



MKM Racing Promotions

High Roller Mile Shootout



2008 Rule Book

TABLE OF CONTENTS

MKM RACING PROMOTIONS - STAFF AND OFFICIALS - 1 -

TABLE OF CONTENTS - 2 -

RULES, REQUIREMENTS, AND SPECIFICATIONS..... - 3 -

GENERAL..... - 3 -

 Acceptance of Rules, Regulations and Specifications - 3 -

 Entry Procedures..... - 3 -

 Registration Procedures..... - 4 -

 Waivers - 4 -

 Event Description - 4 -

 Participation Limit..... - 4 -

 Age Requirements - 5 -

 License and other Requirements - 5 -

 Entry Changes..... - 5 -

 Driver/Rider Meetings - 5 -

 Protests and Appeals - 5 -

 Event Officials - 5 -

 Track Description; Timing and Starting..... - 6 -

 Technical Speed Limit (Tech Speed)..... - 6 -

 Sponsor Decals and Vehicle Numbers - 6 -

 A note about Nellis, entry gates, and trailers - 6 -

 Standards of Conduct - 6 -

FORMAT AND SCORING - 7 -

 Divisions and Classes: - 7 -

 Notes on Divisions and Classes:..... - 7 -

 Description of Divisions:..... - 8 -

 Voluntary Class Change Rule - 8 -

 Breakout Rule..... - 9 -

TECHNICAL SAFETY INSPECTION - 10 -

RULES OF CONDUCT - 11 -

 EVENT DISQUALIFICATION..... - 11 -

EQUIPMENT REQUIREMENTS..... - 12 -

 General Requirements: All Automobile Divisions - 12 -

 Divisional Requirements - Automobiles - 12 -

 General Requirements: All Motorcycle Divisions - 17 -

 Divisional Requirements – Motorcycles - 18 -

PERSONAL SAFETY EQUIPMENT - 19 -

 Divisional Requirements - 19 -

GENERAL WHEEL AND TIRE REQUIREMENTS - 21 -

FUEL & FUEL EQUIPMENT RESTRICTIONS - 23 -

APPENDIX A – ROLL BAR SPECIFICATIONS - 24 -

APPENDIX B – ROLL CAGE SPECIFICATIONS..... - 26 -

entries will not be possible unless the entrant already has his/her own clearance to enter the base. We reserve the right to reject or refuse any entry.

Registration Procedures

All entrants must register at the event. The purpose of registration is to identify all entrants and vehicles taking part in the event and to complete all required paperwork, indemnity releases, and payments. MKM Racing Promotions must register any person or persons taking part in or attending an event. This includes drivers, riders, crews, helpers, family members, the media, sponsors, associate sponsors and event officials. Credentials and/or armbands will be issued and will be used to control access to restricted areas. The credentials must be visible at all times.

Waivers

All persons admitted to the grid, pits and/or other restricted areas of MKM Racing Promotions sanctioned events must obey all Rules, Requirements, and Specifications set forth by MKM Racing Promotions. Each person admitted must complete and sign all releases of liability requested by MKM Racing Promotions. All entrants empower MKM Racing Promotions to represent them in assigning rights for reproduction of sanctioned events by electronic, broadcast and/or print media and automatically assign rights to use their name, facsimile, etc., in media related materials and/or advertising and promotion of sanctioned events.

Event Description

The **High Roller Mile Shootout** is a motorsports competition based on achieving the highest possible trap speed in one mile from a standing start, subject to speed limits based on the class you enter. Entry is open to 2-wheeled motorcycles and 4-wheeled vehicles that meet the specifications in this rule book. Detailed rules appear later in this book.

Participation Limit

One driver/rider may enter and drive more than one vehicle in the event, as long as each vehicle is in a separate division.

One vehicle cannot be entered multiple times in the event; however, one vehicle can have up to two additional Alternate Drivers/Riders added, at an additional fee.

- a) The two Alternate Drivers/Riders will run for "speed only" and will not be eligible for any awards or trophies.
- b) These Alternate Drivers/Riders must still abide by the Tech Speed limit for the class the vehicle is in, and must meet all requirements (safety gear, experience, etc.) for that class.
- c) The Breakout rule will still apply to Alternate Drivers/Riders except that there will be no bumping-up possible; if they break out, they are disqualified. If this happens, the vehicle itself will not be reclassified.

One vehicle cannot be entered in multiple classes.

No passengers will be permitted in or on any vehicle unless approved by MKM, and such approval will generally not be given except for previously arranged media or VIP "ride-alongs" on non-competitive runs.

Age Requirements

All driver/rider participants in an MKM shootout event **MUST** be at least 18 years of age. All persons under the age of 18 attending the event will be restricted to a designated spectator area and must be accompanied by a parent or legal guardian, who will be responsible for their safety and conduct at all times.

License and other Requirements

All Drivers/Riders must have a valid (not expired, suspended or revoked) state, military or international driver's license.

Drivers/Riders in Unlimited divisions require previous competition experience and/or licensing. See **Divisional Requirements** for details. The Race Director has complete discretion as to who will or will not run in Unlimited, or any other division or class.

All entrants must have proof of liability insurance (vehicle policy and/or personal liability insurance), and vehicles in the Pure Street division must have a current license, registration and insurance card. All vehicles entered must have permission to race from the vehicle owner. **NO rental cars allowed.**

All participants must complete a medical release form. Medical examination records from your physician are encouraged. It is also **YOUR** responsibility to note any drug sensitivities on that form.

Entry Changes

As mentioned above, the cutoff for adding any new people (which includes everybody, entrants and anyone else coming in with them) is the Monday before the event (unless they have their own clearance to enter the base), otherwise the new people won't make it onto the access list at the gate. The cutoff for changes in entry class, vehicles, or other non-personnel changes is 3 days prior to the event. Last-minute changes at the event are discouraged and may not be possible. However, please see the rule about **Voluntary Class Change**, later in this book.

Driver/Rider Meetings

A meeting for all Drivers/Riders may be scheduled for the morning of the event, before any runs begin. If such a meeting is scheduled, a notice will be posted, and announcements will be made. **Attendance is mandatory** for all drivers and riders.

Protests and Appeals

A formal protest/appeal procedure has not been established; however, if there is something that you think is wrong, please bring it to the attention of the Race Director. He will evaluate each complaint and decide if it has merit. The Race Director's decisions are final.

Event Officials

The Race Director is responsible for the overall conduct and safety of the race. A Driver/Rider's access to the track is at the sole discretion of the Race Director. The Race Director will supervise all aspects of the event, including communications, emergency personnel, and event control officials. The Race Director may appoint additional personnel to help officiate at the event at his discretion.

Track Description; Timing and Starting

The track will be a straight section of runway exactly one mile in length. One vehicle at a time will be on the track. Electronic Timing based on laser beams will be used to determine speed. The "speed trap" used to measure speed will consist of the last 132 feet of the one-mile track. Entrants will use a semi-standing start with an approximate 20-foot prestart box. This is to avoid or at least reduce the stress and breakage associated with "drag race" starts. There will be no pre-run or warm-up burnouts allowed, and starting burnouts must be kept to a minimum. Elapsed Time will not be measured, only Top Speed. There is an approximately 0.9 mile stopping area after the speed trap, plus some extra runoff.

Technical Speed Limit (Tech Speed)

Tech Speed is the top speed allowed for your vehicle as determined by your choice on the entry form and the standards of the Division requirements and authorization of the Race Director. The Race Director has full discretion with regards to the Tech Speed assigned to a competitor. Your Tech Speed may change during the event. (See: **Breakout Rule** and **Voluntary Class Change Rule**.)

Exceeding your Tech Speed may be cause for penalty or disqualification. (See: **Breakout Rule** and **Disqualification**). The tech speed will be written on the tech inspection sticker affixed to your vehicle, and displayed on the side(s) or side window(s) using numbers we will supply.

Sponsor Decals and Vehicle Numbers

MKM may require official sponsor's stickers to be placed on each vehicle. Vehicle numbers and class identifying stickers will be provided for each vehicle and they must be displayed on the left side of the vehicle, usually on the side windows (for cars). These items must all be in place prior to Tech Inspection.

A note about Nellis, entry gates, and trailers

Entrants except those bringing enclosed trailers may use most entry gates at Nellis AFB, for example the Tyndall gate off Nellis Blvd. or the main gate on Craig Rd. Further gate info and a map will be provided with your entry materials.

If you plan to bring your vehicle in a closed trailer, you must use **ONLY** the truck gate (across from the Speedway on Las Vegas Blvd.). This gate is only open in the morning, and only for a limited time. Your trailer **WILL** be searched. Plan accordingly. Open trailers will generally not be subject to these restrictions.

Standards of Conduct

All participants in an MKM event, including Drivers/Riders, Team Members, support team, and crew members, are expected to conduct themselves according to the highest standards of behavior and sportsmanship and in a manner that shall not be detrimental to the reputation of MKM Racing Promotions or Nellis Air Force Base, particularly in their relationship with other drivers/riders, Officials, and Race Workers. Entrants shall, at all times, be responsible for the conduct of those accompanying them to an event such as crew, mechanics, friends and family. Abuse of any MKM officials, law enforcement officials, volunteers, or Nellis AFB officials or personnel will not be tolerated under any circumstances and could possibly result in civil or criminal action.

**Please remember that we are guests of the Air Force and safety is everyone's responsibility.
NO exhibition driving on the base or anywhere else!**

FORMAT AND SCORING

Divisions and Classes:

The following are the official Divisions and Classes for the High Roller Mile Shootout:

Division	Division Code	Classes
Pure Street Auto	PS	120, 130, 140, 150, 160, 170 MPH
Automobile B	AB	130, 140, 150, 160, 170 MPH
Automobile A	AA	180, 190 MPH
Automobile Unlimited	AU	UNL
Motorcycle B	MB	150, 160 MPH
Motorcycle A	MA	170, 180 MPH
Motorcycle Unlimited	MU	Under 1250cc, NA and PA; 1250+cc, NA and PA

Class competition will be decided by the highest trap speeds recorded in each Class.

1. This speed will be stated in miles per hour, to three decimal places.
2. Class trophies will be awarded for 1st, 2nd, and 3rd place.
3. Runs that exceed the Tech Speed limit will not count.

The optional **Index Challenge Competition** (for participants who have paid an additional fee) will be determined by how close any Index participant comes to one of the exact Index Speeds listed here, on any of their scored runs:

105, 115, 125, 135, 145, 155, 165, 175, 185, 195, 205, 215 MPH

1st, 2nd, and 3rd place trophies will be awarded per Index Speed. This is a combined competition for all entrants in all Divisions. The entrant must specify on the Entry Form, prior to the event, which Index Speed he/she will be aiming for. Runs where the Tech Speed limit is exceeded will not count toward Index competition. To qualify for a trophy, a run must be within 5 MPH of the target Index Speed. Limit one Index trophy per entrant. Alternate drivers/riders are not eligible for the Index Challenge.

Notes on Divisions and Classes:

Our competition structure works like this:

Each entry will fall into a Class within one of our racing Divisions (described below).

Except for Unlimited Divisions, each Class has an associated Speed Limit called the "Tech Speed".

Each Class will have trophies awarded for the top three fastest speeds (not exceeding the Tech Speed, if there is one).

The Class you run in is determined by your choice on your entry form, as long as you and your vehicle pass tech inspection for that class. You may be reclassified before or during the event, either voluntarily (see below), by Breakout (see below), or if deemed necessary by the Race Director.

Be sure to read the **Breakout Rule** to see what happens if you should exceed your Tech Speed limit. It is possible that you could be bumped up to a higher speed class. However, that cannot happen unless you, your vehicle and equipment qualify for that higher class. If you “break out”, and for some reason you can’t be “bumped up” (for example, inadequate tires for the higher class), then your day could be done. (This possibility is one good reason to have higher-rated tires and safety equipment than might normally be required for your class. Plus, it’s just a good idea. Also please read the **Voluntary Class Change** rule for another reason to have better tires.)

If you are not sure about your safety equipment (especially tires), or any of the rules, requirements, or specifications, please contact the appropriate official with any questions (See How to Reach Us, page 1).

Description of Divisions:

Note for PURE STREET division only: Vehicles must be currently registered and licensed with a current proof-of-insurance card.

PURE STREET: is a special Division for unmodified street-licensed cars. Tires and Wheels must be the same size and rating as stock, as listed on the door jamb sticker. A fire extinguisher is required. No other modifications OF ANY KIND (except cosmetic-only) are allowed. In particular, any stock speed limiter must remain intact. This division has several speed-limit classes ranging up to 170 MPH.

AUTO B, AUTO A: For cars in various speed-limit Classes. B is up to 170 MPH, A is up to 190. Safety equipment requirements increase with each division.

AUTO UNLIMITED: Top speeds are not limited. Extensive safety equipment is required. This Division/Class is for any car that expects to exceed 190 MPH. Previous racing experience required.

MOTORCYCLE B, MOTORCYCLE A: For motorcycles in various speed-limit Classes. There are several speed Classes within each Division, ranging up to 180 MPH. No distinction is made with regard to displacement or modifications.

MOTORCYCLE UNLIMITED: Top speeds are not limited. Four classes based on displacement and power adders. The best tires and safety equipment and previous race experience are required.

Voluntary Class Change Rule

We anticipate that many entrants will be unaware of the true speed potential of their vehicle until they actually run it. In recognition of this, we are allowing one (and only one) voluntary change of class at the event, for each vehicle, subject to the following rules:

- 1) You may voluntarily change the class you are registered in, once and only once.
- 2) This change **MUST** take place prior to your second run. You must notify Registration and Scoring of your desired change, and they must approve it, **before** you run a second time. Once you do a second run, you lose the right to change under this rule.

- 3) The class change can be up or down in speed, but must stay within the same Division. (*Exceptions: Motorcycle A and B division entrants can change between the two; and Auto A division entrants can move down into Auto B.*) If you are going up in speed, your vehicle must qualify for the higher speed, i.e., the tires must be rated high enough.
 - 4) If you change class under this rule, your first run, if there was one, will be discarded from scoring. However, if your first run was in excess of 5 MPH over your original Tech Speed limit, you will still receive the official warning referred to in Breakout Rule 2. And if the first run was more than 10 MPH over your original Tech Speed limit, the Event Disqualification rule could still apply. **WATCH YOUR SPEED** on your first run!
 - 5) If you change class under this rule, you may also change your Index Challenge speed selection, if you are entered in that optional competition.
-

Breakout Rule

- 1) Exceeding one's Tech Speed limit by any amount will cause that run to not be scored.
 - 2) Exceeding it by more than 5 MPH will cause a warning to be issued, the first time it happens.
 - 3) After the warning above has been issued, if there is another infraction of more than 5 MPH over your Tech Speed, a Breakout is deemed to have occurred. This will cause a **bump**, or forced move, within the same division, to the next higher class in which the speed would have been legal, if the vehicle qualifies for that higher class.
 - a) If no suitable higher class is available in the same division, the vehicle being bumped can be moved up to run in an appropriate higher class in a higher division, but only if all the requirements are met to run in that higher division and class. This does not apply to Pure Street cars, which cannot leave their division.
 - b) If the vehicle does not qualify for the bump, due to not meeting requirements for the higher class or division, or for any other reason, the driver/rider will be disqualified from any further runs with that vehicle.
 - c) As part of being "bumped", any speed runs previously made by that driver/rider with that vehicle, will also be transferred to the new higher class. It will be as though he/she had originally entered in that higher class. However, runs that exceeded the previous Tech Speed will still not be scored.
 - d) The "bump-up" reclassification will still take effect even if the vehicle makes no more runs.
 - e) Alternate Drivers/Riders cannot bump up at all; if they break out, they are disqualified. In this situation, vehicle reclassification will not occur.
 - 4) Only one bump-up is allowed. After that, even **one** more Tech Speed infraction of more than 5MPH (over the new, higher tech speed) will cause that driver/rider to be disqualified from any further runs with that vehicle, and may result in Event Disqualification of the driver/rider.
 - 5) A flagrantly high Tech Speed violation (more than 10 MPH over) may cause immediate Event Disqualification of the driver/rider.
-

TECHNICAL SAFETY INSPECTION

All vehicles and participants must undergo a Technical Safety Inspection ("Tech") to insure compliance with the Rules, Requirements and Specifications. Each driver/rider is responsible for the safety and race worthiness of his/her vehicle. No equipment shall be assumed "approved" because it went through Tech at other racing events, it passed Tech previously at an MKM event, or because this rulebook does not specifically exclude it. All vehicles must be maintained in a safe condition at all times. Passing Tech Inspection does not relieve the driver/rider of any liability.

- A. You must come to Technical Inspection with your vehicle 100% ready to race in full compliance with the personal equipment required for your Division/Class, including, but not limited to, the following:
 - 1. All safety equipment installed. Any required event sponsor decals affixed.
 - 2. The driver/rider must be present, and must be prepared to don any personal safety equipment required and belt in as he/she would during the event, if requested.
 - 3. All camera mounts with cameras installed.
- B. Any vehicle not passing inspection will have to repair the deficiency or make necessary repairs prior to running in the event.
- C. No modifications are permitted after the final inspection unless coordinated with the Race Director and Chief Technical Inspector. This includes any change in vehicle condition after the vehicle passes Tech, due to breakdowns or failures, flat or damaged tires, or any other reason.
- D. At the discretion of the Race Director, or his/her appointed officials, vehicles which do not meet minimum technical inspection standards in a particular Division/Class may be transferred to an appropriate Division/Class for which they qualify. There will be no adjustment of the entry fee in this circumstance.
- E. Any vehicle not in compliance with the Rules, Requirements, and Specifications will not be allowed to enter the event.

RULES OF CONDUCT

THE FOLLOWING RULES ARE CRITICAL TO YOUR SAFETY. They must be strictly adhered to. Please remember these rules and help our event become a success!

- 1. OBEY ALL OFFICIALS.** They are there to protect you and the event. This includes all law enforcement officers, Nellis AFB personnel, pre-grid and starting line workers, finish line officials, the Race Director, and Emergency Response personnel. Abuse of ANY official will NOT be tolerated.
- 2. DRIVE SAFELY.** We do our utmost to make sure the track is clear, but you are NEVER relieved of your responsibility and obligation to use good judgment while driving. Never make a sudden maneuver unless absolutely necessary. Look FAR AHEAD down the track.
- 3. PLEASE DON'T EXCEED YOUR TECH SPEED.** This is a simple rule. Don't do it.
- 4. NO DRINKING** of alcoholic beverages during the event. This should be obvious.
- 5. NO HIGH SPEED DRIVING ON THE RETURN ROAD.** Keep it slow and safe.
- 6. NO SHOWING OFF.** Exhibition driving, stunts, drifts, burnouts, wheelies, stoppies, etc., have no place in this competition and are heavily discouraged. Don't!
- 7. STAY HEALTHY.** We are on open pavement in a hot desert area. Stay shaded. Use sunscreen. Dress appropriately. Stay hydrated - drink water or sports drink rather than beer and soda. The medics are nice people but you really don't want to have to meet them in a professional capacity.

EVENT DISQUALIFICATION

The Race Director may disqualify you from the event if:

1. You again exceed your Technical Speed (Tech Speed) by more than 5 MPH, after having already been "bumped up" once. See the Breakout Rule for details.
2. You exceed your Tech Speed in an excessive (defined as more than 10 MPH over) or reckless manner, in any division, in the opinion of event officials. In addition to immediate disqualification, you may be suspended for one year or banned from ever participating in a future MKM Racing Promotions event.
3. You engage in reckless or dangerous driving prior to or during the event, either on or off the track.
4. You fail to notify the Race Director or Chief Technical Inspector of **any** change in vehicle condition **after the vehicle passes Tech Inspection**. This includes configuration changes, breakdowns/equipment failures, and flat or damaged tires.

Decisions of the Race Director are final. If you are disqualified from the event, your runs will be stricken from the official results. Any participant disqualified from an MKM event for any reason may require re-qualification prior to participating in future events, and may be moved down one Division for their next event.

EQUIPMENT REQUIREMENTS

General Requirements: All Automobile Divisions

- A. Vehicles in Automobile Divisions must be 4-wheeled cars, SUVs or pickup trucks with a full-fendered body; no open wheel vehicles allowed. Vehicles must use a single internal-combustion engine and be wheel-driven.
- B. Vehicles must have 4 wheel hydraulic brakes. 4 wheel discs are greatly preferred and mandatory in some Divisions.
- C. All cars must have a functional suspension and shock absorber for each wheel. No part of the suspension or chassis is permitted to hang below the bottom of the wheel rim.
- D. A minimum track width of 48 inches front and rear is required, measured between tire centerlines; and the ratio of wheelbase length to minimum track width must not be less than 1.2:1 or more than 2.4:1. (*note: This probably won't affect you. It means no short wide cars or long skinny cars.*)
- E. These and similar vehicles are generally prohibited: Rail-type dragsters; karts; ATVs; streamliners; lakesters; off road vehicles; jet cars; 3-wheeled vehicles; dual rear wheel pickups; vehicles over 5 tons; open wheel cars; hot rods with narrow or motorcycle-type front tires.
- F. **No Passengers Allowed.**
- G. Convertibles must run with the top up. All cars must run with the windows up. If no side window is present, a window net or arm restraints must be used.
- H. No loose items are permitted in the passenger compartment of the race vehicle.
- I. If the race vehicle has airbags, nothing may be mounted or positioned in front of the air bags unless they have been disabled. Any disabled airbag system requires an accompanying NHTSA Form 603.

Any exception to these rules requires special permission. Plead your case to MKM well in advance of the event.

Divisional Requirements - Automobiles

Pure Street Division

Tech Speed Classes: 120, 130, 140, 150, 160, 170 MPH

Requires current registration and proof of liability insurance

The following are the requirements for the Pure Street Division:

- A. Vehicles in this Division must be **unmodified** cars, SUVs, or pickup trucks as produced by a US DOT certified manufacturer. No modifications are permitted. The stock PCM or computer shall be unchanged from its OEM factory programming (except for factory-issued updates). No non-original computers, chips, or other devices, electronic or otherwise, may be added or substituted. Sensors and sensor wiring may not be altered or moved. The factory stock speed limiter, if it exists, cannot

be defeated or altered in its operation. No additional power adders (such as nitrous oxide) are allowed. The engine and drivetrain shall remain factory stock in all respects including intake and muffler(s). All emission controls must be retained. All engine accessory drive belts must be in place and operational. Original-equipment superchargers must have stock size drive pulleys. 100 octane maximum pump gas, E85, or diesel fuel, only.

- B. Allowed Modifications: Notwithstanding section (A), cosmetic-only changes are OK. That means things like paint, stripes, a different grill, different lights, window tint, interior upgrades, stereos, etc. But anything that has any effect on the car's performance or safety must remain factory stock. Specifically, aerodynamic or other body modifications (wings, spoilers, air dams, body kits, ground effects, scoops, etc.) will make the car ineligible for Pure Street. This is true even if the stuff was dealer-installed; if it isn't or wasn't a factory option, it's not eligible, and you will have to run in a different division. Similarly, the car's ride height cannot be altered from factory stock.
 - C. A 2.5 lb minimum, automotive BC fire extinguisher, with a secure quick-release mounting bracket made of metal, must be mounted within easy reach of the driver.
 - D. Restraints: Factory installed original seat and shoulder belts in new or like-new condition are required. Cars with lap belts only will not be permitted to run. (See: **Personal Safety Equipment**)
 - E. Helmet, Clothing & Safety Equipment: see **Personal Safety Equipment**.
 - F. Rollover protection: As built by the vehicle manufacturer.
 - G. Wheels and Tires: Tire speed and load ratings must be OEM or higher. Tires and wheels may be changed but tires must be DOT approved, OEM size, on OEM dimension street legal wheels. *(meaning: if the wheel/tire size and ratings aren't the same as a factory stock or factory optional size for the car, the car isn't eligible for Pure Street. It is the entrant's responsibility to document anything that doesn't agree with the door jamb sticker. Being dealer-installed does not excuse non-OEM wheel-tire sizes from this rule.)* Please note that wheel covers and hubcaps must be removed; see **General Wheel and Tire Requirements**.
 - H. The determination of whether or not a vehicle is eligible for Pure Street will be made by the Chief of Tech and the Race Director. Their decision is final.
-

Automobile B Division **Tech Speed Classes: 130, 140, 150, 160, 170 MPH**

The following are the minimum requirements for the Auto B Division:

- A. Fuel: 100 Octane Pump Gas maximum. (See: **Fuel and Fuel Equipment Restrictions**.)
- B. Power adders: **One** power-adder allowed. (See: **Fuel and Fuel Equipment Restrictions**.)
- C. A 2.5 lb minimum, automotive BC fire extinguisher, with a secure quick-release mounting bracket made of metal, must be mounted within easy reach of driver.
- D. Restraints: see **Personal Safety Equipment**.
- E. Helmet, Clothing & Safety Equipment: see **Personal Safety Equipment**.
- F. Rollover protection: A competition approved Roll Bar (**Appendix A**) is recommended for all vehicles.

- G. Wheels and Tires: DOT approved "H" rated tires are the minimum standard for the 130 and 140 MPH classes. DOT approved "V" or "Z" rated tires are the minimum standard for the 150 MPH class. DOT approved "Z" rated tires with "W" suffix are the minimum standard for all higher classes, and are highly recommended for all classes (see **Breakout Rule** for one reason). DOT "Y" and "(Y)" (parentheses) suffix tires or DOT Drag Radials are highly recommended if available. The rules about load rating and tire rubbing must be observed. (See: **General Wheel and Tire Requirements**.)
-

Automobile A Division Tech Speed Classes: 180, 190 MPH

The following are the minimum requirements for the Auto A Division:

- A. Drivetrain and Chassis: Driveshaft loop required if applicable. For solid rear axle vehicles, positive-retention drive axles are highly recommended. (i.e., GM or similar C-clip axles are discouraged.) Vehicle must have 4 wheel disc brakes of at least 10 inches in diameter and wheels of at least 7 inches in width unless special waiver is granted by MKM.
- B. Fuel: 100 Octane Pump Gas maximum. (See: **Fuel and Fuel Equipment Restrictions**.)
- C. Power adders: **One** power-adder allowed. (See: **Fuel and Fuel Equipment Restrictions**.)
- D. A 2.5 lb minimum, automotive BC fire extinguisher, with a secure quick-release mounting bracket made of metal, mounted within easy reach of the driver.
- E. Restraints: A competition-rated five or six-point safety harness system. (See: **Personal Safety Equipment** for details.) The mounting of the harness must conform to the Restraint System Requirements, especially the shoulder harness mounting. This will be thoroughly checked at all Tech Inspections. Arm restraints are mandatory in this Division.
- F. Helmet, Clothing & Safety Equipment: See: **Personal Safety Equipment**.
- G. Rollover protection: A competition-approved Roll Bar (**Appendix A**) is required. Certain vehicles with built in OEM roll over structures (for example, 1984 and later non-convertible Corvettes) may meet the minimum roll bar standard for this Division. Contact the Chief Technical Inspector to inquire about your particular vehicle. It is **highly recommended** that an additional roll bar be added to those vehicles with approved OEM roll over structures. A competition-approved Roll Cage (**Appendix B**) is highly recommended.
- H. Wheels and Tires: DOT approved "Z" rated tires with "Y" suffix are the minimum standard. DOT "(Y)" (parentheses) suffix tires or DOT Drag Radials are highly recommended if available. Wheels over 18 inches in diameter must be approved for racing. The rules about load rating and tire rubbing must be observed. (See: **General Wheel and Tire Requirements**.)
- I. A competition approved fire suppression system and fuel cell is recommended. If a fuel cell is used, an automatic rollover fuel cutoff valve must be used. (See: **Fuel and Fuel Equipment Restrictions**)
- J. A proper racing seat is highly recommended **and may be required in certain cars**.
- K. A quick release steering wheel system is recommended.
-

Automobile Unlimited Division
Class: Unlimited
Tech Speed limit: Tire-dependent

The following are the minimum requirements for the Auto Unlimited Division:

- A. Drivers must have previously driven in a Mile Shootout, Open Road Race or Land Speed event at a speed of 170 MPH or higher and/or must have previous racing experience and/or a recognized competition license.
- B. Drivetrain and Chassis: Driveshaft loop required if applicable. For solid rear axle vehicles, positive-retention drive axles are highly recommended. (i.e., GM or similar C-clip axles are discouraged.) Vehicle must have 4 wheel disc brakes of at least 10 inch diameter and wheels of at least 7 inches in width unless special waiver is granted by MKM.
- C. Fuel: 114 Octane Race Gas maximum. (See: **Fuel and Fuel Equipment Restrictions.**)
- D. Power adders: **Two** power-adders allowed. (See: **Fuel and Fuel Equipment Restrictions.**)
- E. A competition approved 5 lb. fire suppression system. The activation cables must be carefully located to prevent crushing or damage in the event of a rollover. The cables **MUST** be inside the roll cage structure. A minimum of two nozzles in the passenger compartment are required. It is recommended that vehicles using a 5 lb. fire suppression system also carry a 2.5 lb. automotive BC fire extinguisher, or a second 5 lb. automatic system with nozzles in the engine compartment and fuel cell area.
- F. Restraints: A competition-rated five or six-point safety harness system. (See: **Personal Safety Equipment** for details.) The mounting of the harness must conform to the Restraint System Requirements, especially the shoulder harness mounting. This will be thoroughly checked at all Tech Inspections. Arm restraints are **mandatory** in this Division.
- G. Rollover protection: A competition approved Roll Cage (**Appendix B**) is mandatory. A bolt-in roll cage is allowed, and a fully welded roll cage is highly recommended.
- H. A competition SFI-approved fuel cell with metal shell. An automatic rollover shutoff valve must be used. (Certain factory fuel tanks with bladder inserts may be acceptable with the addition of foam. Consult with the Chief of Tech for prior approval of these fuel systems.)
- I. Helmet, Clothing & Safety Equipment: see **Personal Safety Equipment**. Head and Neck Restraints and Arm Restraints are required. (note: "horse-collar"-type helmet supports do NOT qualify as Head and Neck Restraints!) NASCAR style approved window netting is recommended and required if no window covering (glass or lexan) exists. Use of both is highly recommended.
- J. A proper racing seat of metal or carbon-fiber construction is required and must be mounted to the roll cage unless documentation from the seat manufacturer is produced that supports otherwise. The use of head restraints ("wings") on the racing seat is highly recommended.
- K. A quick-release steering wheel, padded steering hub, and collapsible steering column are highly recommended.
- L. Wheels and Tires: For expected speeds up to 215 MPH, DOT approved "(Y)" (parentheses) suffix, DOT Drag Radials, or MKM-approved racing tires are required. Special Land Speed tires may also be acceptable but must be pre-approved by MKM. Wheels over 18 inches in diameter must be approved for racing. If very high speeds (> 215 MPH) are expected, you must consult with MKM for wheel/tire approval, well prior to the event. (See: **General Wheel and Tire Requirements.**)

M. Parachute: A parachute braking system meeting established drag-racing or land-speed specifications, for the weight of the car at the expected speed, is recommended for all Unlimited cars, and **required** for any car that expects to run more than 220 MPH. Parachute tether should be a minimum of 75 feet long, to help avoid lifting the rear wheels off the track. Parachutes must be mounted to their own separate mounting structure. If dual parachutes are used, each set of shroud lines must be anchored separately. Exemptions may be granted by special waiver; contact MKM or the Chief of Tech.

General Requirements: All Motorcycle Divisions

- A. Vehicles in the Motorcycle divisions must be two wheeled motorcycles, with wheels in line, using one internal combustion engine, driving the rear wheel only.
- B. Minimum wheelbase is 48 inches. Maximum Wheelbase is 72 inches.
- C. Must have functional suspension with shock absorber(s) on front and back wheels. Limit straps and other suspension limiting devices are prohibited.
- D. Must have brakes on front and rear wheels. Hydraulic disc brakes front and rear are highly recommended. Both wheels must have fenders. Removal of rear splash guard on sport bikes is allowed.
- E. The following are prohibited: 3 wheeled vehicles. Choppers. Scooters. Mini-bikes. Streamliners. Enclosed front wheels.
- F. Turn signals and mirrors must be taped or removed. Headlights and taillights must also be taped.
- G. Motorcycles must be ridden solo. (Duh!)
- H. **All motorcycle riders must wear a full face helmet, leather suit, gloves, and boots. No exceptions.** All helmets must be properly sized and fitted, full face with shatterproof visor, in good condition, and must have never been in an accident. Helmets must meet one or more of the following standards: Snell M2000, M2005, SA2000 or SA2005; ECE 22-05; BSI 6658A. Helmets rated DOT-only are not permitted.
- I. **Kill Switch:** All motorcycles must be equipped with an engine kill switch with a lanyard (tether) attached to the rider, to kill the ignition in case of a fall-off. Proper operation must be demonstrated at Tech Inspection. Factory lean-angle kill switches **are not** an acceptable substitute.
- J. **Safety Wiring:** Safety wired or pinned items must include: Front and rear axles, either the axle nuts or pinch bolts as appropriate; oil drain plug; clip-type chain master link (use of silicone OK); oil filter (not required but highly recommended).
- K. Multiple chain master links on the same chain are not allowed.
- L. **Steering Damper:** required for all motorcycles.
- M. **Controls:** Hand levers must not be sharp or pointed. Throttle must be of a spring return type and snap closed when released. Handlebars must turn at least 20 degrees each way.
- N. **Breather hoses:** Must dump into a catch can or into the air box. No fluids shall leak onto the track.
- O. For liquid cooled bikes, it is recommended that all glycol based coolant be removed and replaced with plain distilled water only. Wetting agents such as Water Wetter or Purple Ice are the only recommended additives. (We are trying to avoid the problem of slick, oily glycol coolant ending up on the track. Please note that these additives provide no protection against freezing.)

Divisional Requirements – Motorcycles

Motorcycle B Division

Tech Speed Classes: 150, 160 MPH

Motorcycle A Division

Tech Speed Classes: 170, 180 MPH

- A. **Clothing/Helmet:** A full leather suit (“leathers”) is the minimum standard. 2-piece suits must zip together with at least a 180 degree zipper. Leather gauntlet style gloves that overlap your leathers and riding boots that cover the ankle are required. Armored leather racing suits and back protectors are highly recommended. See General Requirements (above) for helmet standards.
 - B. **Tires:** Must be in excellent condition. DOT approved “V” rated tires are the minimum standard for the B division. DOT approved “Z” rated tires are the minimum standard for the A division and recommended for the B division. DOT “W” rated tires are recommended. Tires must be mounted on appropriate width rims as specified by the tire manufacturer. Wheel weights must be taped to the wheel. Please note that the runway surface at Nellis is grooved. Please consider this when selecting your tires. (See: **General Wheel and Tire Requirements.**)
 - C. **Fuel:** 100 Octane Pump Gas maximum. (See: **Fuel and Fuel Equipment Restrictions.**)
 - D. **Power adders:** One power-adder allowed. (See: **Fuel and Fuel Equipment Restrictions.**)
-

Motorcycle Unlimited Division

Tech Speed Limit: None

Four Classes:

Under 1250cc: Normally Aspirated or Power Adder

1250cc and over: Normally Aspirated or Power Adder

- A. **Experience:** Riders in Unlimited classes must have prior experience in a Mile Shootout or Land Speed event at 180 MPH or more, and/or a valid high speed motorcycle competition license.
- B. **Clothing/Helmet:** Approved road racing or drag racing one-piece suits with armor and back protector are the minimum standard. Racing-approved leather gauntlet gloves that overlap your leathers and boots that cover the ankle and also overlap your leathers are required. See General Requirements (above) for helmet standards.
- C. **Tires:** Must be in excellent condition. DOT approved “W” rated tires are the minimum standard. Tires must be mounted on appropriate width rims as specified by the tire manufacturer. Wheel weights must be taped to the wheel. Please note that the runway surface at Nellis is grooved. Please consider this when selecting your tires. (See: **General Wheel and Tire Requirements.**)
- D. **Fuel:** 114 Octane Race Gas maximum. (See: **Fuel and Fuel Equipment Restrictions.**)
- E. **Power Adder Classes only:** Up to **two** power-adders allowed. (See: **Fuel and Fuel Equipment Restrictions.**)
- F. **Special Rule:** Harley V-Rod engines that are still at the stock displacement of 1250.05 cc will be placed in the Under-1250 classes. Other engines that come extremely close to the 1250cc mark **may** also be considered for this exception. Please contact MKM well prior to the event if you think you might need such a ruling.

PERSONAL SAFETY EQUIPMENT

(4-wheeled Vehicles)

Divisional Requirements

(Note: the term "cars" as used here includes all 4-wheeled vehicles.)

Pure Street Division:

Belts: Factory stock OEM seat and shoulder belts, in good condition, with no frays or excessive wear, are the only acceptable restraints.* This Division requires that the belts must be exactly as installed by the vehicle manufacturer. The factory OEM belts should not be over 10 years old. Cars in this Division greater than ten years old should have their original OEM belts replaced with new belts.

*Exception: Cars so old that they did not originally come with shoulder belts are required to retrofit a factory-type 3 point seat and shoulder belt. (For example: <http://www.andoauto.com/retrofit.htm>) The retrofit installation must be done precisely to the supplier's specifications. **Cars with only lap belts are not allowed to run in this event.** 4-point "show belts" or "street belts" are not acceptable.

Helmets: A SNELL Foundation **SA2000** (or later) helmet in good condition with shatterproof eye protection is the minimum standard. (Shatterproof eyeglasses will be considered the minimum eye protection standard). A Nomex or Carbon-X head sock (balaclava) is highly recommended and may be required for drivers with long hair or facial hair. If such a head sock is worn, a SNELL Foundation **M2000** or later helmet is an acceptable substitute. A full-face helmet with visor is highly recommended.

Clothing: Non-synthetic clothing (cotton, wool, leather etc.), covering torso, arms, and legs, plus gloves and leather topped shoes without holes are the minimum standard. Golf gloves and athletic shoes with holes are not considered appropriate. A Proban or similar (treated cotton) driving suit is acceptable for this division but not recommended. A Nomex or Carbon-X driving suit is highly recommended.

Auto B Division:

Belts/Harnesses: Factory stock or equivalent 3 point (seat and shoulder) belts, OEM or better, in good condition, with no frays or excessive wear, are the minimum standard. Factory OEM belts should not be over 10 years old. Cars in this Division greater than ten years old should have their original OEM belts upgraded to newer belts. 4-point "show belts" or "street belts" are not acceptable.

A proper 5 or 6-point safety harness is recommended. If a harness is installed, it must meet the specifications for the Auto A Division. (See Harnesses section, below.)

Arm Restraints: Arm Restraints are highly recommended if the car has a harness installed.

Helmets: A SNELL Foundation **SA2000** (or later) helmet in good condition with shatterproof eye protection is the minimum standard. (Shatterproof eyeglasses will be considered the minimum eye protection standard). A Nomex or Carbon-X head sock (balaclava) is highly recommended and may be required for drivers with long hair or facial hair. If such a head sock is worn, a SNELL Foundation **M2000** or later helmet is an acceptable substitute. A full-face helmet with visor is highly recommended.

Helmet Supports/Restraints: Padded helmet supports ("horse collars") are recommended. **A racing-approved head and neck restraint system (HANS, Hutchens, R3, Simpson, SRS-1 or similar) is highly recommended** but note that some of these require that a safety harness also be installed.

Clothing: Non-synthetic clothing (cotton, wool, leather etc.), covering torso, arms, and legs, plus gloves and leather topped shoes without holes are the minimum standard. Golf gloves and athletic shoes with holes are not considered appropriate. A Proban or similar (treated cotton) driving suit is acceptable for this division but not recommended. A Nomex or Carbon-X driving suit is highly recommended.

Auto A and Auto Unlimited Divisions:

Harnesses: A 5 or 6-point safety harness is mandatory, with 3-inch lap and shoulder belts except as noted in rule 1h, below. A cam lock safety harness latching system is highly recommended. If a sternum belt is used, the lap belt must be at the proper position at the pelvis and the crotch belt must be used to keep the lap belt down and in the proper position.

1. **Harness Mounting/Age Requirements:** Harnesses must be mounted at or on the roll cage, roll bar, frame member, or body panel (with adequate spreader plates).
 - a. The shoulder belt mounting height (or roll bar crossover height for floor-mounted shoulder belts) should be no more than 2" +/- from the driver's shoulder height when seated in a driving position to reduce the possibility of spinal compression injuries. Shoulder harnesses must be secured or stressed over a steel tube at the proper height.
 - b. The shoulder harnesses should be attached to the horizontal bar on roll bars.
 - c. The belts should be mounted so as to not cause undue spinal compression.
 - d. Adequate spreader plates must be used when mounting harnesses to a body panel. Mounting to fiberglass or other non-metal panels is strictly prohibited.
 - e. Harnesses must be mounted to the roll cage or frame member in the Unlimited Division. OEM seat or belt mounting points can be used in all other divisions (except Pure Street, where non-OEM belts are not allowed) but proper harness installation is difficult without a roll bar or harness mounting bar. Consult with the Chief of Tech if you are entering a car with harnesses and no harness or roll bar.
 - f. Manufacturer's labels cannot be located under the adjusting mechanism when the driver is buckled in the seat and has tightened the seat belts and shoulder harness, as this could cause the belt to "dump" on one side and tear under stress. This will be checked at Tech Inspection.
 - g. All harnesses must be permanently dated and be no more than 5 years old.
 - h. FIA-approved 2" lap belts with proper certification will be accepted. 3" shoulder straps are still mandated with the exception of the 2" into 3" HANS-specific shoulder harnesses when used with a HANS device. Please consult with the Chief of Tech if you desire to use these belts. 4-point "show belts" or "street belts" are not acceptable.
 - i. Crotch Strap Adjustment: Crotch Straps must be adjusted to ensure the lap belts tighten properly across the pelvic girdle (known as the Iliac Crest) and not the soft part of the abdomen. This adjustment will be checked at Tech Inspection.

Arm Restraints: Arm Restraints are mandatory for all drivers in these Divisions.

Helmets: A SNELL Foundation approved **SA2000** (or later) helmet with shatterproof eye protection is required. M2000 and DOT helmets are not permitted in these divisions.

- A. The use of a full-face helmet, with visor, is required in the Unlimited Division and highly recommended for everyone.

- B. A Nomex or Carbon-X head sock (balaclava) is required for drivers with long hair (or facial hair, except for small, trimmed mustaches) and recommended for everyone.

Helmet Supports/Restraints: Padded helmet supports (“horse collars”) are the minimum standard in the Auto A Division. **A racing-approved head and neck restraint system (HANS, Hutchens, R3, Simpson, SRS-1 or similar) is required in the Unlimited division and highly recommended for all Auto Divisions.** All HANS device users must ensure their harness mountings are in exact conformation with the device requirements. Any racer using a HANS device must coordinate with the Chief of Tech and be prepared to provide supporting documentation that their installation is in compliance with HANS requirements. All other types of head and neck restraint systems must also be installed and used strictly in accordance with their manufacturers’ instructions.

Clothing: A Nomex or Carbon-X fire-resistant Driving suit, shoes, socks and gloves (leather palms O.K.) are required. Treated cotton suits of any kind, i.e., Proban, **will not be allowed in these divisions, regardless of any rating they may carry.** A one-piece suit is recommended.

- A. For the Auto A Division, either a suit meeting SFI 3-2A/1 specifications worn with Nomex or Carbon-X underwear, or a suit meeting SFI 3-2A/3, will be considered the minimum standard; and a suit meeting SFI 3-2A/5 (double-layer) or higher is highly recommended.

- B. For Unlimited, a multi-layered suit meeting SFI 3-2A/5 specifications worn with Nomex or Carbon-X underwear is the minimum standard.

Window Nets: Required for any closed cockpit vehicle without glass or Lexan window covering.

GENERAL WHEEL AND TIRE REQUIREMENTS

- A. **Load Carrying Capacity:** All tires must have an equal or greater load carrying capacity than the original tire. (Example: Suppose the base tire for a 1999 Mustang is a P205/65R15 rated @ 1400 lbs. Any replacement tire must therefore have a load rating of at least 1400 lbs., regardless of the speed rating or Division/Class in which the vehicle is competing. Modern tires use a “load index” number but the concept is the same.)
- B. **Speed Rating:** The vehicle must be equipped with tires having a speed rating equal to or better than the OEM specification of the vehicle to compete in any division.
- C. DOT Drag Radials, or DOT radial road racing tires, which may or may not have a speed rating, may be used if the load rating rule is observed. Use of any non-DOT tire, or non-radial car tire, must be cleared first with MKM or the Tech Inspectors. Generally, non-DOT or non-radial Drag Racing tires are unacceptable.
- D. All DOT tires used on 4-wheeled vehicles are required to be radials. Radial and non-radial tires shall not be mixed on the same vehicle, including motorcycles.
- E. In any class, tires or wheels may not rub on any part of the suspension, frame, or bodywork.
- F. Cosmetic hub caps, wheel covers and “beauty rings” that are not bolted on, must be removed.
- G. **Prohibited for 4-wheeled vehicles:** Drag Slicks; narrow “drag race” front tires; wire wheels; wheels larger than 20 inches in diameter (unless factory-equipped, and designed for the speeds expected); tires larger than 30 inches in diameter (exception: 33 inch diameter allowed for ¾ ton or larger trucks/SUVs). **Prohibited for motorcycles:** Drag slicks; rear tires of greater than 240 section width; front tires that are less than half the section width of the rear tire.

- H. Treaded tires must be on-road, highway-type or all-season tread only. No knobby, lug tread, snow, all-terrain, off-road, or mud tires or the like. Any questions, please ask the Tech Inspector or Race Director.
- I. **All vehicles in this event must run with their tires inflated to a minimum of 30 PSI.** No exceptions unless you can prove to the Race Director's satisfaction why you shouldn't. This is only a minimum; many vehicles will require higher pressures. Check your sidewall, and seriously consider using the maximum pressure printed there.
- J. Tubes will not be allowed in tubeless tires in any class. If a tube-type tire is used, the correct tube for the tire, as specified by the tire manufacturer, must be used. A new tube-type tire should also have a new tube installed with it.
- K. Tire tread depth (or rubber depth, for slick racing tires) should not be less than 3/32 of an inch and must not be less than 1/32 of an inch. No cords may be showing through – ever!
- L. Valve stem caps, made of metal, with "O" ring seats, are mandatory. These are available at most auto parts stores. Racing valve stems are recommended but care should be used because they may not fit well on all rims.
- M. Tires must be in excellent condition and suitable for use at the vehicle's maximum speed in the event. They **should** not be more than 4 years old. However, we are aware that newly purchased tires can sometimes be 1 or more years old at the time of purchase. If your tires fall into this category, please consult with MKM or the Chief of Tech before taking any action.
(Note: The tire production date can be found inside a small oval stamp on the inside sidewall. It is usually a 3-digit or 4-digit number indicating the week and year of production. For example, if the number is "349," the tire was produced in the 34th week of 1999. If the number is "1302," then the tire was produced in the 13th week of 2002. You will be asked to provide these dates on your Tire Inspection Form. PLEASE contact us if you have any questions, and we will help you.)
- N. The use of repaired tires is not permitted. Tire failures are a prime cause of racing accidents, so consider your tire condition very carefully!
- O. Tires must be mounted on wheels of proper width, as listed by the tire manufacturer.
- P. (Automobile) Lug Nuts/Bolts: Lug nuts must be of the correct type and size for the wheels and studs used. If open lug nuts (preferred) are used, the wheel stud must protrude through the nut. Closed (acorn) lug nuts are discouraged, but if used, thread engagement into the hex part of the nut must equal or exceed the diameter of the stud. *(In other words, with a nut removed, the stud must protrude past the wheel flange, plus any washer used, by at least that much.)* For lug bolts, the threads must engage into the hub by the same amount. Care must be taken to avoid any bottoming of the studs, nuts or bolts. Non-conical (flat bottom) nuts/bolts must use a steel washer between the wheel and nut/bolt. If this section is a problem for you, please contact MKM for advice, prior to the event.
- Q. Tire Speed Rating Information: The following information is made available to the entrant in order to assist their preparation.

S= 112mph* T= 118mph* U= 124mph* *not permitted in this event

H= 130mph V= 149mph Z= 149mph+

Within the Z category: **W** suffix = 168mph **Y** suffix = 186mph **(Y)** suffix= 186+ mph

Motorcycles use the same codes but generally only H, V, Z and a few W ratings are available.

Note: Some people have inquired about using racing tires in lower speed classes. Given that racing tires are far more susceptible to puncture, we would recommend using an appropriate street tire. We see no reason, however, to disallow the use of racing tires in lower Divisions, but strongly recommend that extra care be taken when using such tires. If you plan to use non-DOT racing tires in ANY division, contact MKM or the Chief of Tech for prior approval, well before the event, or risk being turned down at Tech Inspection!

FUEL & FUEL EQUIPMENT RESTRICTIONS

- A. Power Adders: defined as either a Nitrous Oxide injection system or an add-on (non-OEM) supercharger or turbocharger. (Note: for Motorcycle Unlimited, any supercharger or turbocharger, even OEM equipment, counts as a power adder.) **No** power adders are allowed in Pure Street. For other Divisions, see the division requirements. When counting power adders, please note that for multi-stage systems, each stage is considered to be one power-adder. For example, a two-stage nitrous system counts as two power adders. Tandem or series super/turbocharging works the same way; for example, one turbo feeding into another, would count as two power adders. A twin-turbo engine with each turbo feeding a separate group of cylinders, however, would only count as having one power adder.
- B. Nitrous Oxide systems must incorporate an arming/disarming switch within easy reach of the driver/rider, and a throttle-operated switch set up so that the system will only function at the fully-open throttle position. The system must be wired such that it shuts off with the ignition switch and/or kill switch. It is recommended that oil-pressure and fuel-pressure safety switches also be wired in series with the arming switch. Nitrous purge valves and blow-down tubes must vent outside the vehicle. Maximum of two 10-lb. tanks or one 20-lb. tank allowed. Tanks must be clamped in securely mounted metal brackets made for that purpose; no hose clamps, plumber's tape or other crude mountings allowed. All plumbing for the system must be rated for the pressures used, with steel lines or braided-steel hoses highly recommended.
- C. Positive displacement superchargers (i.e., Roots-type blowers) must be equipped with pressure relief valves and/or burst panels to reduce damage from any backfires that may occur. Retaining straps for the blower are highly recommended.
- D. Fuels: For divisions except Unlimited: up to 100 octane pump gas allowed. For Unlimited: up to 114 octane race gas allowed. Nitromethane, propylene oxide, or similar exotic fuels or additives are strictly prohibited. Octane boosters such as "104" are permitted if less than 2% of the total gasoline volume. Diesel fuel is allowed in all divisions for suitable vehicles. E85 is approved for all divisions. Pure alcohol (ethanol or methanol) must have prior approval of MKM. Other fuels may be permitted at the discretion of MKM if proper application is made prior to the event. Compressed gas fuels such as Propane, LPG, CNG, Methane, Hydrogen, etc. are not allowed without special permission, except that a Propane Injection system is permitted as a Power Adder for diesel-powered vehicles in a division where power adders are allowed. Such a system must have the propane tank securely mounted outside the passenger compartment in a ventilated area. Water or Water/Alcohol injection systems for detonation suppression are allowed except in Pure Street, but they must be declared to the Tech Inspectors, who will inspect and possibly seal the tank.
- E. No fuel may be carried in the vehicle in any container other than the gas tank or fuel cell.
- F. Any open compartment or "hatchback" style vehicle must incorporate a physical barrier between the fuel tank or cell and the passenger compartment. Lexan may be used if this barrier could impede rear visibility. It is strongly recommended that you consult with the Chief Technical Inspector or the Race Director prior to installation.

Appendix A – Roll Bar Specifications

Divisional Requirements: A Roll Bar is mandatory in the Auto A Division and recommended for vehicles in the B division. Vehicles with “pop-up” roll bars, approved OEM rollover structures, or factory reinforced roll structures may be allowed to compete without a roll bar in classes where a roll bar is required but will be evaluated on a per car basis. The Race Director’s decision is final.

Basic Design Considerations: The basic purpose of the roll bar is to protect the driver in case the vehicle rolls over. It should be designed to prevent serious body shell deformation in the case of a collision or of the car turning over. A roll bar is comprised of a structural frame or hoop and mounting points.

The top of the roll bar shall not be below the top of the driver's helmet in a closed car and a minimum of two (2) inches above the driver's helmet in an open car when the driver is in the normal driving position with helmet on. It shall not be more than six (6) inches behind the driver.

The two vertical members forming the sides of the hoop shall not be less than fifteen (15) inches apart, inside dimension, at their attachment points to the uppermost main chassis member.

If certification of roll cage construction cannot be provided, an inspection hole of at least 3/16 inch diameter must be drilled in a non-critical area of the roll bar member to facilitate verification of wall thickness. This should be at least three inches from any weld or bend.

Material: The roll bar hoop and all braces must be of seamless, ERW (Electric Resistance Welded), DOM (Drawn over Mandrel) or CREW (Cold Rolled Electric Welded) mild steel tubing.

Chrome alloy tubing, such as 4130, is not recommended since the strength of the area adjacent to the welds will be impaired if the structure isn't normalized, and because of the difficulty in making satisfactory welds.

The size of the tubing to be used must be determined on the basis of the weight and speed potential of the car. Refer to [chart](#) below. The main hoop and support braces must be of the same size.

Fabrication: The main vertical hoop must be of one continuous length of tubing with smooth continuous bends and no evidence of crimping or wall failure. All welding must be of the highest possible quality with full penetration and will be subjected to very critical inspection. Arc welding, preferably TIG, should be used wherever possible. Gussets should be welded at the junction of any tubes.

On vehicles of Space frame or Frameless Design: It is important that the structures be attached to the vehicles in such a way as to spread the loads over a wide area. It is not sufficient to simply attach the roll bar to a single tube or junction of tubes. The roll bar must be designed in such a way as to be an extension of the frame. Considerable care must be used to add as necessary to the frame structure itself in such a way as to properly distribute the loads. It is not true that a roll bar can only be as strong as any single tube of the frame. On vehicles of frameless construction, consideration should be given to using a vertical roll bar hoop of 360 degrees completely around the inside of the car, and attached with suitable mounting plates. This type of roll bar then becomes a substitute for the frame.

Bracing: The braces must be of the same size tubing as used for the roll bar itself. All roll bars must be braced in a fore or aft direction with the brace attached within six inches of the top of the hoop, and at an angle of at least thirty (30) degrees from vertical. It is required that a diagonal brace be used to triangulate the main hoop and it is highly recommended that this brace be attached at the top on the driver’s side, and to the bottom on the “passenger’s” side.

An additional horizontal bar to support the main hoop is recommended. In addition, this bar should be installed at the height no more than 2" above or below the driver's shoulders while seated in the driver's position. The shoulder harness should be attached to this bar.

Mounting Plates: Roll bars and braces must be attached to the frame of the car whenever possible. Mounting plates must be used for this purpose. In the case of cars with unitized or frameless construction, mounting plates must be used to secure the roll bar structure to the floor of the car. The important consideration is that the load be distributed over as large an area as possible, with 4"x 4x1/8" the minimum size desired for spreader plates. A back up plate of equal size and thickness must be used on the opposite side of the panel with the plates through-bolted together using grade-eight (8) bolts and Self-locking nuts or double nuts if welding is not possible. It is preferred that the plates be tack welded or welded to the car's frame. On some vehicles this exact size is not an option and square area of the spreader plate must be calculated to spread the maximum load expected in the worst-case scenario.

Removable Roll Bars: Removable roll bars and their braces must be very carefully designed and constructed to be as least as strong as a permanent installation. The removable sections **MUST** "bottom out" onto the mounting plate so as not to put all of the stress on the connecting bolt.

If one tube fits inside another to facilitate removal, the removable portion must bottom on the permanent mounting, and the mounting hardware used to secure each joint must be at least grade eight (8) or better. It is recommended that the telescope section be at least eight inches in length.

Other Designs: Deviations from the above will be considered. NHRA-approved (11.49) roll bars will be accepted but we would prefer a full 6-point or higher design.

Roll Bar Padding: Roll bar padding must be used to protect the occupants in all areas of possible contact. It must be of material (readily available) that is designed for this purpose. SFI-approved padding is highly recommended.

Minimum Tubing Sizes: The size of the tubing to be used shall be determined on the basis of the weight and speed potential of the car. Tubing of 1 5/8" .120 wall mild steel may substitute for the mild steel sizes listed in the chart, for an NHRA bar only.

Roll Bar Tubing Chart:

Weight	Steel	Minimum Tubing Size
Under 1500 lbs.	Mild Steel	1.50" O.D. X .120 wall
	Alloy Steel	1.50" O.D. X .090 wall
Over 1500 lbs.	Mild Steel	1.75" O.D. X .120 wall
	Alloy Steel	1.75" O.D. X .090 wall

(It is recommended that vehicles weighing in excess of 3200 pounds use 2.00" tubing).

Appendix B – Roll Cage Specifications

Roll Cage Division Requirements: A Roll Cage is mandatory in the Auto Unlimited division.

Design Requirements: Roll cages must be designed and made so that, when correctly installed, they substantially reduce body shell deformation and so reduce the risk of injury to occupants. The essential features of Roll cages are sound construction (designed to fit the particular vehicle), adequate mountings, and a close fit to the body shell. Tubes must not carry fluids. The safety cage must not unduly impede the entry or exit of the Driver.

Bolt-in roll cages are allowed; fully welded cages are recommended. At least one door bar must be used on both sides of the vehicle. The use of a NASCAR style door bar incorporating at least 2 bars that extend into the door and are supported by vertical upright bars is recommended. A factory side impact bar may only be removed if using a NASCAR style cage design.

The cage should be triangulated at as many points as possible and the liberal use of gussets, welded at each joint, is mandatory.

Basic Design Considerations: A roll cage is comprised of a structural frame or hoop, a perimeter roof hoop, door bars, fore and aft bracing and diagonal supports all arranged in such a manner so as to prevent occupant injury in the event of a rollover and to structurally improve the integrity of the vehicle.

The top of the roll cage main hoop shall not be below the top of the driver's helmet in a closed car and a minimum of two (2) inches above the driver's helmet in an open car when the driver is in the normal driving position with helmet on. It shall not be more than six (6) inches behind the driver.

The two vertical members forming the sides of the hoop shall attach to the outermost main chassis member. If certification of roll cage construction cannot be provided, an inspection hole of at least 3/16" diameter must be drilled in a non-critical area of the main hoop to facilitate verification of wall thickness. This should be at least three inches from any weld or bend.

Material: The roll cage hoop and all braces must be of seamless, ERW (Electric Resistance Welded), DOM (Drawn over Mandrel) or CREW (Cold Rolled Electric Welded) mild steel tubing. Chrome alloy tubing, such as 4130, can be used but is not recommended since the strength of the area adjacent to the welds will be impaired if the structure isn't normalized, and because of the difficulty in making satisfactory welds. The size of the tubing to be used must be determined on the basis of the weight and speed potential of the car. Refer to [chart](#) below. The main hoop and support braces must be of the same size.

Fabrication: The main vertical hoop must be of one continuous length of tubing with smooth continuous bends and no evidence of crimping or wall failure. All welding must be of the highest possible quality with full penetration and will be subjected to very critical inspection. Arc welding, preferably TIG, should be used wherever possible. Gussets should be welded at the junction of any tubes.

On vehicles of Space frame or Frameless Design: It is important that the structures be attached to the vehicles in such a way as to spread the loads over a wide area using spreader plates. It is not sufficient to simply weld the bars to body or frame material. The roll cage must be designed in such a way as to triangulate the designed structure of the vehicle. Considerable care must be used to add as necessary to the frame structure itself in such a way as to properly distribute the loads.

Bracing: The braces must be of the same size tubing as used for the roll bar itself. All roll cages must be braced in a fore or aft direction with the braces attached within six inches of the top of the verticals and at an angle of at least thirty (30) degrees from vertical. It is required that a diagonal brace be used to

triangulate the main hoop and it is highly recommended that this brace be attached at the top on the driver's side and attached to the bottom on the "passenger" side.

An additional horizontal bar to support the main hoop is recommended. In addition, this bar should be installed at the height no more than 2" above or below the driver's shoulders while seated in the driver's position. The shoulder harness should be attached to this bar. A head restraint is recommended.

Mounting Plates: The main hoop and braces must be attached to the frame of the car whenever possible. Mounting plates must be used for this purpose. In the case of cars with unitized or frameless construction, mounting plates must be used to secure the structure to the floor and body of the car. The important consideration is that the load be distributed over as large an area as possible, with 4"x 4x1/8" the minimum size desired for spreader plates. The plates must be tack welded or continuous welded to the car's frame. On some vehicles this exact size is not an option and square area of the spreader plate must be calculated to spread the maximum load expected in the worst-case scenario.

Other Designs: Deviations from the above will be considered. NHRA approved 9.99 cages will be accepted but any factory side-impact door bar must remain. The NASCAR design is preferred.

Roll Bar Padding: Roll bar padding must be used to protect the occupants in all areas of possible contact. It must be of material (readily available) that is designed for this purpose. SFI-approved padding is highly recommended.

Roll Cage Tubing Chart:

Weight	Steel	Minimum Tubing Size
Under 2700 lbs.	Mild Steel	1.50" O.D. X .120 wall
	Alloy Steel	1.50" O.D. X .090 wall
Over 2700 lbs.	Mild Steel	1.75" O.D. X .120 wall
	Alloy Steel	1.75" O.D. X .090 wall

It is highly recommended that vehicles weighing in excess of 3200 pounds use 2.00" tubing.