

AHCA GYMKHANA

FULL EVENT OPERATING RULES

- All competitors must have a valid driver's license.
- Competitors are required to wear seat belts and helmets when driving in competition. A roll bar is recommended for each vehicle.
- A passenger is allowed provided he/she:
 - Is no younger than twelve (12) years old or is at least 57" tall
 - Is in a vehicle which has passed the safety (tech) inspection
 - Is wearing a properly fitted seat belt and a properly fitted helmet
 - Has completed and signed the required participant waiver(s), including a signature from a parent / guardian as appropriate.
- All cars shall be subject to a strict safety inspection as described below.
- All participants, including competitors, workers, crew, and guests, must sign the waiver form. Credentials must be issued to and displayed by those who have signed waivers. Any competitor found to have driven the course in any vehicle before signing the waiver will be disqualified from the event with no refund of entry fee and removed from the premises.
- **Use of Alcohol or Narcotics: THE USE OF ALCOHOL OR NARCOTICS IS NOT ALLOWED AT THE EVENT.**
 - No driver may consume alcohol until he/she has completed all his/her runs and completed his/her work assignment for the day. No official may consume alcohol until his/her duties have been concluded for the day. Alcohol may not be consumed in the grid until after all the day's competition activities are concluded. Nothing in this Section shall override site-specific alcohol restrictions.
 - The use at an event by any participant of any federal Schedule 1 controlled substance (including marijuana or other drugs) that affect the ability of the participant to safely participate in the event or may otherwise adversely affect the safety or integrity of the event is specifically prohibited. CERTAIN PRESCRIPTION AND NON-PRESCRIPTION MEDICINES MAY ALSO IMPAIR PERFORMANCE SO COMPETENT MEDICAL AUTHORITY SHOULD BE CONSULTED PRIOR TO USING SUCH MEDICINES AND PARTICIPATING IN THE EVENT.

Any participant who violates this prohibition:

- a. Shall not seek to participate in the event.
 - b. May be excluded from the event by the Event Coordinator.
 - c. May be removed from the grounds by the Event Coordinator.
- **Unsportsmanlike Conduct:** Any driver who drives unsafely at/near the event location or displays unsportsmanlike conduct shall be disqualified.

- Pressurized gas and air bottles with a pressure in excess of 200 psi (1380 kPa) must have a protective structure around the gauge and valve assembly. Doctor-prescribed medical oxygen bottles/tanks are exempt from this requirement.
- It is strongly recommended for emergency purposes, a public telephone or a cellular telephone be available at the event site or at a known nearby location.
- Children under twelve (12) years of age and pets shall be prohibited in the staging, grid, start, finish, and course areas. Children who are riding as passengers and meet the requirements above are also exempt during the run group in which they are riding. Otherwise, they also are prohibited from these areas.
- Staging, grid, start, finish, and course workers should be at least sixteen (16) years of age.
- Smoking (including e-cig, PV, or ENDS use) is not permitted in the grid or staging areas.
- Course workers must be standing at all times when any competition cars are on-course during the event.
- Cell phones and video or still cameras are not permitted at course worker positions or other locations within the course area. Exceptions may be granted for media relations purposes by the Event Coordinator. Permission for a photographer may be given only if the location is acceptable to the Event Coordinator and if the photographer is accompanied by a spotter (at least 16 years of age) to warn of approaching vehicles.
- Competitors are responsible for using proper support (e.g., jack stands) to safely support a raised vehicle if any person is underneath that vehicle.
- The use of unmanned aircraft systems (UAS, drones, etc.) is not permitted at any event.

The event organizers have the right to refuse an entry at their discretion. This permits organizers to protect themselves and their programs by declining the entry of someone who is believed to pose a safety hazard or other significant threat.

DRIVER SAFETY EQUIPMENT

Helmets: Helmets meeting the following standards must be worn while on course: Snell Memorial Foundation standards EA 2016, SA2020, SA2015, SA2010, SAH2010, SA2005*, M2020D, M2020R, M2015, M2010, M2005*, K2020, K2015, K2010, K2005*; SFI standards 31.1/2015, 31.1/2010, 31.1/2005*, 41.1/2015, 41.1/2010, 41.1/2005*; ECE 22.05 or R22.05; FIA standards 8860-2018, 8860-2018-ABP, 8859-2015, 8860-2010, 8860-2004; or British spec BS6658-85 type A* are acceptable.

For maximum protection, helmets must fit securely and should provide adequate peripheral vision. The chin strap must be securely fastened. Loaner helmets should be available to vehicle occupants not having their own.

* Not valid after 12-31-2021: Snell SA2005, M2005, K2005; SFI 24.1/2005, 31.1/2005, 41.1/2005; British Standards BS6658-85 type A/FR, BS6658-85 Type A.

Footwear: Shoes that cover the entire foot must be worn at all times by persons inside the vehicle when the vehicle is on the course.

VEHICLE SAFETY

Driver Restraints: Seat lap belts are required in all cars and must be installed in cars with passive restraint systems that do not include a lap belt. Installation and the use of shoulder belts or harnesses is strongly recommended; however, non-factory upper body restraints may only be used in open cars, cars with targa-tops in the open position, or cars with T-tops in the open position when these two conditions are met:

1. The roll structure must meet either the requirements of Appendix C or the SCCA® Club Racing General Competition Rules (GCR) Section 9.4.
2. The top of the roll structure may not be below the top of the driver's helmet when the driver is in the normal driving position.

Safety Inspections: All vehicles must pass safety (tech) inspection on the safety points listed below prior to competing. Entry fees, if already paid, will be refunded if a car fails to pass safety inspection. A safety inspection is not concerned with the legality of a car.

The organizing Region or Club may at its discretion provide an advisory inspection for vehicle classification and legality, in connection with technical inspection.

Inspection Requirements

1. All loose items, inside and outside the car, must be removed. Hand held items, such as but not limited to, cameras and cell phones are considered loose items.
2. Pedal operation must not be impeded. Driver's side floor mat must be removed unless securely mounted. OE fasteners designed to prevent the mat from moving forward satisfy this requirement if they are in good working order.
3. Passenger's seat back and all cushions, bolsters, headrests, etc. must be secured. All allowed aftermarket replacement seats (i.e., driver and passenger) must be securely and safely mounted. Special care should be taken when using other than OE mounting points and/or fabricated bracketry.
4. Any cameras, if installed, must be securely mounted to withstand loads from driving maneuvers. The camera may be installed either inside or on the outside of the car. In either case, its mounting method and position must not interfere with driving or pose an additional hazard to driver, passenger, or course workers.

5. Snap-on hubcaps, detachable fender skirts, and trim rings must be removed prior to entering the course.
6. Wheels must be safely affixed. They shall not be reversed so that the lughole taper does not mate with the chamfer of the lugs. All studs and lug nuts must be present and functional.
7. Tires must be in good condition, with no cord or belts showing or cracks in the tread or sidewall. Each tire must have measurable (i.e., exhibiting positive measurement values) tread depth at no less than two points on the tire which are 180° apart around the circumference, and which are within the center one-half of the tread surface that normally contacts the ground. Tires may not have cord visible at the start of competition.
8. Seat belts (and harnesses if used) must be properly installed with attaching hardware, in good condition, secure, tight, and in compliance with the driver restraint section above.
9. Throttle return action shall be safe and positive.
10. No excessive fuel, oil, water, or brake fluid leaks should be observed.
11. Steering "spinner" knobs shall not be permitted.
12. No broken or missing spokes or more than one loose spoke per wheel shall be permitted in wire wheels. No cracks shall be permitted in disc or cast wheels. Non-metallic wheel construction is prohibited.
13. Brakes must have an adequate pedal, sufficient fluid in the master cylinder, and no apparent hydraulic leaks under pressure. Vehicles must have a brake mechanism acting upon each wheel. The braking system shall be a dual system, arranged in a manner to provide braking for at least two wheels in the event of failure in part of the system. In the case of OE single systems, this requirement may be satisfied by a functional, redundant emergency brake.
14. All swing axle cars, except Porsche, must have a camber compensator, have negative camber on the rear wheels, or have axle-limiting straps. Standard pre-1967 Volkswagen straps are not sufficient.
15. Wheel bearings, shocks, steering, and suspension shall be in good operating condition.
16. Exhaust must exit behind the driver or exit to the side of the car.
17. On-board starters shall be provided.
18. All batteries (on-board power supplies) shall be attached securely to the frame or chassis structure, independent of any container or cover that may be present. Any wet-cell battery moved from the manufacturer's original location shall be in a non-conductive,

marine-type container or equivalent and the "hot" terminal shall be insulated. NOTE: This will allow the use of gel cell or dry cell (AGM) batteries without a non-conductive, marine-type container where applicable.

19. Roll bars, if installed, must meet the applicable portions of Section 3.3.2 and Appendix C of SCCA solo rules with specific attention to roll bar height.

20. Helmets for all occupants of the vehicle are to be inspected for condition, fit, and compliance with Section 4.3.1, Driver's Safety Equipment, Helmets.

21. Flex fans are not allowed.

22. Alcohol may not be used in manifold injection or spray bottles.

23. For cars competing on non-DOT-approved tires, the vehicle safety requirements as referenced in each category rule set, in addition to those in Mandatory Sections of the Solo® Rules, shall be adhered to by all entrants.

24. For those categories which permit fuel cells and/or fuel tank modification or replacement, the following requirements apply if the fuel tank/cell does not fit within the same area as the OE tank.

- No part of the fuel tank or fuel cell shall be closer than 6.0" (15.24cm) to the ground unless enclosed within the bodywork and mounted above the floor pan. A metal bulkhead is required that provides total separation between the driver compartment and the compartment containing the fuel tank/cell and/or filler neck. This includes fuel tanks/cells that are flush mounted with driver compartment panels or otherwise exposed to the driver compartment. Fuel filler doors in the driver compartment must be positively fastened (non-metallic fasteners are not allowed). For the purposes of these rules, a fuel tank consisting of a structure containing a fuel bladder is considered to be the entire fuel cell including the containing structure. The containing structure of a fuel cell does not qualify as a bulkhead. A separate metal bulkhead must isolate the fuel cell from the passenger compartment.
- Internal body panels may be modified to accommodate the installation of the fuel tank/cell as long as such modifications serve no other purpose. In the event installation includes encroachment into the driver's compartment, a metal bulkhead shall prevent exposure of the driver to the fuel tank/cell.
- Fuel tank/cell breathers shall not vent into the driver/passenger compartment.

Vehicle Operating Condition: Any car that is judged by the Event Coordinator (or his / her designee) to be in an unsafe operating condition at any time during the event shall be barred from further competition until the deficiency is corrected to the satisfaction of the Chief Technical Inspector.

MUFFLERS: Adequate mufflers are required for events. The criterion of “adequacy” is not what the exhaust system consists of, but the sound level. Any car deemed by the Event Coordinator or his designated representative to be excessively loud shall not compete without acceptable modifications installed on the car.

EVENT OPERATION

ENTRANTS AS WORKERS: At events, the entrants may be required to work. The method by which the entrants may be required to work will be described in the event. Failure to work will result in disqualification from the event.

COURSE FAMILIARIZATION: Each driver will be provided an opportunity to walk or drive through the course or to have a parade lap before his first official run.

LEMANS STARTS FORBIDDEN: No start or finish shall be used wherein the driver is not seated in the vehicle with seat belt buckled.

TIMING POINTS

- A. A car will commence its run at least 15 feet before the point at which timing begins.
- B. Time at the end of the run will be taken in a manner which complies with the course safety and layout rules below. It is recommended that an official be assigned to control the finish area. A complete stop is not required at the finish if sufficient area is available to safely halt any competing car without locking brakes or wild maneuvering (from the highest possible speed attainable at the finish). Particular care must be exercised in the finish area to keep it free from hazard to participants and non-participants.

REPLACEMENT OF MARKERS: Displaced markers will be replaced before the next competitor enters that portion of the course. Where an official run covers all or part of the course twice, course marshals should have extra markers so that markers displaced during the first part of the run can be replaced before the competing car returns to that section. If a driver encounters his/her own displaced marker(s), he/she may not stop and receive a rerun.

VISUAL OR ORAL INSTRUCTION: No visual or oral instruction shall be given to a driver during his timed runs except in an emergency situation.

PENALTIES

Course Markers (Pylons): A clearly visible line around the base will mark the location of each pylon. The inner edge of the line will be used to describe the outer edge of the pylon base as accurately as possible. If the pylon is knocked over or totally displaced outside

the line, two seconds will be assessed. Reruns for displaced or downed cones after the timing finish line will only be given at the discretion of the Chief Steward.

Course Deviation: A Did Not Finish (DNF) or a time penalty, if so specified in the supplementary regulations, shall be charged for any uncorrected deviation from the course, for failing to directly follow the prescribed course route from the stage line through the timing start line, or for unnecessarily delaying the event. A course deviation shall not be charged if any part of the car hits a marker defining the limits of the course. A DNF is charged only if part of the course is omitted. In returning to the course after an off course excursion, it is acceptable to drive a part of the course a second time.

COURSE: Gymkhana courses should be open enough to allow good competition between larger and smaller cars, and should not emphasize high speed, power-to-weight ratio, extreme maneuverability, memory, or visual acuity.

COMMON SENSE AND GYMKHANA: Although Gymkhana events are non-speed events under the Rules, speed alone is not the operative factor in determining what is and is not a proper event. Hazard is the operative word; hazards must not exceed those encountered in legal highway travel. Generally, maximum speeds in the mid-50s to mid-60s (mph) are contemplated, and WITH LIMITED EXCEPTIONS AS DESCRIBED BELOW MUST BE OBSERVED, since these are speeds with which the average driver is familiar from everyday road driving. But it is quite possible to set up a course on which speeds do not exceed 45 mph, but which is more hazardous than another course on which 65 mph is attainable.

The same sort of reasoning must be applied to cornering speeds. If, for example, there are two identical 30 mph turns, one bordered by a 50 ft. drop off or a solid row of trees and the other by 50 ft. of flat, obstacle-free asphalt, the hazards involved are much different. The former is clearly not permissible in an event and the latter clearly is.

IT WOULD BE POSSIBLE TO SET EXTREMELY STRICT AND RIGID LIMITS ON EVENTS REGARDING SPEED AND/OR COURSE DIMENSIONS. HOWEVER, IT IS NOT THE INTENT OF THESE RULES TO OUTLAW EVENT SITES WHICH CANNOT ACCOMMODATE A COURSE OF CERTAIN STATED DIMENSIONS OR CREATE THE IMPRESSION THAT, SO LONG AS SOME "MAGIC" SPEED LIMIT IS NOT EXCEEDED, THESE RULES ARE ADHERED TO.

Basically, event speeds are limited to what is "reasonable and prudent for the conditions encountered," SUBJECT TO THE CONSTRAINT THAT TOP SPEEDS BE WITHIN AN ALLOWABLE RANGE AS DESCRIBED BELOW. Laying out a course to comply with the safety requirements of these rules calls for the exercise of prudent good judgement and common sense.

COURSE SAFETY AND LAYOUT RULES

When laying out a course, the size of the vehicles competing should be taken into consideration and the dimensions specified in the following rules are only minimums:

Courses must be tight enough so that cars run the entire course in their lower gears. Speeds on straight stretches should not normally exceed the mid-60s (mph) for the fastest Street and Street Touring category cars. The fastest portions of the course shall be those most remote from spectators and property. Turns should not normally allow speeds in excess of 45 mph in unprepared cars. It must be remembered that sites themselves vary and not all sites will safely support the speeds shown in these guidelines. Conformity to these speed guidelines does not preclude reasonable and prudent consideration of the conditions encountered.

- The course as laid out shall be on a paved surface which contains no dangerous holes, loose gravel, gratings, oily spots, or other hazardous features. Surface features (e.g., dips, crowns) which could cause a car to become airborne shall be avoided.
- The course boundary shall not normally pass closer than 25 ft. from solid objects.
- Special caution should be applied where negative-cambered turns are used.
- A long straight (over 150 ft.) should not terminate in an extremely sharp turn (e.g., a short radius U-turn).
- Except on permanent circuits such as kart tracks, the inner and outer limits of turns and corners should be marked by course markers, displacement of which results in time penalties. Corner limits must never be marked by curbs, buildings, poles, trees, soft shoulders, or other hazards likely to cause damage to a car or likely to cause a car to overturn.
- Only one car will be allowed on a course at any time.
- All portions of the course shall be visible to at least one course marshal who can communicate through signals or by electronic means with the starting line.
- Extreme care shall be taken in the location of the start, finish, staging, and timing areas. The timers and staging area must be placed well clear of the course in a safe area. The finish section and course exit should be clearly and carefully defined to safely restrict speeds. It is not recommended that competing cars be required to come to a complete stop immediately following the finish line. It is preferred that cars be required to slow to a walking speed within a controlled area before returning to the grid or paddock areas. A complete stop should be required only when unusual site conditions exist. In all cases, a sufficient distance past the finish line must be available to safely slow or halt any competing car from the highest

possible speed attainable at the finish without locking brakes or wild maneuvering. It is recommended that an official be assigned to control the finish area. Particular care must be exercised in the finish area to keep it free from hazard to participants and non- participants.

- Entrance and exit lanes shall enter the course at separate points, though they may be close together. They will be kept clear for use by competing cars at all times.

Portions of the course where significant braking is necessary shall not terminate at a point where participants, non-participants, or obstacles are directly in front at a distance closer than that required to bring a car to a halt even with brake problems, a stuck throttle, etc.

Participants and non-participants must be kept at a safe distance from the course, particularly at the outside of turns and at the start and finish lines. Unless protected by substantial barriers, non-participant areas must be roped off. The Event Coordinator shall have the authority to set minimum viewing distances from the course but such minimum viewing distances may not be less than 75 ft. from the course edge in unprotected areas (areas without adequate barrier protection such as concrete or tire walls). An Organizing Club may request a waiver of this minimum distance requirement from AHCA's Vice President / Safety and SEMA. Appropriate fire extinguishers, and material for cleaning up fluid spills must be provided by event organizers.

COURSE DESIGN RULES

A. All corners shall be negotiable without reversing by any car classified by make/model in the Rules.

- The course shall be at least 15 ft. wide and single-file slalom markers shall be at least 45 ft. apart. Any series of three (3) or more course markers which are generally in a line and have the effect of a slalom are considered to be a slalom. Additional course markers associated with the slalom markers to form gates, "boxes," etc, do not cancel this limit.
- An event, other than a gimmick event in which time is not the only consideration, shall be a test of driving skill, not memory.

B. The course shall be well marked with pylons or other "markers." The base of each marker shall be outlined to permit accurate replacement if displaced.

C. Cars should leave a gate/turn headed generally in the direction of the next gate/turn.

EVENTS AT RACE FACILITIES

Events planned for commercial race facilities, or a private facility that could reasonably be construed to be similar in concept to a commercial race facility, must have approval from the AHCA Vice President / Safety and SEMA.

Roll bars or roll cages are strongly recommended in all cars. A roll bar meeting the requirements of Appendix C or a roll cage meeting the requirements of the Club Racing General Competition Rules (GCR Section 9.4, Roll Cages For GT And Production Based Cars, and/or GCR Section 9.4.5, Roll Cages For Formula Cars and Sports Racing Cars) is required in all (A) Modified (AM), (B) Modified (BM), (C) Modified (CM), and (F) Modified (FM) vehicles and all open cars in Prepared Category, (D) Modified (DM) class, and (E) Modified (EM) class.

For open cars in the Street, Street Touring®, Street Prepared, and Street Modified categories, the roll bar or roll cage height may be reduced from Appendix C or GCR 9.4 requirements to the highest possible height which fits within an installed factory-specified hardtop or convertible top. The roll bar or roll cage height may also be reduced in the same manner for cars in the Prepared category with a full original equipment windshield assembly and a standard (as defined here- in) hardtop which has been bolted securely in place.

Double-hoop roll bars must fasten properly to the chassis/unibody as required by Appendix C, particularly at attachment points in the center of the car.

APPENDIX C - SOLO® ROLL BAR STANDARDS

A. Basic Design Considerations

1. The basic purpose of the roll bar is to protect the driver in case the vehicle rolls over. This purpose should not be forgotten.
2. The top of the roll bar shall not be below the top of the driver's helmet when the driver is in normal driving position, and shall not be more than 6 inches behind the driver. Exception: For Modified Category Specials (Section 18.4), the bar must extend at least 2.0" (50.8 mm) above the driver's helmet in the normal seated position and a head restraint keeping the driver's head from going under or behind the roll bar is required. It is strongly suggested that all roll bars extend at least 3.0" (76.2 mm) above the driver's helmet. In case of two-driver cars, both drivers must be within the roll bar height requirement, however only one (1) driver must be within 6.0" (152.4 mm) of the roll bar. In a closed car or an open car with a removable OE hardtop which is equipped with a roll bar/cage, it must be as close as possible to the interior top of the car.

3. The roll bar must be designed to withstand compression forces resulting from the weight of the car coming down on the roll structure, and to take fore-and-aft loads resulting from the car skidding along the ground on the roll structure.
4. The two (2) vertical members forming the sides of the hoop shall not be less than 15.0" (381 mm) apart (inside dimension). It is desirable that the roll bar extend the full width of the cockpit to provide maximum bearing area in all soil conditions during rollovers. The roll bar vertical members on formula cars and other single seat cars with a center driver position must be not less than fifteen inches apart, inside dimension, at their attachment points to the uppermost main chassis member.
5. An inspection hole of at least 3/16" (0.1875"; 4.75 mm) diameter must be drilled in a non-critical area of a roll bar member to facilitate verification of wall thickness. This should be at least 3.0" (76.2 mm) from any weld or bend.
6. It is recommended that steel gusset plates be used at all welds. Gussets should be at least 2.0" (50.8 mm) long on each leg and 3/16" (0.1875"; 4.75 mm) thick.
7. It is recommended that roll bars be coated only with a light coat of paint. If, however, a roll bar should be chrome-plated, it is recommended that the structure be normalized.
8. Post or tripod types of roll bars are not acceptable.

B. Material

After 09/22/1985, aluminum is not an acceptable alternate material. Cars using aluminum roll bars or roll cages must file proof that the structure was approved prior to 09/22/1985 as provided in this Section.

1. The roll bar hoop and all braces must be of seamless ERW or DOM mild steel tubing (SAE 1010, 1020, 1025) or equivalent, or alloy steel tubing (SAE 4130). It is strongly recommended that roll bars not be constructed of ERW due to quality and strength concerns. Docal R8 is also considered an acceptable material (tube sizing and wall thickness requirements are as per SAE 4130).
2. The size of tubing to be used shall be determined on the basis of the weight and speed potential of the car. The following minimum sizes are required and are based upon the weight of the car without the driver.

For Vehicles under 1000 lbs, the tubing ID must be 1" with a 0.060" wall.

For Vehicles 1000-1500 lbs, the tubing must be 1.250"x0.090" or 1.375"x 0.080".

For vehicles 1501-2500 lbs, the tubing must be 1.5"x0.095" or 1.625"x 0.080".

For vehicles over 2500 lbs, the tubing must be 1.5"x 0.120" or 1.75"x 0.095" or 2"x 0.080".

These are minimum sizes.

Dimensions are nominal. 0.005" (0.127 mm) variation in wall thickness is allowed.

3. Each mounting plate shall be at least 0.080" (2.03 mm) thick if welded and 3/16" (0.1875"; 4.75 mm) thick if bolted. A minimum of three (3) bolts per plate is required for bolted mounting plates.
4. All bolts and nuts shall be SAE Grade 5 or better and 5/16" (0.3125"; 8.0 mm) minimum diameter.

C. Fabrication

1. One continuous length of tubing must be used for the hoop member with smooth continuous bends and no evidence of crimping or wall failure.
2. All welding must be of the highest possible quality with full penetration and will be subjected to very critical inspection. Arc welding, particularly heliarc, should be used wherever possible.

D. Bracing

1. It is recommended that braces be of the same size tubing as used for the roll bar itself.
2. All roll bars must be braced in a manner to prevent movement in a fore-and-aft direction with the brace attached within the top one-third of the roll hoop, and at an angle of at least thirty degrees (30°) from vertical. It is strongly recommended that two such braces be used, parallel to the sides of the car, and placed at the outer extremities of the roll bar hoop. Such braces should extend to the rear whenever possible.
3. It is suggested that roll bars include a transverse brace from the bottom of the hoop on one side to the top of the hoop on the other side.

E. Mounting Plates

1. Roll bars and braces must be attached to the frame of the car wherever possible. Mounting plates may be used for this purpose where desired.
2. In the case of cars with unitized or frameless construction, mounting plates may be used to secure the roll bar structure to the floor of the car. The important consideration is that the load be distributed over as large an area as possible. A

backup plate of equal size and thickness must be used on the opposite side of the panel with the plates through-bolted together.

F. Removable Roll Bars

Removable roll bars and braces must be very carefully designed and constructed to be at least as strong as a permanent installation. If one tube fits inside another tube to facilitate removal, the removable portion must bottom on the permanent mounting, and at least two bolts must be used to secure each such joint. The telescope section must be at least eight inches in length.

G. Installation on Cars of Space Frame and Frameless Design

It is important that roll bar structures be attached to cars in such a way as to spread the loads over a wide area. It is not sufficient to simply attach the roll bar to a single tube or junction of tubes. The roll bar must be designed in such a way as to be an extension of the frame itself, not simply an attachment to the frame. Considerable care must be used to make changes as necessary to the frame structure itself in such a way as to properly distribute the loads. It is not true that a roll bar can only be as strong as any single tube in the frame.

H. Roll Cages

It is recommended but not mandatory that all cars utilize a roll cage as defined in the current Club Racing GCR Section 9.4, Roll Cages For GT And Production Based Cars, or Section 9.4.5, Roll Cages For Formula Cars and Sports Racing Cars.

I. Roll Bar Padding

Braces and portions of the main hoop subject to contact by the driver's or passenger's helmet, as seated normally and restrained by a seat belt and harness, must be padded with a non-resilient material such as Ethafoam® or Ensolite® or other similar material with a minimum thickness of 1/2" (0.50"; 12.7 mm).