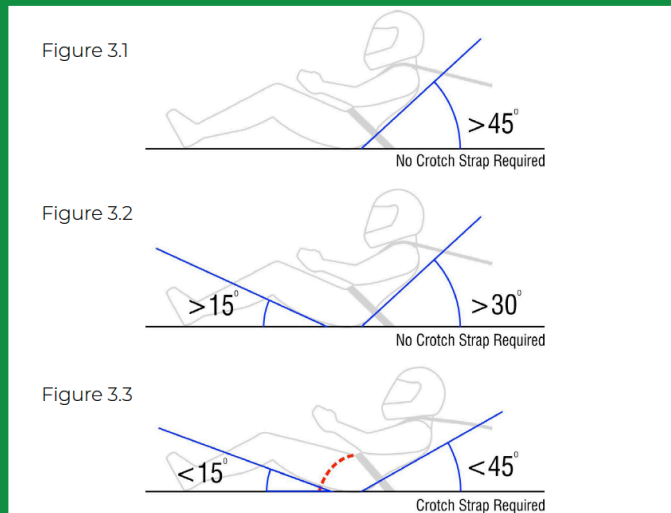
T11.1. Two rear view mirrors, each with a minimum area of 3.5 sq. in. (2250 sq. mm) will be fitted in clear air outside the bodywork and able to be adjusted by the driver while the driver is buckled in. Camera systems to replace rear view mirrors are not permitted. Larger mirrors are encouraged.

T11.2. The vehicle must have a clearly audible single-tone horn. **The horn will need to have a decibel level of at least 75dB(A) at 5 feet from the front of the car.**

T11.3. A 24-volt, minimum 100-amp, rated isolation switch must be fitted. It must be clearly visible and be easily accessible to the driver, and from outside the vehicle. Two switches may be fitted if needed. Two switches may be fitted if needed. On/Off positions must be clearly marked. Indirect operation of the isolator is not permitted.

T11.4. The vehicle must be fitted with a minimum of four fixing points, 2 in. (50 mm) width safety harness, with secure fixing points on the roll bar or chassis. Harness shoulder strap fixing points should be close to shoulder height and neck width (approx. 6 in (150 mm)). Lap (**lower**) straps must be fully tightened **before shoulder straps** and must fully tighten around the drivers hips without additional padding in front of the driver.

Safety Note – Harness ends should protrude at least 100 mm beyond the buckle for all drivers, and be folded and sewn at the ends to act as a stopper.



T11.5. Where the seat back has an angle of 45 degrees or more a minimum 4-point harness is required. See Figure 3.1

Where the seat back has an angle of 30 degrees or more combined with a front lip of 15 degrees or more a minimum 4-point harness is required. See Figure 3.2

Where the seat back has an angle of less than 45 degrees with a front lip of less than 15 degrees a minimum 5-point harness is required. See Figure 3.3.

If in doubt, use a 5-point harness.

T11.6. A non-flashing, red brake light will be fitted so it is clearly visible from the rear of the vehicle.

T11.7. The drive train must be guarded to prevent fingers, hair, and clothing from becoming trapped at any time.

T11.8. The use of locking nuts on safety critical components is mandatory, including but not limited to: safety harnesses, roll bars, wheels, steering, and braking systems. **Bolt must be long enough to use the entire locknut surface.**

Safety Note - If in doubt, use locking nuts.

T12 - STEERING

T12.1. Steering systems must have minimal play.

T12.2. Steering must be able to operate smoothly from lock to lock, without wheels making contact with bodywork.

T12.3. Steering must be by mechanical linkages only.

T12.4. Steering must be by front wheels only.

T12.5. Steering must be operable by hand only.

T13 - ELECTRICS

T13.1. The accelerator must be spring loaded to the OFF position.

T13.2. Electronic motor controllers must not be capable of boosting battery voltage, i.e. at any time, the voltage across the motor terminals may not exceed the voltage across the battery terminals.

T13.3. A fused link/cut-out must be in place in the main power circuit, rated at 70 amps or less.

T13.4. All wires and terminals on the vehicle must be neatly run, secured and unable to chafe, away from moving parts.

T13.5. All wiring and electrical components must be correctly rated for their use.

T13.6. Low current ancillary circuits must have their own fuse (normally 5A or less).

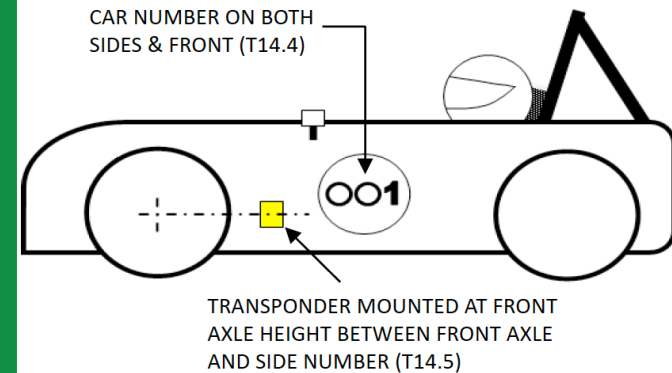
T14 - OTHER

- T14.1. Transmission of any form of electronic data to the car by whatever means is prohibited. Communication with the car/driver is only allowed via verbal (e.g. radio) or visual (pit board) means.
- T14.2. Telemetry and all communication systems must operate at national legal frequencies and power levels.
- T14.3. Driver-to-pit audio communication systems must be used without removing either hand from the steering wheel. Any item, other than primary vehicle controls, in the driver's cell, must be adequately and securely restrained. No items shall be attached to the safety harness.
- T14.4. All cars MUST display three GreenpowerUSA-issued race number stickers. These 10" diameter stickers will be placed on the left, right, and front of each car. Race number stickers are provided at no charge at each team's first event. Replacement stickers, after the first event, will be at the team's expense.

NOTE: Teams should leave space in their car designs for these stickers.

- T14.5. Provision must be made for the positioning of a time-keeping transponder, which will be provided at events complete with a mounting bracket. This must be mounted vertically on either side of the vehicle, on the outside of the bodywork. It must be located between the front axle and the race number, at axle height, and have a clear line of sight to the ground. No fairings are permitted. See Figure 4.
- T14.6. Cameras must not be attached to the crash helmet. Cameras must be attached to the car with secure mechanical fixing. Suction-mounted cameras are not permitted.

Figure 4



- T14.7. Greenpower will supply national partner stickers which must be applied to the vehicle in a prominent position.
- T14.8. Lift points, for use by recovery marshals, must be clearly marked. Lift points must provide for a balanced lift of the vehicle in race-ready condition excluding the driver.
- T14.9. Cars may only be propelled by the drive system located on board, and drivers may not use any part of their body to propel the car. Drivers cannot put their arms/hands outside of the driver compartment to assist the car in a forward movement.

SPORTING REGULATIONS

S1 - TEAM CLOTHING

- S1.1. Drivers must wear **properly fitting** full-face helmets with visor or goggles at all times during practice and competition. It is the responsibility of the driver and team manager to ensure helmets fit properly and are in serviceable condition. In use helmets must be securely fastened. Helmets must have the DOT/FIA Approved/Certified sticker visible upon inspection.
- S1.2. Drivers must be outfitted with suitable clothing covering them from head to toe. Full length sleeves and pants are required for all drivers.
- S1.3. Full fingered gloves must be worn by the driver.
- S1.4. All team members must wear stout closed toe footwear, ideally with toe protection.
- S1.5. **Hair may not come out more than 6in past the end of the helmet.**
- S1.6. **Team shirts may not resemble Greenpower USA Race Official uniform shown below.**



S2 - LOGBOOKS AND SCRUTINEERING

- S2.1. GreenpowerUSA will maintain an electronic Logbook entry for all cars. This will include scrutineering comments that must be actioned before future events, otherwise the vehicle will not be allowed to participate.
- S2.2. Cars must pass scrutineering before being permitted on track.
- S2.3. Cars presented for scrutineering must be in ready to race condition with all covers, bodywork and electrical items in place. Teams should be prepared to remove covers and or bodywork if requested to permit access to all areas of the car.
- S2.4. Tallest and shortest drivers, with helmets, must be present at scrutineering.
- S2.5. Once cars have passed scrutineering team members must exchange their scrutineering paperwork for a timing transponder at Race Admin. Transponders MUST be returned to Race Admin before leaving the event. Failure to do so may result in a \$300 charge.
- S2.6. All cars involved in an on-track incident, **or a black flag**, may be subject to inspection before being permitted to continue. Any corrective measures identified during this inspection must be completed before the car will be permitted to return to the track.
- S2.7. Prior to exiting the pit lane each car/driver will undergo safety checks including, **but not limited to**, correct clothing, safety harness fitment, helmet & chin strap and brake operation.

S3 - TEAM MEMBERS

S3.1. At the start of the race season, team members must be enrolled in:

- Grades 6-8 to compete in F24 Intermediate Categories
- Grades 9-12 to compete in F24 Advanced Categories
- To compete in F24+, drivers must be 18 years of age or older.

S3.2. All drivers must have signed the event registration form that must also be countersigned by a responsible adult. This must be handed to Race Admin before participating.

S3.3. Drivers must be aware of the following flags that will be used on track:

GREEN – The appearance signals a clear course and indicates the immediate start or restart of a race.

YELLOW – Slow down, no passing. Racing may commence after passing an incident and the next manned station is in view with no flag displayed. **Generally, no passing is allowed. However, you may pass only if the car ahead is significantly slower and you can complete the pass before passing any on track incident.**

RED – Extreme danger. Stop racing. Come to a controlled stop as quickly as possible to the edge of the track and within driver's sight of the marshal post. Await instruction from the corner official.

BLACK – Displayed to a car, with audible car number indication, for an infraction or safety concern. Driver is to report to pit road immediately and safely.

CHECKERED – Notifies the race or practice session is finished. Cool your car down and return to the pits at the next opportunity.

Please take note of the Flag Information document on Page 24

S3.4. Drivers must at all times maintain a steady line. They must not move to block other cars. Tailgating is prohibited – drivers must not follow closely in line behind other cars, maintaining at least a 1 second gap.

S3.5. All drivers must be able to read (with glasses or contact lenses, if necessary) a road car number plate from 65 feet.

S3.6. All team members must be fully conversant with the Supplementary Regulations for each event, must be knowledgeable about their vehicle, and must attend the Team Briefing at events.

S3.7. It is the responsibility of the team manager to ensure all drivers are able to drive safely with adequate all-around visibility.

S3.8. (F24) - Adults must not participate in pit stops unless by specific arrangement beforehand with Greenpower.

S3.9. At pit entry all cars must switch off their isolator switch and remove the key. One team member is required to meet cars at pit entry to push them at walking pace to their pit. Running in the pit lane will be penalized. Drivers must NOT unbuckle their safety harness / helmet or remove gloves until stopped at their pit. Cars must not be pushed away from the pit to rejoin the track until the driver is correctly harnessed and clothed.

S3.10. Driver must come to a complete stop before the designated red cones at pit entrance. Drivers who cannot stop will be penalized and brakes must pass 300 N (67lbf) Force Test before rejoining the race. Test will be performed by a Race Official.

S4 - RACE FORMAT

S4.1. Races run to pre-defined durations. These are: F24, 90 minutes; F24+, 60 minutes. During an event, if deemed necessary by the Race Director, race durations may be shortened.

- S4.2. (F24) - A minimum of two driver changes must take place in the 90-minute race. Drivers may only operate one car per classification.
- S4.3. (F24) - Each driver must drive for a minimum of 15 continuous minutes and no more than 45 continuous minutes in each race.
- S4.4. (F24+) - There is no limit to the number of drivers that may be used during a race.
- S4.5. Cars must be able to start under their own power. Push starts for vehicles are not permitted at the start of the race.
- S4.6. Cars that are recovered on track, after 60 minutes into a race heat, due to batteries not being able to move the car forward will not be allowed to rejoin.
- Prior to 60 minutes into the race heat, please see T2.1.

S5 - **PENALTIES**

- S5.1. Teams found to be infringing any of these or event specific supplementary regulations may be penalized by the Race Director. See S5.2 for Penalty Details. **All penalties are taken off the event score, regardless of the heat in which the infraction(s) occurred.**
- S5.2. Penalty Details listed below

HOLD UNTIL RECTIFIED

- Breach of Regulation T8.2 - Driver eye line too low
- Mechanical issue suspected with the car

HOLD UNTIL RECTIFIED AND 1 POINT DEDUCTION

- During a race session, a driver on track (incl. Pit Exit) without a full-face helmet; long hair/hoods not tucked into helmet/clothing; loose safety harness; improperly secured helmet strap; no gloves; or bare skin exposed (without event exception)
- Installing/Adjusting/Removing safety harness, helmet chinstrap, or gloves while car is moving in Pit Road
- Brake light fail at Pit Out

MINOR INFRACTION - 1 POINT DEDUCTION

- Failure to slow down to a walking pace on approach to pit lane marshal- Releasing throttle at Yellow Cones
- Failure to slow down to and stay at a walking pace in pit road between pit lane marshals
- Unauthorized activities by team members in Pit Road
- Blocking a pit stall in Pit Road
- Overtaking another vehicle while passing a stopped racing incident, or recovery vehicle, under a Yellow Flag

INTERMEDIATE INFRACTION - 2 POINT DEDUCTION

- Failure to stop completely before the Red Cones, when entering Pit Road (Ref S3.10)

MAJOR INFRACTION - 5 POINT DEDUCTION

- Deliberate or negligent blocking or dangerous driving of any description
- Unsportsmanlike Conduct (Depending on severity could result in heat/event DQ)
- Vehicle driven under power in Pit Road or driven under power outside of a racing session
- Vehicle driven under power outside of the official course at an event at any time

RACE HEAT DISQUALIFICATION

- Performing less than the required minimum of two (2) driver changes in a race session
- Minimum of 15-minute driver stint not completed in a race session (Ref S4.3)
- Unauthorized changing of batteries during a race session (Ref T2.1 and S4.6)

EVENT DISQUALIFICATION

- Breach of Technical Regulations for which the team have not been granted exemption by the Chief Scrutineer (Ref T1-T14)



S6 - CHAMPIONSHIP REGULATIONS

- S6.1. Championship points, qualifications, and event result details are published on our website.
- S6.2. Teams must compete in a sanctioned GreenpowerUSA points race in order to receive National Championship points. Competing in a sanctioned event means your car must physically be on-site in that event.

NOTE - Remote waivers are available upon request. All requests are not going to be granted. Requests will only be granted in specific circumstances. To request a remote waiver, please communicate with Drew via Discord.

- S6.3. National Championship Recognition
- In the event of a National Championship race, the winners in each category of that event will be declared the National Champion for their category. Grid placement will be based on each team's best four (4) event scores.
 - In order to qualify for the National Championship Division of the National Championship Race, teams must compete in at least four (4) sanctioned races prior to the National Championship Race.
 - In the event there is NOT a National Championship race, the National Championship will be determined by the total of each team's best four (4) event scores from the Race Season.

S7 - SCORING REGULATIONS

S7.1. Each team’s Event Score at a sanctioned Greenpower USA Foundation event cannot exceed 100 points.

S7.2. An Event Score is calculated using the following system:

- Presentation Score (not to exceed 50 points)
 - A panel of judges will score a car’s presentation and the average of their scores is the presentation grade. This grade will then be divided by 2 to create the Presentation Score.
- Race Score (not to exceed 45 points)
 - Race score is counted by comparing a car’s lap count with the lead lap count within the division (Divide team lap count by Division’s lead lap count and then multiply the result by 45)
- Race Placement Bonus:
 - 1st Place - additional 5 points
 - 2nd Place - additional 3 points
 - 3rd Place - additional 1 point

See Figure 5 for an example of the Scoring Method.

FIGURE 5

School Name	Presentation Grade (from Judges Average)	Presentation Score (For Event Score)	Heat 1 Lap Count	Heat 2 Lap Count	Lap Count for Scoring	Race Score (For Event Score)	Race Placement Bonus	Penalty Deductions	Event Score
Arthur High School 35	91.00	45.50	65 laps	61 laps	65 laps	44.32	3		92.82
Castle Hills High School 77	86.33	43.17	66 laps	66 laps	66 laps	45.00	5		93.17
Jones Career Tech Center 146	85.67	42.84	60 laps	62 laps	62 laps	42.27	1		86.11
Wilson High School 90	92.00	46.00	58 laps	58 laps	58 laps	39.55			85.55

In the example here, Castle Hills High School will win 1st Place Overall, Arthur High School will be awarded 2nd Place Overall and Jones Career Tech Center will come in 3rd Place Overall.

S8 - GENERAL

- S8.1. Animals, with the exception of service animals, are not permitted **within Pit Road** at Greenpower event venues unless specifically noted in Supplementary Regulations.
- S8.2. **Unauthorized ball games and outdoor hobbies are not permitted in Pit Road areas or near the track at Greenpower events.**
- S8.3. Smoking/vaping is not permitted at Greenpower events.
- S8.4. **The use of drones at events is subject to Supplemental Regulations and must adhere to all local and federal regulations.**

If you have any questions, or need clarification, about any of the rules mentioned in this document, please send an email to rules@greenpowerusa.net

The Rules Committee is also available to vote upon specific needs/requests of teams to verify compliance of rules and regulations.

**GPUSA
Staff**



Drew Sparks

Executive Director

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Devon Bane

Operations Director and Orders

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TERMS OF ENTRY

By entering for any Greenpower USA Foundation organized event, the team(s) is/are agreeing to the following Terms of Entry:

- E1.1. Published regulations may be subject to change. In the event of this happening, notification will be sent to all entered teams and posted on the Greenpower website.
- E1.2. All team members must sign on at Race Administration prior to entering the controlled race area.
- E1.3. All vehicles will be subject to pre-event and possible post-event scrutineering to ensure compliance.
- E1.4. The vehicle and required drivers (tallest and shortest) must be presented at scrutineering (race day safety check) in a race ready configuration.
- E1.5. Entrants will be further bound by event specific Supplementary Regulations published and distributed via email approximately two weeks prior to the event date.
- E1.6. Greenpower's scrutineers and officials accept no responsibility for damage caused to cars while performing safety checks, recovery or rescue during an event.
- E1.7. While these regulations, the scrutineers and other officials endeavor to ensure vehicles are safe to participate, ultimate responsibility lies with the entrant.
- E1.8. While compliance with the Technical and Sporting Regulations should result in a compliant vehicle, race officials reserve the right to prevent a vehicle racing. A vehicle deemed unfit may, following modification and further inspection, be permitted to race.
- E1.9. It is understood that all persons participating in events under these rules are doing so at their own risk and the entrant will ensure that all competitors will have disclaimers (as provided by the Race Organizer) signed by their parents or guardians prior to competing.
- E1.10. Greenpower ensures that Public Liability and Personal Accident Insurance for participants is always in place for events under their control and accept no liability for events organized by third parties or team practice sessions.
- E1.11. As part of the communications activity, GreenpowerUSA regularly uses photography for publicity purposes. Entrants must ensure all participants are aware of this and the necessary permission is obtained. If permission is not granted, GreenpowerUSA must be notified prior to every event in which the participant takes part.

Team leaders with less able students wishing to participate, who may have special requirements with regard to the regulations, should contact Greenpower who will be pleased to assist in any way possible.

SOCIAL MEDIA

For Greenpower USA Social Media updates, please follow the following handles:

Facebook @gpusafoundation

Twitter @Greenpower_USA

Instagram @greenpower_usa

LinkedIn GreenpowerUSA

MORE INFORMATION

Greenpower USA Foundation
PO Box 4087
Huntsville, AL 35815

Telephone: (256) 203-6553
Email: drew.sparks@greenpowerusa.net
Website: www.greenpowerusa.net



PROTEST GUIDELINES

1. Protest shall not be received or considered if they are based solely on a decision involving the accuracy of an official's judgment.
2. If a team wishes to formally protest the validity of another team's classification, notification of the protest must be made to the Race Director prior to the Awards Ceremony of the event.
3. If a team wishes to formally protest a violation of the Sporting Regulations, notification of the protest must be made to the Race Director prior to the Awards Ceremony of the event.
4. A formal protest will be handled in the following manner:
 - a. The protesting teacher sponsor will accompany the Race Director, in person, to the team in question.
 - b. The Race Director will notify the team in question of the formal protest and begin the investigation at that time.
 - c. If the Race Director finds the team in question in violation of the formal protest, they will receive a minimum penalty of a Heat Disqualification and a maximum penalty of an Event Disqualification.
 - d. If the Race Director finds the team in question in compliance of the formal protest, the Protesting team will receive a minimum penalty of a Heat Disqualification and a maximum penalty of an Event Disqualification.
5. Formal protests made after an event will be handled at the beginning of the next event that the team in question competes.
6. All formal protests will be completed in writing by the Race Director and Protesting Team on an official protest form and published to all competing teams in the event the violation occurred.
7. The decision of the protest, by the Race Director or Executive Director, is final.





Greenpower USA Official Protest Form

READ CAREFULLY

1. First be sure you have a valid protest in accordance with Greenpower USA Rules and Regulations.
2. The protest must be verbally expressed to the Race Director in ALL cases.
3. Remember, matters involving only the accuracy of an official's judgement are not protestable.
4. Reminder that someone will be receiving a penalty for this formal protest: the Protesting Team or the Team in Question.

Event Name:	Race Director:	Protesting Coach (Team):
Date:	Time:	Team in Question:

REASON FOR PROTEST: (Note: if more space is needed, use an additional piece of paper)

Protesting Coach Signature:

Race Director Signature:

Result of Protest: Protest Valid or Protest Invalid

Race Director Notes:

FLAG INFORMATION

All team members need to be familiar with the following flags and their descriptions. If you have any questions, please ask during the Safety Meeting at your next event.



The green flag when displayed at the Starter's Bridge indicates the course is clear and racing is underway.



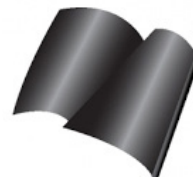
A single stationary or "standing" yellow tells drivers to slow down because something hazardous is off of the race surface but in the area, such as a vehicle off course, an emergency vehicle attending to a disabled car, an exposed corner worker in an unsafe area.

A waving yellow indicates that drivers must slow down and be prepared to take evasive action or stop to avoid an obstruction in the roadway.

See the Penalty section (Page 17) for passing under a Yellow Flag.



When a red flag is displayed it is shown at all stations and at start. The session has stopped and drivers must come to a controlled stop on the side of the race course.



An open black flag, displayed by Start and Black Flag Station with a number board displaying a driver's car number. This open flag tells a specific driver to come to the pits to meet with officials. When black flags are displayed at all corner stations, the race session has halted and cars must come into the pits.

A closed or furled black displayed with a number board at the Start Bridge is a warning to a driver that improper actions have been observed.



A checkered flag tells drivers that the race or session has ended. Return to Pit Road upon seeing this displayed to your car.