

TREC

Trail Racing Endurance Circuit 2022

Vehicle Specifications Version 1

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1. DISCLAIMER TREC's primary interests are to enhance safety for spectators and participants as well as to promote trail racing as a major motor sport. TREC makes no representations or expressed or implied warranties that compliance with the rules as written or any addendums to those rules will guarantee against injury or death to spectators, participants, vendors and others or against damage to personal property. These rules and regulations constitute the minimum acceptable standards for competition and are intended as a guide for the conduct of the sport. The primary responsibility for the safe condition and operation of trail racing rests with the vehicle

owner, driver, and navigator. Think safety first.

In consideration of being permitted to participate in any event sponsored, promoted, sanctioned or directed by Trail Racing Endurance Circuit (TREC), the competitor for himself/herself, his/her personal representatives, heirs and next of kin, hereby releases TREC, and their respective officers, directors, promoters, sponsors, employees, agents and volunteers (“releases”) of all liability to the competitor, whether caused by negligent act or omission of releases or otherwise while the competitor is for any purpose participating in such event. It is fully understood by each of the competitors that there is some inherent risk associated with this event, including damage to vehicles and to the individual.

In addition, the competitor agrees to indemnify and hold harmless the releases from any loss, liability, damage, or cost they incur due to such participation by the competitor, whether caused by releases’ negligence or otherwise. The competitor agrees to assume full responsibility and risk for bodily injury, death, or property damage from releases’ negligence or otherwise, while the competitor is participating in this event.

TREC DOES NOT PROVIDE ANY FORM OF INSURANCE FOR COMPETITORS AND TREC URGES COMPETITORS NOT TO COMPETE WITHOUT IT. MEDICAL INSURANCE IS THE SOLE RESPONSIBILITY OF THE COMPETITOR.

Each competitor acknowledges and represents the following while competing:

1. That he or she has read the foregoing release and waiver of liability and indemnity agreement.
2. That he or she will at all times, while riding in a vehicle participating in an event, wear his or her respective seat and shoulder belts, eye protection , helmet, fire suite and protective safety gear correctly.
3. The owner/driver certifies that he or she has inspected this vehicle and that the same certifies it to be in good mechanical condition and AT MINIMUM adheres to all TREC rules.
4. The owner/driver has informed himself/herself about the event, either by prior participation or by investigation into the event.
5. The driver or any other person(s) in a vehicle participating in any TREC event may choose to cease racing at any time, therefore assuming all risk and liability, as indicated above. Although safety generally is everyone’s concern and certainly the highest priority of TREC, the final responsibility rests on the competitors.

Competitors can, at any time, choose to not race or cease racing at any time or area they feel uncomfortable or unsafe.

TREC approved Helmets must be worn at all times while driving in a competition vehicle on the course.

All safety requirements and rules must be followed at all times.

2. DEFINITIONS

2.1 Classes. TREC categorizes vehicles into the following classes:

2.1.1 Class A. Class A is intended for the most progressive four wheel drive vehicles in use today. Restrictions on this class are intended to keep vehicles of automotive type and design.

2.1.2 Class B. Class B is intended to be a modified class and resemble OEM four wheel drive vehicles. Restrictions on this class are intended to keep the vehicles to two seat, front engine, stock frame and stock body.

2.1.3 Class C. Class C is intended to resemble and keep vehicles as close to stock as possible and still be safe to race

2.1.4 Exhibition. Any vehicle not meeting the restrictions outlined in the Class A, B or C will be considered by TREC for inclusion in an exhibition-only class that is not included in event or series points, purses or trophies. Exhibition class competitors must adhere to all safety and scoring rules.

2.2 Competitor. Driver and/or navigator and/or alternate navigator signed up to compete in an event. A subset of the team.

2.3 Competitive Advantage. Increasing the probability of winning a competition through an item, items, or actions.

2.4 Custom. Items which are produced for specific applications in limited quantities.

2.5 Driver. The person on the team who controls the vehicle while riding in it.

2.6 Event. For all intents and purposes, the event begins when a team arrives on-site for sign-in and ends when the team departs and includes any activities taking place in between.

2.7 OEM (Original Equipment Manufacturer). The same as what would have been installed on a vehicle from the factory.

2.8 Readily Available. Items which are mass produced by commercial means and available for purchase through any conventional distribution channel including the Internet, catalogs, stores, manufacturer sales programs, and shops.

2.10 Team. The team is considered the driver, navigator, alternate navigator, owner, and all support personnel.

2.11 TREC. Trail Racing Endurance Circuit.

3 RULE MODIFICATION PROCEDURE. TREC reserves the right to modify specifications for legal, safety, environmental issues or for any other reason at any time.

3.1 Current competitors in any TREC series may submit rule modification suggestions at any time. Rule change suggestions should be submitted in writing via email to a designated race organizer.

3.2 Suggestions must include the racers name, address, phone, and competitor number. Suggestions should be brief and include a reference to the existing rule number that should be changed, or a reference to the portion of the rules that need to be added to.

3.3 All rule suggestions are reviewed by an appointed rules committee that will determine the merits of any and all suggestions. The rules committee will also gather input from the competitor roundtable when it is warranted.

3.4 The rules committee presents rule changes to TREC on an ongoing basis.

3.5 TREC has final and absolute control over any and all rule changes.

3.6 Changes. One or more of the following ways will notify active racers of any rule change in advance of an event.

3.7 Notification will be given thirty days prior to an event for vehicle specification changes. Changes regarding safety or course rules can be made at any time. Change announcements may be announced via any or all of the following methods: Email, The Website, Drivers meeting, Social media.

4. SAFETY EQUIPMENT

4.1 Fire suits are mandatory for all vehicles in all classes. Suits must cover from the neck to the ankles and to the wrists. The suits must not have any holes, rips, or, nor be worn thin. Suits must also be free from any petroleum-based contaminants. All suits must be made from fire-resistant material with the manufacturer's fire resistant rating label attached. A minimum of a two-layer fire suit, fire resistant gloves and footwear are very highly recommended. TREC highly recommends that each fire suit be labeled on the upper right chest with the wearer's full name, blood type, allergies, and any other important medical information. Do we

4.2 Helmets must be approved by, and bear the sticker of, one of the following: Snell M2000/SA2000/M2005/SA2005 DOT/ECE22-05/BSI or . Primary helmet fastening must be by means of straps using a D-ring buckle. No snaps or Velcro will be permitted as the primary means of securing the helmet. Snaps or Velcro may be present as a means of securing the loose ends of the helmet's straps. The interior and exterior of the helmet must be free from defects (i.e., the padding must be in good condition and the exterior of the helmet must not be damaged). TREC strongly recommends that entrants use helmets specifically designed for motor racing.

4.3 Shatter resistant eye protection is required for all competitors in a TREC event.

4.4 Neck braces are highly recommended for all competitors. Neck braces should provide adequate support and have a fire-resistant covering in good or like-new condition. It is highly recommended that a neck brace made by a recognized manufacturer be worn.

5. ADDITIONAL REQUIREMENTS

5.1 CATASTROPHIC FAILURE

5.1.1 If catastrophic failure is experienced during an event on a hot course, it is important to move your vehicle as far off the marked course as possible.

5.1.2 Each team should carry in their race vehicle at all times a white strobe light that operates independently of the vehicle's electrical system (battery operated) and has a magnetic base.

5.1.3 In the event of catastrophic failure the competitor should place the white strobe light on the side of the vehicle from which traffic is approaching and keep it illuminated for the duration of the event.

6 VEHICLE REQUIREMENTS (all classes)

6.1 All necessary or required equipment, gear, devices, safety equipment, and vehicle components, as described in the TREC Rulebook (including any special rules or supplementary regulations), must be in good and proper working condition at the time of technical inspection. Certain equipment and components must remain serviceable throughout the event, and if damaged during the event must be repaired or replaced before the vehicle may continue on course, as specified in the TREC Rulebook Technical Rules and Specifications.

6.2 SAFETY EQUIPMENT

6.2.1 OCCUPANT RESTRAINT SYSTEMS

6.2.2 All vehicles must have a five-way, five-point H-style restraint system for each occupant. Restraint systems must use a latch-and-link style quick-release buckle (push button buckles are not permitted). Restraints must incorporate a lap belt, anti-submarine strap, and shoulder straps.

6.2.3 The restraint system shall consist of at least one 2" wide anti-submarine strap, one 2" wide lap belt and two 2" wide shoulder straps. Sternum straps and chest buckles may be used.

6.2.4 Belt/strap material shall be nylon or Dacron polyester. Restraint system must be in new or perfect condition with no cuts, frayed layers, chemical stains, or excessive dirt and must be in

flexible condition (i.e. material must not be stiff). All restraint systems must show the manufacturer's name and the month and year of manufacture.

6.2.5 All restraint systems should be replaced after three (3) years from the date of manufacture. It is highly recommended that all driver restraint systems be replaced after one year from the date of manufacture.

6.2.6 No portion of the restraint system may be altered in any fashion from the manufacturer's standard design.

6.2.7 No surplus restraint systems are permitted.

6.2.8 All restraint systems must be properly mounted in accordance with manufacturer's directions and recommendations. Bolt-in, wrap-around, and snap-in mounting styles are permitted.

6.2.9 In addition to conforming to the manufacturer's directions, restraint system installations must also conform to the following:

6.2.10 The restraint system must be mounted to structural members able to withstand the load the restraint system will place on them in a crash, without rupturing or failing.

6.2.11 Restraint must be matched to a properly constructed, fitted, and installed seat firmly mounted to the frame / chassis / roll-cage.

6.2.12 Restraint system must be used with a seat with the proper number of slots, in the proper locations, for the belts. Seats must not be modified to create belt slots.

6.2.13 All belts should be as short as possible to minimize the belt's stretch.

6.2.14 Belt routing must allow webbing to pull a straight line against an anchor point. Mounting brackets must be at an angle that is compatible with the direction of pull on the webbing.

6.2.15 Preferred anchor mount is a double-shear bracket.

6.2.16 Restraint systems must be mounted using high-quality hardware appropriate for the installation. 1/2" or 7/16" fine-thread Grade 8 bolts and Grade 8 deformed-thread locknuts (or better) are recommended.

6.2.17 Belts must not rub against any surface that will cause them to fray.

6.2.18 3-bar slides must be located as close as possible to the anchor plate, or if the belt is wrap-around style, to the bar around which they wrap.

6.2.19 Belts using non-sewn anchor plates must be wrapped back a fourth time through the 3-bar slide.

6.2.20 Wrap-around style mounting should be confined to shoulder belt installation and must include some method to prevent lateral movement of the belts.

- 6.2.21 Lap belt tilt-lock adjusters must not be positioned in, or too close to, the seat slots.
- 6.2.22 For events co-promoted with other series, alternate mounting styles may be required.
- 6.2.23 Restraint systems must be worn properly tightened, by all occupants, at any time the vehicle is in motion.

6.3 SAFETY NETS

6.3.1 TREC approved safety nets are mandatory on all vehicles and must cover the complete open area of the cockpit on both sides of the vehicle to the extent that it is impossible for any limb or body part of any occupant to protrude from the vehicle at any time when the occupant is properly seated and strapped in in their normal driving / riding position.

6.3.2 Wind wing areas located behind the A pillar must be filled by safety net material if there is any chance that any limb or body part of any occupant could protrude from the vehicle at any time when the occupant is properly seated and strapped in in their normal driving / riding position. Lexan is not permitted.

6.3.3 Nets must be installed on the inside of the roll cage to prevent them from being damaged or coming off in a roll over or slide on the side.

6.3.4 Nets attached to door frames are permitted.

6.3.5 Nets must be installed so that the occupants can release the netting unassisted and exit the vehicle regardless of the position of the vehicle.

6.2.6 For vehicles using factory or factory-style doors, Lexan in the side windows can be substituted for nets as long as positive secondary latching devices are used on the doors. Lexan side windows must be mounted in such a fashion as to allow quick removal in the event the door will not open.

6.2.7 The net border or edge and the net attachment must be made of materials that are as strong as, or stronger than, the net itself. Net attachments must be at a minimum of every 6 inches. Acceptable attachments include, but are not limited to: steel hose clamps, snaps, lift-a-dot, metal hooks, and steel rods. Nets must be tight so that when subject to a pushing force of approximately 50lbs the net deflects no more than four inches.

6.4 SEATING

6.4.1 All seats must be manufactured by a recognized manufacturer that specializes in seats for racing applications, and be of a type suitable for the event.

6.4.2 Stock (OEM) production seats are prohibited in all classes. All seats regardless of style or manufacturer must be in good condition.

6.4.3 All seats must be securely and safely mounted to the frame of the vehicle and mounts must be properly reinforced to keep the seat from moving in relationship to the frame. Mounting points must be free of damage of any kind, including rust, and must be structurally sound.

6.4.5 Adjustable track-type seat mounts must be securely mounted to the frame of the vehicle to allow no lateral or vertical movement between seat and frame or mounting track and frame.

6.4.6 Headrests constructed of at least 2” thick resilient padding and being approximately 36 square inches in area are required.

6.4.7 Seats must have appropriate slots to properly accommodate the restraint systems.

6.5 FIRE EXTINGUISHERS

6.5.1 Each vehicle must carry a minimum of 2 portable UL approved 2.5 lb. or greater ABC-class dry chemical or equivalent Halon fire extinguishers. Fire extinguishers must have a gauge, be fully charged, and no more than 3 years old from the date of manufacture.

6.5.2 One Fire Extinguisher must be mounted within easy reach of the front seat vehicle occupants when restrained by the vehicle restraint systems.

6.5.3 One Fire Extinguisher must be mounted on the B Pillar of the vehicle on the passenger side and easily accessible by individuals outside the vehicle.

6.5.5 It is highly recommended that an additional 2.5 lb. or greater ABC-class, dry chemical or equivalent Halon fire extinguisher be carried and mounted in a position that is within easy reach of the front seat vehicle occupants when restrained by the vehicle restraint systems.

6.5.5 It is highly recommended that an additional 2.5 lb. or greater ABC-class, dry chemical or equivalent Halon fire extinguisher be carried and mounted in a position that is easily located and accessed from the exterior of the vehicle by persons not familiar with the vehicle.

6.5.5 All extinguishers must be mounted in a manner that permits their quick removal and use without the use of tools.

6.2.2.4.2 Integrated on-board fire extinguishing/suppression systems are highly recommended in addition to the portable fire extinguishers. In the event a vehicle is equipped with an on-board fire extinguishing/suppression system, vehicle must still meet requirements of two 2.5 lb. or greater portable extinguishers. TREC highly recommends the use of 5 lb. portable extinguishers.

6.2.2.4. All fire extinguishing/suppression systems must have a current fire marshal’s seal and / or a tag or stamp showing the date of manufacture.

6.6 HORNS

6.6.1 All vehicles must have a loud horn. Horn must be clearly audible from a distance of 100 feet in front of the vehicle. The use of sirens is permitted, in addition to a horn, during the actual on-course portion of the event. Disposable air horns are not an acceptable method of meeting the horn requirement.

6.7 REFLECTORS

6.7.1 All vehicles must have two 2” wide x 8” long red reflective tapes or two 2” diameter round red reflectors (DOT stock tail light lenses satisfy this requirement) attached to the rearmost portion of the vehicle at each corner. The reflective tape or reflectors must be clearly visible from the rear.

6.8 BREAKDOWN SAFETY DEVICES

6.8.1 Two battery-operated red-light flashing beacons or two long glow sticks or two red reflective devices must be carried in the vehicle as breakdown safety devices.

6.8.2 Two reflective devices must be carried in the vehicle as breakdown safety devices and be at least 12” high and 12” long and be free standing (similar to trucker’s breakdown triangles). Flares are not permitted.

6.9 FIRST AID KIT

6.9.1 A weatherproof first aid kit must be carried in each vehicle at all times and must contain at least basic first aid items. The first aid kit must be easily accessible within the occupant’s area without having to remove any body panels or equipment. Occupants with special medical needs should make those needs known in an obvious location on their firesuit or helmet.

6.10 VEHICLE IDENTIFICATION

6.10.1 All vehicles in competition must be identified with the correct entrant number and be unique to that vehicle regardless of class. Numbers may not be duplicated.

6.10.2 Entrant numbers shall be composed of a combination of the digits 0 through 9 only.

6.10.3 Entrant numbers shall be assigned to Drivers of Record on a first-come first-served basis. In the event of a conflict, seniority based on the date on which the Driver of Record first competed in a TREC event will determine the outcome.

6.10.4 Vehicles must display entrant numbers on both sides as a minimum. Numbers on the front and back of the vehicle are recommended. Any number location that is deemed by TREC to be

too hard to read will have to be changed before a vehicle competes in the event.

6.10.5 Size, color, and shape of numbers is at the discretion of the vehicle owner. Entrants are advised that checkpoint staff at each checkpoint will not allow vehicles to continue after stopping, until numbers can be verified.

6.10.6 TREC reserves the right to require race vehicle numbers and/or background colors be changed.

6.10.7 TREC assumes no responsibility for scoring vehicles with unrecognizable numbers. It is the vehicle driver's responsibility to maintain numbers in recognizable condition.

6.11 GENERAL VEHICLE COMPONENTS

6.11.1 The vehicle occupants must be able to quickly and easily enter and exit unassisted with the vehicle in any position. Firewalls and/or bulkheads must separate the driving compartment from any fuels, engine fluids, and acids.

6.11.2 Oil coolers, transmission coolers and radiators located in front of the vehicle occupants must have a shroud that, in the event of a rupture or leak, will prevent liquids from blowing back or leaking onto the occupants. All hoses running through the passenger compartment must be shielded. Steel braided hoses do not constitute a shield.

6.11.3 All vehicles with operational doors must have positive locking mechanisms on the doors and doors must also have a permanently attached positive secondary latching device.

6.11.4 All vehicles must have an all-metal firewall separating the occupants' compartment from the danger of fire from the engine and fuel supply. A minimum firewall must be liquid tight and extend from body side to body side. If the engine is rear-mounted, the firewall must be liquid tight and extend from the driver's shoulder height to the vehicle floor and extend from body side to body side. If a rear mounted fuel cell is higher than the driver's shoulder height, a firewall between the driver and the fuel cell must extend at least 2" above the top of the fuel cell. The hood is considered an extension of the firewall on front engine vehicles. Any hole placed in the firewall for structural members, lines, etc. must be kept to a minimum. The hole should not have more than 0.0625" gap around the items passing through the firewall. Metallic tape must be used to seal the hole between the firewall and the item passing through the firewall. Rear-mounted engines are not required to have a top mounted hood.

6.11.5 Floorboards are required on all vehicles and must be attached by a minimum of six 0.25" bolts per side if not an integral part of the body or chassis. Dzus or other quick-turn or 1/4- turn fasteners are not permitted. Floorboards must cover the entire area from in front of the pedal assembly to behind the seat(s), and from the outside edge to the outside edge of the vehicle. Installation must be done in such a manner as to afford maximum protection to the occupants

from debris.

6.11.6 All vehicles must start the event with a functional: generator or alternator, fan, water pump (water-cooled vehicles), and a complete functional electrical system. Air cooled vehicles are permitted.

6.11.7 Safe front and rear bumpers are required on all vehicles. No hazardous front or rear bumpers, nerf bars, frame heads or other protruding objects from vehicles are permitted. Ends must be capped and rounded to prevent any sharp edges. Bumpers and nerf bars must be designed in a way that reasonably minimizes the chance of two vehicles becoming locked together.

6.11.8 A rear view mirror is required on all vehicles. Mirrors must have at least six square inches of mirror surface. Mirror must have a reasonably unobstructed view of the area behind the vehicle.

6.11.9 Skid plates designed to afford a reasonable degree of protection to the front suspension, steering, and brake components are recommended on all vehicles. Skid plates must be securely attached.

6.11.10 All spare parts and extra equipment carried on or in a vehicle must be securely attached or stowed to prevent movement during competition. All spare parts and extra equipment must be carried in a manner that minimizes the risk of injury to the vehicle occupants.

6.11.11 All vehicle body parts must remain on the vehicle (accidental damage excluded) during the entire event.

6.12 ROLL CAGES

6.12.1 It is each competitor's responsibility to present a safe vehicle for pre-event technical inspection. Competitors must maintain their safety equipment including the roll cage integrity. TREC reserves the right to not allow any cage designs that, in the opinion of the Chief Technical Inspector, are not fit for competition. Competitors are ultimately responsible for their vehicle's safety features, including the design, fabrication, quality of execution, maintenance and repair of the roll cage structure. The roll cage is considered to be the main 6-point structure that surrounds and protects the vehicle's occupants.

6.12.2 All vehicles must be equipped with a roll cage fabricated of 1020 mild steel mechanical tubing or better (higher carbon content or alloy steel). Minimum mild steel tubing sizes for roll cage main structure, based on dry vehicle weight rating (DVWR) in race trim, not including occupants, are:

6.12.3 DVWR Under 2000 lb. - 1.5" diameter x .095" wall thickness.

6.12.4 DVWR 2000 lb. - 3200 lb. - 1.5" diameter x .120" wall thickness.

6.12.5 DVWR 3201 lb. - 4200 lb. - 1.75" diameter x .120" wall thickness.

6.12.6 DVWR Over 4200 lb. - 2" diameter x .120" wall thickness.

Note: See manufacturer's reference charts for alloy steel tubing equivalent strengths. No aluminum or other non-ferrous materials are permitted.

6.12.7 Roll Cage main structure material may be CREW, DOM, WHR, or WCR mild carbon steel or 4130 chromoly alloy steel. All welds must be of high quality and craftsmanship with good penetration and with no undercutting of parent material.

6.12.8 All roll cage components (hoops, braces, gussets, etc.) must have a minimum of 3" of clearance from any vehicle occupant's helmet when the occupant is seated in a normal driving/riding position. All roll cage components that might come into contact with the vehicle occupants' helmets must be padded.

6.12.9 Roll Cages must be securely mounted to the frame, chassis, or body. Rollcage terminal ends must be attached to a frame or body member that will support maximum impact and not shear or allow movement in the cage terminal end. Cab/body-mounted roll cages must sandwich the body structure using a minimum of two .1875" thick, dissimilar sized, doubler plates, one on each side of the body structure. Roll cage mounting fasteners must be at least .375" diameter S.A.E. Grade 8 or equivalent or better. Sandwich plates, if used, must be oriented only in the horizontal plane. No vertical or other non-horizontal sandwich plate orientations are permitted.

6.12.10 All vehicles including those with stock steel doors, must have at least one side bar on each side of the vehicle that will protect occupants from side impact. The sidebars must be of the same tubing material and dimensions as the main frame of the roll cage. The sidebars should be as close to parallel to the ground as possible, must be located to provide maximum protection to the occupants, and must be securely welded to the front and rear hoops of the roll cage. The location of the sidebars must not cause difficulty in entering or exiting the vehicle.

6.12.11 Gussets must be installed at all major intersections, including diagonal and rear down braces, where single weld fractures can affect occupants' safety. Gussets constructed of 3" x 3" x .125" flat plate or split, formed and welded corner-tubing, or tubing-gussets made of the same material and thickness as the rollcage may be used.

6.12.12 Six (6) point mounting cages are required over the occupants.

6.12.13 A minimum .040" expanded or flat sheet magnetic steel or .125" aluminum must cover the area immediately above the occupants' seats and be attached via welding or bolting to a steel tubing frame work.

6.13 ENGINE

6.13.1 Engine shall be free of leaks.

6.13.2 Engine vents shall run to a fluid containment system, and dipsticks should be locking type.

6.13.3 Forestry approved spark arrestors or approved mufflers may be used on any vehicle. Exhaust system outlets must extend a minimum of one foot past the rear of the occupants' compartment; be directed rearward out of the body away from the occupants, fuel cells and tires; and be placed in such a manner as to minimize the production of dust.

6.13.4 No entrant may replace a complete engine during an event. Entrants will be deemed to have replaced a complete engine if the block has been replaced.

6.14 TRANSMISSION

6.14.1 Transmission shall be free of leaks.

6.14.2 Transmission vents shall run to a fluid containment system, and dipsticks shall be locking type.

6.14.3 Every vehicle must have a functional reverse gear at the beginning of each event.

6.14.4 Transmission shall have an approved scatter shield, or approved floor between occupants and transmission.

6.15 TRANSFER-CASE

6.15.1 Transfer case shall be free of leaks.

6.15.2 Transfer case vents shall run to a fluid containment system.

6.15.3 All vehicles must be capable of transmitting power to all four wheels/tires, and must be equipped with a functioning low range. Low range is defined as a gear ratio that is lower (numerically higher) than 1:1.

6.16 DRIVESHAFTS

6.16.1 Driveshaft U-joints should be covered with a minimum of forty thousandths aluminum, or 20 ga. steel, or 20 ga. expanded metal, or 1/8" Lexan such that pieces are deflected away from the occupants in the case of U-joint failure. Material only needs to be installed between occupants and driveshaft U-joints. OEM floor in good condition of a production vehicle is considered to satisfy this requirement.

6.17 STEERING

6.17.1 Power-assisted steering systems shall be free of leaks.

6.17.2 Power-assisted steering vent tubes must be attached to a fluid containment system which prevents any fluid from leaking onto the ground. 6.2.10.3 Drag link and tie rod ends designed for use with a castellated nut and cotter pin must be secured with a cotter pin. Spherical rod ends (Heim joints) are a permitted replacement for OEM-style tapered tie rod ends.

6.17.3 All hydraulic steering lines must be in good working order and free of cracks, defects, or leaks. Hydraulic lines shall be run in a manner that protects them from possible damage.

6.18 SUSPENSION

6.18.1 There must be at least one shock absorber per wheel.

6.18.2 Suspension mounting points, pivot points and connecting points must be free of cracks, rust or any significant damage and in good physical condition as determined by the Chief Technical Inspector or his/her delegate.

6.18.3 Shock absorbers shall be free of leaks.

6.19 BRAKES

6.19.1 Brakes must be able to apply adequate force to lock up all four tires. Brakes must be in a safe operating condition and free of leaks during the entire event. If brake system problems occur during the event, they must be repaired before continuing in competition.

6.19.2 Turning, cutting, or steering brakes are permitted.

6.19.3 Manual, vacuum boosted, and hydraulically assisted brakes are permitted.

6.19.4 Brake pedal(s) mounted in the driver's foot-well must be able to operate all brakes with a single foot.

6.19.5 Transmission and/or pinion-brake systems are permitted, providing they meet all other requirements specified herein.

6.19.6 Each vehicle shall have a means of applying continuous brake pressure while the vehicle is parked with occupant(s) outside the vehicle. Such as an emergency brake. Emergency brakes must function. Hydraulic "line-locks" or mechanical "emergency brakes" are permitted.

6.20 CONTROLS

6.20.1 All throttles, whether controlled by hand or foot, must have at least one return spring of sufficient stiffness to instantly close the throttle plate when the throttle is released. Carbureted vehicles must have at least two throttle-return springs, at least one of which must be attached to the carburetor. All vehicles should have at least one throttle return spring at the throttle plate and one at the throttle control (pedal or hand control). Computer controlled throttles (Electronic Throttle Control or “drive-by-wire” systems) are exempt from the requirement to have a return spring at the throttle body, but must have a return spring at the throttle control (pedal or hand control) or maintain the stock OEM system. A positive stop or throttle override system must be used to prevent throttle linkage from sticking in an open position.

6.20.2 Adaptive controls may be used, as required. Hand throttles must meet the same requirements as a foot throttles, and must meet with the approval of TREC.

6.21 FUEL SYSTEM

6.21.1 Fuel types

6.21.2 Any of the following commercially available fuels may be used

6.21.3 Service station pump gasoline (the type normally used in passenger vehicles for highway use, this also includes E85.)

6.21.4 Racing gasoline, as originally manufactured

6.21.5 Commercial aviation gas

6.21.6 Diesel fuel

6.21.7 Alternative fuels, including bio-diesel, WMO, WVO, etc., on approval of TREC.

6.21.8 Propane or natural gas

6.21.9 Alcohol and nitro-methane are not permitted.

6.21.10 Commercially produced, nationally advertised fuel additives may be used.

6.21.11 Nitrous Oxide is not permitted.

6.22 FUEL STORAGE

6.22.1 Safety fuel cells are permitted for all vehicles. Auxiliary fuel tanks may be added. Auxiliary fuel tanks must also be safety fuel cells.

6.22.2 There must be a substantial cross member and firewall between the fuel tank and the occupants.

6.22.3 Fuel tanks shall be mounted in a fashion to protect the tank from damage due to a rear-end collision, impact from debris or rocks from below the vehicle, damage due to roll over, or the possibility of damage from chassis flex.

6.22.4 Safety fuel cells that consist of a bladder enclosed in a smooth-skinned container are required. The container shall be constructed of 20 gauge steel, 0.060" aluminum or 0.125" Marlex. Magnesium is strictly prohibited. Container must be securely attached to the vehicle with bolts or steel straps. All fittings must be built into the container skin and bonded to the container skin as an integral part of the tank or mechanically sealed by a ring and counter-ring system by either flatjoint or an O-ring. Internal baffling is mandatory in all fuel cells. Foam is an acceptable form of internal baffling. Bladder construction shall be of nylon or Dacron woven fabric impregnated and coated with a fuel resistant elastomer. Rotary molded polymer cells are acceptable when encapsulated in a container constructed of 20 ga. Steel or 0.060" aluminum.

6.22.5 Fuel accumulator tanks (accumulators) are permitted under the following guidelines. Accumulator tanks shall be constructed of .25" aluminum or .125" steel, and shall be mounted to the chassis using rubber isolation, and shall have a capacity of no more than one quart. Accumulators shall be mounted in a manner that protects them from damage due to impact.

6.22.6 No jerry cans or other portable fuel containers shall be permitted in or on any entrant vehicle during the event. Use of jerry cans or other portable fuel containers will subject entrants to a time penalty or disqualification.

6.22.7 Alternative fuels (propane or natural gas) must use an approved fuel cell as determined by DOT standards and with the approval of TREC Forklift propane fuel tanks are permitted. Alternative fueled vehicles shall not use auxiliary fuel cells.

6.22.8 Substitute methods may be approved by TREC

6.22.9 All fuel cells or OEM tanks MUST be permanently mounted to the vehicle via an acceptable method. Use of any temporary mounting methods (i.e. ratchet straps) are not permitted.

6.23 FUEL: PLUMBING, FILLING & VENTILATION

6.23.1 Design and installation of fuel tank and related components (plumbing) must prevent fuel escaping from fuel pickups, fuel lines, fuel fillers and fuel vents if the vehicle is partially or totally inverted. Fuel isolation valves that facilitate isolation of the fuel tank from the fuel supply line, fuel return line, and fuel vent line are required. Ball valves, or a combination of ball valve and one-way check valve, located at the supply, return, and vent line are acceptable. Fuel isolation valves shall be located such that, with the vehicle in any position, they may be rapidly closed to restrict the continuous flow of fuel onto the ground in the event of a fuel line

failure.

6.23.2 Accumulators, if used, shall have supply inlet, supply outlet, return supply, and return outlet connections with isolation valves.

6.23.3 Fuel tank must be filled from, and vented to, the outside of the occupants' compartment.

6.23.4 Fuel filler lines and positive-locking, non-vented fuel filler caps must be located and secured in such a manner as to prevent them from being knocked off or open during vehicle movement, rollover, or accidental impact. Monza/flip-type caps are strictly prohibited.

6.23.5 All fuel fillers attached to the frame or a body panel must be connected to the tank using flexible couplers. All fuel fillers must be surrounded by a boot or splashguard (body panel is acceptable as a splashguard, if it is sealed). Boot or splashguard must direct fuel spillage to outside of vehicle and away from occupants' compartment, engine, and exhaust. A fuel filler rollover-check-valve must be incorporated into all fuel cells. It is highly recommended that detachable fuel filler caps have a flexible strap or chain to secure them to the vehicle.

6.23.6 Fuel vent lines must have a rollover check valve incorporated at the fuel cell, and must vent outside of the occupants' compartment, and be directed away from the engine and exhaust system.

6.24 FASTENERS

6.24.1 It is recommended that all component parts of the vehicle's steering, suspension, chassis, drivetrain, and running gear be secured with S.A.E. Grade 8 or better, or metric equivalent, fasteners. Male threaded fasteners (bolts, cap-screws, studs, etc.) should be secured with either: lock nuts, lock washers, cotter pins or safety wire and shall have at least one full thread showing through the nut.

6.25 ELECTRICAL SYSTEM

6.25.1 KILL SWITCH. A brightly colored, highly visible, easily distinguishable, master kill switch must be located in the dashboard area of the vehicle and be clearly labeled. The master kill switch must be able to shut down the entire primary electrical system for the vehicle. The master kill switch must shut down the engine when in the off position. Winch power supply and low amp draw secondary electrical equipment which requires an uninterrupted power supply may circumvent this switch. It is highly recommended that heavy-duty marine-style battery disconnect switches, capable of carrying total vehicle current load (including winch) be used and wired so that the entire electrical system can be disabled with one switch.

6.25.2 IGNITION. Each vehicle must have a positive action on/off ignition switch in. The switch must be labeled "ignition on/off" and be located within easy reach of the driver and from the outside of vehicle. All electric fuel pumps with independent switches must be labeled "fuel on/off" and be within easy reach of driver and from outside of vehicle. It is highly recommended

that electric fuel pumps not be independently switched.

6.25.3 BATTERIES. Batteries must be securely mounted with metal brackets, clamps, or tie-downs in a manner that prevents displacement in a roll over. All flooded cell batteries must be fully enclosed in a battery box, including the top, sides, and bottom. Enclosure must be able to contain the quantity of acid contained in the battery. Batteries shall not be located in the occupants' compartment. Batteries shall be considered as being in the occupant's compartment if there is no firewall between the battery and the occupants. All batteries shall be the sealed, non-spill type. Absorbed glass mat (AGM) or "gel cell" type batteries are highly recommended.

6.25.4 LIGHTS.

6.25.5 All vehicles are required to have at least two working headlights

6.25.6 All vehicles must have a minimum of two tail lights and two brake lights. Stock taillights, if so equipped, are permitted as long as they remain on whenever the vehicle's ignition is on.

6.25.7 All vehicles must have a minimum of one rear facing amber 'dust' light. Amber light must remain on whenever the vehicle's ignition is on.

6.25.8 Additional lighting may be necessary in a co-sponsored event.

6.25.9 All rearward-facing lights must be protected against damage that may be caused by a rollover. Taillights must be at least 3" in diameter, or meet with TREC approval, and must be mounted in such a manner as to be clearly visible from the rear of the vehicle. Rearward-facing amber light, and blue light if so required, must illuminate with a brightness that is at least equivalent to a 40 watt 12V automotive lamp but not brighter than equivalent to a 55 watt 12V automotive lamp. LED lamps of appropriate brightness are permitted. The amber lens must be deep-coated amber in color; no other color is permitted. The blue lens, if used, must be medium-coated blue in color; no other color is permitted. The amber light and blue light if so must be mounted a minimum of 48" from the ground and must be clearly visible, with no obstructions (i.e. not mounted behind any translucent object), from any position in an imaginary arc from the 5 o' clock position to the 7 o' clock position of the vehicle. The amber light and blue light, if so required, must be placed so as not to impair the vision of another driver approaching from the rear. All rearward-facing lights must be connected to the ignition switch or directly to a main battery power switch, such that they remain on whenever the vehicle's ignition is on.

6.25.10 If during an event any required light fails to operate, the light must be fixed or replaced at the next available pit before the vehicle can continue in the event.

6.26 STARTER

6.26.1 All vehicles must be self-starting by use of an onboard electric starter.

6.27 WHEELS & TIRES

6.27.1 All vehicles shall have exactly four wheels, each with exactly one tire.

6.27.2 Snap-on hubcaps or snap-on wheel covers of any type are not permitted.

6.27.3 All factory-built tires from any manufacturer are permitted.

6.27.4 Tires shall be visually checked for condition and must not be considered obviously unsafe by the Chief Technical Inspector.

6.27.5 Tire studs, screws or any other items added to the tire are not permitted. Grooving, sipping or other modifications that involve removing material from the tire are permitted, as long as the requirement of 6.1.11.4 is still met.

6.28 VEHICLE WEIGHT

6.28.1 Official vehicle weight shall be the empty dry weight of the vehicle. Empty dry weight is measured without fuel, spare tires, tools, spare parts or occupants in the vehicle.

Vehicle specifications for Class A, B and C class.

7.0 C CLASS SPECIFIC REQUIREMENTS

7.1 C CLASS The spirit of the stock class is to allow OEM and aftermarket vendors the opportunity to showcase their products while providing a venue for teams to compete in a true driver's class in vehicles that are closely related to street driven versions of the same. The driver of record will bear the burden of proving legality of any part of their vehicle including but not limited to: Motor/Transmission, frame length, suspension configuration.

7.2 ELIGIBLE VEHICLES. Any and all four-wheeled, four-wheel-drive production vehicles are eligible for competition, providing they meet all the rules and regulations specified herein, and with the following limitations and exceptions: Minimum of one thousand (1000) units were produced by the original manufacturer for a given model year, for given market/region. Vehicles produced for foreign markets may be imported for competition, but features and/or components found on vehicles produced for different regions/markets shall not be combined in any one vehicle if doing so would violate any rules or regulations specified herein.

7.3 FRAME & BODY.

7.3.1 Stock frame (frame is considered to be the primary frame rails and all permanently factory cross members) must be retained, and must be complete and unmodified. No material may be removed for any reason and no section of the frame may be 'massaged' or re-shaped with the following limitations and exceptions: The rear portion of the frame and rear cross member may be removed or trimmed for the sole purpose of installing an aftermarket rear bumper. Frames may be reinforced by adding material.

7.3.2 Stock body (body is considered to be the full cab, including all interior and exterior sheet

metal, bed, doors, hood, fenders, grill, etc.) required. Must be complete and unmodified, with the following limitations and exceptions: Holes may be cut in any part of the body for the single and exclusive purpose of allowing roll cage tubes and Transmission / transfer case linkage to pass-through the body. Open holes must be kept to within .5" of the diameter of any tube or linkage that passes through the body, with further restrictions related to holes in firewalls specified in Section

7.3.3 Stock doors may be modified to create half-doors and/or may also be replaced with tubular doors. All doors must have a functional skin that will protect occupants from flying debris or help prevent occupants in the event of a collision.

7.3.4 Stock windows (glass) are not required, but are permitted, providing they meet DOT regulations. Alternatives to traditional safety-glass may be allowed upon approval.

7.3.5 Front inner fenders must be complete and unmodified, with the following limitations and exceptions: outer fenders (wheel well openings) may be trimmed for the single and exclusive purpose of allowing for tire clearance. Modifications to the outer fenders must preserve the look of the stock wheel wells, as originally manufactured, and must not be trimmed excessively (no more than a 2" gap between any part of the outer fender and the tire at full compression).

7.3.6 Front outer fenders may be replaced with OEM-style aftermarket fenders (flared fiberglass fenders are permitted).

7.3.7 Rear inner and outer fenders must be complete and unmodified, with the following limitations and exceptions: outer fenders (wheel well openings) may be trimmed for the single and exclusive purpose of allowing for tire clearance. Modifications to the outer fenders must preserve the look of the stock wheel wells, as originally manufactured, and must not be trimmed excessively (no more than a 2" gap between any part of the outer fender and the tire at full compression).

7.3.8 Extensive damage to any portion of the frame or body, including excessive rust, (prior to race start) may be considered illegal modifications, and repairs may be required, as determined by, and at the sole discretion of the Chief Technical Inspector.

7.3.9 Stock body mounts may be modified or eliminated, with the following limitations and exceptions: The relationship of the body to the frame must remain within 1" of stock configuration, as originally manufactured. Stock body mounts shall not be modified or eliminated for any reason other than to allow any part of the roll cage to pass through the body in order to be securely attached to the chassis.

7.3.10 Factory head / tail lights are required, and must be functional.

7.3.11 Factory bumpers are not required, but may be modified or augmented or replaced with any bumper meeting all other specifications herein. NOTE - Some type of bumper is required and

must meet specifications otherwise stated herein.

7.4 ENGINE. Stock engine must be retained, but may be replaced with any available in make/model/year. Any and all modifications are permitted, with the following limitations and exceptions: Stock engine-block must be retained, as originally Manufactured, boring, stroking and other internal engine modifications are not permitted. Forced-induction of all types is not permitted, unless factory-equipped.

7.4.1 If equipped with a water-cooled engine, the radiator must remain in the original location, as originally manufactured.

7.5 TRANSMISSION. Stock transmission must be retained, but may be replaced with any available in make/model/year. Auxiliary transmissions (e. g. secondary transmissions, under / over-drives, etc.) are not permitted.

7.6 TRANSFER-CASE. Stock transfer-cases must be retained, but may be replaced with any available in make/model/year.

7.7 DRIVESHAFTS. Any and all drive shafts are permitted, providing they meet all the additional rules and regulations specified herein.

7.8 AXLES. Stock axle assemblies must be retained but may be replaced with any available in make/model/year. All internal modifications are open including, but not limited to axles shafts, lockers, gears, etc.

7.9 STEERING. Steering components may be modified and steering components/linkage may be replaced with aftermarket components providing they are of the same design as manufactured, with the following limitations and exceptions: All vehicles must retain some type of mechanical steering linkage. full-hydro steering is not permitted, unless factory-equipped. Said linkage must be capable of controlling the direction of the steering wheels/tires without the benefit of any additional power-steering aids. The steering box or rack, if so-equipped, must remain in the stock location. Rear-steer is not permitted.

7.10 SUSPENSION

7.10.1 Wheelbase must remain stock, as originally manufactured.

7.10.2 Suspension configuration must remain stock, as originally manufactured (meaning that leaf springs must remain leaf springs, coil springs must remain as coil springs, torsion-bars must remain as torsion-bars, etc.).

7.10.3 Leaf springs may be replaced with any aftermarket leaf springs available to the general public and must be installed in the original location and orientation, with the following limitations and exceptions: Leaf springs must be connected directly to the axle assembly, unless otherwise factory-equipped. Links/linkage may be installed, but the leaf springs must be capable of locating the axle assembly relative to the chassis in any direction without the use of any such

links/linkage. As such, quarter-elliptical springs, transverse leaf springs, and the use of double-shackles (at the forward and rear leaf spring mounting points at the chassis) are not permitted, unless factory-equipped.

7.10.4 Coil-springs and related suspension linkage must remain stock and in the stock location. Coil-springs must be connected directly to the axle assembly and chassis and shall not be mounted in any way so as to yield any type of mechanical advantage, unless factory- equipped. Coil-springs shall not be replaced with any type of coil-over shocks, unless factory- equipped (if so-equipped, factory coil-over shocks may be replaced with aftermarket coil-over shocks).

7.10.5 Secondary suspension is not permitted, unless factory-equipped (secondary suspension is considered to be any means or method of supporting any portion of a vehicle's weight and/or affecting the primary spring-rate at any time). As such, springs of all types, airbags, air-shocks and air/nitrogen-charged hydraulic bump stops are not permitted. Compressible bump stops made of rubber, foam, or other similar materials are permitted, with the following limitations and exceptions: Bump stops shall not have any effect whatsoever on any aspect of a vehicle's performance outside of the last 2" of vertical wheel-travel (on compression).

7.10.6 Shock absorbers of any make/model/type are permitted and may be installed in the factory location and orientation and retain the factory mounting points. The following limitations and exceptions apply:

7.10.7 Shock absorber limitations include: Only one shock absorber is permitted per wheel/tire (not including spare tires). Shock absorbers shall not be larger than 2.5" in diameter (outer diameter of shock-body) and shall not be capable of any more than 14" stroke. Position-sensitive shocks (including bypass shock of all types) are not permitted. Shock absorbers must be connected directly to the axle assembly and chassis and shall not be mounted in any way so as to yield any type of mechanical advantage, unless factory-equipped (mounting shock absorbers off-vertical is permitted and shall not be considered a mechanical advantage). 6.3.9.4 Manual suspension controls (e.g. forced hydraulics) are not permitted.

7.11 WHEELS & TIRES. Tires must be DOT-approved, with a maximum outside diameter of 33" (or equivalent), as specified on the tire's sidewall by the original manufacturer.

7.12 FUEL STORAGE

7.12.1 OEM fuel tanks are permitted provided they remain in the stock location and are mounted via OEM mounting methods that are in good condition.

7.12.2 Fuel cells are permitted providing they meet requirements governing fuel storage cited elsewhere in these rules.

8.0 B CLASS SPECIFIC REQUIREMENTS

8.1 FRAME & BODY

8.1.1 Stock frame must be retained (frame is considered to be the primary frame rails), from the engine-mounts to behind the occupants' seats. The balance of the frame should remain whole. Allowances will be made for suspension mounts.

8.1.2 Stock body (body is considered to be the exterior of the cab, bed, doors, hood, fenders, grill, etc.) must be complete, with the following limitations and exceptions: Modifications to the body for performance and/or clearance are permitted, but must preserve the look of the stock body, as originally manufactured.

8.2 ENGINE

8.2.1 Any and all engines are permitted, providing they meet all the additional rules and regulations specified herein, and with the following limitations and exceptions: The back of the engine-block must be located in front of the furthest-forward portion of the driver's seat, unless otherwise-equipped, as originally manufactured.

8.2.2 Radiator mounting open

8.3 TRANSMISSION. Any and all transmissions are permitted, providing they meet all the additional rules and regulations specified herein.

8.4 TRANSFER-CASE. Any and all transfer-cases are permitted, providing they meet all the additional rules and regulations specified herein.

8.5 DRIVESHAFTS. Any and all drive shafts are permitted, providing they meet all the additional rules and regulations specified herein.

8.6 AXLES. Any and all axle assemblies are permitted, providing they meet all the additional rules and regulations specified herein.

8.7 STEERING. All vehicles must retain some type of mechanical steering linkage (e. g. 'full-hydro' steering is not permitted, unless factory-equipped matching frame), and said linkage must be capable of controlling the direction of the steering wheels/tires without the benefit of any additional power-steering aids. Rear-steer is not permitted.

8.8 SUSPENSION

8.8.1 Any and all suspension components and configurations are permitted, providing they meet all the additional rules and regulations specified herein.

8.8.2 Shock absorbers of any make/model/type are permitted and may be installed in any location and orientation, with the following limitations and exceptions: Only two shock absorbers are permitted per wheel/tire (not including spare tires). Shock absorbers shall not be larger than 2.5" in diameter (outer diameter of shock-body) and shall not be capable of any more

than 14" stroke. Shock absorbers must be connected directly to the axle assembly and chassis and shall not be mounted in any way so as to yield any type of mechanical advantage, unless factory-equipped (mounting shock absorbers off-vertical is permitted and shall not be considered a mechanical advantage), or equipped with any type of independent suspension (and then shock absorbers may only be mounted to as to yield a mechanical advantage at the wheels/tires that are independently suspended).

8.8.3 Manual suspension controls (e.g. forced hydraulics) are not permitted.

8.9 WHEELS & TIRES

8.10 Tires must be DOT-approved, with a maximum outside diameter of 37" (or equivalent), as specified on the tire's sidewall by the original manufacturer, unless otherwise stated.

9.0 A CLASS

9.1 ENGINE. Any and all engines are permitted, providing they meet all the additional rules and regulations specified herein.

9.2 TRANSFER-CASE. Any and all transfer-cases are permitted, providing they meet all the additional rules and regulations specified herein.

9.3 DRIVESHAFTS. Any and all drive shafts are permitted, providing they meet all the additional rules and regulations specified herein.

9.4 AXLES. Any and all axle assemblies are permitted, providing they meet all the additional rules and regulations specified herein.

9.5 STEERING. Any and all steering components and configurations are permitted, providing they meet all the additional rules and regulations specified herein. Rear steering is permitted.

9.6 SUSPENSION. Any and all suspension components and configurations are permitted, providing they meet all the additional rules and regulations specified herein.

9.6.1 Shock absorbers of any make/model/type are permitted and may be installed in any location and orientation, providing they meet all the additional rules and regulations specified herein.

9.6.2 Manual suspension controls (e.g. forced hydraulics) are permitted.

9.7 WHEELS & TIRES. Any and all tires are permitted, providing they meet all the additional rules and regulations specified herein.

10 VEHICLE REJECTION

10.1 TREC reserves the right to reject any vehicle for any reason.

10.2 If rejected, a written rejection notice may be provided to the competitor; a verbal rejection by a TREC official is valid.

10.3 TREC reserves the right to pick specific or random vehicles throughout the event for a re - tech.

10.4 If a vehicle passes tech with an item that is not legal, that does not make it legal nor allow them to run with the infraction. Penalty points and/or disqualification can be issued for infractions to TREC rules.