RULES OF COMPETITION
(ROC)

INTRODUCTION

Thank you for your interest in the road races being offered by **SATCAR®**

SATCAR® ***FORMULA STREET®*** races have been created to provide an opportunity for more drivers to participate in road racing events, to have fun with their cars, to learn about road racing, and to gain useful driving skills. To this end, rules will be kept to a minimum and drivers will be provided with as much track time as possible within the schedule of an event. While the rules are minimal, strict adherence to the letter and philosophy of the rules is essential to the safety of all participants in a **SATCAR®** ***FORMULA STREET®*** race.

SATCAR® events are about competition, which we all enjoy. However, it will be competition in a gentlemanly/ladylike manner, with sportsmanship always in mind, and with having safe fun as a primary consideration.

Every driver will have an equal opportunity to win these races. Unlike most racing, the type of car, amount of horsepower, or amount spent on the car will not win **SATCAR®** races. **DRIVER SKILL, SAFE DRIVING**, and **CONSISTENCY** will win these races.

The format and rules for **SATCAR®** racing are written to minimize risks to you and to your car. However, no automotive activity is risk free. It is still the ultimate responsibility of each driver to drive in a manner that minimizes risks for themselves and their cars. With reasonable care and caution, and intelligent observation of the letter and spirit of the **SATCAR®** Rules Of Competition, you can drive your car to the race, run the race, and drive home with no damage and with minimal wear and tear to the car. And if you do well, you may be taking home an award for your efforts!

COME RACE, AND W I N, WITH **SATCAR®**!

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1.0 SATCAR® OFFICIALS

In these Rules Of Competition, reference will be made to various officials that will be involved in the organization and presentation of **SATCAR®** events. The term **SATCAR®** Officials will be used to refer to people involved in one or more of several activities, including but not limited to: **SATCAR®** Staff, Event Partners, Registration, General Administration, Stewards of the Event, Timing & Scoring, Scrutineering, Paddock & Pit, and Flagging & Communications. The people involved in these activities may be either paid or unpaid staff, directly affiliated with the **SATCAR®** organization and its Event Partners, affiliated with other organizations that staff motorsports activities, or individuals interested in motorsports.

Where a specific official function is appropriate to the clarity of the Rules Of Competition, that function will be noted in the rules. Examples of these functions would include, but are not limited to: Steward of the Event, Flag Marshal, Paddock or Pit Marshal, Starter, or Scrutineer.

2.0 INTERPRETATION AND APPLICATION OF THE RULES OF COMPETITION

SATCAR® Rules Of Competition (hereinafter referred to as ROC) are provided to help insure a safe, orderly procedure for the conduct of competitive events and to provide consistency at all **SATCAR®** events. They are to be interpreted in the simplest and most logical manner. The ROC cannot foresee and provide for all possible situations that may occur. Therefore, the Steward(s) of the Event will offer their interpretation of the spirit of the rules in any situations not specifically covered by the written ROC. The determination(s) of the Steward(s) will be final and binding.

These rules shall govern the conduct of all **SATCAR®** events, except where modified by Supplemental Regulations of the Event (hereinafter referred to as SRE) or interpretation by the Steward(s) of the Event. Each participant, by entering into and participating in these events, is contractually agreeing to be bound by these rules. No express or implied warranty of safety shall result from publication of or compliance with these rules and/or any supplementary rules or regulations that are written for a specific event. They are intended as a guide for the conduct of the sport and are in no way a guarantee against injury or death to participants, spectators, or others, or damage to their property. Motorsports events can be dangerous, and participants should keep the risks in mind when choosing to participate in these events.

In consideration of the benefits offered to members, including competitors and officials, and as part of the contractual agreement entered into as part of the entry into an event and/or participation in such event, said members expressly agree that:

A. Determinations by **SATCAR®** Officials are non-litigable;

B. Litigation of any kind will not be initiated or maintained against **SATCAR®** or any person acting on behalf of **SATCAR®**, or any **SATCAR®** Event Partners, to reverse or modify Steward's determinations, or seek to recover damages or other relief allegedly incurred or required as a result of said determinations; and

C. If litigation is initiated or maintained by a member, competitor, or official in violation of this provision, that member, competitor, or official agrees to reimburse **SATCAR®** for all costs to defend such litigation, including attorneys' fees and travel expenses.

D. In addition, in the event that **SATCAR®**, or its officials, agents, or employees, to include Steward(s), become a participant or witness in any litigation in any way connected with a **SATCAR®** event or publication, then the person initiating the litigation or otherwise requiring the appearance or participation of **SATCAR®** or its officials shall fully indemnify **SATCAR®** and its officials for all claims, damages, costs, expenses (including attorney fees and travel expenses) in any way occurring as the result of, or arising out of, such litigation.

E. Each participant further agrees that any claims made, whether litigated or not, against any other participant shall be made only pursuant to the Claims and Arbitration Procedure outlined in the ROC. Each Participant agrees in advance upon entering into the contract created by his or her participation in a **SATCAR®** event, to waive all rights he or she may have to any other remedy or procedure for redress.

3.0 RESERVATION OF RIGHTS

SATCAR® is a private motorsports sanctioning organization formed for the purpose of providing on-track driving experiences, including racing, for primarily amateur drivers. In the course of these sanctioning activities it will be necessary to issue Competition Licenses to the drivers. **SATCAR®** reserves the right to deny issuance of a license to any driver, or to revoke any previously issued license, for any reason or no reason, except that it will not deny or revoke a license based solely on race, creed, color, sex, or national origin.

4.0 SUBMISSION TO RULES

Upon applying for and accepting a **SATCAR®** Competition License, and upon applying for and accepting an entry to a **SATCAR®** event, each participant is entering into a contract in which they are agreeing to, and reaffirming, the following:

A. He/she represents that he/she has received a copy of the ROC, that he/she has read the ROC, and that he/she is familiar with the matters set out in the ROC.

B. He/she voluntarily accepts, without reservation, the terms and conditions of the ROC and acknowledges that **SATCAR®** is expressly relying upon such voluntary acceptance in issuing a license and accepting the entrant.

C. He/she renounces the right to recourse, except with the written consent of **SATCAR®**, to any arbitrator or tribunal other than that specified in the ROC.

5.0 GENERAL CONDUCT

All entrants and their crew/guests are expected to act as ladies and gentlemen at all times. The entrant is responsible for the actions of his/her crew/guests. Serious deviations from this expected behavior will result in the expulsion of the entrant and his/her crew/guests for the duration of the event without the refund of any entrance or license fees. Multiple incidents with the same entrants/crew/guests may result in banning from participation at any future **SATCAR®** events.

In the course of conducting the event, many decisions will be made by **SATCAR®** Officials at registration, in the paddock, pits, and on the track. These decisions will be made based on the ROC, any SRE, on safety or common sense factors, and/or on past experience in a racing environment. If an entrant feels that a decision is ill-advised, that entrant should discuss the decision with the Chief Steward of the Event. Any abuse, either verbal or physical, against **SATCAR®** Officials, any of the workers, or against another entrant or his/her crew/guests, by an entrant or his/her crew/guests, will not be tolerated and may subject the offending party and their crew/guests to expulsion from the event with no refund of entry fees.

In the interests of safety, all behavior, whether on or off the track, at any event, will be constantly monitored by **SATCAR®** Officials. Entrants are expected to act in a courteous manner toward all other competitors on the track and in the pits and paddock. Most cars in **SATCAR®** races are not equipped with the safety equipment built into purpose-built race cars. Car to car contact is to be avoided and will be cause for serious disciplinary measures. Any actions that are deemed overly aggressive or unsafe will be noted and penalties will be assessed based on the nature of the offense. The decisions of the **SATCAR®** Officials in these situations will be final.

5.0.1 PADDOCK VEHICLES

Motorized vehicles may only be operated in the paddock by drivers with current state drivers licenses. Non-motorized vehicles are not to be operated for personal transport or entertainment on the premises of the race facility. Exceptions include bicycles used by participants, wheel chairs, wagons or strollers used by adults to transport children, and wagons or carts used to move parts and/or equipment associated with the race cars. Prohibited devices include roller blades and skates, non-motorized scooters, skateboards, and other similar devices yet to be invented.

No person may ride on or in any motorized vehicle in the paddock, in pit lane, or on the track, unless they are occupying a seat that is specifically designed and installed to carry a passenger.

5.0.2 ALCOHOLIC BEVERAGES, NARCOTICS, AND CONTROLLED SUBSTANCES

Consumption of alcoholic beverages by any participant is prohibited until an announcement that the track is closed for the day. Any indication that any participant has consumed alcoholic beverages prior to arriving at the track, or during the day, prior to conclusion of track activities, may result in expulsion, for the duration of the event, of the participant and all other participants associated with him/her. Expulsion under this ruling will also result in forfeiture of any entry fees paid to participate.

The use of any narcotic or controlled substance, as defined by Federal law or by the law of the state where the event is being held, by any participant, is prohibited. Any participant who uses narcotics or controlled substances during an event or on the grounds where the event is being held, may be expelled for the duration of the event, with forfeiture of any entry fees paid to participate.

The use of any prescription drug which, in the opinion of the **SATCAR®** officials, impairs a participant's vision, coordination, or judgment may result in exclusion of the individual from participation in part or all of an event.

5.0.3 TRACK DAMAGE

Any damage that occurs to the property of the track, where an event is being held, is the responsibility of the party causing the damage. The registered driver will be held responsible for damage caused by him/herself, their crew members, or their guests. A driver will not be allowed to participate in any **SATCAR®** events until the damages to any track property are settled to the satisfaction of the track management.

6.0 DRIVER

6.0.1 MEMBERSHIP

All drivers who register for a **SATCAR®** race event must be members in good standing with **SATCAR®** and must possess a valid **SATCAR®** Competition License.

6.0.2 EXPERIENCE

To qualify to race in **SATCAR®** races, a driver must have satisfactorily completed at least two days of a performance or race driving school at a road racing facility. Open track and lapping days without some form of structured instruction are not acceptable. Oval track driving schools or driving experience type events are not acceptable.

The school can be a **SATCAR**® school, one of the schools associated with any of several marque clubs, or it can be a commercial school. It is the responsibility of the driver to provide **SATCAR**® Officials with proof of satisfactory completion of these two days of school before a **SATCAR**® Competition License will be issued.

From the school(s) the driver should have a basic understanding of the correct line or path that he/she should be driving on the track. The driver should also have a basic understanding of the terminology used around a race event and should know the protocol of activity at a race track. The driver should know and understand the information being transmitted by the various flags at Start/Finish and the corner stations.

Drivers with experience in road racing of four wheeled vehicles of other types may qualify to race in **SATCAR**® based on their previous experience, even though these other vehicles are not cars, i.e. experience in kart racing on a road racing type circuit may be acceptable to qualify to race in **SATCAR**®.

If a driver registers for a **SATCAR**® race and his/her activities during practice and/or qualifying indicate that he/she has inadequate knowledge or experience to participate in these events, **SATCAR**® officials will first offer suggestions on changes to be made. If this is deemed inadequate, officials can suspend the driver from further sessions for the safety of all. A partial refund, at the discretion of the officials, may be offered.

6.0.3 LICENSE

All drivers must have a valid driver's license issued by their state of residence

6.0.4 UNAUTHORIZED DRIVERS

Only the driver registered for the event may drive the car in the pit lane or on the track during any of the track sessions, unless a substitution is approved by the Chief Steward of the Event. The substitute driver must be a member in good standing with **SATCAR**® and must have a **SATCAR**® Competition License. Any attempt to substitute another driver without the express permission of the Chief Steward of the Event may result in expulsion of the vehicle, driver, and all support crew and guests, from the event, with no refund of any fees paid.

If a substitute driver is approved to drive the car, the race lap time and PPT will be determined by the qualifying time in the official qualifying session, whether attained by the original driver or the substitute driver.

6.0.5 NOVICE DRIVERS

Drivers new to **SATCAR**® racing will be required to display a novice marking consisting of a horizontal stripe in adhesive vinyl or tape in bright yellow color. This marking shall be a minimum of two (2) inches wide and twelve (12) inches long. The marking shall be placed on the front and rear of the vehicle across the top center of the windshield and rear window so it is clearly visible to other competitors and to the **SATCAR**® Officials of the event. This marking must be kept in place through the duration of the event.

The novice marking will be displayed for the first three (3) races entered by the novice driver. During this time he/she will be under close observation by the **SATCAR**® Officials at the events. If the driver completes the three races with no serious safety infractions, the novice markings will not be required for further events.

6.0.6 SAFETY EQUIPMENT

As with the vehicle safety equipment, driver equipment is kept to a minimum to offer new drivers ease of entry into **SATCAR®** racing and to keep costs low for all drivers.

The primary requirement is a Snell rated helmet with an M or SA95 (Or newer) rating (SA is preferred). The helmet can be either open or closed face, although the closed face helmets offer more safety protection. It is suggested that visors of closed face helmets be closed for eye protection. If a driver has an open face helmet, it is strongly suggested that eye protection be worn, especially if the windows will be open. All open top cars require closed face helmets. Your entry packet will include a helmet waiver and the helmet will be inspected at registration.

Open top cars also require that the driver use arm restraints.

Clothing requirements include long pants and a long sleeve shirt in either cotton or wool material. Shoes must have leather uppers. Canvas or plastic materials are not acceptable.

Other driver safety equipment, such as Nomex suits, gloves, socks, driving shoes, and safety collars, is acceptable and recommended.

6.0.7 DRIVERS MEETING

A drivers meeting will be scheduled early on each day. This meeting will be used to communicate any special situations or changes for the day. It is also where drivers can ask questions relative to the activities of the event. Due to the sometimes critical safety information that is discussed at this meeting, it is mandatory for all drivers to attend this meeting and to arrive on time. Late arrival or missing the meeting will result in the driver being fined a fee of $50 and having to stay after the meeting to learn what was missed. The lateness or absenteeism will be noted in the **SATCAR®** driver database and/or in the driver's log book. Lateness or absenteeism to additional meetings will result in a doubling of the fine for every late or missed meeting. Three instances of being late or absent within a one year period may result in suspension of the driver's competition privileges for a period of 13 months.

7.0 VEHICLE

7.0.1 ELIGIBILITY

SATCAR® races are open to all sports and touring cars. Touring cars are defined as sedan or convertible cars with a minimum of four seats. Trucks and open wheel cars are currently ineligible.

The driver or entrant must provide proof of vehicle ownership or lease status. Vehicles rented from commercial rental agencies are not eligible for participation in **SATCAR®** events.

The car must be sound (Not rusty) and must pass a safety inspection as spelled out on the **SATCAR®** Safety Inspection Form (hereinafter referred to as SIF). These safety inspections can be performed at a qualified automotive repair facility that is familiar with the car. A safety inspection is valid for a 90-day period from the date of inspection and will allow the car to be entered into any **SATCAR®** events within that period unless some major incident (On or off track) occurs that might affect the safe operation of the car in a track event. If such incident does occur, it is the driver's responsibility to notify **SATCAR®** and have the car reinspected prior to entering another event.

After expiration of a safety inspection, the car must be reinspected before being allowed into another event. These periodic safety inspections are performed to insure the safety and suitability of the car for track activities and to minimize the potential for any incident.

All cars will also be subject to inspections by **SATCAR®** Officials at the race site during the conduct of the event. These on-site inspections will be performed as deemed necessary to insure the safety of all competitors and other personnel on site. Cars found to be unsafe for continued operation on track will require satisfactory correction of the unsafe condition or they will not be allowed to continue in the event.

The car must have a body structure that fully encloses the driver from approximately the shoulders downward.

If a car is not NHTSA certified (All vehicles produced by major manufacturers are certified), the car must be inspected and approved by a **SATCAR®** Official to be eligible for competition. As an example, a fiberglass bodied kit car on a VW chassis would not be eligible to participate in **SATCAR®** events without the installation of a full roll cage because the body does not provide adequate protection in the event of a serious incident.

Vehicle modifications are open and can include any changes made to the car to enhance the performance or appearance as long as it has no negative impact on the safety of the car. If a modification has an effect on safety, the decision of **SATCAR®** Officials regarding the eligibility to participate in the event, will be final. Obtaining a ruling prior to entering an event is advised.

7.0.2 SAFETY EQUIPMENT

The required vehicle safety equipment is minimal to simplify the entry of new drivers and to keep the costs low for all drivers.

7.0.2.1 DISCLAIMER

It is the responsibility of the Entrant to insure that the entered car meets or exceeds the safety requirements specified in the ROC, the SRE, and the SIF. Conformance to these requirements is not a guarantee that injury or death or property damage will not occur. These requirements are an attempt to minimize the possibility of said injury or death or property damage.

If the Entrant has any questions regarding the safety of any car that is entered, these questions must be discussed with the Steward of the Event prior to driving the car on the track. Any Entrant that permits his/her car to be operated on the track when it is not in full compliance with the safety requirements is subject to suspension of membership privileges. If the Entrant is not the driver of the car, the driver will also be subject to suspension.

7.0.2.2 CLOSED CARS

For closed cars, the standard factory shoulder harness systems are acceptable for **SATCAR®** events. It is advisable to learn how to lock the inertia reels with the belts tightly fastened around your body (See Section 3.0.1 of APPENDIX A). This will help to hold you in place while driving and allow better control of the car, minimize fatigue, and provide more protection in case of an incident

If the car is of an earlier manufacture date and does not have factory shoulder harnesses, the entrant must equip the car with a later three-point shoulder harness system, suitably mounted, or a competition seat belt system (5 or 6 point mounting, three inch straps on the lap and shoulder belts). See APPENDIX A for belt mounting guidelines

The driver must be able to sit in a comfortable position with a minimum of 0.5 (1/2) inch clearance between the top of his/her helmet and the roof structure of the car. It is not acceptable to have the helmet in contact with any portion of the roof structure with the driver's head in its normal upright position. This clearance will be measured and will be subject to being re-measured during the event, with the driver in his/her normal driving position.

7.0.2.3 OPEN CARS

Open top cars require a roll over structure that is at least two (2) inches above the top of the drivers' helmet when seated in the normal position (See APPENDIX B regarding construction of roll over structures). Factory roll over structures are acceptable only if they are stated by the factory as suitable for roll over protection and if they meet the height requirement stated above Open cars also require a minimum five-point competition belt system, i.e. 5 or 6 point mounting, three (3) inch lap and shoulder belts, suitably anchored to the vehicle.

A bolt-on hardtop for convertible cars does not effectively change the car to a closed car for **SATCAR®** events. The car must still have a roll over structure installed. Cars with T-top or targa type inserts are acceptable without a roll over structure but must run with the panel(s) in place and the helmet clearance stated in 7.0.2.2 above still applies.

7.0.2.4 ADDITIONAL SAFETY EQUIPMENT

Other vehicle safety equipment, such as roll cages, competition harnesses, master switches, and fuel cells, is acceptable and recommended if you desire to add it.

Also recommended is a fire extinguisher or fire suppression system. If an extinguisher is used, it must be securely mounted within the passenger compartment and must be accessible to the driver when seated.

This extinguisher must be a dry chemical type with a two (2) pound minimum capacity and a method of showing the charge level. Chemical: 10BC Underwriters Laboratory rating, potassium bicarbonate (Purple K) recommended, 1A10BC Underwriters Laboratory rating multipurpose, ammonium phosphate and barium sulfate or Monnex.

7.0.2.5 INTERIOR OBJECTS

All objects in the passenger compartment and trunk that are not firmly attached to the body structure shall be removed from the car prior to driving it on the track. This includes any objects in glove or storage boxes, door pockets, under seats, etc. This also includes floor mats that are not firmly attached. Loose objects can become missiles in the event of an incident.

It may also be advisable to remove the spare tire, jack, and any tools from the trunk. These are just additional weight that must be accelerated, stopped, and carried around the corners, slowing the car slightly and resulting in increased brake and tire wear.

7.0.3 TIRES

All cars must run the event on DOT approved street radial tires. Brand and size are open. Tires on the same axle must be the same size and type. Tires may be a different size front to rear. The speed rating of the tires must be equal to or greater than the highest speeds reached at the track where the event is being held. Tires may not protrude outside a vertical line down from the widest portion of the fender at the top center of the wheel opening.

Slicks are not allowed. This restriction is to minimize the differences in braking and cornering performance between vehicles. Any benefit in speed offered by sticky tires is negated by the Performance Parity Time.

Tires with full tread depth can "chunk" or lose large sections of their tread blocks when subjected to the extra stresses and heat of track use. It is advisable to use tires that have some tread worn off or that have been shaved to remove some tread depth. Minimum tread depth allowed will be 1/16 inch for dry races and 1/8 inch for wet races. At the end of the race, tires must have a minimum tread depth of 1/16 inch over 2/3 of the width and the full circumference.

To offer the best response and safety on a race track, tires must be properly inflated Experienced drivers have found that pressures near the maximum stated on the tire sidewall usually offer better performance. Inflate to these pressures when the tires are cold and do not bleed off any pressure when they are hot.

7.0.4 DETACHABLE PANELS/SUNROOFS

Detachable roof panels shall be in place during track sessions, unless the vehicle is equipped with those additional safety devices for the driver and car, required of open top cars.

Movable panels, such as sliding sunroofs, must be closed.

7.0.5 WINDOWS

Many track events require that the window next to an occupant be fully down. This has the advantage of preventing shattered glass from cutting the occupant in case of an incident. Side windows are generally made of tempered glass so they shatter into many small particles, which may create many small, but shallow cuts, none of which is usually life threatening.

A lowered window also has some disadvantages. It does not add its strength to the door frame and it does not prevent arms from being outside the car in case of an incident. A lowered window also allows water and dirt into the car in inclement weather.

Having the windows up helps to keep arms inside the car in an incident. Prepared race cars require window netting for this purpose. One other advantage of having the windows closed is that the driver can operate the air conditioning or heating system to remain comfortable in extreme weather conditions. There is no disadvantage to operating the air conditioning in **SATCAR®** races!

The driver can choose to compete in the events with the windows open or closed, but they must be either full up or full down. One window can be open and the other closed, if the driver chooses.

7.0.6 IN-CAR TIMING AND COMMUNICATIONS EQUIPMENT

The use of timing and communications equipment in competing cars will be prohibited in the interests of equalizing the competition and preventing “buying” an advantage by having more elaborate or sophisticated equipment. Any device that provides information to the driver regarding his/her lap times or any portion of their lap times, is prohibited. This is to prevent the driver from paying more attention to his/her timing than to his/her driving. A skilled driver can run consistent lap times without a timer.

Prohibited timing devices include wrist chronographs and any GPS based equipment, including in-car navigation systems. The driver has the option of disabling or covering any in-car navigation systems that are not easily removed.

No radio communications from the pit/paddock to the driver or the driver to the pit/paddock will be allowed. This is to prevent coaching a driver on adjusting his/her speeds to control lap times.

The only permitted communication between the active pits and the driver will be by pit board or other mechanical signaling device. Any attempt to coach or signal a driver from the paddock or spectator areas for the purpose of helping the driver adjust his/her speeds or lap times, is prohibited.

7.0.7 IN-CAR ENTERTAINMENT EQUIPMENT

All in-car entertainment equipment, such as radios and tape or CD players, shall be turned OFF during any track sessions.

7.0.8 CAMERA MOUNTS

Cameras are permitted in cars during practice, qualifying, and races. The camera mounting must be of a safe and secure design, not only to prevent camera movement during the loads imposed by the on-track motion of the car, but also to prevent the camera and/or mounting from becoming a missile in case of an incident.

The attachment of the camera to its mounting must be at a minimum of two (2) points on different sides of the camera. Attachments must not be elastic or plastic.

All camera mounts are subject to inspection by the Steward(s) of the Event or the Scrutineer(s). Their decision regarding the suitability of the mount for use on-track is final. If the camera mount is deemed not suitable, it must be removed prior to any further on-track sessions.

7.0.9 NUMBERS

Numbers will be provided by the organizers and will be contained in the entry packet you receive at registration. These numbers shall be placed on the car in the following positions:

- One on each side, located as high on the side as possible, on any surface except the front door windows, between the front and rear wheel axle centerlines.
- One on the hood, located as far forward as possible and as near the center as possible. If the hood contains some contours near the center that make it difficult to attach the number, the number shall be placed on the side closest to the timing and scoring facility when the car is driving past on the race course.

If the entrant already has numbers on the car or desires to provide his/her own numbers, they must be positioned as noted above. No more than two characters may be used. The numbers must be at least six (6) inches high with a one (1) inch stroke width The separation between the two characters of a set shall be at least equal to the stroke width.

If an entrant has numbers permanently attached to the car and wants this number for their entry, that number must be submitted to the organizers with the registration form to prevent assigning it to another car. If the entrant wants to make their own numbers using a number assigned by the organizers, it is not necessary to request a specific number.

7.0.10 ADVERTISEMENTS AND GRAPHICS

Cars may have advertisements and graphics (Names, symbols, and logos) displayed on their bodies provided that they are tasteful and do not interfere with any identification markings or **SATCAR®** logos.

8.0 ENTRIES

Any entry that is made and accepted in accordance with the ROC and any SRE will be considered a contract binding the Entrant to participate in the competition unless prevented by forces beyond their control. The entry is also a contract whereby the Entrant agrees to abide by all the rules of **SATCAR®**, including the ROC and any SRE.

An entry is considered official and the competitor is considered as entered in an event when:

A. An official entry form has been completed, signed, and submitted by the Entrant and has been received by the organizers (Subject to subsequent refusal per section 8.0.1).

B. The entry fee has been paid and received by the organizers of the event.

C. Any previous liabilities due to on-track incidents or track property damage have been satisfactorily settled with the injured party as evidenced in writing signed and dated by or on behalf of the injured party.

8.0.1 REFUSAL OF ENTRY

The organizers have the right to refuse an entry at their discretion without offering a reason for the refusal. However, no entry shall be refused based upon race, creed, color, sex, or national origin. If an entry is refused, notification of the refusal shall be sent to the Entrant at the address shown on the entry as soon as possible and normally no later than one week prior to the event, unless the entry is received later than the one-week prior date.

8.0.2 FALSIFICATION OF ENTRY

Any entry which contains false, misleading, or incorrect information may be considered null and void by the organizers. The Entrant may be considered to be guilty of a breach of the ROC, the entry fee may be forfeited, and further penalties may be imposed.

9.0 WAIVERS

All participants in **SATCAR®** events (Entrants, drivers, crew, workers, and guests receiving passes) must sign a RELEASE AND WAIVER OF LIABILITY, ASSUMPTION OF RISK AND INDEMNITY AGREEMENT (Waiver) prior to receiving participatory credentials.

Waivers contain a statement that the participant (or their parent/ guardian) has read the Waiver and understands the terms therein. Copies of the Waivers are posted on the **SATCAR®** web site and will be included with each entry so the participants will have the opportunity to read and understand the contents prior to signing at the event.

9.0.1 MINOR WAIVERS

Minors who are considered to be participants must have a PARENTAL CONSENT, RELEASE AND WAIVER OF LIABILITY, ASSUMPTION OF RISK, AND INDEMNITY AGREEMENT (Minor Waiver) signed by a parent or guardian. If a parent or guardian will not be attending the event with the minor, the Minor Waiver must be signed prior to the event and brought to the event and presented at registration. If a minor is brought to the event without a parent or guardian and without a Minor Waiver, admission of the minor to the track property will be refused.

10.0 COMPETITION GROUPS

10.0.1 CAR GROUPING

In order to provide the best competition for drivers and to minimize the time spent in the pits for the Performance Parity Time, cars will be grouped according to their performance potential, i.e. cars with similar engine sizes or lap times will be grouped to run together. The general guideline will start with four basic groupings:

A. Large engine sports cars

B. Small engine sports cars

C. Large engine touring cars

D. Small engine touring cars

The final grouping of cars will be determined by the entry list for a specific event. For example, if the entry contains enough cars of a specific marque, such as Mustangs, **SATCAR®** Officials may choose to have one race group just for Mustangs and they would not be combined with other cars that they would normally compete against, such as Camaros and Firebirds.

Organizers will determine tentative groupings after receiving the entries for the event and prior to the event. Each Entrant will be told his/her assigned group at registration for the event. Organizers reserve the right to move a car/driver combination to another group if the lap times are significantly different from the original assigned group.

10.0.2 NUMBER OF CARS PER GROUP

The group sizes will be dictated by the length of the track. The maximum number of cars that will be permitted per group will be 10 cars per mile of track length.

11.0 TRACK CONDUCT

11.0.1 BLEND LINE

When entering the track from pit lane, cars must remain on the pit side of the blend line until the blend line ends. They are not to cross the blend line with any tire.

If there is no blend line for cars exiting the pits onto the track, those cars exiting the pits must remain next to the pit side edge of the track for a sufficient distance to be able to smoothly enter the flow of any cars on the track. Cars entering the track from the pits are not to make any sudden or unexpected moves across the track to seek a preferred line or position or to block any cars already on the track.

11.0.2 OFF-COURSE

During practice, qualifying, and competition, drivers are required to follow the pavement or marked course and shall not gain an advantage by going off-course. Penalties will be imposed if a driver places two, three, or four tires off the paved surface or marked course during a race. If a driver goes off-course with all four (4) tires during any session, he/she shall bring the car to a stop and wait for a signal from a corner worker to re-enter the course.

Drivers should be aware that attempting to keep the car on the course, when the laws of physics will not permit that to occur, can lead to unfortunate circumstances. As a general rule, if the car is on a path that will take it off the pavement, do not attempt to force it to stay on. Drive it off the pavement, still under steering control. Take the penalty rather than risk an incident.

11.0.2.1 PRACTICE & QUALIFYING

If a driver goes off course with two or three tires during practice or qualifying, he/she will be considered to be trying too hard or not being accurate enough with their car placement on the track. They will be shown the black flag and will have a discussion with a Steward of the Event in the pits regarding their driving. During this discussion, they will be losing valuable driving time on the track.

If a driver goes off course with all four tires during practice or qualifying, he/she will be shown the black flag and must visit the pits at the end of that lap so the car can be given a visual inspection by the Pit Marshal(s) to be certain that there is no undercar damage that might create a safety hazard. There will also be a discussion with a Steward of the Event regarding the off course excursion

11.0.2.2 RACE

If a driver goes off course with two or three tires during the race, they will be shown the black flag and will have to serve a stop and go pit stop penalty.

If a driver goes off course with all four tires during a race, he/she will be shown the black flag and required to serve a mandatory 30-second pit stop and the car will be inspected for

damage. Any damage that is found that may create a safety hazard will have to be corrected before the car can return to competition.

Failure to stop and await the signal of the corner worker to re-enter the course will result in an additional 30 seconds added to the mandatory pit stop penalty.

11.0.3 COUNTER-RACE DIRECTION DRIVING OR TOWING

No vehicle shall be driven or towed in the direction opposite to that being used for the event, unless specifically approved by the Chief Steward of the Event. Violation of this rule will result in expulsion from the event with no refund of entry fees

11.0.4 MECHANICAL PROBLEM

If a driver or a car has a problem and is not able to maintain a pace that is close to the pace of other cars on the track, the driver can choose to try to get back to the pits, provided the car is not leaking fluids onto the track. If the car/driver is not able to maintain a pace that is at least 130% of the fastest car in the group, **SATCAR®** Officials may choose to black flag that car/driver for the safety of all. To prevent congestion in no-passing areas, other cars may carefully pass the slow moving car upon receiving a signal from the driver of that car.

The driver of the slow moving car should activate the four-way flashers of his/her car if continuing at a slow speed. If the car does not have a four-way flasher system, the driver should raise his arm straight up on the outside of the driver's door.

The driver of the slow moving car has an obligation to be aware of traffic approaching from the rear and of signaling them to make a safe pass. The driver of the slow moving car also has the obligation not to make any unplanned or unexpected direction or speed changes that might cause a collision with another car.

11.0.5 STOPPING ON COURSE, ACCEPTING ASSISTANCE

If a driver is forced to stop his/her car on the course during a session, he/she shall make every effort to place the car in a position where it will not be a hazard or obstruction for other competitors and where it will have a minimum chance of being hit by an out-of-control car. In general, this suggests that the car be positioned well off the track along either side of any straight or to the inside of a corner, being aware that cars can spin to the inside of corners occasionally. The preferred position on the inside of a corner is in the beginning portion of the corner.

If a car is parked near a corner station, it shall be positioned such that it does not impede the sight lines from the corner station to the track.

During any session, cars shall not be moved by using the starting device except to position them in a location of greater safety.

Drivers can accept no assistance during a race except from their pit crews in the pits. Race officials may provide assistance in areas other than the pits, for safety reasons

Drivers shall not attempt any service or repair on their cars if the car is disabled on course.

If a car becomes disabled or stuck during a session, the driver is to exit the car, when it is safe to do so, and walk to a position of safety until the end of the session, when the car can be retrieved. Do not cross the track to a position of safety. The best locations to wait are at one of the corner flagging stations or behind a retaining wall or fence. Do not interrupt the activities of the corner workers at the flag station. Do not choose a location on the outside of a corner where an out of control car can travel.

If the car is in a position that might be hazardous to the continued activity of the session, **SATCAR®** Officials may choose to black flag all cars or red flag the session and move the car.

11.0.6 PIT RAIL OR WALL

Pit crew members are to remain behind the pit rail or wall unless their car is in the pits for a mechanical problem. Pit members are not to cross the pit rail or wall to confer with their driver during timed pit stops to serve the Performance Parity Time or during penalty pit stops.

One (1) crew member for each car may enter the pits and cross to the rail or wall separating the pits from the racing surface, or to a designated signaling area, to signal the driver with a pit board or other mechanical signaling device. That crew member shall remain at the separation rail or wall only long enough to accomplish the signaling to the driver and then shall return to a position behind the pit rail or wall.

Smoking is not permitted in the pits.

11.0.7 FUELING OF VEHICLES

Fueling of vehicles is permitted in the paddock only. No fueling is permitted on the false grid or in the pits.

11.0.8 SOUND LEVELS

All vehicles shall be equipped with a muffler. Maximum sound level requirements vary from one track to another and competing vehicles must meet the sound level requirements of the track. Specific information regarding sound level requirements that may exist for each track will be available from the organizers or will be provided with entry forms

Failure to comply with the sound level requirement will result in suspension from participating in any sessions until the vehicle is brought into compliance with the local sound level requirement. No refund of entry fees will be provided for failure to comply with the local sound level requirement.

12.0 FLAG COMMUNICATIONS

The universally used method for communicating to drivers on a race course is by the use of colored flags. These flags are at the Start/Finish line and at each of the corner stations. These flags are an important ingredient in the safe conduct of any motorsports event. As such, all drivers must know the meaning of each of the flags and what message is being communicated to them by display of that flag. The different flags fall into two basic communication groups - - command flags and information flags.

12.0.1 COMMAND FLAGS

Command flags are those that are used to communicate a command that must be acknowledged and obeyed by the driver.

12.0.1.1 GREEN - used to start a track session. The track is open for cars to run at speed. The green flag is usually displayed at Start/Finish only and usually will be left on display as long as the track is open to high speed driving.

12.0.1.2 CHECKERED - used at the end of a track session. When noting the checkered flag, drivers should slow their pace to allow the car to cool down and exit the track into the paddock, as directed by **SATCAR**® Officials or Corner Marshals.

12.0.1.3 BLACK

12.0.1.3.1 SINGLE CAR - used to indicate that the driver must visit the pits for a consultation with **SATCAR**® Officials or for a pit stop penalty. The black flag will usually be shown at

the last corner before the pit entrance, but may also be shown at other corners. In order to make it clear which car is intended to receive the black flag, the corner station may also show a board with the car number along with the black flag. When shown the black flag, the driver must exit the course onto the pit lane at the earliest opportunity.

12.0.1.3.2 ALL - there may also be a situation where the event officials need to get all the cars off the track in an expedient manner. In this case, the black flag will be shown to all drivers on the course. All drivers should then exit the course into pit lane and follow the instructions of the Pit Marshals.

12.0.1.4 BLACK WITH ORANGE CIRCLE (MEATBALL) - used to indicate to the driver that the car may have a mechanical problem of some type. The driver is to exit into the pit lane as soon as possible. If the driver smells oil, fuel, or coolant, or detects severe smoke behind the car, slow the car, drive off the pavement, and park the car in a safe place until the session is over. Continuing to drive on the track while spreading any liquids is hazardous to other competitors because of the slippery conditions that are created and will result in the expulsion of the offending driver and car from the event.

12.0.1.5 BLUE WITH WHITE OR YELLOW DIAGONAL STRIPE (PASSING) - shown to a slower car to indicate that a faster car is approaching from the rear. The slower car must assist the faster car in executing a pass at the earliest passing zone

12.0.1.6 RED - used to indicate that a serious situation has occurred on the track and the officials want all cars stopped. Carefully slow your car and stop at the extreme right edge of the track. If the ground beside the track is solid, it is better to stop off the track. When slowing, be certain that another car is not going to hit you from the rear. Once you have stopped, shut off the engine and remain in the car until either directed to continue by the Corner Marshals or until the safety car comes around to lead cars back to the pit lane.

12.0.2 INFORMATION FLAGS

Information flags are those that are used to communicate useful information to the driver to make him/her aware of some situation on the track that might be a hazard.

12.0.2.1 YELLOW (CAUTION) - used to indicate to the driver that there is an incident ahead (sometimes out of view) that requires extra alertness.

12.0.2.1.1 STATIONARY - the incident is not blocking the track. The driver should slow the car to a safe speed and be prepared to take any evasive action that may be required to avoid the car(s) involved in the incident. No passing is permitted in any section of the track that is under yellow flag control, even if it is a normally designated passing zone. Once competitors reach a flag station that is not showing the yellow flag, they can increase speeds to normal levels and passing is allowed in passing zones that are not under yellow flag control.

12.0.2.1.2 WAVING - the incident is blocking a portion or all of the track and requires extreme caution and immediate slowing of the car to avoid the incident No passing is permitted within the section of the track under yellow flag control

12.0.2.1.3 FULL COURSE - used to indicate that the officials need to control the speeds of all cars around the entire course. This flag is used in professional racing to keep the show going for spectators. It will seldom be used in **SATCAR®** events. In most cases, all cars will be black flagged off the course to get the situation resolved.

If a full course yellow is declared, the Safety Car will be placed on the track and all cars will line up behind the Safety Car. All laps under the full course yellow flag will be counted as race laps. No protests will be allowed relative to these laps being slower with no passing allowed.

12.0.2.2 RED AND YELLOW STRIPED - used to indicate that there is some hazard on the course that can make the surface slippery. These slippery conditions can be caused by cars deflecting dirt or mud onto the course, by cars losing fluids, or by precipitation. Be aware that the traction of your tires will be less than normal and slow the car to maintain control.

12.0.2.3 WHITE

12.0.2.3.1 STATIONARY AT CORNER STATIONS OR START/FINISH - used to indicate that a slow moving vehicle is on the course. It may be a slow moving race car or a safety vehicle. Be alert and slow the car to a safe speed to pass the slow moving vehicle.

12.0.2.3.2 WAVING AT START/FINISH - used to indicate that the race has one more lap to run before the finish and the Checkered Flag.

13.0 TIMING & SCORING

13.0.1 PERFORMANCE PARITY TIME

SATCAR® ***FORMULA STREET*** ® races use Performance Parity Time (Hereinafter referred to as PPT) to accomplish several goals:

- To allow drivers to compete in any car they have, as long as it is safe for track use. Any modifications to the car do not affect its competitiveness in **SATCAR®** races, so drivers can "Bring What You Own" and race it.
- To equalize the performance potential, and the opportunity to win, for all drivers within a race group and to make driving skill the primary factor in determining results.
- To eliminate the potential of "Buying" a win by having a car with more horsepower, wider or stickier tires, etc.
- Eliminate the need for elaborate rules defining car eligibility and preparation, and the need to monitor the adherence to those rules.
- Eliminate the need for protests regarding car preparation or legality relative to the rules. PPTs will compensate for any variations in car preparation. NO PROTESTS will be allowed regarding car preparation or equipment, except on the issues of in-car timing or communications equipment.

This racing format will reward, and provide wins for, those drivers who can run consistent lap times at or near, but no more than two seconds faster than, their qualifying times. Since vehicle capabilities are neutralized by the PPTs, **SATCAR®** races are DRIVING SKILL events.

Total PPT for each car will be generated by the scoring computer program, based on the qualifying lap time and the total duration of the race. If all drivers were to drive equally well during the race, all cars would cross the finish line at the same time!

The total PPT for each car will be served by being stationary in the pits. Races will be designated by the organizers as either pit-stop races or non-pit-stop races. For non-pit-stop races, the entire PPT will be served at the start of the race and will provide single file, staggered starts for all cars of the group.

For pit-stop races, half of the PPT will be served at the start and provide the single file, staggered starts. The other half will be served by making a pit stop during the race. The pit stop will be made by all cars, including the slowest, or scratch, car. The scratch car will just make a stop and go pit stop. The other cars will be held stationary for the other half of their PPT.

13.0.1.1 PPT ADJUSTMENT FACTOR

Analysis of the PPT showed that perfect application of the times would result in an advantage for the slower cars because they would not have as many passes to make and would thus have fewer situations where they would be held up in no passing zones by slower traffic. The faster cars would have to make more passes to get to the front and would be exposed to more chances of being held up by slower cars in no passing zones.

To correct this inequity, an adjustment factor was introduced into the scoring system. This factor is a number less than 1.00 and is applied to the PPT of every car in a group when the computer defines the starting time spacing. This factor will decrease the PPT for all cars except the first, which has a PPT of zero. The effect of this factor will be to provide each car, except the first, a slight time adjustment to allow for being held up in no-passing zones.

The adjustment factor will tend to be slightly different for different tracks, depending upon track length, number of passing zones, and lengths of straights where passing can occur. The factor for each track will be determined by setting an initial value and then keeping records of the starting positions of podium position cars. The factor will be adjusted until the starting positions of podium cars tends to come from random positions within the field. At that point the factor will be locked in for that track and will remain a constant unless some aspect of the track layout is changed.

13.0.2 QUALIFYING TIMES

The PPT system operates based on qualifying times. Each car will have all lap times recorded during the officially designated qualifying session. The fastest lap recorded during the qualifying session will be the qualifying time for that car. Official qualifying times will be posted for all drivers after the qualifying session ends.

Drivers are encouraged to qualify at a lap time that is comfortable for their driving abilities and the capabilities of their cars to run safely for the distance of the race.

The PPT for each car/driver within a group is calculated based on the difference in qualifying times from that car/driver to the slowest car/driver in the group. In order to keep PPTs for the faster car/drivers from becoming excessive, the slowest car/driver in a group must have a qualifying time that is within 120% of the qualifying time of the fastest car/driver within that group.

If the slowest car/driver is outside the 120% qualifying time, **SATCAR®** Officials have the option of waiving this requirement, of transferring that car/driver to a different group where the time is within the 120% range, or of excluding the car/driver from starting and refunding a portion of the entry fee.

In no circumstances are the officials of the event to encourage any driver to drive faster to qualify within the 120 % time range.

If one or more car/driver(s) in a group are significantly faster than other car/drivers in the group, **SATCAR®** officials may choose to transfer the faster car/driver(s) to a different group as an alternative to transferring the slowest car/driver.

If two or more drivers within a group qualify with precisely equal fastest lap times, the drivers will be ranked on the starting grid based on the next fastest qualifying lap. If the next fastest laps are also equal, the ranking will be based on the third fastest lap and so on until the tie is broken.

13.0.2.1 MISSED QUALIFYING

If a car/driver does not qualify for any reason, the first option will be to review his/her times from any practice or warmup sessions to obtain a lap time that can be used as a valid substitute for a qualifying time. The fastest lap noted in any of these sessions will be assigned as the qualifying time.

If the driver misses all practice, qualifying, and warmup sessions and still would like to compete in the race, he/she will be assigned a qualifying time equal to the average of the group in which he/she will be racing. This time may not be typical of the time that the car/driver would normally attain. No protests will be allowed regarding any assigned qualifying times.

14.0 PIT STOPS

The mandatory pit stop during a pit stop race can be made at any time deemed appropriate by the competitor. The only restrictions are that it cannot be made until all cars have started and it cannot be made within two laps of the finish. A pit stop flag or board will be displayed at the final corner before the pit entrance when pit stops are permitted. If the pits become too congested during the race, **SATCAR®** Officials reserve the right to withdraw display of the pit stop flag or board until conditions are relieved.

The signal to other drivers that a driver is planning to exit the track to pit lane is to hold the arm closest to the driver's door (Usually left) out the window and straight up on the outside of the car so it is clearly visible to following drivers. After entering the beginning of the pit lane, the arm can be brought back into the car until it is necessary to use an arm signal for the Pit Marshals (See 14.0.2).

As an alternate to the arm signal, the driver planning to exit onto the pit lane from the track can signal that intention with the turn signal on the appropriate side

If a driver is planning to visit pit lane, he/she should not slow unnecessarily and impede any following traffic. If the portion of the track just prior to the exit for pit lane is a passing zone, faster cars may pass a car that is slowing for an exit into the pits. The pass must still be completed prior to the end of the passing zone. If a car is completely on pit lane and is slowing, other cars may pass, even though it is not a designated passing zone.

Some oval/road courses have an apron around the inside of the oval track turns. If a car has pulled completely down onto the apron and is slowing to enter pit lane, other cars may pass on the outside of that slowing car, allowing adequate space, even though the turn is a no-passing zone.

14.0.1 PIT LANE PROCEDURE

The pit lane will consist of the full length of the pit related pavement from the exit point off the course to the entry point onto the course. Within this distance will be a designated section that will be the speed controlled section of pit lane. This speed controlled section will be marked by traffic cones on each side of the pavement at the beginning and the end.

The speed limit within the speed controlled section of pit lane will be 30 MPH. Pit lane speeds will be monitored by one or both of two methods, a radar gun or the lap times as recorded by the computer. The computer reference qualifying times will have a lap time factor added to pit-in and pit-out laps that allows for the slower pit speeds. If pit lane speeds are violated, a BreakOut (Hereinafter referred to as BO) will occur and a pit stop penalty will be assessed.

All competitors are expected to maintain full control of their cars within the pit lane. The lap time correction factor for all pit-in and pit-out laps eliminates the need for hard acceleration or braking within the pit lane. Burnouts when starting in pit lane are prohibited. Any loss of control of the car within the pit lane will result in expulsion of the driver and car from the event.

When a car/driver returns to the pits from the track to serve a pit stop penalty or the timed stop for the PPT, the driver should follow the directions of the Pit Marshal to where he/she is to stop. The control of the car is then with the starter, or a starting light system, who/which will indicate when the car can return to the track.

14.0.2 PIT STOP ARM SIGNALS

When a driver makes a pit stop during a race, the Pit Marshals need to know the reason for the pit stop. Arm signals shall be used by the driver to indicate to Pit Marshals the reason for the pit stop so the driver can be directed where to position the car in pit lane.

One of the following signals shall be used when entering the pits at any time between the green flag and the checkered flag of any session.

A. If the driver is pitting to serve a black flag penalty, the arm closest to the driver's door (usually the left arm) shall be extended upward outside the car, as straight as possible.

B. If the driver is pitting due to a mechanical problem with the car, the arm closest to the driver's door shall be extended outside the car straight out, horizontally

C. If the driver is pitting for his/her scheduled pit stop to serve the balance of his/her PPT, the arm closest to the driver's door shall be extended downward outside the car, close to the outside of the door.

D. If the driver is pitting as a prelude to returning to the paddock area, he/she should extend the arm out the window and use a pointing motion in the direction of the paddock. Alternatively, the driver can activate the turn signal on the side that is toward the paddock from the pits.

Failure to provide these signals to the Pit Marshals may result in the car being held longer than necessary in the pits while the reason for the stop is determined and the required pit stop procedures are followed.

15.0 START PROCEDURES

15.0.1 FALSE GRID

The False Grid is defined as that area within the paddock where cars for the next group are positioned prior to the start of each track session. At a preset time prior to the track session, the cars are moved from the False Grid to the pits in preparation for starting.

Prior to the start of each session, the cars for the specified group will line up in the designated False Grid area. For practice, qualifying, and warm-up sessions, the line up will be based upon arrival sequence. For race sessions, the line up will be based upon qualifying times, with the slowest, or scratch, car at the head of the grid, and the fastest car at the rear of the grid. Grid Marshals will direct drivers to their positions on the False Grid.

It is suggested that cars arrive at the False Grid at least 10 minutes prior to the start of any practice, warm-up, or qualifying sessions. This allows the Grid Marshals to properly check all cars prior to release to the pit lane. Late arrivals will miss time in the session while the Grid Marshals check their cars.

For race sessions, all cars must be in position on the False Grid a minimum of 10 minutes before the scheduled start of their race. It is the responsibility of the driver to be there on time. Failure to arrive on time will result in a start that is 30 seconds or half their PPT (Whichever is greater) after the last car.

After the cars from the previous session clear the pit lane, the cars of the next session will be directed by the Grid Marshals to move from the False Grid area to the active pits and positioned for the start. The cars then come under the control of the Pit Marshals and the Starter.

15.0.2 RACE STARTS

All cars start from pit lane at staggered times. Each car starts at a time equal to their adjusted PPT (Non- pit-stop races) or one half their PPT (Pit-stop races) after the slowest, or scratch, car starts. These staggered start times are designed to promote safety by providing an initial spacing for the cars as they enter the track.

A few minutes prior to the planned start, the Starter will signal all drivers to start their engines by moving his/her hand, or the furled green flag, in a rotating motion in the air. Drivers are to start their cars and indicate to the Starter that they are ready to start by raising their arm closest to the drivers door (Usually left) straight up outside the car.

The cars will be released from the pits in single file order for a warm-up/reconnaissance lap. Cars are to remain in single file through the entire lap - no passing is allowed. The cars are to run the lap at moderate speeds to warm up drive trains, brakes, tires, and the driver's mind. At the completion of the warm-up/reconnaissance lap the cars are to reenter pit lane and line up for the race start. Cars must remain in the original start order unless a driver elects to start at the rear of the field for some reason.

At the start time for the race, a green flag will be shown and the slowest car/driver will start. The Starter will then indicate to each successive driver when he/she is allowed to start. The Starter will be in communication with race control to start the cars. Each car will be started from a reference point or line in pit lane. Each car will be signaled to start by a green flag from the Starter.

After the car in front is started, the following car should move up to the starting line for his/her start.

16.0 RACE LAPS

16.0.1 BREAKOUT TIMES

To prevent "Sandbagging", i.e. qualifying at a slower time and then running the race at faster times to gain an advantage, a BO time of two (2.000) seconds per lap will be enforced. To prevent "Breaking Out" each car will have to race at lap times that are close to but no more than 2.000 seconds faster than their qualifying time. A lap time that is faster than the official qualifying lap by 2.001 seconds or more is considered a BO and will result in a stop and go pit stop penalty.

Every lap of every competing car will be recorded during the race. If a car exceeds the two second BO time, a black flag will be displayed to that car at the last corner before pit-in. The offending car will be expected to come into the pits immediately to serve the pit stop penalty. If the offending car does not come into the pits upon being shown the black flag, a second black flag will be shown on the next lap. If the offending car still does not make the required pit stop after the second black flag, scoring will cease for that car and it will be classified as a DNF (Did Not Finish).

If a driver incurs three BO laps during a race session, he/she will be black flagged and will be removed from further competition in that session.

As discussed earlier in the Pit Lane section, an additional time will be added to the lap times for those laps where a car is entering or leaving the pits. This is to insure that competitors drive the on-track portion of those laps at close to their qualifying speeds. If this addition were not made, a driver could drive faster than qualifying during the on-track portion of one of those laps without incurring a BO. Competitors will be notified of the lap time additions for pit-in and pit-out laps.

16.0.2 TIME CORRECTION FOR TRACK CONDITION CHANGE

In the case of a significant difference in track conditions between qualifying and the race, a correction factor will be applied to the qualifying time to determine the race time. This correction factor will be determined by having an experienced driver in a typical car run several laps in both conditions to determine the lap time differences. Then the correction factor will be assigned, i.e., if qualifying is wet and the race is dry, the qualifying times will be reduced by the correction factor Conversely, if qualifying is dry and the race is wet, the qualifying times will be increased by the correction factor. The correction factor will also affect the PPT of all cars except the scratch car.

The correction factor will be a percentage of the lap time and will be the same percentage for all car/driver combinations. This may result in some error for some competitors based on driver and vehicle capability differences. No protests will be permitted relative to the correction factor or the corrected qualifying times.

Competitors will be notified, before starting the race, if a correction factor is in effect and what each of their lap times will be after application of the correction factor

If conditions are expected to change during the race, such as starting on a dry track and finishing on a wet track, or vice versa, the whole race will be run under the conditions, and qualifying times, in effect at the start.

If any sessions are run in rainy or foggy conditions, drivers are to turn on their headlamps.

16.0.3 LAP COUNTER

A lap counting board or lighted display will be shown at Start/Finish to inform drivers of the progression of the race so they can plan their pit stops (Pit-stop race) to complete the stop before the last two laps. The lap counting display will show the number of laps remaining in the race. The lap counting display will be changed at the time the leading car approaches Start/Finish.

17.0 PASSING

17.0.1 PASSING ZONES

For safety, passing will be permitted only on the longer straights of each course. The passing zones will be defined for all entrants prior to the start of the event. These passing zones will be marked by a traffic cone on each side of the track at the beginning and end of each passing zone.

The passing zones are the only places on the track where any front/rear overlap between cars will be permitted. All other sections of the track must be run single file with no permitted overlap. It is strongly suggested that a following driver leave space (Approx. 2-3 car lengths) to the car in front when not close to a passing zone. This allows some room for evasive action if the car in front has a mechanical problem or loses control. A driver who continually “pushes” the car in front may be subject to a pit stop penalty for unsafe driving.

The beginning of a pass (Overlap) must be started after the beginning cones of a passing zone and the pass must be completed (No Overlap) before the ending cones of the passing zone. Observers will be stationed around the track to monitor the actions of the drivers inside and outside the passing zones. Violation of the rules regarding car positioning within and outside of the passing zones will be cause for a discussion with the Steward of the Event during practice, qualifying, or warmup sessions and a pit stop penalty during races.

17.0.2 PASSING PROCEDURES

In order to insure safe passing during the event, all entrants are expected to act in a fair and responsible manner. The responsibility for a safe pass always rests with the driver of the overtaking car. The overtaking car should move off line to complete the pass.

The driver of the car being overtaken has the responsibility to be aware that he/she is being overtaken and not make some unexpected move or change of position or speed that might force another driver off the track or cause a collision. The car being overtaken should always maintain the expected path or line for that portion of the track. Do not move off line to permit the overtaking car to pass. As a courtesy to the overtaking car/driver, the driver of the car being overtaken can signal with his/her turn indicators or a hand signal to indicate which side the overtaking driver should use to pass.

As a general rule, if another car/driver catches you on the track, you should assume that he/she is running faster lap times and you should permit and, if necessary, assist them in the pass. This may require lifting the throttle slightly so your acceleration on the straight will not be as great as normal. This situation usually arises where a car with less acceleration may be trying to pass a car with stronger acceleration. The slight throttle lift by the driver being passed will not significantly affect the lap time for that lap.

Race control will be constantly monitoring car positioning on the track. They have access to the qualifying times for all cars in the race. If they see a situation where a car with a faster qualifying time is in a position to pass a car with a slower qualifying time, they will inform the flag station to show a passing flag to the driver of the slower car. It is the responsibility of the driver of the slower car to allow and assist the pass, as soon as safely possible, within a passing zone. If the driver of the slower car ignores the passing flag for three (3) consecutive passing zones and does not permit the faster car to pass, a pit stop penalty will be assessed to that slower car/driver.

A driver is not allowed to use the greater acceleration of his/her car on the straights to keep a car/driver with a faster lap time behind, even though that faster lap time car/driver may not have equal or greater acceleration on the straight. Once a car/driver with a faster lap time has passed a car/driver with a slower lap time, the slower car/driver cannot repass at the next opportunity, even though the slower car/driver may have greater acceleration and be able to make a pass by using that acceleration. Once a faster car/driver passes a slower car/driver, the pass is final and remains in effect until the end of the race or until the faster car/driver makes a pit stop.

If a faster car/driver has passed a slower car/driver and then is not able to maintain a pace that is close to his/her qualifying time due to some mechanical or other condition, the faster car/driver will be shown the passing flag and slower car/driver(s) will be allowed to pass/repass.

17.0.2.1 PASSING OF RELATIVELY EQUAL CARS

If two cars qualify at times that are close to equal, their PPT will be similar and they would leave the pits closely spaced at the start. If this situation occurs, the cars will be released in the time spacing indicated by the PPT and they will be allowed to race for 2-3 laps. If the slower car/driver in front is able to drive better and pull away from the faster car/driver behind, the car/driver in front will not be shown the passing flag. If the faster car/driver is able to drive better and is able to constantly stay within close proximity to the slower car/driver, the slower car/driver will be shown the passing flag and must permit and assist the pass. As above, once the pass is made, a repass by the slower car/driver is not allowed.

18.0 SAFETY CAR

Occasionally, it may be necessary to place a Safety Car on the track to control the speed of the race group or to lead the cars back to the pits under a red flag condition. Examples of when a Safety Car will be put on track will be if there is a full course yellow flag condition due to an on-track incident or a spillage of fluid around a significant portion of the track. A Safety Car might also be used if there is a significant change in track surface conditions, such as a sudden, heavy rain.

In most cases where other racing would use a Full Course Yellow and a safety car, **SATCAR®** will use a Black Flag All and restart the race after the situation is corrected. This is safer and more fair to all drivers than a restart after the cars are closely spaced behind a safety car.

18.0.1 IDENTIFICATION OF THE SAFETY CAR

The Safety Car will be identified by a bright yellow tape stripe full width across the top of the rear window. When it is on-track, the Safety Car will be further identified by having its four-way flasher system operating.

18.0.2 PROCEDURE

When **SATCAR®** Officials determine that a Safety Car is necessary, the track will be placed under a Full Course Yellow condition or will have already been placed under a Red Flag condition. A board with the letters "SC" will be displayed at the Start/Finish line and all manned flag stations.

The Safety Car will enter the track at the soonest opportunity after it is ordered to do so. If the track is under a Full Course Yellow condition, no attempt will be made to pick up the leader. When the Safety Car leaves pit lane and exits the blend lane or blends into the on-track flow, no competing cars are allowed to pass the Safety Car unless specifically motioned to do so by someone in the Safety Car

The competing car immediately behind the Safety Car will take position approximately two to three (2 - 3) car lengths distant. As other cars in the field catch the Safety Car and any cars behind it, they should take position behind the last car in line, again at a distance of approximately two to three car lengths. The lineup behind the Safety Car will be single file.

If the safety car is brought onto the track under a Red Flag condition, it will indicate to each of the stopped racing cars that they are to fall in behind the Safety Car to return to the pits. Each race car driver shall wait until any other cars behind the Safety Car have passed and join the lineup at the end.

Since the track is under a Yellow or Red Flag condition, no passing is allowed during the formation of the lineup behind the Safety Car or within the lineup. The no-passing rule will remain in effect until the cars are brought to the pits (Red Flag) or until the Yellow Flag condition is removed and the track is again Green

When the Full Course Yellow is to be removed and the track is ready to go Green, the Safety Car will exit into pit lane before reaching the Start/Finish line. The lead car will maintain the Safety Car speed until the Green Flag is shown. All following cars must maintain the 2-3 car spacing until the Green Flag is shown. If the starter is not satisfied with the lineup and/or spacing of the cars for the restart, he will not show the Green Flag and the drivers will have to complete another lap at pace car speed and reform for the restart. Any laps run after the Safety Car leaves the track will be considered as race laps, even if the Green Flag has not been shown.

19.0 BLACK FLAG ALL OR RED FLAG RESTARTS

If a race has to be stopped under a Black Flag All or Red Flag condition, it may be considered as a completed race if it has run at least half the number of laps for a complete race and if the situation is likely to take some time to rectify. If this situation occurs, the finishing order will be that on the last completed scored lap.

If a race is restarted after a Black Flag All or Red Flag condition, the cars will be restarted singly from pit lane in the same order that they were on the last completed scored lap. The restart times will have the same interval between cars as recorded on the last completed scored lap. Wherever possible, the race will be run for the originally scheduled distance. However, if time conditions do not permit, the race may be shortened. Competitors will be notified if the race will be shortened. No protests will be allowed relative to any shortened race and disparity of the PPT for the lessened race distance.

20.0 RACE FINISH

20.0.1 WINNER

The winner shall be that competitor who reaches the specified distance of the competition in the shortest time, or the greatest distance within the specified time of the competition. Occasional time penalties may be added when the session summary is computed. The ranking of the cars in the race may be changed from the order in which they crossed the Start/Finish line. If the race is shortened for any reason, the winner shall be the race leader on the last completed scored lap, subject to any time penalties to be added.

20.0.2 CHECKERED FLAG

The Checkered Flag shall be displayed to the winner as he/she crosses the finish line at the completion of the specified distance or time of the race. The flag will continue to be shown to the other competitors as they cross the finish line, until all competitors have received the Checkered Flag. After being shown the Checkered Flag, all competitors will exit to pit lane as directed even though they may not have completed the total number of laps scheduled for the race.

If the Checkered Flag is not displayed at the scheduled end of the race, the race shall be scored as if it had ended at the scheduled length.

21.0 INCIDENTS

If a competitor is injured or a car is damaged in an incident, the at-fault driver will be responsible for the costs of injury treatment and/or repair of the damage. If the incident is a single car event, the at-fault driver is usually the driver of the car involved and he/she will be assumed responsible. However, there may be situations where a single car incident is caused by the actions of another car/driver and results in no damage to the causing car/driver but results in injury and/or damage to another car/driver or other cars/drivers. In this case, the driver that caused the incident will be considered responsible.

In a passing situation, the overtaking driver is responsible for deciding when a safe pass can be executed and for safely executing the pass. If vehicle damage occurs during a passing maneuver, the overtaking driver will be deemed to be at fault for the incident unless the driver being overtaken performs some action or maneuver that is totally unexpected and unpredicted based on normal track protocol. In this case, the driver at fault will be the one making the unexpected or unpredicted maneuver.

If any driver loses control of his/her car in any manner and this loss of control results in damage/injury to another car/driver, the driver who lost control will be deemed to be at fault for the incident.

If any car has any type of mechanical failure that results in damage/injury to another car/driver or other cars/drivers, the driver of the car that had the mechanical failure will be deemed at fault. Examples would include loss of fluids that cause a slippery track surface or loss of a part that is hit by another car.

If an incident occurs that results in damage/injury, the **SATCAR®** Officials on site will make a determination regarding which driver is at fault It will then be the responsibility of the at-fault driver to arrange a mutually agreeable settlement with any driver(s) who have incurred vehicle damage and/or personal injury. If the at-fault driver does not arrange a mutually satisfactory settlement within a period of 10 days from the date of the incident, that driver will be prohibited from competing in any subsequent **SATCAR®** events until a satisfactory settlement is reached. Refer back to section 2.0 regarding the participation of **SATCAR®** Officials in any litigation.

SATCAR® Officials will only make the determination of fault in an incident and will only enforce the prohibition of participation until a satisfactory settlement is achieved. They will not be involved in the negotiation process to determine the settlement terms. In order to be allowed to further participate in **SATCAR®** events, an at-fault driver must provide **SATCAR®** Officials a statement, signed by all

Entrants involved in the incident, that a satisfactory settlement has been reached. If a satisfactory settlement cannot be reached between the parties involved in an incident, an arbitration process has been provided as a next step in achieving a satisfactory settlement

The at fault driver will be placed on probation for a period of 13 months from the date of the incident. Another incident within the 13-month period will result in suspension of membership privileges for a period of 13 months from the date of the second incident.

If an incident occurs, an incident report must be completed by the driver(s) involved and presented or sent to the organizers of the event within 10 days of the incident.

22.0 PENALTIES

The ROC has been written to provide a relatively safe format where all drivers have a fair chance at winning **SATCAR®** races. To maintain the safety and fairness of the format, it will be necessary for all drivers to adhere to the rules during competition. If a driver chooses to violate one of the rules, either voluntarily or involuntarily, a penalty will be assessed against that driver

The penalties listed below are the minimum that will be assessed for each of the infractions. The Steward(s) of the Event may choose to invoke a greater penalty, depending upon the nature or the frequency of the rules violation. The Steward(s) of the Event may also choose to not invoke a penalty on a competitor if the penalty is not deserved and would impose an unfair disadvantage to the driver. An example would be if a driver deliberately drove off the track to avoid hitting another car that was spinning in front of him/her. In this case the driver who drove off the track did so as a result of another driver's mistake and avoided a more serious incident - and would not be penalized.

ABUSE (VERBAL OR PHYSICAL) OF **SATCAR®** OFFICIALS OR OTHER PARTICIPANTS
- Expulsion from the event - No refund of entry fees.
- Possible revocation of membership.

BLACK FLAG - FAILURE TO ACKNOWLEDGE AND RESPOND - Scoring will stop after two consecutive showings and the car will be classified as DNF (Did Not Finish).

BLEND LINE - CROSSING WHEN ENTERING THE TRACK - Stop and go penalty.

BREAKOUT - Stop and go penalty.
- THREE (3) IN A SESSION - Exclusion from the balance of the session.

CONDUCT - UNACCEPTABLE OR INAPPROPRIATE - Expulsion from the event - No refund of entry fees.
- Possible revocation of membership.

COUNTER-RACE DIRECTION DRIVING OR TOWING WITHOUT PERMISSION - Expulsion from the event - No refund of entry fees.

DRIVER - SUBSTITUTION WITHOUT PERMISSION - Expulsion from the event - No refund of entry fees.

DRIVERS' MEETING - LATE OR ABSENT - Noted in driver database and/or driver's log book. First offense - $ 50 fine. Additional offenses - fine doubles each time.
- LATE OR ABSENT THREE (3) TIMES IN A ONE YEAR PERIOD - Suspension of competition privileges for 13 months.

DRIVING - OVERLY AGGRESSIVE OR UNSAFE - 30 second stop and go penalty.
- UNSPORTSMANLIKE - 30 second stop and go penalty.

FALSE GRID (RACE) - LATE ARRIVAL - Start 30 seconds or half of the PPT (Whichever is greater) after the last car.

INCIDENT - Expulsion of the car & driver at fault - Probation of the at-fault driver for 13 months.
- FAILURE TO FILE INCIDENT REPORT - Suspension of participation privileges until

filed.
- FAILURE BY AT-FAULT DRIVER TO SETTLE FOR DAMAGES TO OTHER DRIVERS OR TO TRACK - Suspension of participation privileges until settlement is made.

PASSING - NOT ASSISTING PASS IN THREE (3) CONSECUTIVE ZONES - Stop and go penalty.
- REPASSING A FASTER CAR BY USING SUPERIOR ACCELERATION - Stop and go penalty.
- SAFETY CAR WITHOUT BEING SIGNALED - Stop and go penalty.
- YELLOW FLAG ZONE - Stop and go penalty.

PASSING FLAG - FAILURE TO ACKNOWLEDGE AND PERMIT A FASTER CAR TO PASS - Stop and go penalty.
- FAILURE TO ACKNOWLEDGE AND PERMIT A FASTER CAR TO PASS ON EITHER OR BOTH OF THE LAST TWO LAPS -One minute time penalty per occurrence will be added to the total race time.

PASSING ZONE - OVERLAP OUTSIDE - Steward decision for either or both cars - Stop and go penalty.

PIT LANE - BURNOUTS - Exclusion for the balance of the session.
- LOSS OF CONTROL - Expulsion from the event - No refund of entry fees.
- SPEEDING - Stop and go penalty.

PIT STOP - FAILURE TO COMPLETE - One minute plus half the PPT penalty added to total race time.

QUALIFYING - OUTSIDE THE 120% RANGE - Move the car/driver to another group.
- Exclusion from participating - Partial refund of entry fee.

RADIO COMMUNICATION EQUIPMENT - FUNCTIONAL IN CAR - Expulsion from the event - No refund of entry fees.

SIGNALING TO DRIVER FROM PADDOCK OR SPECTATOR AREAS - Expulsion from the event - No refund of entry fees.

SOUND LEVELS - EXCEEDING THE ACCEPTABLE SOUND LEVEL - Exclusion from participating until corrected.

SPIN - ON TRACK - Recovery time plus a stop and go penalty. If necessary to quickly clear the track and get the car back into the race, the driver can drive off the track surface to get the car out of harms way and pointed in the right direction without incurring an off-track penalty. The driver must wait for a signal from corner workers before re-entry onto the track.
- OFF TRACK WITH ANY TIRES - Recovery time plus a 30 second stop & go penalty.

STOP AND GO PENALTIES - LAST TWO LAPS - Any infraction that occurs during the last two laps and would normally require a stop and go penalty will instead be assessed a one-minute time penalty per occurrence added to the race time for that car.

STARTING BEFORE THE START SIGNAL - Stop & go penalty.

TIMING EQUIPMENT - FUNCTIONAL IN CAR - Expulsion from the event - No refund of entry fees.

TIRES OFF THE TRACK SURFACE - TWO OR THREE - Stop & go penalty.
- FOUR - 30 second stop & go penalty.
- REENTRY TO TRACK WITHOUT CORNER WORKER SIGNAL - 30 second addition to mandatory pit stop time.

APPENDIX A

BELT RESTRAINT SYSTEMS

Use of seat belts is a proven method of reducing injuries and deaths in automobile crashes. The additional use that is not often mentioned is their function in holding the driver in position for better control of the vehicle. Their use in race track situations is even more critical, so all race sanctioning groups mandate the use of some type of seat belt system in competition cars.

The **SATCAR®** event formats are designed to minimize the chances of a crash when participating in these events. These formats lower the risk factor to a level where drivers are allowed to participate with the factory three point shoulder harnesses in closed cars.

1.0 DISCLAIMER

This section is included to provide basic information regarding the installation and usage of restraint systems in vehicles that are driven on a race track. The wide variety of vehicles and installations do not allow specific installation and usage information that will be applicable in all situations. The information provided in this section is intended to provide basic guidelines and awareness of installation and usage of these systems. This information is no guarantee that injury or death will not occur when these systems are installed and used in the manner noted. The information is provided to minimize the chance of such injury or death by minimizing the possibility of improper installation or usage.

2.0 BELT LIFE

It is not widely known that seat belts have some limitations on their life and effectiveness. Most drivers just use the belts that are provided in their cars and think nothing further about them.

The webbing or straps of the belts tend to degrade over time and lose some of their original strength. The rate of this loss of strength is dependent upon a variety of factors, with exposure to sunlight being one of the major causes. Some estimates have indicated that the belts may lose half of their original strength in as little as one year. For this reason, most competition sanctioning organizations require that the webbing of restraint systems in race cars be replaced at regular intervals, some as frequently as every two years. It may be a good idea to consider replacing the seat belts in your car on a regular basis to maintain maximum belt strength

Another situation that should require belt webbing replacement is if the belt system is subjected to the high loads typical of a crash. The belt webbing is designed to stretch when loaded heavily. This stretch helps to decrease the deceleration forces that the wearer feels in a crash. However, once a belt has been initially stretched by one impact, the amount of stretch available for another impact is decreased.

If your vehicle is involved in any type of impact where the belts are subject to a high load, they should be replaced along with any other repairs to the vehicle. Insurance companies do not discuss this issue because it will cost them more money to repair vehicles if they include belt replacements.

In a crash impact, the forces on a belt system can reach figures as high as 20 or 30 G's, possibly more. A G is equal to the weight of your body, so a 180-pound man in a 20 G impact would subject the belt to a loading of 3600 pounds - about the weight of a mid-sized car! Driver forces in high speed racing crashes have been measured at over 100 G! Keep these forces in mind when thinking about maintaining your belt systems and whether to consider replacing them.

3.0 THREE-POINT FACTORY SYSTEMS

The three-point belt systems used in production cars and trucks for many years are a very effective compromise for daily use. The use of inertia reel locking devices provides convenience of use and a solid lock up in an impact situation.

To make these systems more effective for use on a race track, it is advisable to be able to fasten the belt tightly around the body and keep it tight with the locking function of the inertia reel. Having the belt as tight as possible helps to hold the driver in position in the seat during the higher cornering and braking forces typical of driving on the track. This allows the driver to use his/her arms and legs to control the car rather than having to use part of their strength to hold the body in position. This gives the driver better control of the car and less fatigue at the end of a session.

The tight and locked belts also have less slack in the system and allow less movement of the driver in an impact, decreasing the chance of hitting something within the vehicle.

3.01 LOCKING THE BELTS

The inertia reel systems are designed to lock up and keep the belt from moving any further if they sense a situation that seems like a crash. They do this in one of two ways: one type senses the speed of the belt movement and when it reaches a certain threshold, the reel locks and prevents further belt extension. The other method senses the forces on the body of the vehicle and when these exceed a certain level, the reel locks. Both types can be locked tightly around the driver's body, but they require slightly different techniques to do so.

To keep the reel locked during the movements of the car and the driver's body on the seat, the belts have to be quite tight at initial fastening. In general, the tighter the better. To accomplish this, the procedure starts with the driver sitting in a normal position, belts unlatched, the buckles about two inches apart, and the belts positioned normally over the hips and across the chest. The inside hand should be holding the portion of the buckle that is on the lap/shoulder strap

To lock the type that senses belt motion, just jerk the shoulder harness quickly with the outer hand and it will lock the reel. Then pull on the buckle with the inner hand and latch it into the anchor point. Done properly, this will require that you pull in your stomach as much as possible and may require a lot of tugging on the lap/shoulder strap. Once latched, the belt will remain locked and tight around your body until you unlatch the buckle. If you do not get it tight enough, the reel will not stay locked. The belt will still provide protection but will not assist in keeping you positioned in the seat.

To lock the type that senses vehicle motion, start with the belts across the body and the lap/shoulder portion of the buckle held by the inside hand. Then drive the car slowly (5 MPH is usually adequate) and tap the brake while holding slight tension on the lap/shoulder belt with the inner hand. The reel will lock and then you can do the stomach/tugging routine to latch the buckle.

If the vehicle has power seats, this can simplify the procedure. The seat should be moved rearward beyond the normal position. Then lock and latch the belt using the appropriate procedure above. The belt does not have to be quite as tight initially. After locking and latching, keep tension on the belt with a hand to keep it locked Then power the seat forward to tighten the belt around your body.

4.0 COMPETITION HARNESS SYSTEMS

Race sanctioning organizations that are involved with specially prepared race cars and trucks require that the vehicles have a competition harness installed to protect the driver. These harnesses use either a five or six point attachment and have three inch webbing on the lap strap and either two or three inch webbing on the shoulder straps. The anti-submarine, or crotch, strap(s) is usually two inch webbing. All of the straps latch into a single buckle assembly at the lower front center of the body and all are released by a single movement to undo the latch mechanism

Five point systems are generally suggested for those vehicles where the driver is sitting upright, as in most production vehicles. The six point systems are recommended for those vehicles, primarily race cars, where the driver is sitting in a more reclined position, although a six point system can be used for an upright seating position.

Four point belt systems are not acceptable for use in open cars and are allowed by **SATCAR®**, but not recommended, in closed cars, only if used in conjunction with the three point factory system, fastened tightly as noted above. The shoulder straps of a four point system can pull the lap strap upward into the stomach area and create possible damage to internal organs. Use of the three point system combined with the four point system will provide restraint of the pelvic area and minimize potential movement of the pelvis under the lap strap of the four point system.

The extra straps and mounting points of competition belt systems are designed to provide more support over larger areas of the body to minimize injuries in higher impact situations. The shoulder straps are designed to restrain the upper torso and shoulders. The lap straps are designed to restrain the movement of the pelvis. The anti-submarine (crotch) strap is designed to prevent the pelvis from moving under the lap strap and/or allowing the lap strap to be pulled upward by the shoulder straps into the softer stomach area where injury to internal organs can occur.

The mounting points where the belt hardware attaches to the vehicle should be in high strength areas, preferably to the vehicle frame structure or to the roll bar/cage structure. If this is not possible and it is necessary to attach the belt hardware to sheet metal, a large back up washer or plate of sufficient area and thickness should be placed on the underside/backside of the sheet metal to feed the loads into a large area. It is not acceptable to attach belt anchorages to sheet aluminum of less than 1/8-inch thickness.

The geometry of the belt installation will affect the function and the relative safety that it can provide for the driver. The belts should be routed so that the pull on the belts between the body and the anchor points should be as close to a straight line as possible. Extra bends or curves in the belt create the potential for excess movement of the body and for extra stress in the belt webbing. All belts should be kept as short as possible. Extra length in a belt allows more stretch and more driver movement in an impact.

Lap belt mounts should be located such that when the belts are latched in the normal position over the driver's pelvis, the belt angle from the hips, as viewed from the side, is downward and rearward at about a 45 degree angle to the horizontal. This angle restrains the pelvis from both forward and upward movement and helps to resist the vertical pull of the shoulder harnesses.

Shoulder harnesses should be anchored as closely behind the seat as possible. An anchor point(s) on the rear shelf behind the rear seat in touring cars is frequently used. This is inadvisable because of the excess length of the shoulder belts, which permits extra stretch and also provides minimal restraint against side movement of the upper torso. If a long run is used to anchor the shoulder belts, some type of guide system to control side movement of the belts must be provided at the seat back or immediately behind it. This guide system must be strong enough to prevent side movement of the belts and upper torso in side impact situations.

As viewed from the side, the shoulder belt anchor points should be as close to straight behind the top of the shoulders as possible. Angles upward or downward from the tops of the shoulders create situations that can lead to injuries or excess stress in the belt system. The greater the downward angle, the greater the vertical compression load that is placed into the spine in an impact. As the upward angle is increased, the stresses on the belt system increase and the potential for forward movement increases. The point of attachment to the vehicle structure can be at larger angles if there is an intermediate bar or loop that is straight behind the shoulders to route the belts such that the tension provided by the belts is close to horizontal from the shoulders. This intermediate bar or loop must be strong enough to withstand the loads imposed by a high G impact and must have a smooth rounded contour to prevent belt chafing or cutting.

Y-type shoulder belts are not acceptable to any known competition sanctioning body and are not acceptable for **SATCAR®** events.

The submarine strap should be anchored such that the belt positioning, as viewed from the side, is as close as possible to a straight line with the shoulder belts down the front of the body. This allows the submarine strap to exert the maximum force to prevent the tension of the shoulder belts from lifting the lap belt into the stomach area.

All belt routings must avoid sharp edges or abrasive surfaces that can chafe or cut the belt webbing and weaken it. If sharp edges or abrasive surfaces cannot be eliminated, they must be covered in a way that will protect the belt webbing from damage during normal use and in an impact.

All belt adjusting and mounting hardware is usually furnished with the belts. Any additional mounting hardware, such as bolts and nuts, should be SAE Grade 5 minimum strength. When installing the belts, route the webbing through the hardware as suggested by the manufacturer.

To maintain the belt webbing at its maximum strength, protect it from weathering effects whenever possible and do not use chemicals on the webbing to clean or degrease the material. If the belts get dirty or greasy, have any fraying of the webbing material, or if the belts are subjected to an impact, the belt webbing material must be replaced.

Once the belts are installed properly, their effectiveness is a function of how well they restrain the body and minimize movement. To this end, the belts should be pulled as tightly as possible prior to going on-track.

An incident can occur to any driver at any time and your belts have to protect you the first time they are needed. This is not an area where shortcuts are advisable.

APPENDIX B

ROLLOVER STRUCTURES

SATCAR® does not require that closed cars have additional rollover structures installed in the car. Those cars that are considered open cars, such as convertibles, are required to have additional rollover protection installed. The basic purpose of any rollover structure is to protect the driver in a situation where the car becomes inverted. In some cases these inversions can involve large impact forces and/or sliding at speed on the rollover structure. These possibilities should always be kept in mind when designing and building any rollover structure in any vehicle.

The specifications in this section have been defined based on information published by other race sanctioning organizations and are to be considered as minimum requirements for the structure. Additional strength obtained by the use of thicker materials and/or additional structural elements is not detrimental to the competitor in **SATCAR**® events. Specific installations are subject to approval by **SATCAR**® Officials.

A roll cage is recognized as the safest structure to add to a vehicle being used on a race track. The **SATCAR**® format provides less on-track risk so the minimum requirement is for a single hoop roll bar with specified bracing. The information provided is for this configuration only. Additional hoops and bars, up to a full roll cage, are acceptable and encouraged. Suggested construction for roll cages is available from other race sanctioning organizations.

1.0 DISCLAIMER

This section is included to provide basic information regarding the design, construction, and installation of rollover structures in vehicles that are driven on a race track. The wide variety of vehicles and installations do not allow specific design, construction, and installation information that will be applicable in all situations. The information provided in this section is intended to provide basic guidelines and awareness of design, construction, and installation of these structures. This information is no guarantee that injury or death will not occur when these structures are designed, constructed, and installed in the manner noted. The information is provided to minimize the chance of such injury or death by minimizing the possibility of improper design, construction, and installation.

Approval of a specific design, construction, and installation by **SATCAR**® Officials is also no guarantee that injury or death will not occur with that design, construction, and installation in place.

2.0 BASIC DESIGN CONSIDERATIONS

The following factors must be incorporated into the design.

2.01 STRENGTH

The roll bar must be capable of withstanding compression forces from the car coming down onto the bar and to withstand longitudinal and lateral forces from the car sliding on the bar while inverted. The bar must be able to withstand three simultaneously applied loads:

1.5 G Lateral	1 G is equal to
5.5 G Longitudinal	the weight of
7.5 G Vertical	the car.

These loads should be effectively transferred into the vehicle structure without significant deformation or failure of the bar, its mountings, or the structure to which it is attached.

2.02 HEIGHT

In an open car the top of the roll bar must be a minimum of two (2) inches above the top of the driver's helmet when the driver is seated in his/her normal position. In closed cars, the roll bar shall be as close to the inner roof structure as possible.

2.03 FORE & AFT LOCATION

The main hoop of the roll bar must be located no more than six (6) inches behind the driver when he/she is sitting in their normal driving position.

2.04 HOOP WIDTH

The two vertical portions forming the sides of the hoop must be a minimum of fifteen (15) inches apart between the inside surfaces. It is recommended that the main hoop of the roll bar be as wide as possible to provide greater protection and to spread the loads over a larger portion of the vehicle structure.

2.05 PADDING

If any portion of the bar or bracing can be contacted by the driver's helmet, it must be padded with a high density foam material with a minimum thickness of one (1) inch.

3.0 MATERIAL

The roll bar and braces must be constructed from seamless ERW or DOM mild steel tubing. The minimum size of the tubing is defined by the weight of the vehicle as driven on the track, as specified below:

Vehicle Weight	Tubing Size
Less than 1500 lb.	1 1/4" O.D. - .090 Wall Thickness
1500 to 2500 lb.	1 1/2" O.D. - .120 Wall Thickness
Over 2500 lb.	2 1/4" O.D. - .120 Wall Thickness

A hole of at least 3/16" diameter must be drilled in a non-critical area of the main hoop to permit verification of the wall thickness of the tubing.

Any bolts and nuts used in the construction or installation of the roll bar must be at least 3/8 inch diameter SAE Grade 5 or greater in strength.

4.0 FABRICATION

The main hoop of the roll bar must be made from a single, continuous length of tubing. Bends shall be smooth with no evidence of crimping or wall failure. If the roll bar is less than full width, it is recommended that the bend radius be such that the minimum outside width of the hoop be at least twelve (12) inches at a height of four (4) inches below the uppermost point of the hoop.

Whenever possible, the roll bar hoop should be attached at the floor of the car. If the car has a tube frame, the roll bar should be attached to the chassis tubes by welding, incorporating gussets or sheet steel webs to distribute the loads into the frame members.

If the car has a factory frame or is of unibody construction, the roll bar can be welded or bolted to the floor structure of the car, or, for a frame car, the roll bar hoop and braces can pass through the floor and be bolted or welded to the frame.

All welds are to be of the highest possible quality with full penetration and no undercutting of the tube wall at the edge of the weld. After fabrication, the welds should be inspected by using either magnaflux or dye penetrant.

5.0 BRACING

The main hoop of the roll bar must be braced in the fore-aft direction to prevent folding over due to longitudinal forces and must have a diagonal brace to prevent a parallelogram distortion due to a lateral load. These braces effectively triangulate the structure for maximum strength.

5.01 FORE - AFT

The included angle between the main hoop and any fore-aft braces, as viewed from the side, must be greater than 30 degrees.

5.01.1 PARTIAL WIDTH MAIN HOOP

If the main roll hoop is not full width, it can have either one or two fore-aft braces. If a single brace is used, it must be the same tube size as the main hoop and must attach at the top of the main hoop, as close to the driver as possible.

If two braces are used, the tube size must be 1.0 " O.D. - .090 Wall Thickness minimum. The braces must be attached one on each side of the main hoop at a point not more than six (6) inches below the uppermost point of the main hoop.

5.01.2 FULL WIDTH MAIN HOOP

If the main roll bar hoop is full width of the passenger compartment, two braces, one on each side, must be used and the tube size must be equal to that of the main hoop. The braces must attach to the main hoop at a point not more than six (6) inches below the uppermost point of the main hoop.

5.02 DIAGONAL

A diagonal brace for the main hoop must be installed and must be the same tube size as the main hoop. The normally acceptable construction is to route the brace from the bottom mounting on one side of the main hoop to the opposite top corner. If this is not possible because of space constraints, an alternate, but less desirable, routing is from the top corner on one side of the main hoop to the bottom mounting of the opposite side fore-aft brace. It is preferable for the top attachment to be on the same side as the driver.

6.0 MOUNTING PLATES

In most cases of cars with frame or unibody construction, the roll bar structure will be bolted or welded to the floor of the car. In these cases, mounting plates are used between the roll bar tubes and the floor and are welded to the roll bar tubes

The mounting plates must be large enough to spread the load over the floor structure to prevent the roll bar from punching through the floor when loaded in any direction. All plate corners should have a minimum radius of .25 inch to prevent a sharp corner from acting as a cutting tool to start a failure of the sheet metal to which the bar is attached.

The minimum area for each individual plate is twelve (12) square inches. It is recommended that the total plate area for all plates have a minimum of 1.5 square inches for each 100 pounds of vehicle weight.

Wherever possible, placing the mounting plates close to or also attached to a vertical body structure will add strength to the installation.

Mounting plates must be a minimum of 3/16 inch (.1875) thick. If they are to be welded to the car structure, the weld must be all around the plate. If the mounting plates are to be bolted to the car structure, a backup plate of identical shape and size must be placed on the opposite side of the car panel. The two plates are to be bolted together using a minimum of three (3) bolts of 3/8 inch minimum diameter and SAE Grade 5 or greater.

7.0 REMOVABLE ROLL BARS

If a roll bar is going to be designed for relatively easy removal by unbolting all or a portion of it, the bar has to carefully designed and constructed so it is at least as strong as a more permanent installation. If a sliding joint of one tube inside another is used to aid installation and removal, the tubes must fit tightly to one another. The telescopic section must be at least eight (8) inches long and the upper tube must bottom into the permanent mounting. Each such joint must be secured with at least two (2) bolts and nuts of 3/8 inch minimum diameter, SAE Grade 5 or greater.