

MAORA 2018 RULE BOOK

Comment [PW1]:

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WARNING:

OFF ROAD RACING IS A HAZARDOUS ACTIVITY. PARTICIPATION MAY  
RESULT IN SERIOUS INJURY OR DEATH. COMPLIANCE WITH THESE RULES  
DOES NOT INSURE OR IN ANY WAY GUARANTEE THE SAFETY OR WELL  
BEING OF PARTICIPANTS IN MAORA SANCTIONED EVENTS OR ACTIVITIES.

NO EXPRESSED OR IMPLIED WARRANTIES OF SAFETY OR FITNESS FOR

A MAORA SANCTIONED EVENT OR ACTIVITY SHALL BE INTENDED BY OR RESULT FROM THE PUBLISHING OF OR THE COMPLIANCE WITH THESE RULES AND REGULATIONS.

PARTICIPATION IN ANY MAORA SANCTIONED EVENT OR ACTIVITY IS AT THE PARTICIPANTS OWN RISK.

BY ENTERING A MAORA SANCTIONED EVENT OR ACTIVITY EACH PARTICIPANT AGREES TO BE BOUND BY THE RULES AND REGULATIONS COVERING ANY SUCH EVENT OR ACTIVITY.

ALL PARTICIPANTS WILL BE REQUIRED TO SIGN A WAIVER AND RELEASE OF GENERAL LIABILITY BEFORE ANY PARTICIPATION IN ANY MAORA SANCTIONED EVENT OR ACTIVITY.

## 1. SAFETY REGULATIONS

### S-1. HELMETS:

A. Snell Memorial Foundation 2005 or newer approved helmet is required. If you have any questions check with the Technical Committee. Required: are "D" rings on straps. It is recommended that the following medical information be included: Name, Blood Type, Allergies, and pertinent medical history.

### NOT ALLOWED:

1. D.O.T. rated only
2. Snaps on straps

### 3. Velcro strap connection

#### S-2. PROTECTIVE CLOTHING:

A. A driving suit that effectively covers the body from the neck to the ankles and wrists, manufactured of fire resistant material, is required for enduro, heat race, and obstacle. It is recommended that Nomex type underwear be used. Drivers shall not wear nylon underwear.

B. Gloves are recommended and made of leather and/or other fire resistant material containing no holes.

C. Shoes and socks made of fire resistant or low flammable materials (i.e., nomex, nomex lined, 100% wool or cotton socks and all leather shoes) should be used.

D. Drivers and Co-Drivers of open cars SHALL wear goggles or face shields made of impact resistant materials.

E. It is highly recommended that entrants with removable dentures, remove dentures prior to competing in off-road events.

#### S-3. RESTRAINT SYSTEMS:

All occupants in all vehicles SHALL utilize either a five (5), six (6), or seven (7) point restraint system meeting the following specifications:

A. A five (5) point system is recommended for use in those vehicles where the Driver and Co-Driver are seated in an up-right position. It consists of a 3" lap belt and a 2" anti-submarine (crotch) strap. The shoulder straps MUST be 3."

B. A six (6) or seven (7) point system is recommended for use in those vehicles where the Driver and Co-Driver are seated in a semi-reclining position. It consist of a 3" lap belt, 3" shoulder harness and 2 or 3 leg anti-submarine belt(s).

C. All straps shall be nylon or Dacron polyester and in new or perfect condition with no cuts or frayed layers, chemical stains, or excessive dirt. The buckles MUST be of the metal-to-metal quick release type. The shoulder harness SHALL be the 2 strap over-the-shoulder type. There must be a single release

common to the lap belt, shoulder harness, and anti-submarine belt(s).

D. Restraint systems must be replaced every 4 years. Re-webbing is the suggested method of replacement.

#### S-4. INSTALLATION OF RESTRAINT SYSTEM:

A. Shoulder harnesses should be mounted behind the Driver/Co-Driver. The recommended mounting point is approximately 4" below the top of the shoulder.

B. Lap belts should be kept at a minimum of at least 2 ½" forward of the seat and backrest intersection.

C. All belts must be mounted directly to a main structure member with the strength of at least 1 ½ X .090 tubing with gussets.

D. All adjustment buckles should be kept a minimum distance of 1 ½" from the seat to prevent accidental loosening or chafing.

E. No surplus safety harnesses are allowed. Mounting hardware must utilize 5/16" hardened bolts with 1 ½" diameter washers attached through the body or frame using lock nut or cotter key.

F. Bolt-in end fittings require that a plate of at least ¼" be welded to the frame at an angle that allows for direct pull of the strap. Eye bolts should be mounted to the frame. All bolts and nuts are to be lock-nutted or safety wired and the snaps must be cotter keyed. UNDER NO CIRCUMSTANCES are bolts to be inserted through the webbing.

#### S-5. ROLL CAGES AND ROLL BARS:

These specifications are MANDATORY and represent the MINIMUM requirements.

A. All vehicles in competition must be equipped with a roll cage. Roll cage structures on vehicle whose weight is less than 2000 lbs. are to be a minimum of 1 ½" O.D. by .090 wall cold rolled steel tubing. Roll

cage structures on vehicles whose weight is 2000-3000 lbs. are to be a minimum of 1 3/4" O.D. by .120 wall cold rolled steel tubing. (Threaded pipe, pipe fittings, lap weld pipe, square tubing, magnesium, or aluminum is not permitted in any construction of roll cages or roll bars.) Low carbon (mild) steel tubing is recommended.

B. All roll cage construction must be securely mounted, braced, and gusseted. Gussets must be 1/8" thick by 3" diagonally across. All welds must be gusseted.

C. All bars must be adequately supported within 6" of the top of the bar, or cross braced to prevent forward or lateral collapse of the roll bar or roll cage. No method of attachment to the main frame shall be other than (a) bolting with a minimum of 2 1/2" aircraft type bolts at any location of attachment or (b) welded as an integral portion of the main frame. NO muffler clamps may be used to attach the roll cage or roll bar to the main frame. Flush grinding of welds is not permitted.

D. The top of the roll cage/roll bar MUST be a minimum of 3" above the top of the Driver/Co-Driver's helmet when occupants are sitting in their normal sitting positions. It is MANDATORY that any portion of the roll cage or bracing which may be contacted by the occupant's helmet(s) or body(s) shall be covered with energy-absorbing material to a minimum thickness of 1". The energy-absorbing material MUST be covered with duct tape or other similar slow to burn material.

E. Cab or body mounted cages must not be attached to the body structure by direct welding, but must be bolted through and attached by use of doublers plates (one on either side) with a minimum thickness of 3/16".

F. ROLL CAGE DESIGN: All roll cages must be constructed with at least one front hoop, one rear hoop, two interconnecting top bars, two rear down braces and one diagonal brace and necessary gussets.

**EXCEPTION:**

Single seat buggies are not required to have diagonal brace.

G. Any vehicle not equipped with stock steel doors must be equipped with side bars, at least one on each side to protect the occupants from the side. These bars must be parallel with the ground and

located vertically in relation to the occupants to provide maximum protection without causing undue difficulty in entering and exiting the vehicle.

The side bars must be formed from tubing of the same material and dimension as the roll cage and must be securely attached to the cage's front and rear members. Rear down braces and diagonal braces must angle no less than 30 degrees from vertical.

S-6. HORN: All vehicles must be equipped with a loud horn.

3.

S-7. FIRE SUPPRESSION EQUIPMENT:

It is required that all vehicles in all classes be equipped with a Dry Chemical type or a Halon 1301 system of the following minimum capacities: (No Halon 1211 systems allowed.)

1. Dry Chemical: 2 ½ lbs. of 1-A:5-B:C Underwriters Laboratory rating or better. The extinguisher MUST be within EASY reach of the Driver/Co-Driver. The bottle MUST have an all metal, quick release mounting bracket and all metal parts, except the fuel gauge face.

2. Halon 1301: (Flame-Out, Phoenix, Simpson, Flame-X) 5 lbs. is the minimum size allowed. The system SHALL NOT have more than 4 nozzles. The line to all the bottles shall not exceed 7'. The location of the bottle, release cable, and nozzles should be installed as per manufacturers specifications. If the vehicle has a Halon 1301 system, a dry chemical system is not required, but is recommended.

S-8. NETS:

A. Nets shall cover the complete open area of both sides and top of all vehicles. The nets must be fastened every 6-8" around the outside of the net. Vehicles with wing glasses that open fully must cover the area surrounding the wing glass.

B. The net border or edge and tie downs shall be made of material that is stronger than the netting

itself. Velcro installations should be carefully checked because they tend to loosen when packed with dirt or dust.

C. Acceptable methods of tying the nets into the car include, but are not limited to, hose clamps, snaps, nylon ties, velcro, lift-a-dot, metal hooks, and steel rods. Full length velcro or steel rods are acceptable continuous fastening devices from the bottom of the net. Velcro must fasten continuously along the bottom of roll cage bars to prevent accidental unfastening from a direct pull.

D. Nets shall be installed so the Driver/Co-Driver can release the netting and exit the vehicle unassisted regardless of vehicle position.

E. The netting shall be installed on the INSIDE of the roll cage bars so that it will not be damaged or come off the car in the event of a roll-over or slide on the side.

F. Nets attached to the floor frame covering the entire opening are approved as long as the door is equipped with a secondary positive latching device.

G. The roof shall also be covered with sheet metal, sheet aluminum, steel mesh or nylon safety net covering all areas. In addition, it is required that the occupant's legs be protected in such a manner that prevents them from extending from the body or frame of the vehicle during a roll-over.

#### VEHICLE COMPONENT REGULATIONS

##### S-9. SUSPENSION:

On all production-type vehicles in production classes, front and rear suspension systems may be strengthened by adding material or replacing parts, but the basic design of the system may not be changed. Suspension springs and their mounts may be modified provided the original spring type and mounting method and placement retained.

(Strictly stock class accepted.)

S-10. SHOCK ABSORBERS:

All vehicles in all classes MUST have at least one shock absorber per wheel. Additional shock absorbers and their installation are subject to approval of the Chief Technical Inspection.

4.

S-11. WHEELS AND TIRES:

Lug studs and nuts, lug stud holes in wheels, spindles, and all other components will be checked for wear and serviceability. Paint should be removed from the drum and wheel mounting surfaces.

S-12. STEERING:

All steering components MUST be free of defects and in excellent working condition. Questionable units will be rejected. Steering shafts and ay joints will be closely inspected. Steering play must be at a minimum, drag link and tie rod ends must be secured and keyed. All welded parts must be reinforced. If the steering shaft is not a factory production item, then the shaft must be welded (not brazed) to the wheel mounting flange. Minimum specifications for the shaft are 7/8" O.D. x .060" wall thickness unless it is an original factory production item.

S-13. BRAKES:

All vehicles in all classes MUST have at least one working brake on each wheel. ALL brake lines are to be metal and they are to run in the safest way possible to prevent damage from rocks and other objects which might cause the line to leak. Metal or O.E.M. connecting lines are allowed. Aircraft type braided line is recommended for connecting wheel cylinders to static lines.

S-14. IGNITION:

Each vehicle must have positive action on/off switch in good working condition and should be located within easy reach of the driver with his/her belt and harness set on and tightly adjusted. The ignition switch shall be marked or labeled "ignition" on and off.

S-15. BATTERIES:

Batteries MUST be securely mounted with metal-to-metal tie downs. All wet-cell batteries mounted in



the driver's compartment must be fully enclosed, including the side and bottom of the batteries which will contain the quantity of acid in the battery when inverted. Aircraft batteries which are not covered but located in the driver's compartment are not acceptable. Batteries will be considered to be located in the driver's compartment if there is not a full bulkhead (firewall) separating the driver and the battery.

S-16. LIGHTS:

All vehicles in all classes MUST be equipped with and have operating (a) two tail lights, (b) two brake lights, minimum of 3" in diameter. ALL VEHICLES AT ALL TIMES MUST HAVE OPERATING BRAKE AND TAIL LIGHTS. ADDITIONAL FLASHING DUST LIGHT REQUIRED may be Blue Or Yellow.

S-17. STARTERS:

All vehicles in all classes MUST be self-starting.

S-18. FUEL:

A. Any of the following commercially available gasoline, LPG, or diesel fuel may be used:

1. Service station type fuel
2. Racing gasoline as manufactured
3. Commercial aviation gasoline as manufactured

B. No oxygen bearing fuel, including alcohol or nitro methane is allowed.

C. Commercially produced, nationally advertised fuel additives may be used only in quantities specified by the manufacture and only if a sample of the gasoline with the additive is supplied for technical inspection prior to the event. Fuel samples may be taken at random before, during, and after the event at the discretion of the Technical Inspector.

5.

S-19. FUEL TANKS AND SYSTEMS:

A. All fuel tanks MUST be securely mounted. If fuel cells are not used, a firewall must separate the

driver's compartment from the fuel area. Auxiliary fuel tanks may be added provided they are mounted securely and filled from and vented to the outside of the vehicle. All fuel tanks mounted outside the vehicle and exposed to crushing forces under ANY condition of crash or upset must be equipped with an approved burst proof bladder. NO side pod fuel tanks allowed other than fuel cell. NO G.I. cans or fuel containers similar in construction or purpose will be allowed in or on any vehicle during a race.

B. A positive locking filler cap (no Monza/flip type) MUST be used (dry brake is allowed) and fuel pick-up openings and lines, breather vents, and fuel filler lines SHALL be designed and installed so that if the vehicle is partially or totally inverted, fuel SHALL NOT escape. If the fuel filler cap is located directly on the fuel tank (within 2" of the tank) a check valve shall not be required provided the filler cap is of a positive locking type and does not incorporate an unchecked breather opening. If the fuel filler cap is not located directly (within 2" of the fuel tank) a check valve (tip-over) MUST be incorporated in the fuel tank to prevent fuel from escaping if the cap and filler neck are torn from the tank. Filler lines must be flexible enough to allow 6" of movement of the cap and not alter the filler inlet location on the tank. Filler caps are to be mounted inside the roll cage and must have splash guards to prevent fuel from getting on the occupant(s), engine, and exhaust system.

C. Fuel tank breathers MUST rise at least half the depth of the tank above the tank and then vent below the tank.

A p.c.v. valve is recommended for the end of the vent line.

D. FUEL LINES AND FUEL PUMPS: All fuel lines SHALL be run in areas that are protected from damages that might be caused by rocks, dirt, debris, a collision with another vehicle, or stationary object. It is recommended that steel braided cable be used for fuel line. In the pick-up four wheel drive classes, a protective cover over the fuel line that is at least 1/8" x 16" long, 8" in front and 8" in back of the flywheel or torque converter MUST be used. In all other classes, if rubber tubing is used for fuel line it MUST be soft, flexible, and long enough to allow movement. Tubing that has turned hard must be

replaced. Hose clamps MUST be used on every end of rubber hose. Make sure they are not too tight.

Vehicles using electrical fuel pumps MUST have a shut off switch that can be reached by the Driver with his/her restraint system tightened down. In the VW powered vehicles a mechanical pump with an electrical back-up system, cannot have an electrical pump hooked up electronically when not in use.

(Accidental use may cause the diaphragm in the mechanical pump to give way causing raw fuel to be pumped into the crank case, which may result in a fire or explosion.) Fuel pumps SHALL only supply fuel to the carburetor(s) or injectors and not used for cooling purposes.

E. It is required that fuel cell foam be installed in all fuel tanks. The tanks should be filled 75% full with foam.

F. FUEL CELLS: Safety fuel cells are MANDATORY. A substantial cross member must be between the fuel tank and Driver in vehicles with rear mounted fuel tanks.

G. Fuel cells must meet the specifications established by the FIA (Federal International de L'Automobile). The following are basic but not complete specifications established by FIA:

H. Safety Fuel Cell Specifications: Safety fuel cells SHALL consist of a fuel bladder enclosed in a smooth skinned container. DOUBLE WALLED TANKS ARE MANDATORY.

I. The physical properties must be maintained throughout all areas of the bladder, including seams, joints, and fittings. These are the minimum standards acceptable:

1. Tensile Strength 450 lbs (Spec. CCC-T-1916)
2. Tear Strength 50 lbs (Spec. CC-T-1916)
3. Puncture Test 175 lbs (Spec. MIL-T-6396)

J. All fittings shall be built into the skin and bonded as an integral part of the tank or mechanically bound to the skin by a system of ring and counter ring with sealing by either a flat joint or with an "O" ring. Fuel cells MUST be replaced every 5 years.

K. The bladder shall be fully surrounded in a smooth skinned casing (container) made of 20 gauge steel, .060" aluminum or .125 Marlex. Use of magnesium is prohibited. The container must be securely

fastened to the frame or floor with bolts and/or steel or nylon straps. Foam internal baffling is required.

6.

#### S-20. MUFFLER AND EXHAUST SYSTEMS:

Each vehicle may be required to be equipped with mufflers or forestry approved spark arrester installed in such a manner as to direct the exhaust gasses out of the body, rearward, behind the Driver, away

from fuel tank and tires and placed in such a manner that will minimize the producing of dust. Exhaust pipes must extend to the rear, at least, of the driver's compartment.

#### S-21. ENGINE:

Where applicable, engines must displace no more than specified, an engine's displacement and location may be checked at the discretion of the Technical Director at any time prior to, during or after an event. Violation of the displacement rule may result in disqualification, loss of accumulated Driver's points and/or purse. No vehicle may replace a complete engine during an event unless that engine has been through technical inspection and marked accordingly.

#### S-22. TRANSMISSIONS:

Every vehicle MUST have a functional reverse gear. Four-wheel drive vehicles must be capable of being driven through the front wheels.

#### S-23. THROTTLES:

Each vehicle must have a foot throttle, incorporating positive action return springs attached directly to the carburetor throttle arm and must register a minimum pull of 2 lbs. A positive stop or over-ride prevention system must be used to keep linkage from passing over center and sticking in an open position.

#### S-24. DRIVE SHAFTS:

All front-engine vehicles utilizing open drive shafts must have a retainer hoop securely mounted and

located within

6" of the front universal joint. Four-wheel drive vehicles are not required to restrain the front drive shaft from the transfer case to the differential. The retainer hoop may consist of either: (a) ¼" x 2" steel strap or (b) 2" wide nylon webbing, both securely attached to a body or frame member.

S-25. OIL COOLERS:

All vehicles using supplemental oil coolers/filters MUST mount cooler(s) in such a manner that should a line break,

NO oil or spray can reach the occupant(s). It is recommended that steel braided line be used, and that a shroud be installed to prevent oil from hitting the occupant(s).

7.

S-26. AUXILIARY EQUIPMENT:

Generator, fan, water pump, and a complete functional electrical system MUST be connected and operational at all times. Drive belts must be sufficiently tight to drive equipment in a satisfactory manner and without slippage.

Thermostatically controlled accessory fans are allowed. Auxiliary equipment will be waived for unlimited classes.

S-27. SUPERCHARGERS AND TURBOCHARGERS:

Not permitted in any classes except by special ruling.

S-28. SEATING:

All seats, regardless of stock or after-market, must be securely mounted and reinforced. Stock VW runners must be welded 360 degrees or U-bolted in place. Stock seats are not recommended.

S-29. DRIVER'S COMPARTMENT:

Drivers must be able to enter and exit the compartment unassisted with ease, with the vehicle in any position. The driving compartment must be separated by fire walls or bulkheads from any acids or fuels.

S-30. DOORS AND LATCHES:

All vehicles in all classes with operating doors MUST have a positive locking mechanism, i.e. retainer strap, pin and clip, or stock handle and latch.

S-31. FIRE WALLS:

A. All vehicles MUST utilize an all-metal firewall to separate the driver's compartment from any danger of fire from the engine. A minimum firewall MUST extend from the Driver's shoulder height to the vehicle floor and body sides and be fuel tight. If rear mounted fuel tank or "cell" is higher than shoulder height, the firewall must be extended at least 1" above the fuel tank or "cell". Front engine vehicles without windshields, the hood is considered an extension of the firewall.

B. On front engine vehicles where engine changes require firewall modifications: Material substitution is no allowed. Firewall must retain original thickness and material type.

S-32. BALLAST:

Any material used for the purpose of adding to the vehicles weight MUST be permanently attached as a part of the vehicles structure and must not extend in front of the front wheels or in back of the rear wheels or above the height of the front tires. NO liquid or loose ballast is permitted, I.e. water, sandbags, rocks, shot bags, metal weights, etc.

S-33. WEIGHT:

Shall be considered dry weight, gas tanks shall be drained, tools and spare MUST be removed, but otherwise race ready.

S-34. FLOORBOARDS AND PANS:

Floorboards or belly pans are required on all vehicles and MUST be held on by the minimum of 6,  $\frac{1}{4}$ " bolts per side if the floor is not an integral part of the body chassis.

8.

S-35. BUMPERS AND NERF BARS:

All vehicles in all classes SHALL have front and rear bumpers. However, NO hazardous front or rear bumpers, frame heads, nerf bars will be allowed. No angle iron bumpers will be allowed. All installations are subject to approval by the Chief Technical Inspector.

S-36. MIRRORS:

A rearview mirror is REQUIRED on all vehicles.

S-37. SKID PLATES:

Skid plates designed to protect the front suspension, steering, and brake components are recommended in Classes 1-2, 1-2 1600. 9-10 and class 11. Skid plates must be designed of metal and installed so as to prevent any accumulation of fluid.

S-38. STORAGE:

All spare parts and equipment carried on or within the vehicle MUST be securely fastened so as to eliminate their moving during an event.

S-39. FENDERS:

On all vehicles required to have fenders, fenders must be securely attached to the vehicle with quick release or breakaway fasteners. The removal of fenders for any reason other than damage incurred during an accident, after the race has officially started, will cause the vehicle to be disqualified.

S-40. BODIES/CHASSIS:

All body components shall remain on the vehicle (accidental damage accepted) during the entire event. As specified in individual class rules, body/chassis series must be maintained with body/chassis combinations and weight certifications left to the discretion of the Technical Director.

S-41. NUMBERS:

Each vehicle SHALL be required to carry the following identification numbers and/or letters as a minimum requirement:

A. Visible from the side- 2 numbers per side on both sides and one number visible from the rear. One of

the numbers to be mounted on the roof. Side and top numbers MUST BE 8" high with a 1" stroke. Rear numbers are to be a minimum of 6" high.

B. ALL NUMBERS MUST BE BLACK ON A WHITE BACKGROUND.

C. MAORA assumes NO responsibility for scoring vehicles that have unrecognizable identification numbers. It is the Driver's responsibility to keep the numbers recognizable at all times during the event.

S-42. FASTENERS:

All nuts, bolts, and their component parts on the vehicle drive train (engine mounts, U-bolts, etc.) chassis and suspension system, steering, or any other deemed necessary MUST be secured by one of the following: safety wire, lock nuts, cotter keys, or lock washers. Bolts MUST have thread showing through the nut.

S-43. HOSES:

All fuel, brake, or cooling lines MUST be securely fastened in place. This includes metal lines, hose clamps, or aircraft fittings on the ends, tie wraps along the line or safety wired.

9.

S-44. ANTENNA:

In short course events NO long whip antennas will be allowed. In long course events, whip antennas are recommended but not required.

S-45. ADVERTISING:

Name and company logos may and should be displayed on race vehicles. All advertising and paint jobs MUST be in good taste and MAY NOT interfere with the identification numbers.

S-46. WORKMANSHIP:

All modifications and alterations MUST be performed in a workmanlike manner subject to the approval of the

Technical Inspector.



S-47. FLYWHEEL SHIELDS:

All V-8 powered vehicles with standard transmissions and solid lifters must have a SEMA-approved bell housing or cover.

S-48. VENTILATION AND FORCED AIR SYSTEMS:

All vehicles using one or more of these systems MUST mount fresh air intake in such a location as to make it

impossible for the pump to pump any smoke, oil vapor or mist, exhaust fumes, battery acid fumes, or other matter which might cause the occupant(s) to have difficulty breathing. The system SHALL NOT be mounted over the fuel tank, near an oil cooler or the battery. Rigid metal ducting is suggested for pumping air from remote locations. The flexible hose lines should be fire resistant material.

OPEN CLASS

CLASS 1-2 SINGLE AND TWO SEAT UNLIMITED

A. Defined as a single seat vehicle with one occupant or a two seat vehicle with two occupants at ALL times during competition.

B. Must comply with all GENERAL REGULATIONS if applicable.

C. ALL COMPETITION AND SAFETY REGULATIONS APPLY with the following clarifications and/or limitations:

S-21. ENGINE:

Unlimited displacement.

S-33. WEIGHT:

No limitations.

S-41. NUMBERS:

A. Must use "1" as first digit if it is a single seat vehicle.

B. Must use "2" as first digit if it is a two seat vehicle.

Unless the class requirements or safety regulations specifically state that a modification or optional equipment is permitted, IT WILL NOT BE ALLOWED, unless technical rule has been made and published.

10.

#### CLASS 6

A. Defined as two wheel drive passenger cars and sport utility vehicles using only two wheel drive, produced in quantities of at least 5,000 vehicles per year and available for sale in the U.S. within a few years of their production. If a vehicle is questionable, the driver must provide a title or owners manual. The Classix class is further divided into 3 subgroups for the purpose of competitive equality. These subgroups have some different rules to compensate for various strengths and weaknesses:

1. Traditional Cars
2. Full Size Sport Utilities
3. Lightweight Sports Utilities

B. Must comply with all GENERAL REGULATIONS if applicable. Unless the class requirements or safety regulations specifically state that a modification or optional equipment is permitted, IT WILL NOT BE ALLOWED, unless technical ruling has been made and published.

C. ALL COMPETITION AND SAFETY REGULATIONS APPLY with the following restrictions:

#### S-9. SUSPENSION:

Original concept of suspension and springs such as A arm, leaf springs and I beam, etc. must be used.

#### ALLOWED FOR PASSENGER CARS AND SUV's:

- A. Stock suspension pieces from any vehicle in the same manufacturer.
- B. Any ball joint adaptations, but only in stock locations. Example: mono balls are legal as replacement ball joints.
- C. Spindles may be modified or aftermarket but must be at least as heavy as the original equipment.

D. Travel limits may be modified up to a maximum of 12" front and 15" rear.

E. Strengthening by plating and/or gusseting stock components.

F. Spring rate and/or capacity changes.

G. Shock combinations and configurations are unlimited.

H. Suspension parts may be moved up to a maximum of 1" (+) or (-) from original location on the frame.

I. Cars with trailing arm rear end may fabricate trailing arms up to a max of 22" from pivot point to pivot point.

NOT ALLOWED FOR PASSENGER CARS AND SUV's:

A. Shop/custom fabricated components to lighten un-sprung weight of vehicle.

B. All parts must retain original working lengths. Longer springs are allowed only if they attach to stock frame location.

C. Stock frame location plus (+) or (-) 1" must be used for mounting of all suspension parts.

D. Adjustable heim joints are not allowed on front suspension components (tie rods are not suspension components, they are steering components).

ALLOWED FOR FULL SIZE SUV AND LIGHT SUV ONLY:

Changing front suspension to that of another vehicle of same manufacturer/make and in same model year.

Example: Ford truck front frame and I beam may be put on a Bronco.

NOT ALLOWED FOR FULL SIZE SUV AND LIGHT SUV:

No vehicle may have more than 12" front travel or 15" rear travel. If stock components allow more travel than allowed, limit straps or bump stops will be required.

S-11. TIRES:

The tires and wheels must be D.O.T. approved pneumatic as long as wheels and tires do not extend

beyond lines as viewed from above. Wheels must be a 15" rim size or smaller.

#### 11. S-12. STEERING:

The steering must have stock location of all parts and components (+) or (-) 3". If after market or custom components are used such as steering quickeners, they must be stronger and safer than the stock steering system. Steering brakes are not allowed.

#### S-13. BRAKES:

Any manufactured or re-manufactured brakes are allowed so long as all 4 wheels lock up.

WHEEL BASE: Stock wheel base measurement must be retained (+) or (-) 2".

#### S-21. ENGINE, TRANSMISSION & DRIVELINES:

The engine must be 460 ci or less by the same manufacturer as the vehicle. Internal engine modification is permitted.

#### ALLOWED:

- A. Balancing, strengthening, and blueprinting.
- B. Camshaft and valve train modifications.
- C. Stroke and bore changes.
- D. Carburetor changes.
- E. Piston changes.
- F. Oil and water-cooling system upgrades.
- G. Air intake filter upgrades.
- H. Fuel pump upgrades.
- I. Exhaust and intake system upgrades & modifications.
- J. Transmission: gear sets and clutch may be modified.
- K. Rear axle assembly: gear ratios, carriers, axles, and floating hubs may be used/modified.

L. Ford 9" rear end and disc brakes.

NOT ALLOWED:

A. Moving the engine back, down, or in any direction from stock.

B. Water and vapor injection systems.

C. Fuel injection systems, except stock systems as provided on that specific model and year.

D. Dry sump oil systems.

E. Transmission must be a unit offered by the vehicle manufacturer.

F. Rear axle assembly cannot be changed from a standard automotive production housing and third member.

S-40. CHASSIS:

Strengthening the chassis and frame by adding material is acceptable, however no original frame member or any other piece of the frame may be removed. Small cutting and grinding on the chassis to allow for the addition of heavier and stronger supports is allowed.

BODY:

The original shape, size, and appearance (with minimum damage) of the body are required. Stock mounting and original body location in respect to the wheelbase must be maintained within (+) or (-) 1".

Full & Light SUV's- If a truck is built to mimic another vehicle such as a Bronco or Blazer, the body must represent the SUV it is portraying i.e. the box will be shorter and will attach seamlessly to the cab. SUV's do not have to keep removable fiberglass or canvas tops.

ALLOWED:

A. Outer fenders, hood, deck lid, and door skins may be replaced with fiberglass provided the original shape is maintained.

B. Up to 4" of fender well opening may be removed and the fenders may be flared out an additional 3" to allow for tire clearance.

12. MINIMUM WEIGHTS: Full size SUV's must weigh 4,400 lbs. minimum. Traditional cars must weight GVW plus 200 lbs. or 3,000 lbs. whichever is more. Light SUV's with 6 cylinder engines must weigh 3,800 lbs.

CLASS 9 SINGLE AND TWO SEAT

A. Defined as a single seat and two seat vehicles having an engine displacement no more than 1650cc water-cooled and 1915cc air-cooled.

B. Must comply with all GENERAL REGULATIONS if applicable. Unless the class requirements or safety regulations specifically state that a modification or optional equipment is permitted, IT WILL NOT BE ALLOWED, unless technical ruling has been made and published.

C. ALL COMPETITION AND SAFETY REGULATIONS APPLY with the following restrictions:

S-21. ENGINE:

A. Any engine may be used providing:

1. It has been series produced in quantities of 5000 units or more.
2. It must not displace more than 2000cc in stock form.
3. Engines with more than 2 valves per cylinder will be allowed in this class.
4. Maximum water-cooled engine displacement not to exceed 1650cc.
5. Maximum air-cooled engine displacement not to exceed 1915cc.

B. Any make of one for single seat or two for two seat, carburetors may be used providing:

1. It retains a maximum of two venturi per carburetor.
2. Maximum allowable carburetor venturi size of 42mm per throat.
3. Carburetors must be of automobile production type.
4. It has no modification of the venturi or throttle blade area.

S-33. WEIGHT:

1300 lbs. minimum.

S-41. NUMBERS:

Vehicles must have the first digit of "9".

GENTLEMEN'S AGREEMENT:

- A. Mandatory rear row start for all water-cooled entries.
- B. Class 9 to be Open Class to all novice entries to encourage more participation.

- 1. Novice being any entry not known to have previously raced competitively in buggies.
- 2. Novice must enter as a novice if the car does not conform to Class 9 rules.
- 3. No one shall be allowed to enter as novice after:
  - a. Two (2) first place finishes
  - b. Three (3) second place finishes (5 or more entries)
  - c. Four (4) second place or higher finishes.
  - d. Five (5) paybacks.
  - e. These apply to a two-season accumulation.
- C. Class 9 teardown rules apply to all entries not meeting the novice requirements.
- D. Options: Amendments allowed at Driver's Meeting to encourage participation. Need only majority vote.

13. CLASS 10/OPEN FOUR, SINGLE OR TWO SEAT

- A. Defined as a single seat or two seat vehicle having a four cylinder automotive of 5000 units or more
- B. Must comply with all GENERAL REGULATIONS if applicable. Unless the class requirements or safety regulations specifically state that a modification or optional equipment is permitted, IT WILL NOT BE ALLOWED, unless technical ruling has been made and published.
- C. ALL COMPETITION AND SAFETY REGULATIONS APPLY with the following restrictions:

S-9. SUSPENSION:Open

S-11. TIRES:D.O.T. Approved

S-21. ENGINE:

Four cylinder air cooled or water cooled automobile engine, naturally aspirated. All other modifications are open.

FUEL INJECTION: Is allowed

S-33. WEIGHT: 1300 lbs. minimum (with or without driver)

S-40. CHASSIS: Open

S-41. NUMBERS:First 2 digits must be "10".

#### CLASS 11

A. A limited 4 wheeled sedan or buggy type vehicle utilizing VW type I stock components with a 1600cc or buggy frame. All parts to be stock Type I unless modifications are stated.

B. Must comply with all GENERAL REGULATIONS if applicable. Unless the class requirements or safety regulations specifically state that a modification or optional equipment is permitted, IT WILL NOT BE ALLOWED, unless technical ruling has been made and published.

C. ALL COMPETITION AND SAFETY REGULATIONS APPLY with the following restrictions:

S-9. SUSPENSION:

FRONT END SUSPENSION:

ALLOWED:

1. Type I VW torsion housing.

2. Front axle torsion tubes may be cut, rotated, and rewelded to increase ground clearance. Stock shock must be retained but may be reinforced. Original seams may be rewelded to front axle.

3. Filling of speedometer hole.



4. Ball joints or king pins.
5. Spindles may be reinforced but diameter bearing cannot be changed.
6. Stock torsion bars only.
7. Front snubbers of any manufacture, but stock dimension and mounting methods must be maintained.
8. Limiters on ball joints ends.
9. Link pin gusset.
10. Collar may be welded to the front spindle.

14. NOT ALLOWED:

1. Torsion adjusters.

B. REAR SUSPENSION:

ALLOWED:

1. Type 1 or 3 torsion housing.
2. Torsion bars must be stock.
3. Spring plates stock only.
4. Rear torsion housing may be additionally supported only by the attachment of a terminal end (support member) of roll cage.
5. After-market torsion housing but stock dimensions must be maintained and stock end caps must be used. All four (4) bolts must be in place.
6. Torsion bar rubbers of any manufacture but must be stock dimensions.

7. Control arm bracing but stock configuration must be retained.

8. Axle tube stiffeners on swing axles.

NOT ALLOWED:

1. Secondary suspension.
2. Adjusters.

WHEELBASE: Open

S-10. SHOCK ABSORBERS:

ALLOWED:

1. Two (2) automotive type per rear wheel.
2. Shock mounts must be used in original location.
3. Rear shocks may be any size and one must utilize the stock mounting location.
4. Cooling fins.
5. Mounting bolts may be changed to a maximum of ½" diameter.
6. Emulsion-type shocks.

NOT ALLOWED:

1. Air or coil over shocks.
2. Reservoir shocks.
3. Over 2.4" maximum shock diameter.

S-11. WHEELS AND TIRES:

ALLOWED:

1. Any stock Type 1 wheel or any manufacture steel wheel may be used.
2. Removal of hub cap clips.
3. Centers may be welded and safety beads may be added.
4. Studs may replace bolts.

NOT ALLOWED:

1. Wheel adapters.

15.

S-12. STEERING:

1. Any model steering box or rack may be used and additionally supported.

2. Shims may be used between pitman arm and box.
3. Tie rods may be reinforced or one-piece tie rods, any one-piece tie rod may be used, stock tie rods may be reinforced.
4. Gusseting of the Steering Arms.
5. Mounting fabrication for steering stabilizer.

S-13. BRAKES:

1. VW Type 1 drum only.
2. Any combination of VW master and wheel cylinders as long as stock dimensions are maintained.
3. Any mechanical or hydraulic steering brake.
4. Any manufacture brake lining that maintains stock dimensions.

S-14. IGNITION:

ALLOWED:

1. Battery 6 or 12 volts.
2. Any manufacture distributor.
3. Any VW type alternator or generator in stock location.

NOT ALLOWED:

1. Magnetos.
2. Electronic ignition.

S-21. ENGINE:

The engine must be VW Type 1 (U.S. model sedan components and dimensions) as delivered from the factory.

Maximum engine displacement is 1600cc 85.5mm x 69mm.

A. CASE:

ALLOWED:

1. Any type 1, 2, 3 or "universal" can be used.
2. Align bore.

3. Drilled and tapped for oil pressure and/or temperature sending units.

4. Crank pulley seal. Machining necessary for installation.

5. Oil galleries on early cases may be enlarged to that of the "universal" case (10mm).

6. Oil gallery plugs may be threaded.

7. Windage trays.

NOT ALLOWED:

1. Deep or dry sumps.

2. Sump alterations.

B. BEARINGS: Any manufacture as long as stock dimensions are maintained.

C. PISTON ASSEMBLIES AND CYLINDERS:

ALLOWED:

1. Any manufacture as long as stock dimensions are maintained.

2. Three (3) ring pistons only

3. Wrist pin retainers may be of any type.

4. Balancing piston assemblies. One (1) assembly must be left untouched. The rest can be balanced to the weight of the one untouched.

NOT ALLOWED:

1. Slipper skirts.

2. Notched pistons.

3. Forged pistons.

16.

D. RODS:

ALLOWED:

1. VW "B" rods only. 5.395" Measured from center of small end to centerline of large end.

2. Balancing rods to one rod untouched.

NOT ALLOWED:

1. VW "A" rods.

2. Polishing and profiling.

E. CAMSHAFT AND CAMSHAFT GEAR:

ALLOWED:

1. Stock only.

2. Camshaft may be cut for oiling.

NOT ALLOWED:

1. Bolt on gears

2. Adjustable gears.

3. Offset of crank and cam gears.

F. OIL PUMP: Any manufacture oil pump.

G. CRANK SHAFT:

ALLOWED:

1. Stock VW only.

2. Any gear.

3. Power pulley.

4. Sand seals.

5. .030" undersized.

6. Balancing.

7. 8 doweling.

NOT ALLOWED:

1. Polishing or lightening.

2. Counter weighting.

H. CLUTCH AND PRESSURE PLATE:

ALLOWED:

1. Any manufacture stock diameter only.
2. Balancing.

I. FLYWHEEL:

ALLOWED:

1. Stock VW only.
2. Lightening and balancing.
3. Stock diameter only.
4. Eight (8) dowel pinned.
5. Any gland nut and washer.

J. HEADS: Heads must be U.S. sedan stock single port or the Brazil manufactured head with the VW insignia and a part #040-101-373.

17.

K. VALVES:

ALLOWED:

1. Stock one (1) piece valve.
2. Single 45 degree angle.
3. Guide may be bronze, cast iron, or steel.
4. Valve guide seal.
5. Any manufacture of valve springs, spring retainers, and lifters.
6. Stock valve spring diameter in heads must be maintained.
7. Valve stem lash caps.

NOT ALLOWED:

1. Grinding, polishing, or porting in any area including valves, port area, and guides.

L. ROCKER ARM SHAFT:

ALLOWED:

1. Stock 1600cc VW rocker arms only (1.1-1 ratio).
2. Any manufacture push rods and tubes.
3. Rocker arm adjustment screws and wave washers may be of any manufacture.
4. Rocker arm clips may be wired tied.

NOT ALLOWED:

1. No other grinding except that mentioned.
2. Roller or needle bearings.

M. CARBURETOR (ALLOWED):

The following stock VW carburetors may be used: (30PICT 1, 2, or 3). Maximum venturi size of carburetor is 24.10mm. No internal modifications in the carburetor venturi or throttle blade area are allowed. This includes no removing of part, no grinding, polishing, or filing. Intake manifolds must be stock. However, cutting of the manifold to compensate for head milling is allowed, rewelding will not be allowed. Those manifolds that have been cut and rewelded must be cut again, and assembled by use of rubber hose and clamps, or some other suitable method so that the interior of the manifold can be inspected. No chemical milling of manifold or carburetor. Automatic choke housing may be removed. Choke plates and shaft may be removed and the holes plugged. Electric needle valve optional. The stock

float bowl vent may be moved and/or plugged. An external float bowl vent may be incorporated. Any air and main jet. Any combination of stock fuel pump and electric fuel pump may be used.

Heater tubes optional. After-market fan shrouds allowed.

N. RESTRICTOR PLATES:

1. 19.5mm for single seat.
2. 21.0mm for two (2) seat (MUST HAVE 2 PEOPLE)

O. INTAKE MANIFOLD:

ALLOWED:

1. Stock only.
2. Cutting but cannot be rewelded. MUST use hose clamps so interior can be inspected.
3. Painting

NOT ALLOWED:

1. Modifications.
2. Chemical milling.

P. FAN SHROUDS:

Stock only

- 18.

Q. HEADS:

ALLOWED:

1. U.S. Sedan stock single port or equivalent only.
2. May be fly cut for cleanup but must retain 44cc combustion chamber.

NOT ALLOWED:

1. Polishing or porting
2. Combustion chamber shape inner surfaces can be neither changed nor touched.

S-22. TRANSMISSION:

ALLOWED:

1. Stock VW Type 1 Bug only
2. Any three (3) ring and pinion allowed (3.88-4.12-4.37).



3. Rear transaxle mounts may be additionally supported.

4. Any manufacture's shifting lever.

5. All gears must be stock.

6. Other internal modifications optional.

7. Heavy duty side plates.

NOT ALLOWED: Close ratio gears.

S-25. OIL COOLERS:

ALLOWED:

1. Any manufacture full flow system.

2. Location optional.

3. Late model housing.

NOT ALLOWED: 1. Deep or dry sump.

S-33. WEIGHT:

ALLOWED:

1. Minimum 1350 lbs.

2. These are dry weights. Dry weight is without fuel.

3. Ballast to make weight if needed. If this is used a 1/8" hole for wiring the ballast to the frame so as to make removal impossible is mandatory.

S-35. BUMPERS:

Adequate for safety front and rear.

CLASS 12 (S, M, E, U)

A. This class is designed for your standard woods buggy and will be separated by motor size.

B. Must comply with all GENERAL REGULATIONS if applicable. Unless the class requirements or safety

regulations specifically state that a modification or optional equipment is permitted, IT WILL NOT BE ALLOWED, unless technical ruling has been made and published.

C. ALL COMPETITION AND SAFETY REGULATIONS APPLY

12S- Small motor, 1600cc maximum. Solex single barrel carburetor.

12M- Modified motor, 69mm stroke maximum single or dual carburetors.

12E- Extreme motor, open stroke and cylinder 4s for air cooled engine. Four cylinder water cooled motors, 2500cc maximum. Carburetors are open.

12U- Unlimited motor, four cylinder, V-6, V-8, or rotary engine. Unlimited carburetors, fuel injection, superchargers, turbochargers.

This class will be raced together but scored separately. Unless we receive too many entries, or the race director needs to make changes.

The drivers of all vehicles must be honorable and tell the size of their motor to the Tech Director. If drivers are not

HONEST about engine size, they will be disqualified, will forfeit any prize money, and will lose their points for the day. If a driver found guilty of racing a car illegally for several races, they will lose all their points for the year, will be disqualified, forfeit prizes, and maybe banned.

All vehicles must be built and maintain, wheels tight, no loose items in vehicle. This will be decided by the Tech

Director for your safety and your fellow racers.

19.

S-13. Brakes:

Vehicle must have a minimum of 2 operating rear brakes and brake lights. Front brakes are recommended.

S-41. Numbers: Must start with "12" followed by your 2 numbers of choice.

CLASS 16

A. This class is defined as a single or two seated vehicle with a 1600cc engine.

B. Must comply with all GENERAL REGULATIONS if applicable. Unless the class requirements or safety regulations specifically state that a modification or optional equipment is permitted, IT WILL NOT BE ALLOWED, unless technical ruling has been made and published.

C. ALL COMPETITION AND SAFETY REGULATIONS APPLY with the following restrictions:

S-9. SUSPENSION:

Type 1 ball joint or link pins. Any type tie rod and tie rod ends are allowed. Torsion tubes may be additionally supported or replaced. Torsion tube centers may be cut, rotated, and rewelded to increase ground clearance.

Sway bars may be removed. Any manufacturer front/rear torsion bars allowed. Front/rear torsion adjusters allowed. Front end must remain stock Type 1 width. Steering open. Front shock towers may be modified, extended, or replaced. Trailing arms (torsion arms) must be of Type 1 VW or aftermarket arms of stock dimensions. May be reinforced. Shock mounting stud on bottom trailing arm may be increased in size or relocated.

Suspension bottom trailing arm may be increased in size or relocated. Suspension limiters allowed. Spindles may be reinforced, modified, or replaced but must remain Type 1 width. Rear suspension must retain Type 1 width as measured from backing plate flange to backing plate flange. Maximum front track width from wheel mounting surface to wheel mounting surface at ride height will be 56". The rear track width with drum brakes must not exceed 51" from backing plate flange to backing plate flange at ride height. If disc brakes are installed track width will not exceed 58.75" measured between the wheel mounting surfaces while at ride height. Stock dimensions from the centerline of the rear torsion housing to the center of the rear stud axle must be 16.25" plus or minus 1".

Maximum measurement will be 17.25".

S-10. SHOCKS:

No limit on number or size, cooling fins allowed.

S-11. WHEELS AND TIRES:

Any size tire and rim that will mount directly to VW drum

20.

S-21. ENGINE:

Engine must utilize VW series Type 1, 1600cc, US model sedan components and dimensions. The maximum allowed displacement is 1600cc. Any manufacture engine bearing allowed as long as stock dimensions are maintained. Any Type 1, 2, 3, or "universal" case is allowed. The following modifications may be made to the stock case:

- A. the case may be align bored and machined for cam bearings.
- B. The case may be drilled and tapped for oil pressure and/or temperature sending units.
- C. The case may be machined to allow the installation of a crank seal.
- D. Case savers may be installed for cylinder head studs.
- E. Early case galleries (8mm) may be enlarged to the dimension of the universal case (10mm).
- F. Threaded oil gallery plugs allowed.

Any camshaft, valve spring retainer, valve springs, and lifters allowed. However valve spring seat diameter in the head must be stock. Any manufacture oil pump. No deep sumps, dry sumps, or sump alterations allowed. Windage trays allowed. The use of oil bypass pistons and springs allowed. Pistons must be stock 3 rings only. Pistons and cylinders may be any manufacture as long as original stock dimensions and balance weight are maintained.

Forged pistons allowed. Any type wrist pin retainers. Piston assemblies may be statically balanced to the equivalent weight in grams of the lightest original non-balanced piston, wrist pin, etc. Flywheel, clutch and pressure plate, crankshaft, pulley, connecting rod and piston assemblies may be balanced. Balancing

limitations are specified under individual items.

Crankshaft must be stock VW. Power pulleys and sand seals are allowed. Crankshafts to .030 undersize allowed.

Counter weighted cranks allowed must be 69MM. No polishing or lightening. Any VW flywheel may be balanced and lightened. Any manufacture clutch or pressure plate allowed, but must remain stock diameter. No aluminum flywheels allowed.

May be 8 dowel pinned and any gland nut and washer. Connecting rods may be statically balanced, but not polished or profiled. Balanced weight of the connecting rods in grams should be equivalent to the lightest original non-balanced stock rod. Heads must be US sedan stock single port or the brazil manufactured head with the VW insignia and a part number 040-101-373.

Welded heads are allowed. Heads may be fly cut for cleanup. Fins may be removed for fly cut.

Combustion chamber volume open. NO porting or polishing allowed.

Valves must be stock 45 degrees.

One piece valves allowed. NO profiling or polishing of valves allowed.

Valve guides may be steel, bronze, or cast iron. No grinding or polishing in the port including valve guides. Any shaft may be used which will allow the stock VW rocker arm(s).

The rocker arm(s) may be resurfaced to permit the use of swivel feet or similar devices. NO grinding or changes to the rocker arm(s) are permitted. NO roller on the shaft. Push rods and push rod tubes may be of any manufacture and clips may be tie wired. Rocker assemblies subject to post race inspection.

Valve covers may be of any manufacture. Air cleaner may be of any manufacture, location optional.

Velocity stacks may be used provided it is not bonded to the carburetor. Maximum venturi size of carburetors is 24.10mm. No internal modifications in carburetor venturi or the throttle blade area allowed. This includes no removing of parts, no grinding, polishing, or filing. Intake manifolds must be stock. However cutting of the manifold for compensate for head milling is allowed, rewelding not permitted. Those manifolds which have been cut and rewelded must be cut again and assembled by use of a rubber hose and clamps or by some suitable method so that the interior of the manifold can be

inspected.

No chemical milling of manifold or carburetor. Automatic choke housing may be removed. Choke plate and shaft may be removed and holes plugged. Electric needle valve optional. The stock float vent may be moved and/or plugged. An external vent may be incorporated. Any air and main jet. Any combination of stock fuel pump or electric pump may be used. Heater tubes optional. After market shrouds allowed.

Dual port heads allowed only VW original part numbers 0401013752, 04010137513, 04010137519. If dual port heads installed that competitor will have to run a 21.0mm restrictor plate while other competitors with single port heads may run without a restrictor plate.

21.

#### RESTRICTOR PLATE:

Single seat (one occupant in vehicle) restrictor plate will be 19.50mm and two seat (two occupants in vehicle) restrictor plates will be 21.0mm and shall be the only thing between the carburetor and intake manifold other than required gaskets. Provisions for safety wiring the carburetor and intake manifold to prevent removal of the restrictor plate must be provided. Single ports do not have to run restrictor. A dual port must run a 21.0mm restrictor plate at all MAORA events.

S-22. TRANSMISSION: Must be VW Type 1 or 2 transaxle housing. Not more than four forward speeds. All internal modifications OK. Any gear ratio combinations may be used. However only VW type (helical cut gears) may be used. Must be stock VW housings with internal modification only. May use after market side covers.

S-25. OIL COOLERS: Any manufacture oil cooler allowed. Location optional. Full flow systems allowed.

S-26. AUXILIARY EQUIPMENT: Battery ignition only. No magnetos. 6 volt or 12 volt system may be used. Any manufacture distributor may be used. Any VW type alternator or generator system in stock location may be utilized.

S-32. BALLAST: Vehicles using ballast to make minimum weight must have 1/8" hole drilled in ballast in

such a manner that it can be sealed to a main structure member where removal is impossible without breaking sealing wire.

S-33. WEIGHT: Single seat vehicle's minimum weight is 1300lbs. Two seat vehicle minimum weight is 1350lbs.

S-41. NUMBER: Must use a "6" as first digit. May run a "3" as first digit if running other series.

#### CLASS 7E

A two wheeled drive four wheeled vehicle known as a mini pickup. It must be stock production vehicle that has been series produced in quantities of at least 5000 for a 12 month period and available to the public of the USA.

All components must remain stock unless modifications are allowed as follows. This class can be run with one or two people during the race. This is a stock production class and must retain engine body and chassis combinations.

B. Must comply with all GENERAL REGULATIONS if applicable. Unless the class requirements or safety regulations specifically state that a modification or optional equipment is permitted, IT WILL NOT BE ALLOWED, unless technical ruling has been made and published.

C. ALL COMPETITION AND SAFETY REGULATIONS APPLY with the following restrictions:

22.

THIS IS AN ECONOMY CLASS!!

#### S-9. SUSPENSION

Stock Production

REQUIRED:

A. Suspension parts must maintain stock lengths as on the delivered chasses: such as A-arm, I- beam, front axels, etc. Except for shock absorbers and springs.

B. Springs in front must be in stock location and configuration. i.e. leaf coil torsion, etc.

C. Travel limits in front 12" only. Measurements are made on the spindle centerline in its travel upper to lower stop.

D. Rear spring length equal to that of the longest stock production rear leaf spring available on any model capable of competition in this class. Spring mounting must be the same as on your vehicle I.e. under frame, side of frame, etc. Frame must not be modified. Springs may be mounted above or below the axle. Total spring length at this time is 57.5" and 14 travel in the rear.

E. Track width must be stock plus or minus 2" measured from wheel mounting surface in front and wheel mounting surface in rear.

F. Stock spindles only.

G. Stock pivot points only.

ALLOWED:

A. Spring any capacities or rate. ½ ton truck springs may be used.

B. Ball joints OEM or equivalent.

C. Limiter straps can be used for stops.

D. Strengthening by addition of metal to parts such as A-arm and mounting positions but stock size, shape, and configuration must be maintained.

E. Removal of stock sway bars.

F. Wheels retract up into the fender well.

G. Track width must be wider than the rear.

H. Front frame horn may be removed to install bumper.

I. NO fender flares.

NOT ALLOWED:

A. Use of one or two sine point anti-wrap bars on the differential.

B. A-arm vehicles be able to alter the arms providing the following conditions are met:



- a. Must remain stock arm length.
- b. Must remain stock pivot point
- c. Must remain stock spring location.
- C. Removal of material or parts unless specified.
- D. No hydraulic or air bumpstops (OEM).
- E. Secondary suspension.

S-10. SHOCK ABSORBERS:

ALLOWED:

- A. Any nitro charges 2" diameter gas shocks.
- B. May only run two shock per wheel.
- C. Any shock up to a 2" nitro chargeable.

NOT ALLOWED:

- A. May not protrude through the hood.
- B. coil over shocks or adjustable bypass.

23.

S-12. STEERING:

ALLOWED:

- A. Only stock steering box as original on that particular chassis. May be strengthened with addition material but location and operation must remain the same as stock parts.
- B. Tie rods, tie rod ends, relay rod turning arms and pitman may be strengthened or replaced but location and operation must remain the same as stock parts.
- C. Any steering wheel.
- D. Factory power steering.

NOT ALLOWED:

A. Change of original concept of location.

B. Quick steers.

S-13. BRAKES: stock production wheel components.

S-14. IGNITION: Stock ignition only.

S-15. BATTERY: Open (may be relocated; recommended to rear of the truck).

S-19. FUEL TANK: Fuel cells are mandatory and securely mounted.

S-21: ENGINE:

ALLOWED:

A. Maximum of four cylinder; maximum displacement is 2500cc (152.5) with a maximum over bore of 0.040".

B. Ford 2.3 may be stroked to a 2.5 with unaltered stock components.

C. Maximum cam lift of 420 on intake and exhaust.

D. Engine block and heads must be of the same material as delivered by the manufacture to the public of the USA for body classes series.

E. Stock design (oval, "D", round, etc.) of the cylinder head ports must be maintained, head cannot be cut more than 0.040" thousand.

F. Location stock plus or minus 1", measure from the rear of the engine to the centerline of the front spindle.

G. Dual valve springs and adjustable cam gear are allowed.

H. Cast hypereutectic, any style of piston ring.

I. After market fasteners.

J. You may be asked to remove valve cover to inspect cam lift and measure cylinder head.

NOT ALLOWED:

A. Rotary piston engines.

- B. Welding on head (repairs only exception)
- C. No polishing or porting of cylinder heads.

CARBURETOR:

ALLOWED:

- A. Stock carburetor for 4 cylinder engine.
- B. Fuel injection only if factory installed.
- C. Any air cleaner or fuel pump.
- D. Water and vapor systems only if factory installed originally.

24.

OIL SYSTEM:

- A. No dry sumps or wet sumps. Only factory equipment.
- B. Auxiliary cooling system may be added.

EXHAUST:

- A. Exhaust must exit behind the cab.
- B. Headers or stock manifold.

COOLING SYSTEM:

- A. Stock from your series of truck, mechanical fans only no electrical fans.
- B. Auxiliary engine cooling equipment allowed.

C. Any radiator in stock location.

S-22. TRANSMISSION:

- A. Stock from your series of truck.
- B. Auxiliary cooling system may be added.
- C. Torque converters must be used.
- D. Automatic transmissions may be modified to allow for manual shifting.

CLUTCH AND DRIVE PARTS:

Stock

DIFFERENTIAL:

- A. Stock only for 4 cylinder trucks
- B. Max 4.00 gear ratio.
- C. Rear end gears may be welded.

S-28. SEATS: Any manufacturer and in approximate stock location.

VEHICLE INTERIOR:

- A. Removal of upholstered panel, head liner, and carpets is allowed.
- B. Pedal assemblies before and after location must remain stock.
- C. Dash optional.

S-30. DOORS: Stock location only with original hinges in working order. Doors may be welded or bolted shut.

S-31. FIRE WALLS: Must be stock and in the same location with no removal of material allowed except for routing exhaust pipes to rear of vehicle.

S-32. WEIGHT: 2500lbs. minimum.

S-33. FLOORBOARD: Altering to allow routing of exhaust pipes to the rear of vehicle. Must remain on stock concept.

S-34. BUMPERS: Any bumper approved by the Technical Director is allowed.

S-35. CHASSIS:

ALLOWED:

- A. Strengthening of the chassis and by addition of material. Stock chassis only allowed.
- B. Stock wheelbase must be maintained plus or minus 1".
- C. Frame cross member on rear may be replaced, relocated, or removed to allow for sinking of fuel cell.

D. Removal of "horns" on front end to allow mounting front bumper must not be more than 6" of material removed per side.

NOT ALLOWED:

A. Removal of material unless specifically mentioned.

B. Change in length of frame.

25. BODY:

REQUIRED:

A. Original shape, size, configuration, and appearance.

B. Stock mounting, original location must be maintained (no change lateral, horizontal, or vertical).

C. Door, hood, and fenders must be in stock location.

ALLOWED:

A. Body structural members may be cut (holes), or trimmed for installations of roll bars or other supports but must remain intact.

B. Additional mount and strengthening material may be added.

C. Material of hood and front fenders must remain stock.

D. All glass must be removed.

E. Skinning of the hood, doors, and roofs are allowed.

PICKUP BED:

Finished fenders, stock fender material.

FENDERS:

Front inner panel may be modified for roll cage or shock.

CLASS 7S

A. This class is defined as Open 2 wheel drive.

B. Must comply with all GENERAL REGULATIONS if applicable. Unless the class requirements or safety

regulations specifically state that a modification or optional equipment is permitted, IT WILL NOT BE ALLOWED, unless technical ruling has been made and published.

C. ALL COMPETITION AND SAFETY REGULATIONS APPLY.

CLASS 7X

A. This class is defined as Open 4 wheel drive.

B. Must comply with all GENERAL REGULATIONS if applicable. Unless the class requirements or safety regulations specifically state that a modification or optional equipment is permitted, IT WILL NOT BE ALLOWED, unless technical ruling has been made and published.

C. ALL COMPETITION AND SAFETY REGULATIONS APPLY.

MAORA CHAMPIONSHIP POINTS SYSTEM

THE POINTS SYSTEM IS SAME FOR SHORT AND ENDURO!!!!!!!!!!!!!!!!!!!!!!

OVERALL FINISH POINTS

1ST PLACE-----	25
2ND PLACE-----	22
3RD PLACE-----	19
4TH PLACE-----	17
5TH PLACE-----	15
6TH PLACE-----	14
7TH PLACE-----	13

8TH PLACE-----12

9TH PLACE-----11

10TH PLACE THRU LAST-----10

\*\*\*\*\* YOU WILL RECEIVE 5 PTS IF YOU TAKE HOT LAPS AND BREAK AND DO NOT  
START THE RACE.....

\*\*\*\*\* YOU WILL RECEIVE 10 PTS EACH IF YOU DO NOT MAKE CLASS

\*\*\*\*\* 1ST TIE BREAKER WILL BE MOST COMPLETED FOR SEASON

\*\*\*\*\* 2ND TIE BREAKER WILL BE BEST FINISH AT LAST RACE.