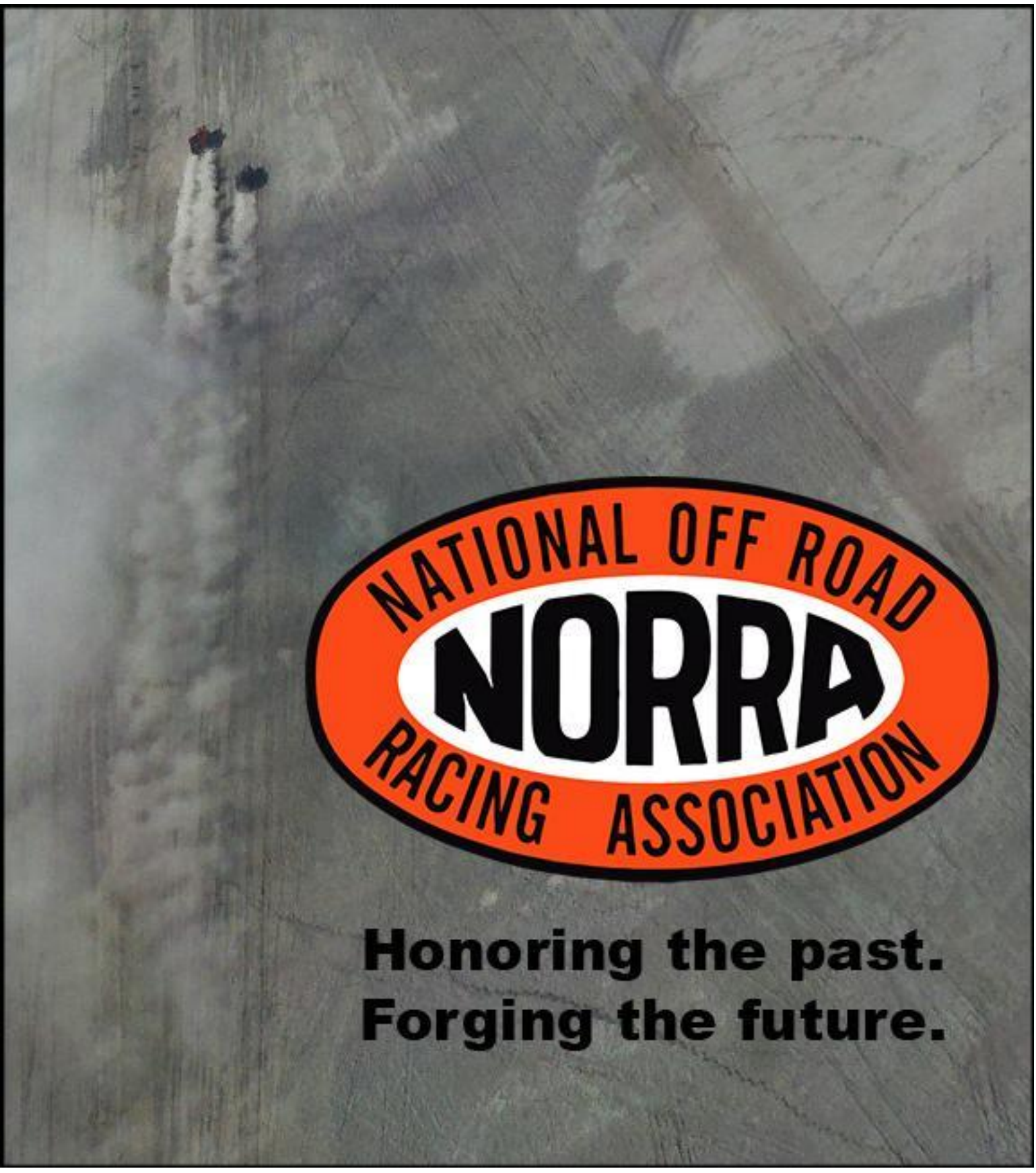

NATIONAL OFF ROAD
NORRA
RACING ASSOCIATION
Honoring the past.
Forging the future.

2026 Vehicle Rules

Version 6.1

1 Safety Equipment for All Eras of Cars, Trucks, SUVs, and SXS except Safari Categories which are not race vehicles

1.1 Helmets and Frontal Head Restraints

All drivers/riders in four-wheel vehicles must wear full-face Helmets that meet at least one of the following standards: Snell memorial foundation SA2025 or SA2020 with a legible Snell sticker attached, SFI Standard 31.1/2025 or 31.1/2020, FIA Standard 8860-2018, 8860-2018 ABP, 8860-2010, 8859-2024, 8859-2024 ABP and 8859-2015 with a legible FIA sticker attached. Straps must have D-ring fasteners only. No snaps or Velcro will be permitted. The interior and exterior areas of the helmet must be free of defects (i.e., the padding must be in good condition, and the exterior of the helmet must not be damaged). Helmets must be always worn during Special Stages and Transit Stages. Open-Face helmets are only allowed in vehicles equipped with a windshield. All drivers/riders in four-wheel vehicles must wear a Frontal Head Restraint (FHR) compliant with the SFI Foundation Spec 38.1 or FIA 8858-2018 or 8858-2010 Standards. The FHR device must be used with a compatible helmet that has pre-installed FHR fixation points (M6 threaded inserts), which all Snell SA2020/SA2025 and all FIA homologated helmets have.

1.2 Protective Clothing

SFI 3.2A/1 or greater /5, /10 or FIA 8856-2018 or 8856-2000 certified fire suits are mandatory for all vehicle categories (including prerunner categories) and must be worn during Special Stages and Transit Stages. Two-piece suits are not permitted. The suits must cover from the neck to the ankles and to the wrists. The suits must not have any holes, rips, and tears or be worn thin. The suits must also be free from any petroleum-based contaminants. All suits must be made from fire-resistant material with the manufacturer's fire-resistant rating label attached. SFI 3.3/5 or greater /10, /20 or FIA 8856-2018 or 8856-2000 certified racing gloves are mandatory for all vehicle categories (including prerunner categories) and must be worn during Special Stages and Transit Stages.

1.3 Eye Protection

Shatter resistant eye protection is required for all entrants.

1.4 First Aid Kit

A weatherproof first aid kit must be always carried in each vehicle and must contain at least the following items:

2	4" Bandage Compress	2	2" Bandage Compress
1	Triangular Bandage	8	2" x 3" Adhesive Bandages
4	1" x 3.375" Adhesive Bandages	4	Antiseptic (Methylate, etc.)
1	Eye Dressing Packet	1	Ace Bandage

The first aid kit must be easily accessible within the occupant's area without having to remove any body panels or equipment.

1.5 Emergency Warning Devices

Four-wheel vehicles are required to carry at least two fifteen-minute flares for emergency signaling and warning or two electronic visual distress signaling devices (eVDSD) These battery-operated LED lights flash the international Morse Code SOS signal and can last for hours, compared to the minutes of a traditional flare.

1.6 Horns

All vehicles must have a horn that is audible from 100 feet in front of the vehicle. Sirens are permitted during Special stages but are not to be used on the highway nor during transit sections.

1.7 Rear Facing Light and Reflectors

All 4-wheel vehicles must have a rear-facing deep colored amber light, the light must be at least 3 inches in diameter if round and be DOT approved, visible 180 degrees from the rear and mounted a minimum of 48 inches off the ground. Amber light must be wired to battery cut off switch or battery on. Vehicles may not be allowed to start a Special stage unless the amber light is operational. Additionally, must have two red reflectors of at least 2" diameter each if round (DOT stock taillight lenses satisfy this requirement) attached to the rearmost portion of vehicle at each corner or reflective tape or reflectors that must be clearly visible from the rear. LED lights are non-reflective and do not meet this requirement.

1.8 Fire Extinguisher

Each four-wheel vehicle must carry two (2) portable UL approved 2.5-lb. ABC-class dry chemical type fire extinguishers one located inside of the driver compartment and another one in the exterior of the vehicle. Halon type fire extinguishers do not meet this requirement as Halon is readily dispersed in wind. Fire extinguishers must have a capacity gauge, be fully charged, and readily accessible. An on-board fire suppression system (with discharge nozzles in the passenger compartment, the engine compartment and the fuel storage area) is optional in addition to the portable fire extinguishers.

1.9 Survival Supplies

All vehicles must carry at least one day of survival supplies and one quart of water per occupant or rider. It is highly recommended that additional water be carried for each occupant during the hotter months.

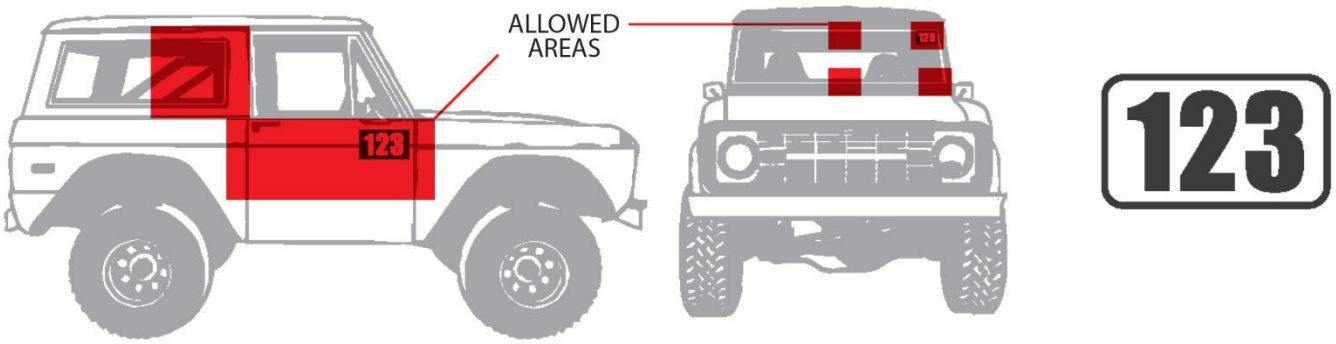
1.10 Race Vehicle Numbers (Cars)

Teams must supply their own number stickers per the following rules.

All race numbers are to be on a rectangular area of contrasting solid background color such as black on white or white on black. The front numbers shall be a 3.5" tall. The rear and side numbers shall be 5" tall. In front a simple black on white with block letters is required to facilitate rapid sorting in staging each day.

If a vehicle does not have a flat surface facing forward or rearward, then the competitor is required to have a plastic or metal plate attached to the car, so they have a place to attach the required stickers. The front sticker must be as close to vertical as possible but should not be angled back more than 30 degrees such that it is quickly visible and readable by the staging crews. The front number must be in one of the 4 corners of the driver's side of the windshield or front opening (not on the passenger side). For example, on the drivers A-pillar at the top or bottom or in the windshield/opening center at the top or bottom. But not on the passenger A-pillar.

NORRA cannot guarantee there will be someone available at tech to print numbers so please have this taken care of prior to arrival at the event.



Safety Equipment for all Motorcycle and ATV Riders

1.11 Helmets and Frontal Head Restraints

Motorcycle and ATV riders must wear full-face helmets that meet at least one of the following standards: Snell memorial foundation M2025, M2020 (D or R variants) with a legible Snell sticker attached or UNECE ECE 22.06 or 22.05 with label sewn onto the chinstrap, stickers only are not acceptable or FIM Standard FRHPhe-02 with label sewn onto the chinstrap, stickers only are not acceptable. Straps must have D-ring or Fidlock fasteners only. No snaps or Velcro will be permitted. The interior and exterior areas of the helmet must be free of defects (i.e., the padding must be in good condition, and the exterior of the helmet must not be damaged). Helmets must be always worn during both Special stages and during transit sections. DOT Helmets are not allowed.

1.12 Boots

Entries must wear motorcycle boots.

1.13 Eye Protection

Shatter resistant eye protection is required for all entrants.

1.14 Rear Reflector

A minimum of one red reflector of at least 2” diameter each or one 2-inch round red reflectors (DOT stock taillight lenses satisfy this requirement) attached to the rearmost portion of motorcycle. The reflective tape or reflectors must be clearly visible from the rear. Typical LED lights are non-reflective and do not meet this requirement.

1.15 Survival Supplies

All riders must carry at least one day of survival supplies and one quart of water. It is highly recommended that additional water be carried during the hotter months.

1.16 Race Numbers (Motorcycles)

NORRA will provide race number stickers with the entry number printed for all entries that have pre-registered. For late entries, NORRA will provide background stickers and have numbers available that can be applied over the background sticker. This is provided by NORRA at no extra cost. The number sticker size will be 3” x 5”.

1.17 Lighting

All handlebar category riders must wear a red strobe located on the rider's back or back of the helmet to increase the rider’s visibility from behind. Strobe light must have a minimum of 100 lumens and a minimum battery life of 7 hours. Examples of strobe lights that meet this requirement:

Cygolite Hypershot 350
NiteRider Solas 250

Alternatively, riders may use a rear facing blue light such as the NiteRider Cherry Bomb 100. The use of both the red strobe and blue light helps maximize visibility from behind.

2 Vehicle Rules for all Eras of Cars, Trucks, SUVs, UTVs and all Motorcycles and ATVs except Safari Categories which are not race vehicles

2.1 Workmanship

All construction, modifications and alterations must be performed in a workmanlike manner and meet with the rules, regulations and approval of NORRA.

2.2 Communication Equipment

All competitors should carry a VHF radio able to transmit and receive on the official NORRA frequency, 151.625MHz; Any radio equipment is strictly prohibited from interfering with or disrupting event communications on all frequencies allotted to the amateur radio band, public service band, marine band and aircraft band as permitted by FCC rules. NORRA uses the 151.625MHz frequency, commonly known as Weatherman. Outboard linear amplifiers with an output over 25watts are prohibited.

The above VHF radio equipment is optional if the vehicle or rider is equipped with satellite communications such as Starlink, Garmin In-reach, SPOT or Sat Phones that allow for outgoing calls or text messages to the NORRA Ops hotline. That number will be published in the race info prior to the race.

2.3 GPS Tracking Devices

All vehicles in competition shall have a GPS tracking device, presently the Stella device. The competitor must purchase and install the mounting kit with wiring and antennas prior to the event. At tech inspection, the Stella device will be installed into the mounting kit and tested. This device provides many functions including GPS position data logging which is used to verify course compliance and speed restrictions, it provides communication to other vehicles to warn of stopped vehicles or request overtaking via RF, it provides communication to Race Operations for emergencies, and it transmits a subset of the tracking data out so that live tracking can be observed via a website in real time. The system has 2 antennas which must be mounted (a GPS receiver and RF dual antenna, and an Iridium sat phone antenna).

2.4 Navigation

NORRA routes are not physically marked. The course details are not released until shortly before the event so that competitors do not have the opportunity to “pre-run” the exact course. A road book is provided to all competitors. For CARS (four-wheel classes) a GPS trail is provided in .GPX format compatible with most GPS brands. Two GPS files will be released, one that will have waypoint numbers that correspond to note numbers in the road book and another one that has all road book notes translated with the option of audio markings with the LeadNav App. The details of the course are in the road book notes with graphic indications and must be always used. It is the competitor’s responsibility to successfully navigate such that they follow the route and avoid penalties for non-compliance on the course or speed zones listed in the road book. For MOTOS classes (handlebars) will have both road book only navigation classes using traditional towers with devices such as odometer, CAP repeater, tracker and road book reader and a MOTO GPS class with a .GPX file that includes racecourse track and dangers marked for safety.

2.5 Vehicle Refueling

All vehicles may only be refueled with vented fuel cans, gravity fed fuel towers, or with fuel transfer pumps. Refueling equipment or storage tanks must be at least 20’ from the racecourse and at least 10´ away from race vehicles. All towers must have a spring-loaded dead man valve to automatically close the line when the handle is released. The hose must have a break-a-way feature in the event the vehicle departs with the hose still attached. NORRA reserves the right to disallow any fueling system deemed unsafe. Refueling may only be performed with the vehicle stationary. These requirements do not apply for vehicles refueling at a commercial gas/fuel station. The use of personal protective equipment and fire-retardant safety gear is mandatory for pit personnel such as fire suits, helmet, gloves, footwear, underwear and aprons. In addition to personal protective equipment the pit area must have a minimum of three (3) 20lb fire extinguishers that must be located at most 6 feet from the fueling operation and must be manned at all times.

2.6 Driver’s License, Passport and FMM (for US citizens)

A valid government issued driver’s license and picture ID must be always carried during the event, For US citizens,

additionally an FMM Tourist Permit is required by Mexico and a US Passport or Passport Card is required. The FMM may be obtained at www.mexicotouristcard.com or at the border at Mexican Immigration. A US Passport with at least 6 months remaining prior to expiration is required to obtain the FMM. A US Passport is required in the event of a medical airlift across the border. The FMM is a Mexican requirement, and enforcement is up to the Mexican authorities. NORRA will not be checking for FMM nor for passports/ passport cards however we do encourage all US citizens to comply with this Mexican requirement. US citizens with a Permanent Mexican Residency card do not need the FMM (but still do need a US Passport for medical airlift over the border).

3 Vehicle Rules for all Eras of Cars, Trucks, SUVs, SXS except Safari Categories which are not race vehicles

3.1 Suspension Components

3.1.1 Shock Absorbers

There must be at least one shock absorber per wheel in working condition at the start of the event. External reservoirs are permitted in any era unless prohibited by specific category rules. Water cooled shocks are permitted in any era unless prohibited by specific category rules. For this rule book, air bumps and air shocks are considered shocks and are allowed in all categories unless specifically prohibited by the individual category rules. Air bumps and air shocks are subject to the same Era specific shock diameter rules as other shocks (2” air bumps allowed in Pioneer and Legend, 2.5” air bumps allowed in Challenger, Vintage and newer).

3.1.2 Wheels and Tires

Snap-on hubcaps or Snap-on wheel covers of any type are not permitted. Tires can be visually checked for condition and must be considered reasonably safe by NORRA prior to competing.

3.1.3 Fasteners

All component parts on the vehicle’s suspension system, chassis and running gear must be secured with S.A.E. Grade 8 or better nuts and bolts. Bolts should be secured with either lock nuts, lock washers, cotter pins or safety wire and have at least one full thread showing through the nut.

3.2 Hoses

All fuel and brake line hoses including metal lines and fittings must be clamped and/or safety wired.

3.3 Steering and Brake Components

3.3.1 Steering

All steering components must be in good condition and in proper working order. If OEM drag link and tie rod ends are used, they must be secured with a cotter pin in each one.

3.3.2 Brakes

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

3.4 Electrical System

3.4.1 Ignition

Each vehicle must have a positive action on/off switch in good working order. The switch must be labeled “ignition” on/off and be located within easy reach of the driver and from the outside of vehicle. All electric fuel pumps with independent switches must be labeled fuel on/off and be within easy reach of driver and from outside of vehicle. It is highly recommended that electric fuel pumps are not independently switched. OEM keyed ignition switches are acceptable.

3.4.2 Batteries

Lead-Acid (Wet Cell) batteries are not allowed, AGM (Absorbed Glass Mat) or Lithium-Ion (LiFePO4) batteries must be securely mounted with metal-to-metal tie downs. For four-wheel vehicles using Lithium-Ion batteries NORRA requires a Class D fire extinguisher that must be mounted in the vehicle in addition to the standard required fire extinguishers.

3.4.3 Lights

All four-wheel vehicles must have forward facing lights, taillights, brake lights and minimum of one safety rear facing amber

light. Unless the stock location is used on production-based vehicles, the tail/brake lights must be at least 36” above the ground. The brake lights must be at least 3” diameter or 7 sq in unless OEM brake lights are used on production-based vehicles.

All Moto and ATV entries must have one (1) headlight and one (1) taillight. The taillight must always be on and operational. The entry may not be allowed to start a Special stage unless the taillight is operational.

All Moto entries are required to use a rear strobe light as mentioned on section 1.17 safety requirements.

3.4.4 Starter

All cars and trucks must be self-starting by use of an onboard electric starter.

3.5 Vehicle Safety Equipment

3.5.1 Roll Cages

It is each competitor’s responsibility to present a safe vehicle for pre-event tech inspection. You must maintain your safety equipment including the roll cage integrity. NORRA reserves the right to not allow any safety cage design that, in the view of the tech inspector, is not fit for competition. You, as the competitor, are ultimately responsible for your own vehicle’s safety features with respect to the design, quality of execution, maintenance and repair of the roll cage structure.

NORRA welcomes participation of vintage vehicles of all ages and will accept roll cage designs and tubing sizes that were used in the vehicle as it was built for, and used in, previous competition, these vehicles must be raced only in Pioneer, Legends, Challenger or Vintage Eras.

The remainder of this section represents the best practices for new vehicle construction:

All vehicles in competition are required to be equipped with a roll cage based on seamless mild steel/4130 chromoly steel tubing. Minimum recommended design and tubing size for roll cage structure is in accordance with the following table:

Vehicle Weight	
Under 2000 lbs.	1.5" x .095"
2001 to 2500 lbs.	1.5" x .120"
2501 to 3000 lbs.	1.75" x .095"
3001 to 4000 lbs	1.75" x .120"
4001 pounds and over	2.0” x .120”

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

MATERIAL
Roll cage construction material may be mild carbon steel, DOM or 4130 chromoly. Stress relieves all welded intersections by flame annealing. All welds must be of high quality and craftsmanship with good penetration and with no undercutting of parent material. Oxy-acetylene brazing on roll cage is strictly forbidden.

ROLLCAGE DESIGN
All roll cages must be designed and constructed with one front vertical hoop, one rear vertical hoop, two interconnecting top bars, two rear down braces, one diagonal brace and all necessary gussets. The two top interconnecting bars must be placed as far to the outside of the top part of the front and rear hoops as possible. Rear down braces and diagonal braces should angle a minimum of 30 degrees from vertical. At the bottom of the diagonal brace there should be a cross member of the same tubing material and dimensions as the hoop. All roll cage components (hoops, braces, gussets, etc.) should have a minimum of 3-inch clearance from the component to the vehicle occupant’s helmets when occupants are seated in their normal riding positions. All portions of the roll bar or bracing that might come into contact with the vehicle occupant’s helmets should be padded. Roll cages should be securely mounted to the frame or body. All intersecting points should be gusseted and braced. Cab or body mounted roll cages should be bolted through the body structure and be attached by use of a minimum two 0.1875-inch thick doubler plates (one on each side of body structure). Bolts and nuts must be at least 0.375-inch-diameter S.A.E. Grade 8 or equivalent aircraft quality. Welding of cab or body mounted roll cages to body structure is strongly discouraged. Roll cage terminal ends should be attached to a frame or body member that will support maximum impact and not shear or allow more than 1.5 inches of movement in the cage terminal end.

All vehicles including those with stock steel doors should have at least one side bar on each side of vehicle that will protect occupants from side impact. The side bars should be of the same tubing material and dimensions as the rest of the roll cage. The side bars should be as close to parallel to the ground as possible, be located to provide maximum protection to the occupants, and be securely welded to the front and rear hoops. The location of the sidebars should not cause difficulty in entering or exiting the vehicle. Gussets constructed of 0.125-inch x 3-inch x 3-inch flat-plate or split, formed and welded corner tubing, or tubing-gussets made of the same material and thickness as the roll cage may be used. Gussets should be installed at all major intersections, including diagonal and rear down braces, where single weld fractures can affect occupants' safety.

3.5.2 Safety Harness

All vehicles must have a heavy-duty type five-point fast release latch (no push button type) seat belt, anti-submarine strap and shoulder straps with metal-to-metal buckles and connectors for each occupant.

The five-point harness system shall be SFI 16.1 certified and consist of one 2-inch-wide anti-submarine strap, one 3-inch-wide seat belt and two 3-inch-wide shoulder straps (no "y" type shoulder belts permitted). Alternatively, SFI 16.5 certified 2-inch-wide lap and 2-inch-wide shoulder harnesses may be used. Note that 2" wide lap and shoulder harness with SFI 16.1 certification is not allowed, these width belts require SFI 16.5

Harness material shall be made of nylon or Dacron polyester. Harness must be in new or perfect condition with no cuts, frayed layers, chemical stains, or excessive dirt and must be in flexible condition (i.e. material must not be rigid). All harnesses must show the manufacturer's name and the month and year of manufacture or an expiration date. All belts must be no more than two (2) years old from the date of manufacture or in the case where the harness has an expiration date, they must not be expired. No portion of the harness may be altered in any fashion from the manufacturer's standard design. No surplus safety harnesses are permitted.

The five-point harness must be mounted to the main structure members of the same size and dimension as the roll cage and be gusseted. The structure members must be in the following locations. The anti-submarine belt must mount to the floor structure as close to the front of the seat as practical to exert maximum restraint to the upward movement of the seat belt and shoulder straps. Shoulder straps must be mounted behind the occupant's seats and be located a minimum of 4 inches below the top of the occupant's shoulders. Seat belt should be mounted a minimum of 2.5 inches forward of the intersection of the back of the seat and the sitting portion of the seat. All adjustment buckles must be a minimum distance of 1.5 inches from the seat to prevent loosening or chafing. Mounting hardware must be a minimum of 0.312-inch Grade 8 or greater bolts with a 1.5-inch diameter flat washer attached through the body or frame using lock nuts or cotter keys. All harness hardware must be safety tied; clip ins are allowed and must be secured with safety wire or cotter key.

3.5.3 Safety Nets and Vehicle Roof

Safety nets are mandatory on all vehicles including the prerunner categories and must cover the complete open area of the cockpit on both sides of the vehicle. Window nets may be made of polyester or nylon. Nets can be either webbing or mesh type. Webbing nets will be made of 1.0 inch by .043 thick webbing with 2.0 inch spacing. Mesh nets must have 1.0 x .043 thick webbing every 12.0 inches. Nets must meet with the approval of the technical inspector.

Nets must be installed on the inside of the roll cage to prevent them from being damaged or coming off in the event of a roll over or slide on the side. Nets attached to door frames are permitted if the door has a positive secondary latching device. Nets must be installed so that the occupants can release the netting unassisted and exit the vehicle regardless of the position of the vehicle. Net installation must meet with the approval of the technical inspector.

The net border or edge and the net attachment must be made of materials that are as strong, or stronger than the net itself. Net attachments must be at least every 6 inches along top and bottom. Acceptable attachments are not limited to the following: hose clamps, snaps, heavy-duty nylon ties, lift-a-dot, metal hooks and steel rods. Rod must be made from a minimum of 1/2-inch solid steel and go 1 inch through the upper rear mounting tab. 1/2- inch rod top and bottom. No fixed upper rods. All window net mounts must be welded to the roll cage. The window net, when in closed position, must fit tight and be secured with a safety belt type of latch. Push button latches are not allowed. Spring type mounting of nets on the top or bottom is not permitted.

The roof must be covered with sheet metal .060 in minimum or aluminum sheet .090 in minimum or UHMW .250 in minimum. The occupants of all vehicles must be protected during a rollover in such a manner that prevents them from extending from the body or frame of the vehicle. Fiberglass roofs must be backed up with a metal roof.

3.5.4 Seating

A recognized manufacturer that specializes in seats for racing applications must make all seats. Reclining seats are not allowed. No stock production seats are allowed unless specified on individual class rules. All seats must be securely mounted to frame of vehicle and be properly reinforced in such a manner as to keep seat from moving in relationship to the frame. Adjustable track type seats must be securely mounted as to allow no lateral or vertical movement. Stock VW-type seat runners must be clamped to the floor with a minimum of two 0.375-inch diameter U-bolts per rail and have 1-inch minimum diameter flat washers on the underside. All portions of the roll bar or bracing that might encounter the vehicle occupant's helmets must be padded. No low back seats allowed.

3.6 Fuel System

3.6.1 Fuel

Any of the following commercially available fuels may be used:

a) Service station pump gasoline (including Ethanol up to E100)
b) Racing gasoline as manufactured
c) Commercial aviation gas
d) Diesel fuel (including Biodiesel up to B100)
e) Propane or natural gas.
Oxygen bearing fuels including alcohol and nitromethane are prohibited, except for those originally present in-service station pump fuel and as mentioned above. Commercially produced nationally advertised fuel additives may be used.

3.6.2 Fuel Tanks

Safety fuel cells are required for all vehicles unless specified on individual class rules. Auxiliary fuel tanks may be added. Auxiliary fuel tanks must be safety fuel cells. All fuel tanks must be securely mounted. Fuel bladders are not allowed unless contained in a securely mounted metal box. Fuel tank must be filled from and vented to the outside of the vehicle. There must be a substantial cross member and firewall between the fuel tank and the occupants. No GI-cans, RotoPax, or fuel containers similar in construction or purpose will be permitted in or on any vehicle during the event.

Safety fuel cells shall consist of a bladder enclosed in a smooth skinned container. The container shall be constructed of 20ga. steel, 0.060-inch aluminum or 0.125-inch marlex. Magnesium is strictly prohibited. Containers must be securely attached to vehicles with bolts or steel straps. All fittings must be built into the skin and bonded to the skin as an integral part of the tank or mechanically sealed by a ring and counter ring system by either flat joint or an "O" ring. Internal baffling is mandatory in all fuel cells. Bladder construction shall be of nylon or Dacron woven fabric impregnated and coated with a fuel resistant elastomer. The minimum standards for the physical properties are in accordance with the following table:

Test Type	Minimum Standard	Test Specification
Tensile Strength	450 lbs.	Spec CCC-T-1916 Method 5102
Tear Strength	50 lbs.	Spec CC-T-1916 Method 5134
Puncture Test	175 lbs.	Spec MIL-T-6396 Article 4.5.17

These physical properties must be maintained throughout all areas of the finished bladder including seams, joints and fittings.

Pioneer era vehicles that competed in NORRA prior to 1973 do not require Safety fuel cells unless specified on individual class rules.

Vehicles in the prerunner truck category, production car and rally categories and SXS categories, may use an OEM fuel tank if mounted in the original (OEM) location. In prerunner and production car or rally classes such tanks must have a separate skid plate and must not encroach into the passenger compartment. If the fuel tank encroaches into the passenger compartment, then the above rules shall be in effect regarding safety fuel cell construction, firewall, and roll over valves. A tank that is cut into the floor of the passenger compartment shall be considered outside the passenger compartment if the floor is modified such that the tank is still sealed from the passenger compartment. OEM or metal tanks used in the prerunner truck category or in the rally categories must be fitted with rollover valves in the fuel filler such that fuel cannot readily flow out of the tank if the vehicle is upside down or on its side, must meet technical inspector approval.

3.6.3 Fuel Filler, Vents, and Caps

Fuel filler lines and caps must be located and secured in such a manner as to prevent being knocked off or open during

movement, rollover or accidental impact. Design and installation must be in such a manner to prevent fuel escaping from pickups, lines, fillers and breather vents if the vehicle is partially or totally inverted. Fuel breather lines must have a rollover check valve incorporated into the fuel cell.

The vent line must extend at least 4 inches above the fuel cell, be routed to one side at least 3 inches beyond the fuel cell then wrapped back to the other side of the fuel cell and down to below the belly pan of the vehicle or 3 inches below the fuel cell, whichever is lower. The objective is to route the vent line such that fuel cannot readily flow out the breather if the vehicle is on its side or upside down.

All fuel fillers attached to the frame or body panel must use a flexible coupling to the tank. All fuel fillers must be surrounded by a boot or splash guard (body panel is acceptable as a splashguard if sealed). Boot or splash guard must direct fuel spillage to outside of vehicle and away from driver's compartment, engine, exhaust and brakes. A fuel filler rollover-check-valve must be incorporated into all fuel cells.

3.7 General Vehicle Components

3.7.1 Throttles

Every carbureted vehicle with a foot throttle must have two return springs, with a minimum of a 2-lb. pull, attached to the carburetor. Vehicles using OEM fuel injection or computer-controlled throttles are exempt from this requirement. A stop or override system must be used to keep linkage from passing over center and sticking in an open position.

A hand throttle may be used if physical limitations necessitate use of such a device. The hand throttle must follow the same guidelines as a foot throttle and must be approved by Technical Inspector.

3.7.2 Exhaust

Exhaust system design and installation must be done in such a manner as to extend past the rear of the driver's compartment, be directed rearward out of the body and away from the driver and co-driver, fuel cells and tires.

3.7.3 Driveshafts

All front engine vehicles with open driveshafts must have a 0.25-inch x 2-inch steel strap or a 2-inch-wide heavy nylon webbed retainer hoop. Hoop or strap must be securely mounted to a body or frame member and must be located within the first 6 inches of the main driveline behind the slip yolk or universal joint. Hoop or strap must be fabricated and located in such a manner that it will reasonably prevent the front of the driveshaft from digging into the ground when the rear suspension is fully compressed to the upper limit of wheel travel. The loop must be as short as possible to prevent severe "whipping" of the driveshaft.

3.7.4 Fluid Coolers

Oil coolers, transmission coolers and radiators located ahead of the driver and co-driver or in the passenger compartment must have a shroud that will prevent liquids from blowing back or leaking onto the driver and/or co-driver in the event of a rupture or leakage. All hoses running through the passenger compartment must be shielded. Steel braided hoses do not constitute a shield.

3.7.5 Auxiliary Equipment

All vehicles must start event with a functional generator or alternator, fan, water pump (water cooled vehicles) and a complete functional electrical system.

3.7.6 Driver's Compartment

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

3.7.7 Doors and Latches

All vehicles with operational doors must have positive locking mechanisms and must have a secondary latching device, secondary latching device must be approved by Technical Inspector.

3.7.8 Firewalls

It is recommended that all vehicles have an all-metal firewall separating the driver's compartment from the danger of fire from the engine and fuel supplies. A minimum firewall should be liquid tight and extend from the driver's shoulder height to the vehicle floor and from body side to body side. If the rear mounted fuel cell is higher than drivers shoulder height, the firewall should extend at least 2 inches above the top of the fuel cell. The hood is considered an extension of the firewall on front engine vehicles. Any hole placed in the firewall for structure members, lines, etc. should be kept to a minimum. The hole should not have more than 0.0625-inch gap around the items passing through the firewall. Metallic tape can be

used to seal the hole between the firewall and the item passing through the firewall.

3.7.9 Floorboards

Floorboards or belly pans are required on all vehicles and must be attached by a minimum of six 0.25-inch bolts (Dzus fasteners are not permitted) per side if not an integral part of the body or chassis. Floorboards must cover the entire area from in front of the pedal assembly to behind the seats and from outside edge to outside edge on each side. Floorboards in the front must extend up in front of the pedal assembly. Installation must be done in such a manner as to afford maximum protection to the occupants from debris.

3.7.10 Bumpers

No hazardous front or rear bumpers, nerf bars, frame heads or other protruding objects from vehicles are permitted. Ends must be capped and rounded to prevent any sharp edges. Bumpers and protective bars must be designed in a way as to reasonably inhibit two vehicles from becoming locked together. A safe front and rear bumper are required on all vehicles.

3.7.11 Mirrors

A rear-view mirror is required on all vehicles. Mirrors must have at least 6 square inches of mirror surface. Mirror must have a reasonably unobstructed view of area behind vehicle.

3.7.12 Skid Plates

Skid plates designed to reasonably protect the front suspension, steering and brake components are required on all vehicles. Skid plate must be made of metal or UHMW .250” minimum and be securely attached unless specified on vehicle class rules.

3.7.13 Storage

All spare parts and extra equipment carried on a vehicle must be securely fastened to prevent movement during competition. All spare parts and extra equipment must be carried in such a manner as to reduce the risk of injury to the occupants.

3.7.14 Chassis and Body

All body parts mandated by category rules must remain on the vehicle (accidental damage excluded) during the entire length of event. The categorization of vehicles is based upon the chassis, not the body. For example, a buggy chassis (tube frame transaxle mid/rear engine) will not be allowed in a truck category just because it has a truck body on it.

3.7.15 Fenders and Hood

Front and Rear Fenders and Hoods must be securely attached to vehicle on all categories unless specified on vehicle rules.

3.8 Engine, Transmission, and Drivelines

3.8.1 Engine Displacement

Where applicable, engine displacement must adhere to class rules. Engine displacement may be checked by NORRA. Unless otherwise specified in the category rules, engines may be of any manufacture and any number of cylinders. This includes categories for production-based vehicles.

3.8.2 Fuel Delivery

Fuel delivery method (carburetion or fuel injection) is open unless otherwise specified in the class rules.

3.8.3 Transmission

Every vehicle must have a functional reverse gear. Vehicles in classes requiring four-wheel drive must be capable of being driven through all wheels.

3.8.4 Turbochargers and Superchargers

Superchargers and Turbochargers are not permitted on any gasoline-powered vehicles except as allowed in class specific rules. Within this document, the word “turbochargers” shall be used generally to indicate any forced induction mechanism, whether it is a turbocharger or supercharger.

4 Vehicle Rules for All Motorcycles and ATV

4.1.1 Brakes

Brakes must be in a safe working condition and be able to apply adequate force to lock up all tires. Brakes must be in a safe operating condition during the entire event. If brake system problems do occur during the event they must be repaired before continuing in competition. Brakes must be equipped with a rear facing red brake light to warn others that the vehicle is slowing.

4.2 Electrical System

4.2.1 Ignition

Each vehicle must have a positive action on/off switch in good working order. The switch must be labeled “ignition” on/off and be located within easy reach of the rider.

4.2.2 Batteries

Batteries must be securely mounted with metal-to-metal tie downs. No Lead-Acid batteries allowed.

4.3 Fuel System

4.3.1 Fuel

Any of the following commercially available fuels may be used:
a) Service station pump gasoline (including Ethanol up to E100)
b) Racing gasoline as manufactured
c) Commercial aviation gas
d) Diesel fuel (including Biodiesel up to B100)
Oxygen bearing fuels including alcohol and nitromethane are prohibited, except for those originally present in service station pump fuel and as mentioned above. Commercially produced nationally advertised fuel additives may be used.

4.3.2 Fuel Tanks

Auxiliary fuel tanks may be added. All fuel tanks must be securely mounted to the bike / atv.

4.3.3 Engine Displacement

Where applicable, engine displacement must adhere to class rules. Engine displacement may be checked by NORRA. Unless otherwise specified in the class rules, engines may be of any manufacture and any number of cylinders.

4.4 Body

4.4.1 Hoses

All fuel and brake line hoses including metal lines and fittings must be clamped and/or safety wired.

4.4.2 Seating

All seats must be securely mounted to frame of motorcycle and be properly reinforced in such a manner as to keep seat from moving in relationship to the frame.

4.4.3 Storage

All spare parts and extra equipment carried on a motorcycle must be securely fastened to prevent movement during competition. All spare parts and extra equipment must be carried in such a manner as to reduce the risk of injury to the occupants.

4.4.4 Fenders

Fenders must be securely attached to motorcycle on all classes.

5 Technology Eras for Cars, Trucks, SUVs, and SXS

NORRA has introduced the concept of “Technology Eras”. An Overall Trophy will be awarded for the lowest overall time in each Era. The Eras are *roughly* defined by the technology that was available in that era, rather than by specific build dates. The Era technology restrictions are primarily focused upon chassis, suspension, and transmission technology. Era specific engine technology restrictions are in place in some categories and may be implemented in additional categories in the future.

The NORRA Eras are:

- **Pioneer Era (1967 - 1975)**
    - Characterized by early Burros and original Stroppe builds.
    - 2” shocks, 33” max tire size, swing axle buggies
- **Legends Era (1976 - 1982)**
    - Characterized by early open class IRS buggies and stock trucks
    - 2” shocks, 35” max tire size
- **Challenger Era (1983 – 1992)**
    - Type 4 & early Porsche 6-cylinder buggies and quarter elliptic trucks
    - 2.5” shocks, 35” max tires
- **Vintage Era (1993 – 20+ years old)**
    - Big engine beamed buggies, racing transaxles, linked production-based trucks
    - Big modern shocks allowed, 37” max tires
- **Historic Era (20+ year old tube frame trucks and truggys)**
    - A new era in pure tube frame unlimited trucks, truggys and A-arm cars
    - Unlimited categories for 20+ year old machines
- **Evolution Era (Modern machines)**
    - Multiple categories of modern racing machines

5.1 The Exception Rule

For all Eras and Categories, an exception may be made for authentic vehicles that can document they had technology which these rules ban from a given Era. Examples would include Big Oly which was essentially a Trophy Truck in 1970, or cars that ran Mickey Thompson 36" tires as early as 1976. Exceptions will not be made for Tribute builds nor for undocumented vehicles. (Tribute builds must follow these technology limits). Exception requests must be sent via email, with documentation attached to info@norra.com no later than 90 days before the event to be considered for a waiver.

➢ First came the Pioneers, creating the sport of desert racing…

5.2 PIONEER Era (1967 - 1975)

- Pioneer Buggy category
    - VW Type 1 engines only (any displacement), no fuel injection
    - VW Swing axle transaxles only
    - Stock VW front / rear suspension
    - 100” max wheelbase
    - 33” max tire diameter
    - 2” max shock diameter, no coilovers, no bypasses
- Pioneer Cars category
    - Cars conforming to Pioneer Era limitations
- Pioneer Truck category
    - Body style must have existed in this Era
    - Stock chassis, stock suspension
    - 33” max tire diameter
    - 2” max shock diameter, no coilovers, no bypasses
- Pioneer 4x4 category
    - Body style must have existed in this Era
    - Stock chassis, stock suspension, solid axle 4wd
    - 33” max tire diameter
    - 2” max shock diameter, no coilovers, no bypasses

Pioneer Era Categories (racing for Pioneer O/A)	**Grouping**
Pioneer Buggies	Classic
Pioneer Cars	Classic
Pioneer Trucks	Classic
Pioneer 4x4s	Classic

➢ The Pioneers became Legends…

5.3 LEGEND Era (1976 - 1982)

- Legend Buggy category
  - VW Type 1 engines only (any displacement)
  - VW IRS transaxles allowed (091, 002, swingers)
  - Beam fronts with arms no more than 2.5” over stock length
  - Rear arms no more than 3x3
  - 110” max wheelbase
  - 33” max tire diameter
  - 2” max shock diameter, no coilovers, no bypasses
- Legend Cars category
  - Cars conforming to Legend Era limitations
- Legend Truck category
  - Body style must have existed in this Era
  - Stock chassis, stock concept suspension
  - 35” max tire diameter
  - 2” max shock diameter, no coilovers, no bypasses
- Legend 4x4 category
  - Body style must have existed in this Era
  - Stock chassis, stock concept suspension, solid axle 4wd
  - 35” max tire diameter
  - 2” max shock diameter, no coilovers, no bypasses

Legend Era Categories (racing for Legend O/A)	**Grouping**
Legend Buggies	Classic
Legend Cars	Classic
Legend Trucks	Classic
Legend 4x4s	Classic

➢ The Challengers stepped up to take on the Legends…

5.4 CHALLENGER Era (1983 - 1992)

- Challenger Buggy category
  - 3.5L max air cooled, 2.5L max water cooled
  - Non-production buggy chassis
  - Any transaxle but non-sequential
  - Front beams of unlimited dimensions, no a-arms
  - Rear IRS, no solid axle
  - 35” max tire diameter
  - 2.5” max shock diameter, coilovers ok but still no bypasses
- Challenger Cars category
  - Cars conforming to Challenger Era limitations
- Challenger Truck category
  - Body style must have existed in this Era
  - Stock chassis, stock concept suspension, quarter elliptics ok
  - 35” max tire diameter
  - 2.5” max shock diameter, front coilovers ok but still no bypasses
- Challenger 4x4 category
  - Body style must have existed in this Era
  - Stock chassis, stock concept suspension, quarter elliptics ok, solid axle 4wd
  - 35” max tire diameter
  - 2.5” max shock diameter, front coilovers ok but still no bypasses

Challenger Era Categories (racing for Challenger O/A)	**Grouping**
Challenger Buggies	Classic
Challenger Cars	Classic
Challenger Trucks	Classic
Challenger 4x4s	Classic

➢ The Challengers evolved to became Vintage…

5.5 VINTAGE Era (1993 – 20 years old)

- Vintage Open Buggy categories, must be at least 20 years old
  - Big Engines
  - Sequential transaxles
  - Beams ONLY unless car is documented to have had them 20 years ago
    - Tribute or new builds must have beams, no A-arm tribute cars
  - Rear IRS, no solid axle (Solid rear axle buggies belong in the Historic Category)
  - 37” max tire diameter
  - Big modern shocks

- Vintage Truck categories, must be built from 20+ year old production truck
  - Body style must have existed in this Era
  - Production based modified chassis, stock concept suspension, linked w/coilovers
  - No pure tube frame trucks (those belong in the Historic Category)
  - 37” max tire diameter
  - Big Modern shocks

- Vintage Limited Air-Cooled VW powered categories
  - Common modern rule packages for VW powered buggies and VW’s
  - These categories have changed very little over the last 20 years so newer builds are permitted in these vintage categories as long as they conform to the category limitations

Vintage Era Categories	**Grouping**
Vintage Open Buggies	Pro
Vintage 6-Cylinder Buggies	Classic
Vintage 4-Cylinder Buggies	Classic
Vintage Open Trucks	Pro
Vintage 6-Cylinder Trucks	Classic
Vintage 4-Cylinder Trucks	Classic
Vintage Open Truck, Rear Leafs	Classic
Vintage Open Truck w/4x4	Classic
Vintage Short Wheelbase 4x4	Classic
Vintage Military Vehicle	Classic
Vintage Open Production Cars	Classic
Vintage Stock Production Cars	Classic
Vintage Class 12	Classic
Vintage Class 5	Classic
Vintage Class 5-1600	Classic
Vintage Class ½-1600	Classic
Vintage Class 9	Classic
Vintage Class 11	Classic

➢ The Historic Era ushered in the tube frame unlimited vehicles…

5.6 HISTORIC Era (Must be at least 20 years old)

- Historic Truck and Truggy category
    - Unlimited category for vehicles at least 20 years old
- Historic Buggy category
    - Unlimited category for IRS vehicles at least 20 years old

Historic Era Categories (racing for Historic O/A)	**Grouping**
Historic Truck and Truggy	Pro
Historic Buggy	Pro

And now we find ourselves in the modern Evolution Era…

5.7 Evolution Era (modern race cars)

- Multiple modern categories for any modern racecar or prerunner that meets safety rules.
- VW powered categories and 5 Open are in the Vintage Era even if built more recent.

Evolution Era Categories (racing for Evolution O/A)	Grouping
Unlimited Truck	Pro
Unlimited Buggy / UTV	Pro
Class 5 Open	Pro
Pro SXS Naturally Aspirated	Pro
Pro SXS Forced Induction	Pro
Sportsman SXS (2 / 4 Seat)	Pro
Pro SXS	Pro
Class 10	Pro
Class 11	Classic
Rally Car	Classic
Class 6100	Pro
Heavy Metal (8, ProTruck, 1450, 6, 3, 2)	Pro
Class 7100	Classic
Class 7 / 7200	Pro
Ultra 4x4	Pro
Trophy Lite / 3000	Pro
Meyers Manx	Pro
Modern Military Vehicles	Classic
Prerun Trucks (must have doors)	Classic
Prerun Buggies (must have back seat)	Classic
RV (Recreational Vehicles)	Classic
Hybrid Vehicles	Classic

Electric Vehicles	Classic
JeepSpeed 3700	Classic
Showroom Stock Late Model Truck	Pro

6 Motorcycle and ATV Categories

For Motos / ATV, NORRA offers a professional rally experience.

- The Pro Rally class will be Ironman only (only 1 rider)
- Amateur Rally class will be Optional Ironman only (Multirider).
- There will be no GPS trail published for most of the Moto / ATV classes. This will be challenging navigation via roadbook only with hidden Virtual Check Points (VCP's) to enforce course compliance and fairness.
- NORRA has a Moto class that allows GPS navigation with dangers marked for safety.
- In the event of prize money, only the Pro Rally class will be eligible.
- The Amateur Rally class is only open to riders who have completed less than 3 NORRA roadbook rallies as an Ironman or Multirider or completed 3 roadbook ironman rallies elsewhere if known (NORRA cannot verify so this is on the honor system).
- All Moto / ATV classes must have a 200-km fuel range.

Moto / ATV classes

Class Name	Roadbook ONLY	Ironman	Prize Money (if avail)	Motos allowed
Pro Rally	Yes	Yes	Yes	Any
Amateur Rally	Yes	Optional	No	Any
50+	Yes	Optional	No	Any
60+	Yes	Optional	No	Any
Vintage	Yes	Optional	No	1999 or older
XR650	Yes	Optional	No	Any Honda XR650 2000-2008 and XR650L
Two Stroke	Yes	Optional	No	Any Moto, ATC or ATV with Two Stroke Engine
Moto GPS	No	Optional	No	Any Moto, ATC or ATV

7 Car Class groupings – Pro and Classic

7.1 Overview of Groupings

- Groupings split the four-wheel classes into two groups, Pro, and Classic to enable alternate race routes to be used based on the speed and capabilities of the classes. When classes within a given Era are split between groups, an effort has been made to ensure that all classes within that Era which have typically won the Era overall trophy are kept together in Pro. In the event a Classic Evo or Vintage entry wishes to race for the Era overall trophy, then they must change into a class which races in Classic.

8 Pioneer Categories (1967 - 1975)

8.1 Pioneer Buggies

The spirit of this category is to provide a home for non-production-based Buggies that raced in the 1967-1975 era.

Engines can only be VW Type 1 but can be built to any size. No fuel injection must run a carburetor.
Transaxles must be VW swing axle type.
The maximum wheelbase is 100", measured at ride height.
Stock front and rear VW suspension pieces are required, ball joint or link pin style is allowed.
Combos and aftermarket stock length trailing arms may be used due to the difficulty of sourcing good stock parts.
The maximum shock diameter is 2" (OD). No coilovers. No bypass shocks (internal or external).
The maximum tire diameter is 33".
Bugs are allowed in this category if they do not meet the Pioneer cars rules but do meet the Pioneer buggy rules.
Due to the availability of quality original steering boxes, NORRA will allow conversion to rack and pinion steering.
No fuel cells are required for this class.

8.2 Pioneer Cars

The spirit of this category is to provide a home for VW Beetles and other cars that raced in the 1967-1975 era.

For Volkswagens:
Engines can only be VW Type 1 but can be built to any size. No fuel injection must run a carburetor.
Transaxles must be VW swing axle type.
The maximum wheelbase is 95", measured at ride height.
Stock front and rear VW suspension pieces are required, ball joint or link pin style is allowed however must use what originally came on the car (cannot convert ball joint to link pin and vice versa).
Combos and aftermarket stock length trailing arms may be used due to the difficulty of sourcing good stock parts.
Car must use a stock VW pan from rear bulkhead to front bulkhead.
Due to the availability of quality original steering boxes, NORRA will allow conversion to rack and pinion steering.

For other cars:
Engine must be stock but can be built to any size.
Suspension must be stock however spring rates may be changed.

The maximum shock diameter is 2" (OD). No coilovers. No bypass shocks (internal or external).
The maximum tire diameter is 33".
No fuel cells are required for this class.

8.3 Pioneer Trucks

The spirit of this category is to provide a home for production based 2wd or 4wd trucks as raced in the 1967-1975 era.

- Body must maintain design and style which was available in 1975 or older. Fiberglass replacement panels allowed only for hood and fenders. Flared and/or cut out fender opening allowed. Cut outs in hood for air cleaner allowed. Hood and front / rear fenders must be mounted on car at start of event. Stock grill required of a design matching the body style. Body must be mounted to chassis in the same location as stock however body lifts are allowed. Channeled or drop bodies are not allowed.
- Chassis (frame) must be stock 1975 or older. Frame may be reinforced. Frame material may not be removed other than to provide for bolt/hardware attachment. Additionally, the front of the frame may be bevel cut from the top front on the frame to a location on the bottom of the frame 8" back from the front of the frame to provide ground clearance and improve approach angle. Examples of frame material removal which are NOT allowed include clearance for axle travel, tie rod clearance, or shock/bump stop clearance/mounting.
- Wheelbase must remain stock however any stock wheelbase is allowed in this category.
- Tires shall have a maximum diameter of 33" as specified/marketed by the manufacturer (not as measured).
- Rims shall have a maximum diameter of 15" as marketed by the manufacturer. Any offset is ok. Wheel spacers are not allowed.

- Engine shall be of a design/type which was sold for the vehicle model being raced. Iron Block only. Engine items with no restriction include engine internals, cylinder heads (provided number of valves per cylinder remains stock for the vehicle), camshaft (however must remain in stock location), intake and exhaust manifolds. Fuel delivery must be via a carburetor. Fuel injection of any type is not allowed. Ignition must use a mechanical distributor. Engines must be naturally aspirated (forced induction not allowed). Modern engines such as GM LS series or Ford Modular series are not allowed.
- Transmission must be of a design/type which was sold for the vehicle model being raced. Electronic transmission controls are not allowed.
- Rear End must be of a semi-floater design unless the vehicle model being raced came equipped from the factory with a full floating rear end (in this case the rear housing and hub must be stock but may be reinforced/trussed). Semi-float housings may be reinforced/trussed or may be aftermarket fabricated pieces but are limited to a 3.25" housing tube OD. Internals such as axle shafts, differentials/carriers and gears are unrestricted.
- For 4wd vehicles, the front axle must be a stock piece available in 1975 and available for the vehicle model being raced. Reinforcement is allowed. As an example, a front Dana 60 is not allowed on a Bronco, but a Dana 44 is allowed even if the vehicle originally came with a Dana 30. Internals including axles, diffs/carriers, gears, lockouts are unrestricted.
- Brakes are open. Aftermarket disk brakes are allowed on all 4 corners, however the 15" wheel limitation will self-limit rotor diameter. Power assist of any type is allowed if desired.
- Steering must be of a design that was available in 1975 for the vehicle model being raced (ie box or rack). Power steering may be retrofitted using OEM or aftermarket pumps/boxes. Steering linkages may be stock or aftermarket/fabricated however must be of the same basic design as was available from the factory in 1975 (ie no relay arm steering). Ram assist and full hydraulic steering are not allowed (as these were not part of OEM design in 1975).
- Suspension must be stock except for spring rates/shape, and shocks. Stock suspension arms and linkages are required but may be reinforced. Aftermarket / fabricated arms are not allowed. Suspension arms must mount in stock locations using stock style bushings however mounting reinforcements are allowed (ie double shear, weld in washers, etc.) No non-stock links may be used (aka traction bars).
- Track Width must be stock as delivered from the factory measured WMS to WMS. Given the suspension rules, it should not be possible to legally widen the truck at the WMS (Wheel Mounting Surface).
- Springs: Coil springs may be of any length/rate but must mount in the stock mounts. Leaf springs must be stock length but may be of any rate/arch. Stock shackles are required but may be reinforced. Stock bushing types must be used (no Heims or spherical bushings).
- Shocks: Coilovers are not allowed. Bypass shocks are not allowed (internal or external). Shock diameter is a maximum of 2" OD. Remote reservoirs are allowed. The number of shocks per wheel is open. The mounting locations of all shocks is open. Rear shocks may not protrude through the floor or bed. Front shocks may not protrude through the hood.
- Bump Stops must of rubber or poly or similar. Hydraulic air bumps are not allowed.

- No fuel cells are required for this class.

8.4 Pioneer 4x4s

The spirit of this category is to provide a home for production based 4x4 Trucks / SUVs as raced in the 1967-1975 era. Vehicles in this category must have working 4wd of a solid front axle design and with a wheelbase not to exceed 108" at ride height.

- Body must maintain design and style which was available in 1975 or older. Fiberglass replacement panels allowed only for hood and fenders. Flared and/or cut out fender opening allowed. Cut outs in hood for air cleaner allowed. Hood and front / rear fenders must be mounted on car at start of event. Stock grill required of a design matching the body style. Body must be mounted to chassis in the same location as stock however body lifts are allowed. Channeled or drop bodies are not allowed.
- Chassis (frame) must be stock 1975 or older. Frame may be reinforced. Frame material may not be removed other than to provide for bolt/hardware attachment. Additionally, the front of the frame may be bevel cut from the top front on the frame to a location on the bottom of the frame 8" back from the front of the frame to provide

ground clearance and improve approach angle. Examples of frame material removal which are NOT allowed include clearance for axle travel, tie rod clearance, or shock/bump stop clearance/mounting.

- Wheelbase must remain stock however any stock wheelbase is allowed in this category if it does not exceed 108".
- Tires shall have a maximum diameter of 33" as specified/marketed by the manufacturer (not as measured).
- Rims shall have a maximum diameter of 15" as marketed by the manufacturer. Any offset is ok. Wheel spacers are not allowed.
- Engine shall be of a design/type which was sold for the vehicle model being raced. Iron Block only. Engine items with no restriction include engine internals, cylinder heads (provided number of valves per cylinder remains stock for the vehicle), camshaft (however must remain in stock location), intake and exhaust manifolds. Fuel delivery must be via a carburetor. Fuel injection of any type is not allowed. Ignition must use a mechanical distributor. Engines must be naturally aspirated (forced induction not allowed). Modern engines such as GM LS series or Ford Modular series are not allowed. Transmission must be of a design/type which was sold for the vehicle model being raced. Electronic transmission controls are not allowed.
- Rear End must be of a semi-floater design unless the vehicle model being raced came equipped from the factory with a full floating rear end (in this case the rear housing and hub must be stock but may be reinforced/trussed). Semi-float housings may be reinforced/trussed or may be aftermarket fabricated pieces but are limited to a 3.25" housing tube OD. Internals such as axle shafts, differentials/carriers and gears are unrestricted.
- The front axle must be a stock piece available in 1975 and available for the vehicle model being raced. Reinforcement is allowed. As an example, a front Dana 60 is not allowed on a Bronco, but a Dana 44 is allowed even if the vehicle originally came with a Dana 30. Internals including axles, diffs/carriers, gears, lockouts are unrestricted.
- Brakes are open. Aftermarket disk brakes are allowed on all 4 corners, however the 15" rim limitation will self-limit rotor diameter. Power assist of any type is allowed if desired.
- Steering must be of a design that was available in 1975 for the vehicle model being raced (ie box or rack). Power steering may be retrofitted using OEM or aftermarket pumps/boxes. Steering linkages may be stock or aftermarket/fabricated however must be of the same basic design as was available from the factory in 1975 (ie no relay arm steering). Ram assist and full hydraulic steering are not allowed (as these were not part of OEM design in 1975).
- Suspension must be stock except for spring rates/shape, and shocks. Stock suspension arms and linkages are required but may be reinforced. Aftermarket / fabricated arms are not allowed. Suspension arms must mount in stock locations using stock style bushings however mounting reinforcements are allowed (ie double shear, weld in washers, etc.) No non-stock links may be used (aka traction bars).
- Track Width must be stock as delivered from the factory measured WMS to WMS. Given the suspension rules, it should not be possible to legally widen the truck at the WMS (Wheel Mounting Surface).
- Springs: Coil springs may be of any length/rate but must mount in the stock mounts. Leaf springs must be stock length but may be of any rate/arch. Stock shackles are required but may be reinforced. Stock bushing types must be used (no heims or spherical bushings).
- Shocks: Coilovers are not allowed. Bypass shocks are not allowed (internal or external). Shock diameter is a maximum of 2" OD. Remote reservoirs are allowed. The number of shocks per wheel is open. The mounting locations of all shocks is open. Rear shocks may not protrude through the floor or bed. Front shocks may not protrude through the hood.
- Bump Stops must of rubber or poly or similar. Hydraulic air bumps are not allowed.

- No fuel cells are required for this class.

9 Legend Categories (1976 – 1982)

9.1 Legend Buggies

The spirit of this category is to provide a home for non-production-based Buggies that raced in the 1976-1982 era.

Engines can only be VW Type 1 but can be built to any size.
Transaxles must be VW but can be IRS (091, 002, or swing axle).
The maximum wheelbase is 110”, measured at ride height.
Front suspension must be beam of any width, but arms can be no longer than 2.5” longer than stock.
Rear suspension can be no greater than 3x3 over stock.
The maximum shock diameter is 2” (OD). No coilovers. No bypass shocks (internal or external).
The maximum tire diameter is 33”.
Bugs are allowed in this category if they do not meet the Legend bug rules but do meet the Legend buggy rules.
Due to the availability of quality original steering boxes, NORRA will allow conversion to rack and pinion steering.

9.2 Legend Cars

The spirit of this category is to provide a home for VW Beetles and other cars that raced in the 1976-1982 era.

For Volkswagens:
Engines can only be VW Type 1 but can be built to any size.
Transaxles must be VW but can be IRS (091, 002, or swing axle).
The maximum wheelbase is 95”, measured at ride height.
Front suspension must be beam of any width, but arms can be no longer than 2.5” longer than stock.
Rear suspension can be no greater than 3x3 over stock.
Car must use a stock VW pan from rear bulkhead to front bulkhead.
Due to the availability of quality original steering boxes, NORRA will allow conversion to rack and pinion steering.

For other cars:
Engine must be stock size and type as delivered on the original car.
Suspension must be stock however spring rates may be changed.

The maximum shock diameter is 2” (OD). No coilovers. No bypass shocks (internal or external).
The maximum tire diameter is 33”.

9.3 Legend Trucks

The spirit of this category is to provide a home for production-based Trucks that raced in the 1976-1982 era.

- The body style must have existed in this era.
- The chassis must be stock.
- The suspension must be of stock concept for the chassis.
- Leaf springs must be of a semi elliptical design and must have a single fixed pivot (single shackle).
- The maximum shock diameter is 2” (OD). No coilovers. No bypass shocks (internal or external).
- The maximum tire diameter is 35”.
- A maximum of 2 rear links is allowed.
- Engine shall be of a design/type which was sold for the vehicle model being raced. Iron Block only. Engine items with no restriction include engine internals, cylinder heads (provided number of valves per cylinder remains stock for the vehicle), camshaft (however must remain in stock location), intake and exhaust manifolds. Fuel delivery must be via a carburetor. Fuel injection of any type is not allowed. Ignition must use a mechanical distributor. Engines must be naturally aspirated (forced induction not allowed). Modern engines such as GM LS series or Ford Modular series are not allowed.

- Transmission must be of a design/type which was sold for the vehicle model being raced. Electronic transmission controls are not allowed.

9.4 Legend 4x4s

The spirit of this category is to provide a home for production based 4x4 Trucks / SUVs that raced in the 1976-1982 era.

- The body style must have existed in this era.
- The chassis must be stock.
- The suspension must be of stock concept for the chassis.
- Must have solid front axle 4-wheel drive.
- Leaf springs must be of a semi elliptical design and must have a single fixed pivot (single shackle).
- The maximum shock diameter is 2” (OD). No coilovers. No bypass shocks (internal or external).
- The maximum tire diameter is 35”.
- A maximum of 2 rear links is allowed.
- Engine shall be of a design/type which was sold for the vehicle model being raced. Iron Block only. Engine items with no restriction include engine internals, cylinder heads (provided number of valves per cylinder remains stock for the vehicle), camshaft (however must remain in stock location), intake and exhaust manifolds. Fuel delivery must be via a carburetor. Fuel injection of any type is not allowed. Ignition must use a mechanical distributor. Engines must be naturally aspirated (forced induction not allowed). Modern engines such as GM LS series or Ford Modular series are not allowed.

- Transmission must be of a design/type which was sold for the vehicle model being raced. Electronic transmission controls are not allowed.

10 Challenger Categories (1983 – 1992)

10.1 Challenger Buggies

The spirit of this category is to provide a home for non-production-based Buggies that raced in the 1983-1992 era.

Any production air-cooled engine to a max of 6 cylinders, or any production water cooled 4-cylinder engine. Carbureted only. Internals are open.
Any brand or make of non-sequential transaxle, no live axles.
Front suspension must be a beam design.
Rear suspension must be IRS.
The maximum shock diameter is 2.5” (OD). Coilovers are allowed but no bypass shocks (internal or external).
The maximum tire diameter is 35”.
Steering is open.

10.2 Challenger Cars

The spirit of this category is to provide a home for VW Beetles and other cars that raced in the 1983-1992 era.

For Volkswagens:
Any VW air-cooled engine to a max of 4 cylinders, or any VW water cooled 4-cylinder engine. Carbureted only. Internals are open.
Any brand or make of non-sequential transaxle, no live axles.
Front suspension must be a beam design.
Rear suspension must be IRS or swing axle.
Steering is open.

For other cars:
Engine must be type as delivered on the original car. Internals are open.
Suspension must be stock however spring rates may be changed.

The maximum shock diameter is 2.5” (OD). Coilovers are allowed but no bypass shocks (internal or external).
The maximum tire diameter is 35”.

10.3 Challenger Trucks

The spirit of this category is to provide a home for production-based Trucks that raced in the 1983-1992 era.
Engine Open
The body style must have existed in this era.
The chassis must be stock.
The suspension must be of stock concept for the chassis.
Leaf springs can be quarter elliptical or dual shackle, links allowed but no rear coilovers.
The maximum shock diameter is 2.5” (OD). Coilovers allowed on front only. No bypass shocks (internal or external).
Secondary suspension including air shocks are allowed but ride height must not drop more than 1.5” with secondary suspension removed.
The maximum tire diameter is 35”.
3 or 4 links are allowed, however spring method must still be leafs.

10.4 Challenger 4x4s

The spirit of this category is to provide a home for production based 4x4 Trucks / SUVs that raced in the 1983-1992 era.
Engine Open
The body style must have existed in this era.
The chassis must be stock.
The suspension must be of stock concept for the chassis.
Must have solid front axle 4-wheel drive.
Leaf springs can be quarter elliptical or dual shackle, links allowed but no rear coilovers.
The maximum shock diameter is 2.5” (OD). Coilovers allowed on front only. No bypass shocks (internal or external).
Secondary suspension including air shocks are allowed but ride height must not drop more than 1.5” with secondary suspension removed.
The maximum tire diameter is 35”.
3 or 4 links are allowed, however spring method must still be leafs.

11 Vintage Categories (1993 – at least 20 years old)

11.1 Vintage Open Buggies

The spirit of this category is to provide a home for open class Buggies that raced in the 1993-20-year-old era.

Vehicle must be 20+ years old.
Vehicle can be a buggy or a VW Beetle body style.
Any naturally aspirated engine may be used.
Any brand or make of transaxle may be used, no live axles.
Front suspension design could be Beam type or A-arms as it was 20 years ago or more.
Rear suspension must be IRS.
Shock and spring package is unlimited.
The maximum tire diameter is 37”.

11.2 Vintage 6-Cylinder Buggies

The spirit of this category is to provide a home for limited displacement Buggies that raced in the 1993-20-year-old era.

Vehicle must be 20+ years old.
Any production naturally aspirated engine up to 6-cylinders may be used.
Any brand or make of transaxle may be used, no live axles.
Front suspension design could be Beam type or A-arms as it was 20 years ago or more.
Rear suspension must be IRS.
Shock and spring package is unlimited.
The maximum tire diameter is 37”.

11.3 Vintage 4-Cylinder Buggies

The spirit of this category is to provide a home for limited displacement Buggies that raced in the 1993-20-year-old era.

Vehicle must be 20+ years old.
Any production naturally aspirated engine up to 4-cylinders may be used.
Any brand or make of transaxle may be used, no live axles.
Front suspension design could be Beam type or A-arms as it was 20 years ago or more.
Rear suspension must be IRS.
Shock and spring package is unlimited.
The maximum tire diameter is 37”.

11.4 Vintage Open Trucks

The spirit of this category is to provide a home for Trucks and SUVs that raced in the 1993-20-year-old era.

The body style must have existed in this era.
The chassis must be based on a 20+ year old production truck; the back half of the frame may be removed.
The full unmodified frame must be in place from the front of the truck to the rear of the cab. (Vintage trucks that do not meet this frame requirement are welcome in the Historic Era category for tube frame trucks.
The lower portion of the front 8” of the frame may be removed for ground clearance.
Any production naturally aspirated engine may be used.
The front suspension must be of stock concept for the chassis. Rear may be linked on coilovers.
Shock and spring package is unlimited. IRS not allowed.
The maximum tire diameter is 37”.

11.5 Vintage 6-Cylinder Trucks

The spirit of this category is to provide a home for Trucks and SUVs that raced in the 1993-20-year-old era.

The body style must have existed in this era.
The chassis must be based on a 20+ year old production truck; the back half of the frame may be removed.
The full unmodified frame must be in place from the front of the truck to the rear of the cab. (Vintage trucks that do not meet

this frame requirement are welcome in the Historic Era category for tube frame trucks.
The lower portion of the front 8” of the frame may be removed for ground clearance.
Any production naturally aspirated engine up to 6-cylinders may be used.
The front suspension must be of stock concept for the chassis. Rear may be linked on coilovers.
Shock and spring package is unlimited. IRS not allowed.
The maximum tire diameter is 37”.

11.6 Vintage 4-Cylinder Trucks

The spirit of this category is to provide a home for Trucks and SUVs that raced in the 1993-20-year-old era.

The body style must have existed in this era.
The chassis must be based on a 20+ year old production truck; the back half of the frame may be removed.
The full unmodified frame must be in place from the front of the truck to the rear of the cab. (Vintage trucks that do not meet this frame requirement are welcome in the Historic Era category for tube frame trucks.
The lower portion of the front 8” of the frame may be removed for ground clearance.
Any production naturally aspirated engine up to 4-Cylinders may be used.
The front suspension must be of stock concept for the chassis. Rear may be linked on coilovers.
Shock and spring package is unlimited. IRS not allowed.
The maximum tire diameter is 37”.

11.7 Vintage Open Trucks with Rear Leafs

The spirit of this category is to provide a home for Trucks and SUVs that raced in the 1993-20-year-old era.

The body style must have existed in this era.
The chassis must be based on a 20+ year old production truck. Full frame required.
The full unmodified frame must be in place from the front of the truck to the rear of the truck.
The lower portion of the front 8” of the frame may be removed for ground clearance.
Any production naturally aspirated engine may be used.
The front suspension must be of stock concept for the chassis. Rear must use leafs as primary suspension.
Shock package is unlimited. IRS not allowed.
The maximum tire diameter is 37”.

11.8 Vintage Open Trucks with 4 Wheel Drive

The spirit of this category is to provide a home for Trucks and SUVs that raced in the 1993-20-year-old era as well as for IFS 4x4’s from earlier eras but with Vintage era shock packages.

The body style must have existed in this era.
The chassis must be based on a 20+ year old production truck. Full frame required.
The full frame must be in place from the front of the truck to the rear of the truck. C-notch allowed to the top edge of frame.
The lower portion of the front 8” of the frame may be removed for ground clearance.
Any naturally aspirated engine may be used.
The front suspension must be of stock concept for the chassis.
Shock and spring package is unlimited. IRS not allowed.
Must have 4-wheel drive and be operational at start of rally.
The maximum tire diameter is 37”.

11.9 Vintage Short Wheelbase Trucks with 4 Wheel Drive

The spirit of this category is to provide a home for short wheelbase 4x4 Trucks and SUVs with modified suspensions and big shocks from the newer Eras.

The body style must have existed in this era.
The chassis must be based on a 20+ year old production truck.
The full frame must be in place from the front of the truck to the rear of the truck.
C-notch allowed to the top edge of frame.
The lower portion of the front 8” of the frame may be removed for ground clearance.

Any naturally aspirated engine may be used.
The maximum wheelbase is 108”.
The front suspension must be of stock concept for the chassis.
Shock and spring package is unlimited. IRS not allowed.
Must have solid front axle 4-wheel drive.
The maximum tire diameter is 37”.

11.10 Vintage Military Vehicles

The spirit of this category is intended to be stock military 4-wheeled vehicles as delivered to the US or a foreign military produced in quantities greater than a limited prototype production. Tech inspectors must approve that vehicles comply with this category regulations.

Suspension must remain stock concept as delivered on the vehicle as determined by the frame/chassis (solid axle, a-arm, etc). Spring and shock method and type are open. Front springs (leafs, coils, or torsions) may be replaced with coilovers. If originally equipped with rear torsion or coils, these may be replaced with coilovers. If originally equipped with rear leaf springs, rear suspension must use one set of leaf springs per rear wheel as the primary spring method. Semi-elliptical or quarter elliptical leafs are acceptable. Transverse leafs cannot be used as the primary spring method. Secondary suspension is allowed however with secondary suspension removed; the primary suspension must maintain static ride height +/-1.5”. Engine must be based on originally installed size and displacement.

11.11 Vintage Open Production Cars

This is a vintage category for production-based passenger vehicles (sedans, coupes, and convertibles). Trucks and SUVs are not permitted in this category. Vehicles in this category must be at least 20 years old.

Fenders are required for all four wheels. Maximum tire size is 37”
Vehicles in this category must be readily recognizable as the vehicle upon which it is based, at the discretion of NORRA.
The Open Production Car category is for vehicles that are heavily modified for example a vehicle that is a space frame racecar with a production appearing body. The determination of this is left to NORRA officials and will be based upon past performance or speed potential in NORRA’s opinion.

11.12 Vintage Stock Production Cars

This is a vintage category for production-based passenger vehicles (sedans, coupes, and convertibles). Trucks and SUVs are not permitted in this category. Vehicles in this category must be at least 20 years old.

Fenders are required for all four wheels. Maximum tire size is 37”
Vehicles in this category must be readily recognizable as the vehicle upon which it is based, at the discretion of NORRA.
The Stock Production Car category is for cars that are largely based on mildly modified production cars and retain most of the car’s chassis and body.

11.13 Vintage Class 12

This is an open category for open wheel air cooled buggies.

Front Suspension
Front suspension must be a VW twin beam trailing arm type 1 configuration. Beam and dimensions are open. Spindles are open.

Engine
Engine must be a VW type 1 with 2 valves per cylinder. Max displacement for single seater is 1776cc. Two seat cars may have a displacement up to 1835cc. Race Engine and all Spare Engines should be verified and sealed by Tech Inspector prior to the start of the race or have it verified before the start of the next day if you change it during the event. Engines must be air cooled and are limited to a single carburetor with a maximum of 2 venturis. The maximum venturi size is 42mm. The carburetor must be an automotive type, but any make is allowed. The engine must be located behind the rear axle centerline.
Low compression engine option

VW type-1 air cooled engine with a maximum compression of 9.0:1.

Single seat limited to 2110cc maximum.
Two seats limited to 2276cc maximum.
Bore and Stroke open.
Single Weber 44 IDF or EMPI HPMX 44 carburetor.
Maximum venturi size is 34mm.
Individual tube manifolds only. No plenum manifolds allowed.
Maximum intake runner tube size 1.750(1 3/4) inch OD.
OEM End Castings only, may be modified.
Any manufacturer VW head allowed.
Two (2) valves per cylinder.
Cam, valves, valve springs, and lifters are open.
Any non-roller rockers and rocker shafts allowed.
Ignition system open.
All engines must be mounted to the rear of the transmission.
Race Engine and all Spare Engines should be verified and sealed by Tech Inspector prior to the start of the race or have it verified before the start of the next day if you change it during the event.
Minimum weight is 1500 lbs.

11.14 Vintage Class 5

This class is intended for VW Baja bugs. Vehicles must be based on a VW type-1 sedan hardtop or convertible, 181 Safaris, 900 series Porsche, Karmann Ghias, or VW type-2 and type-3. Must retain Baja Bug appearance.
This class is an open class, and all components will be considered open unless restricted herein.

SUSPENSION COMPONENTS
Front and rear suspension systems may be modified or replaced if the stock concept (trailing-arms, swing-axles, IRS, etc.) is retained and wheelbase limit is not exceeded.
STEERING
No center steering.

BRAKES
Brakes are open. Turning brakes are allowed.

FUEL TANKS
Fuel cell mandatory.

ENGINE and ENGINE DISPLACEMENT
Any manufacturer air cooled, 4-cylinder single cam, push rod, VW concept engine allowed. Six (6) cylinder Porsche engine is allowed in a Porsche 911 only.

SUPERCHARGERS and TURBOCHARGERS
No turbo or superchargers allowed.

SEATING
Single or two seats are allowed. No center seating.

DRIVERS COMPARTMENT
Front and rear firewalls required. Interior sheet metal may be removed, but exterior appearance must be retained. Pedals may be of any manufacture but must be mounted on the left side of the vehicle.

DOORS AND LATCHES
Doors must remain stock. Doors may be welded or fastened closed.

FLOORBOARDS
Must retain original VW floor pan, which begins at front tip of the frame head and extends to the rear tip of the frame horns with a overall length of 107 inches plus or minus one (1”) inch. Pan may not be modified in any way. Frame heads may be interchanged early to late, late to early, modifications must be forward of the body mounting flange. Torsion adjusters are allowed.

CHASSIS and BODY
Front and rear fenders must be used. Front fenders may be one-piece fiberglass. Rear fenders must not measure less than 6 inches from the body, measured at the top center of the fender. Rear fender mounting height is open. Rear fenders must have rolled edges but may be made of ant material.
Must retain an original VW floor pan, main steel body and doors.
The body may only be cut to a minimum to install Baja kit.
Body lift kits are allowed up to 3 5/8’s.
Body must resemble a Baja Bug.
Steel body and doors must be retained. Hard body vehicles must retain a stock steel roof. Convertible bodies must retain windshield frames.
Maximum wheelbase is 105 inches plus or minus 1/2(.50) inch.

11.15 Class 1/2-1600

This category is for limited suspension open wheel cars based on 1600cc VW type 1 parts. Tech inspectors must approve that vehicles comply with this category regulations.

Suspension Components

FRONT SUSPENSION
Front suspension may only use either VW type-1 ball joint or link pin. Any manufacturers beam of two (2) steel tubes may be used but must maintain stock width. Centers may be cut, rotated and welded or torsion adjusters added. Any manufacturer torsion bars are permitted. Tube spacing is open. Front trailing arms may be reinforced or replaced if stock VW width and length are retained. Suspension limiters are allowed. Spindles, link pins, ball joints, and shock mounting locations are open. Front track width will be measured from wheel mounting surface to wheel mounting surface, with a maximum allowed width of 55.75”

REAR SUSPENSION
Rear suspension is based on VW Type 1 IRS or swing axle. IRS swing arms may be modified or replaced for strengthening purposes if stock VW IRS swing arm length is retained +/-1”. The stock VW dimension between the centerline of the rear torsion housing to the centerline of the rear stub axle (16.250”) must be retained +/-1”. Outboard bus reduction gears are allowed. Rear torsion tubes may be additionally supported or replaced but must remain steel and retain stock VW width. Center torsion adjuster is allowed. Any manufacturer’s axle assemblies are allowed if original VW type suspension is retained, this includes the use of “micro stub hubs”. A single torsion bar per wheel of any manufacturer is allowed. Torsion bars must remain inside the torsion housing. Torsion bars must be connected to the trailing arm with steel spring plates of any manufacturer. Rear suspension track width must not exceed a maximum of 58.25” as measured wheel mounting surface to wheel mounting surface. CV joint mounting face to CV joint mounting face must not exceed 47.375” and measured at ride height. The entire CV must remain inboard of the trailing arm inner bearing.

SHOCK ABSORBERS
No limit on number or size of shocks however no coilovers and no air shocks allowed. No secondary suspension.

WHEELS and TIRES
Any rims that directly mount to VW drums are allowed. No wheel spacers allowed.

STEERING
Steering is open. Any tie rod and tie rod end may be used.

BRAKES
Brakes are open if all other rules are followed.

Electrical System
Battery ignition only, no magnetos. Any distributor may be used. Any 6- or 12-volt VW type alternator or generator in the stock location may be used.

FUEL TANKS
Fuel cells are required.

ENGINE
Engine must be based upon a VW series type-1, 1600cc. The maximum displacement is 1600cc as delivered from the factory. Race Engine and all Spare Engines should be verified and sealed by Tech Inspector prior to the start of the race or have it verified before the start of the next day if you change it during the event.

ENGINE CASE
Any VW type-1, 2, 3 or universal case is permitted. The following stock case modifications are permitted:
A. May be align bored.
B. May be drilled and tapped for oil and temp sending units.
C. May be machined for crank pulley seal.
D. Installation of case savers.
E. Cylinder seating surface may be machined.
F. Oil galleries may be enlarged to 10mm

G. Threaded oil gallery plugs permitted.

OIL PUMP
Any manufacturer's oil pump is allowed. No deep sumps, dry sumps, or sump alterations. Windage trays are allowed. The use of any oil-bypass pistons and springs are allowed.

FUEL PUMP
Any combination of stock fuel pump or electric fuel pump may be used. Any fuel filters and fuel pressure regulators may be used.

PISTONS
Pistons must be stock 3 ring only. Pistons and cylinders may be of any manufacturer if original stock dimensions are maintained. Any type of wrist pins retainers may be used. Piston assemblies' way be statically balanced to the equivalent weight in grams of the lightest original non-balanced piston, wrist pin, etc.

CRANKSHAFT
Crankshaft must be stock VW. Crankshaft may be balanced. Crankshaft maximum journal re-sizing is limited to .030" undersize. No polishing or lightening of crankshaft is allowed. Any crankshaft gear is allowed. Any manufacturer engine bearing may be used if the stock dimensions are maintained. Power pulleys are allowed. Pulleys may be balanced. Sand seals may be used. Any VW flywheel may be lightened and balanced. Flywheels may be eight dowels pinned and any gland nut and washer may be used. No aluminum flywheels may be used. Any manufacturers clutch disk or pressure plate allowed but must retain original stock VW diameter. Clutch and pressure plate may be balanced. 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. Connecting rods may be of any manufacturer but must retain stock dimensions. Minimum rod weight is 580 grams.

HEADS
Heads may be U.S. sedan stock single port or dual port or their equivalent. Heads may be fly cut for cleanup. No polishing or porting is allowed. Only dual port heads from Brazil, part number 040 101 375 2 or 040 101 375 13, 040 101 375 19, or stock OEM heads are allowed. Intake manifold is restricted to a stock 34mm original equipment center section or its replacement. A 1 ½ inch (1.500) long by ½ inch (.500) diameter tube may be welded two inches below the carburetor flange. A maximum of a ¼ inch (.250) may be removed from each end of the center section for clearance. A slip tube with a 1 5/8 inch (1.625) diameter, two inches (2.000) long may be welded to the end of the runners to allow the use of a better hose connection. No porting or polishing. End castings must be original equipment VW, with VW logo and part numbers. No porting, polishing or matching of ports allowed. Balancing slot may be welded closed. Vacuum hole may be plugged. A 34mm to 30mm carburetor adaptor must be used. The only carburetor adaptor that is allowed is the EMPI part number 98-1293-B.

CAMSHAFT, VALVETRAIN
Any camshaft, camshaft gear, valve spring retainers, valve springs, and lifters are allowed. Valve spring seat diameter, in head, must remain stock VW. Valves must be stock 45 degrees. One-piece valves are allowed. Valve guides may be steel, bronze, or cast iron. Valve guide seals are allowed. No grinding or polishing in the port including valve guides. Any camshaft may be used which will allow the use of the standard stock VW 1600cc rockers arms. The rocker arm(s) may be resurfaced to permit the use of swivel feet or similar devices. No other grinding or changes to the rocker arms are permitted. No roller or needle bearings will be allowed as part of the camshaft or as an interface between the rocker arms and the camshaft. Push rods and push rod tubes may of any manufacturer. Rocker arm valve adjustment screws and wave washers may be of any origin. Clips on rocker arms may be wire tied. Valve covers may be of any type and manufacturer.

FAN SHROUD
Aftermarket fan shrouds are allowed. Heater tubes are optional.

CARBURETOR
Air cleaner location is optional and may be of any manufacturer. Velocity stacks may be used if they are not welded or bonded to the carburetor. Stock VW carburetor 30 pict 1, 2, or 3 or the Solex H-30-PIC replacement must be used. Maximum venturi size of the carburetor is 24.10mm. No internal modifications in the carburetor venturi or throttle blade are allowed. This includes no removing of parts, no grinding, polishing or filling. Intake manifolds must be stock VW. Intake manifold may be cut to allow for head modifications. No chemical milling of manifold or carburetors. Automatic choke housing may be removed. Choke plate and shaft may be removed. Electric needle valves are 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 may be used.

RESTRICTOR PLATES
Restrictor plates are required unless using the Optional Engine Rule. Single seat restrictor plates are 21.5mm. Two seat restrictor plates are 24.0mm.

OPTIONAL LOW COMPRESSION ENGINE RULE
1600cc maximum displacement with no more than 8:1 static compression ratio, stock replacement heads with no porting and the same valve and spark plug rules as above with stock end castings with no polishing may be used with an Empi or Webber 40 or 44 carb and any intake manifold. For this optional engine package, the maximum venturi is 24mm for single seat and 25mm for two seat cars. The restricted venturis must be made by PUM. Contact NORRA if you need contact info to purchase PUM special venturis. No restrictor plate is required if using this Optional Engine Rule. Race Engine and all Spare Engines should be verified and sealed by Tech Inspector prior to the start of the race or have it verified before the start of the next day if you change it during the event.

TRANSMISSION
Must use a stock VW type 1 or 2 transaxle housing. Any internal or external modifications to housing are allowed. No more than four (4) forward speeds are allowed. Any gear ratio combinations but only VW type gears (helical cut gears) may be used. Any internal modifications are allowed. May use aftermarket side covers.

FLUID COOLERS
Any oil coolers permitted with the location optional. Full flow system is permitted.

VEHICLE SAFETY EQUIPMENT
There are no restrictions for terminal points of the roll cage.
Any manufacturer's racing seat is permitted.

WEIGHT
Minimum weight, 1 seat or 2 seat: 1550 lbs

CHASSIS and BODY
Wheelbase is open.

11.16 Class 5-1600

Vehicles in this category must be VW Sedan Type 1 hardtop or sunroof as delivered from the factory. Vehicle must have the external appearance of a "Baja Bug". No convertibles, Karmann Ghias, 181 Safaris, Variants, or Super Beetles.

Suspension Components
Front and rear suspension components are limited to stock VW production Type 1 parts unless otherwise stated below.

FRONT SUSPENSION
Front suspension may only use either VW type-1 ball joint or king and link pin. Front axle torsion tube must maintain stock width, but centers may be cut, rotated and welded or torsion adjusters added. Any manufacturer torsion bars are permitted. Front torsion tubes may be additionally supported by attachment to the floor pan and/or roll cage. Original seams may be reinforced. Front trailing arms may be reinforced or replaced but stock VW width and length must be retained. Suspension limiters are permitted. Spindles, link pins, ball joints and upper shock mounting locations are open. Lower shock mount may be moved or replaced but location must remain on the lower trailing arm. Sway bars may be removed. Stock geometry must be maintained. The maximum track width is 55.75" measured from wheel mounting surface to wheel mounting surface.

REAR SUSPENSION
Rear suspension is based on VW Type 1 IRS or swing axle. IRS swing arms may be modified or replaced for strengthening purposes if stock VW IRS swing arm length is retained +/-1". The stock VW dimension between the centerline of the rear torsion housing to the centerline of the rear stub axle (16.250") must be retained +/-1". Outboard bus reduction gears are allowed. Rear torsion tubes may be additionally supported by attaching to the floor pan and/or the roll cage. Center torsion adjuster is allowed. Any manufacturer's axle assemblies are allowed if original VW type suspension is retained, this includes the use of "micro stub hubs". Rear shock tower may be removed to body mounting bolt hole only. Suspension limiters allowed. Any manufacturer spring plate may be utilized with additional retainer straps and top and bottom stops removed if stock mounting method is maintained. May convert existing swing axle suspension to IRS by welding any manufacturer's tabs to torsion housing in stock location while maintaining stock geometry. Original wheelbase must be maintained. Rear suspension track width must not exceed a maximum of 58.250 inches as measured wheel mounting face to wheel mounting

face. CV joint mounting face to CV joint mounting face must not exceed 47.375 inches, as measured at ride height. The entire outer CV must remain inboard of the trailing arm inner bearing.

SHOCK ABSORBERS
Any manufacturers shocks and sizes are allowed. Cooling fins and/or reservoirs are allowed. One shock per wheel allowed in the front. Two shocks per wheel in any location allowed in the rear. No air shocks or coil over shocks are allowed. No hydraulic bump stops allowed. No secondary suspension allowed.

WHEELS and TIRES
Any manufacturers rims allowed that will mount directly on VW drums. To wheel spacers allowed. Any manufacturer tires allowed. Spare tire may be relocated anywhere inside the body.

STEERING
Steering box may be of any origin. Any Manufacturers steering wheel and adaptor may be used in the stock location. Any steering dampener may be used. Any steering shaft is allowed, and the sheet metal tube may be removed. Any tie rods and tie rod ends are allowed. Power steering may be used as long as other rules are adhered to.

BRAKES
Any type and manufacturer brake may be used if other rules adhered to.

Electrical System

IGNITION
Battery ignition only, no magnetos. Any distributor may be used. Any 6- or 12-volt VW type alternator or generator in the stock location may be used.

BATTERIES
Number of batteries and location are optional.

LIGHTS
Additional lighting is permitted. Any manufacturers stop and taillights are allowed.

Fuel System
Fuel is restricted to automotive pump gasoline only. Automotive pump gasoline will be considered gasoline that is sold to the general public for use in domestic cars.

FUEL TANKS
Safety fuel cells are required. Fuel cell may be relocated from stock location. Any size fuel cell is allowed. A minimum of two (2) additional hold down straps must be installed to support fuel cell in the event of an upset. Straps may be rubber coated steel or nylon webbing. Any combination of stock or electric fuel pump may be utilized.

ENGINE
Engine must be based upon a VW series type-1, 1600cc. The maximum displacement is 1600cc. Race Engine and all Spare Engines should be verified and sealed by Tech Inspector prior to the start of the race or have it verified before the start of the next day if you change it during the event.

ENGINE CASE
Any VW type-1, 2, 3 or universal case is permitted. The following stock case modifications are permitted:
A. May be align bored.
B. May be drilled and tapped for oil and temp sending units.
C. May be machined for crank pulley seal.
D. Installation of case savers.
E. Cylinder seating surface may be machined.
F. Oil galleries may be enlarged to 10mm
G. Threaded oil gallery plugs permitted.

OIL PUMP
Any manufacturer's oil pump is allowed. No deep sumps, dry sumps, or sump alterations. Windage trays are allowed. The use of any oil-bypass pistons and springs is allowed.

FUEL PUMP
Any combination of stock fuel pump or electric fuel pump may be used. Any fuel filters and fuel pressure regulators may be used.

PISTONS
Pistons must be stock 3 ring only. Pistons and cylinders may be of any manufacturer if original stock dimensions are maintained. Any type of wrist pins retainers may be used. Piston assemblies' way be statically balanced to the equivalent weight in grams of the lightest original non-balanced piston, wrist pin, etc.

CRANKSHAFT
Crankshaft must be stock VW. Crankshaft may be balanced. Crankshaft maximum journal re-sizing is limited to .030" undersize. No polishing or lightening of crankshaft is allowed. Any crankshaft gear is allowed. Any manufacturer engine bearing may be used if the stock dimensions are maintained. Power pulleys are allowed. Pulleys may be balanced. Sand seals may be used. Any VW flywheel may be lightened and balanced. Flywheels may be eight dowels pinned and any gland nut and washer may be used. No aluminum flywheels may be used. Any manufacturers clutch disk or pressure plate allowed but must retain original stock VW diameter. Clutch and pressure plate may be balanced. 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. Connecting rods may be of any manufacturer but must retain stock dimensions. Minimum rod weight is 580 grams.

HEADS
Heads may be U.S. sedan stock single port or dual port or their equivalent. Heads may be fly cut for cleanup. No polishing or porting is allowed. Only dual port heads from Brazil, part number 040 101 375 2 or 040 101 375 13, 040 101 375 19, or stock OEM heads are allowed. Intake manifold is restricted to a stock 34mm original equipment center section or its replacement. A 1 ½ inch (1.500) long by ½ inch (.500) diameter tube may be welded two inches below the carburetor flange. A maximum of a ¼ inch (.250) may be removed from each end of the center section for clearance. A slip tube with a 1 5/8-inch (1.625) diameter, two inches (2.000) long may be welded to the end of the runners to allow the use of a better hose connection. No porting or polishing. End castings must be original equipment VW, with VW logo and part numbers. No porting, polishing or matching of ports allowed. Balancing slot may be welded closed. Vacuum hole may be plugged. A 34mm to 30mm carburetor adaptor must be used. The only carburetor adaptor that is allowed is the EMPI part number 98-1293-B.

CAMSHAFT, VALVETRAIN
Any camshaft, camshaft gear, valve spring retainers, valve springs, and lifters are allowed. Valve spring seat diameter, in head, must remain stock VW. Valves must be stock 45 degrees. One-piece valves are allowed. Valve guides may be steel, bronze, or cast iron. Valve guide seals are allowed. No grinding or polishing in the port including valve guides. Any camshaft may be used which will allow the use of the standard stock VW 1600cc rockers arms. The rocker arm(s) may be resurfaced to permit the use of swivel feet or similar devices. No other grinding or changes to the rocker arms are permitted. No roller or needle bearings will be allowed as part of the camshaft or as an interface between the rocker arms and the camshaft. Push rods and push rod tubes may of any manufacturer. Rocker arm valve adjustment screws and wave washers may be of any origin. Clips on rocker arms may be wire tied. Valve covers may be of any type and manufacturer.

FAN SHROUD
Aftermarket fan shrouds are allowed. Heater tubes are optional.

CARBURETOR
Air cleaner location is optional and may be of any manufacturer. Velocity stacks may be used if they are not welded or bonded to the carburetor. Stock VW carburetor 30 pict 1, 2, or 3 or the Solex H-30-PIC replacement must be used. Maximum venturi size of the carburetor is 24.10mm. No internal modifications in the carburetor venturi or throttle blade are allowed. This includes no removing of parts, no grinding, polishing or filling. Intake manifolds must be stock VW. Intake manifold may be cut to allow for head modifications. No chemical milling of manifold or carburetors. Automatic choke housing may be removed. Choke plate and shaft may be removed. Electric needle valves are 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 may be used.

OPTIONAL LOW COMPRESSION ENGINE RULE
1600cc maximum displacement and 8 to 1 compression ratio, must use same heads as high compression engine with same valve size and no porting at all. Stock VW end castings with VW part numbers must be used, no polishing allowed. An EMPI or WEBER 40 or 44 idf carburetor may be used and tube style intake manifold, No Plenum Manifolds allowed. Must use a maximum 26mm venturi. This is a pump gas only engine option with a maximum of 91 octane. Race Engine and all Spare

Engines should be verified and sealed by Tech Inspector prior to the start of the race or have it verified before the start of the next day if you change it during the event.

TRANSMISSION
Must use a stock VW type 1 or 2 transaxle housing. Any internal or external modifications to housing are allowed. No more than four (4) forward speeds are allowed. Any gear ratio combinations but only VW type gears (helical cut gears) may be used. Any internal modifications are allowed. May use aftermarket side covers. Any gearshift level allowed. May use any manufacturers Type 1, 2, 181, or Micros Stub axle. May use any CV joint. Oversized bolts allowed if engine remains in stock location. Rear frame horns may be modified for CV joint clearance if modification does not exceed below the seam.

FLUID COOLERS
Any oil coolers permitted with the location optional. Full flow system is permitted. No deep sumps or dry sumps allowed.

Vehicle Safety Equipment
There are no restrictions for terminal points of the roll cage.

SEATING
Any manufacturer's racing seat is permitted but must remain in stock location. If stock seat mounts are to be used, they must be reinforced using at least two U-bolts per seat runner.

DRIVERS COMPARTMENT
It is highly recommended that flammable items such as the rear seat, upholstered panels, headliners and carpets be removed. Removal of dash and firewalls is prohibited. Dash may be covered with aluminum to install gauges. Pedals must remain in the stock fore and aft location.

DOORS and LATCHES
Doors must remain functional and in original stock location with original hinges and working latches. Secondary positive latching devices are mandatory.

FLOORBOARDS
No alterations to pan permitted except for heating, bending or cutting of pan to a maximum of 1-inch to allow for tie rod and CV joint clearance. Frame head may be interchanged from early to late or late to early.

BUMPERS
Nerf bars may be added to the sides in front of the rear wheels. The supporting bar hole should not have more than 0.125" clearance between the bar and the body where it enters the body.

SKID PLATES
Any type of front and rear skid plate permitted. Any engine guards are allowed.

FENDERS
Fenders must be stock baja bug kit fenders. Rear fenders may be of any manufacturer. Metal fenders require rolled edges. Rear fenders may be mounted a maximum of 1.5" above the body line as measured at the top of the fender. Minimum width of 6" as measured at the center line of the rear wheel. Rear fender wells may be modified or removed 0.5" below stock fender mounting holes. Rear package trays must remain in stock location and remain stock size. If fender well is removed the resulting hole must be covered airtight with metal of the same thickness and the metal removed.

CHASSIS and BODY
Original wheelbase must be maintained. Body must be VW Type 1 Bug or Sunroof Bug. No convertibles, Ghias, 181 Safaris, Variants, or Super Beetles. Main body shell must be all original. Sunroofs must have metal covering. No fiberglass body or doors. Front and rear sheet metal may be removed far enough to allow installation of baja bug kit. Running boards may be removed. Single piece front fiberglass baja bug hood allowed. No canvas hoods allowed. No lift kits allowed.

11.17 Class 9

This category is for 100" wheelbase open wheel cars based on VW type 1 parts. Tech inspectors must approve that vehicles comply with this category regulations.

Suspension Components

FRONT SUSPENSION
Front suspension must only use VW type-1 ball joint. Front axle torsion tube must maintain stock width, but centers may be cut, rotated and welded or torsion adjusters added. Original seams may be welded (not reinforced) on the front beam. No additional material may be added. Torsion adjusters allowed. Filling of the speedometer hole is permitted. Steering arm on the spindle may be reinforced by welding a 0.25" gusset from the top of the upper ball joint mount to the end of the steering arm. A single tube may be welded from one shock tower to the other as a reinforcement member. Suspension limiters are allowed.

REAR SUSPENSION
Rear suspension is limited to stock VW type 1 components. Rear suspension torsion bars may be of any origin. The torsion housing must retain stock dimensions; aftermarket housing is allowed. Torsion bar grommets may of any manufacturer if stock dimensions are retained. Torsion adjusters are allowed. Rear suspension limiters and spring plate retainers are allowed. Rear spring plates may be of any origin.

SHOCK ABSORBERS
Only one shock per wheel is allowed. Shock mounting bolts may be enlarged to a maximum ½" diameter. Any manufacture shock is allowed with a 65mm maximum outside diameter and a maximum shaft diameter of 0.875". Cooling fins and/or reservoirs allowed. Secondary suspension is not allowed. Front shocks must mount in stock location; rear shocks may be mounted in any location. Rear shocks may not have an extended length greater than 31.5" No air shocks. No coilovers. No bypass shocks.

WHEELS and TIRES
Any steel 5"x15" wheel that bolts to a stock VW brake drum may be used. Bolted hubs may be replaced with studded hubs. Any manufacture tire and size allowed up to 32" tall and 10" wide as mounted and inflated on a 5" wide rim with 18 lbs of air. Spare tire is mandatory but may be mounted any place within the body shell or trunk.

STEERING
Steering box may be of any origin. Power steering is not allowed. Any Manufacturers steering wheel and adaptor may be used in the stock location. Any steering dampener may be used. Any steering shaft is allowed, and sheet metal tube may be removed. Any tie rods and tie rod ends may be used.

BRAKES
Original VW types of drum brakes must be used on all wheels. Drums may be studded but not reinforced. Any combination of brake linings and any combination of VW master and wheel cylinder are allowed. Dual master cylinders are allowed.

Electrical System
Battery ignition only, no magnetos. Any distributor may be used. Any 6- or 12-volt VW type alternator or generator in the stock location may be used.

BATTERIES
Batteries may be relocated.

LIGHTS
Additional lighting is permitted. Stock headlights may be replaced with any brand so long as original mounting location is used. Pre 1967 model headlight lenses may be removed. Tail and stoplights must remain functional. Front and rear turn indicators are optional. Backup lighting may not be directed towards the engine compartment or in any gear but reverse.

Fuel System
Fuel is restricted to automotive pump gasoline only. Automotive pump gasoline will be considered gasoline that is sold to the public for use in domestic cars.

FUEL TANKS
Fuel cells are required and may be no larger than 22 gallons. Any type of fuel shutoff valve may be used.

FUEL FILLERS, LINES, VENTS, and CAPS
Fuel fillers may penetrate and extend through the hood but must have a drain/catch boot or grommet system to prevent fuel spillage in front compartment. Fuel cell filler may be in center of tank and have a maximum 2.25" internal diameter neck.

ENGINE
Engine must be based upon a VW series type-1, 1600cc. The maximum displacement is 1584cc as delivered from the

factory. Race Engine and all Spare Engines should be verified and sealed by Tech Inspector prior to the start of the race or have it verified before the start of the next day if you change it during the event.

ENGINE CASE
Any VW type-1, 2, 3 or universal case is permitted. The following stock case modifications are permitted:
A. May be align bored.
B. May be drilled and tapped for oil and temp sending units.
C. May be machined for crank pulley seal.
D. Installation of case savers.
E. Cylinder seating surface may be machined.
F. Oil galleries may be enlarged to 10mm
G. Threaded oil gallery plugs permitted.

OIL PUMP
Any manufacturer's oil pump is allowed. No deep sumps, dry sumps, or sump alterations. Windage trays are allowed. The use of any oil-bypass pistons and springs is allowed.

FUEL PUMP
Any combination of stock fuel pump or electric fuel pump may be used. Any fuel filters and fuel pressure regulators may be used.

PISTONS
Pistons must be stock 3 ring only. Pistons and cylinders may be of any manufacturer if original stock dimensions are maintained. Any type of wrist pins retainers may be used. Piston assemblies' way be statically balanced to the equivalent weight in grams of the lightest original non-balanced piston, wrist pin, etc.

CRANKSHAFT
Crankshaft must be stock VW. Crankshaft may be balanced. Crankshaft maximum journal re-sizing is limited to .030" undersize. No polishing or lightening of crankshaft is allowed. Any crankshaft gear is allowed. Any manufacturer engine bearing may be used as long as the stock dimensions are maintained. Power pulleys are allowed. Pulleys may be balanced. Sand seals may be used. Any VW flywheel may be lightened and balanced. Flywheels may be eight dowels pinned and any gland nut and washer may be used. No aluminum flywheels may be used. Any manufacturers clutch disk or pressure plate allowed but must retain original stock VW diameter. Clutch and pressure plate may be balanced. 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. Connecting rods may be of any manufacturer but must retain stock dimensions. Minimum rod weight is 580 grams.

HEADS
Heads may be U.S. sedan stock single port or dual port or their equivalent. Heads may be fly cut for cleanup. No polishing or porting is allowed. Only dual port heads from Brazil, part number 040 101 375 2 or 040 101 375 13, 040 101 375 19, or stock OEM heads are allowed. Intake manifold is restricted to a stock 34mm original equipment center section or its replacement. A 1 ½ inch (1.500) long by ½ inch (.500) diameter tube may be welded two inches below the carburetor flange. A maximum of a ¼ inch (.250) may be removed from each end of the center section for clearance. A slip tube with a 1 5/8 inch (1.625) diameter, two inches (2.000) long may be welded to the end of the runners to allow the use of a better hose connection. No porting or polishing. End castings must be original equipment VW, with VW logo and part numbers. No porting, polishing or matching of ports allowed. Balancing slot may be welded closed. Vacuum hole may be plugged. A 34mm to 30mm carburetor adaptor must be used. The only carburetor adaptor that is allowed is the EMPI part number 98-1293-B.

CAMSHAFT, VALVETRAIN
Any camshaft, camshaft gear, valve spring retainers, valve springs, and lifters are allowed. Valve spring seat diameter, in head, must remain stock VW. Valves must be stock 45 degrees. One-piece valves are allowed. Valve guides may be steel, bronze, or cast iron. Valve guide seals are allowed. No grinding or polishing in the port including valve guides. Any camshaft may be used which will allow the use of the standard stock VW 1600cc rockers arms. The rocker arm(s) may be resurfaced to permit the use of swivel feet or similar devices. No other grinding or changes to the rocker arms are permitted. No roller or needle bearings will be allowed as part of the camshaft or as an interface between the rocker arms and the camshaft. Push rods and push rod tubes may of any manufacturer. Rocker arm valve adjustment screws and wave washers may be of any origin. Clips on rocker arms may be wire tied. Valve covers may be of any type and manufacturer.

FAN SHROUD

Aftermarket fan shrouds are allowed. Heater tubes are optional.

CARBURETOR
Air cleaner location is optional and may be of any manufacturer. Velocity stacks may be used if they are not welded or bonded to the carburetor. Stock VW carburetor 30 pict 1, 2, or 3 or the Solex H-30-PIC replacement must be used. Maximum venturi size of the carburetor is 24.10mm. No internal modifications in the carburetor venturi or throttle blade are allowed. This includes no removing of parts, no grinding, polishing or filling. Intake manifolds must be stock VW. Intake manifold may be cut to allow for head modifications. No chemical milling of manifold or carburetors. Automatic choke housing may be removed. Choke plate and shaft may be removed. Electric needle valves are 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 may be used.

TRANSMISSION
Type 1 bug, 4-speed transaxle only. Heavy duty side plates and differential allowed. 8:33 ring and pinion and drive gears must be used only. No close ratio gears. Axle over tubes is not permitted. Other internal mods are optional. Rear transaxle mounts may be supported by a maximum of two (2) vertical straps of 0.25”x1” dimension. Adjustable straps are optional. Any gearshift is allowed. May use any manufacturers Type 1, 2, or 181 stub axle. May use any VW CV joint. Oversized bolts allowed.

THROTTLES
Stock pedals with no other modifications must be used.

EXHAUST
Any exhaust system may be used.

This category is exempted from 4.6.3 Driveshafts.

FLUID COOLERS
Any oil coolers permitted with the location optional. Full flow system is permitted.

VEHICLE SAFETY EQUIPMENT
There are no restrictions for terminal points of the roll cage.
Any manufacturer’s racing seat is permitted.

WEIGHT
Minimum weight, 1 seat: 1550 lbs
Minimum weight, 2 seats: 1350 lbs

CHASSIS and BODY
Maximum wheelbase is 100”.

11.18 Vintage Class 11

OPEN WHEEL – STOCK VW SEDANS MUST BE A STOCK VW SEDAN AS DELIVERED IN THE U.S.A.

COMPETITION REGULATIONS
Any questions concerning chassis combinations will be decided by referring to VW factory parts manuals and /or VW of America booklet. This is a stock production class, and all components must remain stock except for those modifications allowed herein.

SUSPENSION COMPONENTS

FRONT SUSPENSION
Front axle torsion tube centers may be cut, rotated, rewelded to increase ground clearance or front adjusters may be used. Original seams may be welded (not reinforced) on the front beam. Shock towers may be additionally supported by the adding of a single gusset; gusset may not extend more than 2” above top torsion tube.

Stock front spindles and trailing arms must be used no additional material may be used. Sway bars may be removed. Filling of speedometer hole is permitted. Steering arm on spindle may be reinforced by welding a .25 gusset from the top of the spindle to the end of the steering arm. Front snubbers may be of any manufacture but must retain stock dimension

and mounting methods. Suspension limiters allowed.

REAR SUSPENSION
Rear suspension torsion bars may be of any origin. Rear suspension spring plates may be of any origin. Torsion bar adjusters are allowed. Torsion bar grommets may be of any manufacturer but must retain stock VW dimensions.

Rear torsion bars may be additionally supported only by the attachment of a terminal end (support member) of the roll cage. Rear shock tower may be removed to body mounting bolt hole. Lower rear shock mounts may be removed or replaced but must bolt directly to rear trailing arm or swing axle. No remote mounted shocks. Rear trailing arms must remain stock, shape, size and configuration, but may be reinforced by adding material.

Shock Absorbers and Bump Stops
Only one shock per wheel is allowed. Stock front shock mounts must be utilized. Shock mounting bolts may be changed to a maximum of 1/2 in diameter. Any manufacture shock allowed with 2.0” maximum outside diameter. Rear shock must not have an extended length longer than 18”, center of mounting hole to center of mounting hole. Cooling fins and/or reservoirs allowed. No air shocks or coil over shocks allowed. No hydraulic bump stops allowed. No bypass shocks allowed.

Secondary Suspension
No secondary suspension allowed.

Wheels and Tires
Any stock VW steel 4” x 15” wheel that bolts on a stock VW brake drum may be used. Wheel studs allowed. Any manufacturers tire and size allowed up to 31” tall and 10” wide as mounted and inflated on a 4” wide rim with 18 lbs of air. Spare tire is mandatory but may be mounted any place within body shell or trunk. Mobelwagen aluminum wheels are permitted.

Fasteners
All nuts, bolts and component parts on each vehicles suspension system, chassis and running gear must be secured with S.A.E. grade 8 or better nuts, bolts and secured with either lock nuts, lock washers, cotter pins or safety wire and have at least one full thread showing through the nut.
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STEERING AND BRAKE COMPONENTS
Steering
Steering wheel play must be kept to a minimum. Drag link and tie rod ends must be secured and have a cotter pin in each one or lock nut. Any manufacturer’s steering wheel may be used. Steering shaft is open. Use of pillow blocks are allowed. Steering box must be stock, but shims may be used between pitman arm and box. Steering components such as ball joints, steering arms, and tie rods must remain stock.

Brakes
Brakes must be in a safe working condition and able to apply adequate force to lock up all four tires. Turning or steering brakes are allowed. Original VW type 1 drum brakes only on all wheels. Front and rear drums may not be interchanged. Any combination of brake linings allowed as long as stock dimensions are maintained. Any combination of VW master and wheel cylinders are allowed. Emergency brake is optional but if removed the opening must be covered.

ELECTRICAL SYSTEM
Ignition
Each vehicle must have a positive action on-off switch in good working order. The switch must be located within easy reach of the driver and labeled “Ignition Switch” on – off. Ignition Battery ignition only, no magnetos. Six- or twelve-volt systems may be used regardless of year model. Any manufacturer’s distributor may be used. Any VW type alternator or generator system in the stock location may be used.

Batteries
Battery must be relocated. If in the drivers compartment it must be covered or sealed to prevent acid from leaking in case of roll over.

Lights
All vehicles must have a minimum of two headlights, two brake lights, and two taillights. Taillights must be mounted at least 36” from the ground and be 3” in diameter. All lights must be on and working for the entire race, except headlights for

day races. All vehicles must have an amber light facing the rear and hooked up to the ignition switch. This must be a fog type light with a minimum of 25 watts and a maximum of 55 watts. LED lights are ok if they are the proper size. LED lights must be at least 6” long and 2” high. All must run a three-inch (3”) diameter blue or green light along with the amber light facing the rear of the vehicle. The blue Light is to identify the slower moving vehicles. This is to assist the faster moving classes to recognize a slower moving vehicle when they are approaching them.

Additional lighting is permitted. Stock headlights may be replaced with any brand so long as original mounting position is used. Pre 1967 model headlight lenses may be removed. Tail and stop lights must remain functional. Front and rear turn indicators are optional. Back up lighting may not be directed towards the engine compartment or function in any gear but reverse.

Starters
All vehicles must have a starter capable of turning over the engine.

FUEL SYSTEM
Safety fuel cells are required and may be mounted anywhere and have any capacity. Stock tanks may be used in the stock location. Any type of fuel shut off valve allowed. Stock fuel pump must be used. Electric fuel pump may be used but must be used as a backup and routed thru the stock system. SCR22 Fuel Lines, Vents, Caps Fuel fillers may penetrate and extend through hood but must have a drain/catch boot in case of spillage in front compartment. Fuel cell filler may be in center of tank and have a maximum of a 2.25” internal diameter neck.

ENGINE, TRANSMISSION AND DRIVELINE
Engine must utilize VW series type 1, 1600cc, U.S. model sedan components and dimensions. The maximum allowable engine displacement is 1600cc as delivered from the factory. Race Engine and all Spare Engines should be verified and sealed by Tech Inspector prior to the start of the race or have it verified before the start of the next day if you change it during the event.

ENGINE CASE
Any VW type 1, 2, 3 or “universal” case is allowed. The following modifications may be made to the stock case:
(a) The case may be line bored
(b) The case may be drilled and tapped for oil and temp sending units
(c) The case may be machined for crank pulley seal
(d) Case savers may be installed
(e) Cylinder seating surface may be machined
(f) Oil galleries may be enlarged to 10mm
(g) Threaded oil gallery plugs allowed
(h) oil squirters ok
(i) case may be full flowed

OIL PUMP
Any oil pump is allowed. No deep sumps, dry sumps, or sump alterations. Windage trays allowed. Any oil bypass piston and spring allowed. No accusump systems allowed.

FUEL PUMP
Stock fuel pump must be used. Electric fuel pump may be used but must be used as a backup and routed thru the stock system. Any fuel filter and pressure regulators may be used.

PISTONS
Pistons must be stock 3 ring only. Any piston and cylinders if original stock dimensions are maintained. Any type of wrist pin keepers. Piston assemblies may be balanced to the weight in grams of the lightest original non balanced piston, wrist pin, etc. Total seal rings are ok.

CONNECTING RODS
Any VW aftermarket connecting rod is allowed if the rods are stock VW length (5.393) and stock weight with a 500-gram minimum with one (1) rod untouched. No polishing or profiling of rods.

CRANKSHAFT
Crankshaft must be stock VW. Crankshaft may be balanced. Maximum journal size is limited to .030” undersize. No polishing or lightening. Offset grinding allowed max 69.5mm. Any gear is allowed. Any engine bearing is allowed if stock dimensions are maintained. Power pulleys are allowed. Pulley may be balanced. Sand seals ok. Any VW flywheel may be

lightened and balanced No aluminum flywheels. Any clutch disk and pressure plate but must retain stock VW diameter.

HEADS
Heads must be U.S sedan stock single port or dual port or their equivalent. Only dual port heads with the following numbers will be allowed. 040101375 2, 040101375 13, 040101375 19 or stock OEM heads will be allowed. Heads may be fly cut for clean-up. No porting or polishing. Stock intake 34mm original equipment center section or its replacement. A 1" by 1.5" long by ½ inch tube may be welded 2 inches below the carb flange. A minimum of material may be removed from the end of the tube for clearance. A 1 5/8 X 2" long slip tube may be welded to the end of the runners for use of better hose connection. End castings must be original equipment VW, with the VW logo and part numbers. Balance slot may be welded closed. Vacuum hole may be plugged. A 34mm to 30mm carb adapter must be used.

CAMSHAFT, LIFTERS, VALVES, ROCKER ARMS
Any camshaft, gear, valve springs, valve spring retainers, and lifters are allowed. Valve guide may be steel, bronze, or cast iron. No grinding or polishing in the port Any camshaft, gear, valve spring retainers, lifters are allowed. Beehive springs allowed. Valve spring seat diameter in head must remain stock. May use any valve but must be stock 45 degrees and stock dimensions and 8mm stem size. no titanium valves allowed. including valve guide must use stock VW 1600 rocker arms. The rocker arms may be resurfaced to permit the use of swivel feet. No other grinding Official Rule Book 97 November 2, 2024or changes may be made to the rocker arms. No roller or needle bearings will be allowed as part of the camshaft or as an interface between the rocker arms and the camshaft. Any push rods and push rod tubes. Any valve adj screws. Clips on rocker arms may be wire tied. Rocker assemblies may be subject to post race inspection.

FAN SHROUD
Must use stock VW fan shroud. Heater tubes optional.

CARBURETOR
Air cleaner location is optional and may be of any manufacturer.
Stock VW carb 30 pict 1, 2, 3 or the solex h-30-pic replacement must be used. Maximum venturi size is 24.10mm. Velocity stacks may be used as long as they are not bonded to the carburetor. No internal modifications are allowed. This includes no removing of parts, no grinding, polishing, or filing. Intake manifolds must be stock. The cutting of manifolds to compensate for head milling is allowed but rewelding will not be allowed. No chemical milling of manifold or carburetor. Choke housing may be removed. The stock float bowl vent may be plugged and relocated. Any air and main jet may be used

LOW COMPRESSION ENGINE OPTION
1600cc maximum displacement and 8 to 1 compression ratio, must use same heads as high compression engine with same valve size and no porting at all. Stock VW end castings with VW part numbers must be used, no polishing allowed. An EMPI or WEBER 40 or 44 idf carb may be used and tube style intake manifold, No Plenum Manifolds allowed. Must use a maximum 26mm venturi. This is a pump gas only engine option with a maximum of 91 octane. Race Engine and all Spare Engines should be verified and sealed by Tech Inspector prior to the start of the race or have it verified before the start of the next day if you change it during the event.

TRANSMISSION
Type 1 bug 4 speed transaxle only. Heavy duty side plate and differential allowed. 8.33 (4.12) ring and pinion only. Stock VW 1st, 2nd, 3rd, 4th gears only, no close ratio gears allowed. Axle over tubes is not allowed. Other internal modifications are optional. Rear transaxle mounts may be supported by a maximum of two vertical straps of .025" x 1" dimension. Adjustable straps are optional. Any gearshift lever allowed. Shift tube must be inside tunnel. Any type 1, 2 or 181 stub axle and any VW cv joint. Oversize bolts ok.

Throttles
Stock pedals with no other modifications are allowed.

Exhaust
Any exhaust system may be used.

Fluid Coolers
Any manufacturer's oil cooler is allowed with the location optional. Full flow systems ok.
No deep sumps or dry sump will be allowed. Late model housing approved.

12 Historic Categories (at least 20 years old)

12.1 Historic Trucks and Truggys

This is a vintage category for unlimited vehicles that are at least 20 years old.

This is the only non-Evolution category in which 20+ year old Trophy Trucks and solid rear end buggies (truggys) may compete. Additionally, 20+ year old IRS buggies and IRS Trophy Trucks may enter this category if desired.

12.2 Historic Buggies

This is a vintage category for unlimited vehicles with IRS (Independent rear suspension) that are at least 20 years old.

20+ year old IRS buggies and 20+ year old IRS Trophy Trucks may enter this category if desired (or may enter the true unlimited class “Historic Truck and Truggy”). This category was created primarily as a home for 20+ year old A-arm Class 1 cars which may be removed from Vintage in the future.

13 Evolution Categories (up to present day)

13.1 Unlimited Truck

Unlimited 4-wheel vehicles of any age. Forced Induction allowed. Must start with a truck looking full body including front and rear fenders and hood. 2wd or 4wd allowed.

13.2 Unlimited Buggy

Unlimited 4-wheel vehicles with independent rear suspension of any age. Forced Induction allowed. Must be open wheel (no truck fenders). 2wd or 4wd allowed.

13.3 Class 5 Open

This class is intended for VW Baja bugs. Vehicles must be based off a VW type-1 sedan hardtop or convertible, 181 Safaris, 900 series Porsche, Karmann Ghias, or VW type-2 and type-3. Must retain Baja Bug appearance.
This class is an open class, and all components will be considered open unless restricted herein.

SUSPENSION COMPONENTS
Front and rear suspension systems may be modified or replaced as long as stock concept (trailing-arms, swing-axles, IRS, etc.) is retained and wheelbase limit is not exceeded. Vehicle suspension support system (torsion bars, torsion leafs, springs, etc.) is open.

STEERING
No center steering.

TR16 BRAKES
Brakes are open. Turning brakes are allowed.

FUEL TANKS
Fuel cell mandatory.

ENGINE and ENGINE DISPLACEMENT
Any displacement normally aspirated four (4) cylinder air cooled engine allowed.
Any production water cooled normally aspirated four (4) cylinder engine with a maximum displacement of 2.5L is allowed.
All non-air-cooled engines must be inspected and sealed by a NORRA approved engine builder, for this please send email to info@norra.com

Limited Class Approved Engine Builders List
All the following motors have been approved by NORRA to compete:

1) Wiks Racing Engine
2) Roush Competition Engines
3) Danzio Performance
4) Lozano Performance
5) CBM Motorsports
6) Major Performance
7) Dougans Racing Engines
8) Turnkey Engines
9) Redline Performance

SUPERCHARGERS and TURBOCHARGERS
No turbo or superchargers allowed.

SEATING
Single or two seats are allowed. No center seating.

DRIVERS COMPARTMENT
Front and rear firewalls required. Interior sheet metal may be removed; exterior appearance must be retained. Pedals may be of any manufacture but must be mounted on the left side of the vehicle.

DOORS AND LATCHES
Doors must remain stock shape, size, and configuration. Doors may be welded or fastened closed. Fiberglass side panels and windshield frames are allowed.

CHASSIS and BODY
Front and rear fenders must be used. Front fenders may be one-piece fiberglass. Rear fenders must not measure less than 6 inches from body, measured at top center of fender. Rear fender mounting height is open. Rear fenders must have rolled edges but may be made of ant material.
Body must resemble Baja Bug.
Steel body and doors must be retained. Hard body vehicles must retain steel roof. Convertible bodies must retain windshield frame. Stock floor pan maybe cut, modified, or replaced.
Maximum wheelbase is 105 inches plus or minus 1/2(.50) inch.

13.4 Pro SXS Naturally Aspirated

This category is for production based naturally aspirated SXS with the addition of safety gear and limited performance modifications. Window nets and 5-point harnesses are required. Side doors are required to be added if not originally equipped with such. Roll Cage must be minimum 1.75” Dia. x .095” Wall Thickness Mild Steel, DOM, 4130 Chromoly with a minimum of 6 mounting points to the chassis, production OEM lower chassis is required and must utilize OEM suspension and steering pick up points. Stock gas tanks (must run stock fuel pump and stock configuration if using a production tank) stock seats are all acceptable in this category. Basic safety items as required for all cars are also required such as first aid kits, fire extinguishers, horns, rear amber lights, etc.

- Vehicles in this category must maintain the stock wheelbase as OEM manufactured and may not exceed 80” in width measured from the outside of the tire bulge.
- OEM suspension and steering pivot points and wheelbase must be maintained.
- Wheel size is open; tire size is limited to 35” measured on the car with a square at 18 PSI.
- The following performance items may be replaced: wheels, tires, brakes, shocks/springs, exhaust, ECU/tune, lights, clutch springs, suspension arms, radiator and radiator placement. No other performance mods are permitted. The 80” width rule shall be the only limiting rule for suspension arms (also accounting for aftermarket/oversized wheels and tires). The car must fit though an 80” wide gate opening.
- One shock per wheel only.
- Aftermarket Brakes are allowed.
- Non-performance upgrades are allowed including items such as lighting, cage upgrades, seats, fuel cells however these are optional.
- Vehicles in this category must be based on a production UTV and must use a stock production concept transmission and final drive system.
- Forced induction (Turbos or Superchargers) are not allowed in this category.
- This UTV category is limited to 1000cc.
- Must have OEM front facia, headlights may be replaced with aftermarket lights if they stay on the stock mounting location, must have OEM hood and fenders front and rear.

13.5 Pro SXS Forced Induction

This category is for production based forced induction SXS with the addition of safety gear and limited performance modifications. Window nets and 5-point harnesses are required. Side doors are required to be added if not originally equipped with such. Roll Cage must be minimum 1.75” Dia. x .095” Wall Thickness Mild Steel, DOM, 4130 Chromoly with a minimum of 6 mounting points to the chassis, production OEM lower chassis is required and must utilize OEM suspension and steering pick up points. Stock gas tanks (must run stock fuel pump and stock configuration if using a production tank) stock seats are all acceptable in this category. Basic safety items as required for all cars are also required such as first aid kits, fire extinguishers, horns, rear amber lights, etc.

- Vehicles in this category must maintain the stock wheelbase as OEM manufactured and may not exceed 80” in width measured from the outside of the tire bulge.
- OEM suspension and steering pivot points and wheelbase must be maintained.
- Wheel size is open; tire size is limited to 35” measured on the car with a square at 18 PSI.
- The following performance items may be replaced: wheels, tires, brakes, shocks/springs, exhaust, ECU/tune, lights, clutch springs, suspension arms, radiator and radiator placement. No other performance mods are permitted. The 80” width rule shall be the only limiting rule for suspension arms (also accounting for aftermarket/oversized wheels

and tires). The car must fit though an 80” wide gate opening.
- One shock per wheel only.
- Aftermarket Brakes are allowed.
- Non-performance upgrades are allowed including items such as lighting, cage upgrades, seats, fuel cells however these are optional.
- Vehicles in this category must be based on a production UTV and must use a stock production concept transmission and final drive system.
- Forced induction (Turbos or Superchargers) are allowed in this category.
- This UTV category is limited to 1000cc, stock bore and stroke must be maintained.
- Must have OEM front facia, headlights may be replaced with aftermarket lights if they stay on the stock mounting location, must have OEM hood and fenders front and rear.

13.6 Sportsman Stock SXS (2 / 4 Seat)

The Sportsman SXS class is intended for entry-level SXS racers. 2 and 4 seat SXS are allowed. It is the perfect opportunity for new drivers to gain a better understanding of NORRA and off-road racing at a comfortable level of competition or slower pace. The rules are relatively open to allow most SXS vehicles. Sportsman SXS race vehicles are not elegible for any cash prize or overall SXS trophy, vehicles are subject to tech inspection. Sportsman SXS class will receive trophies.

This is intended as a fun category either forced induction or N/A SXS are allowed with the addition of safety gear and performance modifications. Window nets and 5-point harnesses are required for both front and rear seats. Side doors are required to be added if not originally equipped with such. Stock cages, stock production gas tanks in stock location (must run stock production fuel pump and stock production configuration if using a stock production tank), fuel cells may be in any location. Stock seats are all acceptable in this category. Basic safety items as required for all cars are also required such as first aid kits, fire extinguishers, horns, rear amber lights, etc.

• Vehicles in this category must maintain the stock wheelbase as OEM manufactured and may not exceed 80” in width measured from the outside of the tire bulge.
• OEM suspension and steering pivot points must be maintained.
• Wheel size is open; tire size is limited to 35” measured on the car with a square at 18 PSI.
• The following performance items may be replaced: wheels, tires, brakes, shocks/springs, exhaust, ECU/tune, lights, clutch springs, suspension arms, radiator and radiator placement. No other performance mods are permitted. The 80” width rule shall be the only limiting rule for suspension arms (also accounting for aftermarket/oversized wheels and tires). The car must fit though an 80” wide gate opening.
• Aftermarket Brakes are allowed in UTV classes.
• Non-performance upgrades are allowed including items such as lighting, cage upgrades, seats, fuel cells however these are optional.
• Stock fuel tank in stock location or aftermarket fuel cell of any size is permitted.
• Aftermarket or OEM forced induction is allowed with a pop off valve at 18 PSI.
• This UTV category is limited to 1000cc forced induction and 2000cc N/A.

13.7 Pro SXS

SXS in this category are limited to naturally aspirated 2000cc or 1000cc Forced Induction engines. The allowed modifications include the addition of safety gear and limited performance modifications. Window nets and 5-point harnesses are required. Side doors are required to be added if not originally equipped with such. Roll Cage must be minimum 1.75” Dia. x .095” Wall Thickness Mild Steel, DOM, 4130 Chromoly with a minimum of 6 mounting points to the chassis, production OEM lower chassis is required and must utilize OEM suspension and steering pick up points. Stock gas tanks (must run stock fuel pump and stock configuration if using a production tank) stock seats are all acceptable in this category. Basic safety items as required for all cars are also required such as first aid kits, fire extinguishers, horns, rear amber lights, etc.

- Vehicles in this category must maintain the stock production wheelbase as OEM manufactured and may not exceed 80” in width measured from the outside of the tire bulge.
- OEM suspension and steering pivot points must be maintained. Original OEM wheelbase must be maintained.
- Wheel size is open; tire size is limited to 35” measured on the car with a square at 18 PSI.
- The following performance items may be replaced: wheels, tires, brakes, shocks/springs, exhaust, ECU/tune, lights, clutch springs, suspension arms, radiator and radiator placement. No other performance mods are permitted. The 80” width rule shall be the only limiting rule for suspension arms (also accounting for aftermarket/oversized wheels and tires). The car must fit though an 80” wide gate opening.

- One shock per wheel only.
- Non-performance upgrades are allowed including items such as lighting, cage upgrades, seats, fuel cells however these are optional.
- Vehicles in this category must be based on a production UTV and must use a stock production concept transmission and final drive system.
- Aftermarket or OEM forced induction is allowed in 1000cc or smaller engines.

13.8 Class 10

This is an open wheel class with unlimited suspension and limited engine; All components will be considered open unless stated herein. Single or Two Seat vehicles. 2-wheel drive and 4-wheel drive.

ENGINE, TRANSMISSION AND DRIVELINE
Teams are required to register race engine and spare engines seal numbers and fill engine specs registration sheet at Tech Inspection; seal numbers could be verified after everyday finish line randomly. Engine Valve Covers, Throttle Body, ECU, Oil Pan and OBD Ports must be accessible for Tech Inspectors.

Only Cup Style Tags are allowed.

Any Naturally Aspirated engine may be used providing:
(1) It is a design that has been series produced in quantities of 5000 units or more in a 12-month period and is readily available to the general public in the U.S.A.
(2) It has a maximum of four (4) cylinders.
(3) It retains a maximum of no more than four (4) valves per cylinder.
(4) It is not a rotary engine.
(5) It does not displace more than 2500cc in the stock form.

Stock Production Engines
All stock production engines are to be inspected and sealed by NORRA approved engine builders / sealers.

1. Intake manifold will remain as delivered by the manufacturer. It must retain its shock shape, size and configuration. No porting or other modifications.
2. Ports may be matched to the heads, but matching must not exceed .250 (1/4 inch) deep. Manifold must be the unit that was installed and delivered on the engine by the original manufacturer.
3. Only U.S.A. delivered fuel injection is allowed. Manifold must be installed and sold on production vehicles that are sold for the street use in the U.S.A.

Stock production engines must be stock as delivered from the factory except for the following:

a. Oil and water-cooling systems. (No dry sumps)
b. Exhaust system, including exhaust manifold.
c. Fuel pumps.
d. ECU
e. Oil pan may be modified or replaced
f. Power steering pump.
g. Alternator
h. Air filter
i. Belts and pulleys
j. Fly by wire is allowed.

GM ECOTEC 2.2L, 2.4L or 2.5L
Will be allowed in single seat or two seat vehicles but must use factory stock fuel injection. Any ignition system allowed. Port or factory direct injection is allowed. Forced induction injection is not allowed.

FORD ECOBOOST 2.0-liter,16 valve, I4-DI-TIVCT Direct port injection
Will be allowed in single seat or two seat vehicles but must use stock Ford direct injection with ignition manufactured by Ford.

Single and two-seat vehicles (GM and Ford engines) may use one (1) carburetor providing:

1. A maximum of two (2) venturi per carburetor
2. Maximum allowable carburetor venturi size is 42mm
3. Carburetor must be of the production automotive type

HONDA K24 2.4L

Will be allowed in single seat or two seat vehicles. Block must have **K24A** Stamped Badge. Cylinder Head and Intake Manifold must have **RBB** Casting Identification. Throttle body can operate by wire or drive by cable. Maximum size is 65mm. Any oil pan allowed. No Dry Sump or Vacuum Pump allowed. Must use **K24RBB oil pump with balance shaft and pickup tubes can be modified. 0.010 in. oversize piston JE 397178 allowed. Rings are MPRE3435.**

LIST OF APPROVED ENGINE BUILDERS / SEALERS

- Turn Key Engine Supply - (760) 966-2663
- Moruzzi Race Motors - (909) 754-4941
- Danzio Performance Engineering (951) 245-2537
- Wiks Racing Engines - (702) 837-2522
- Redline Racing Engines - (714) 777-5758
- CBM Motorsports – (909) 291 7550
- Lozano Performance – (760) 500-2779
- Major Performance – (619) 599-5960

Used Engines - To be eligible to compete in this class, any engine from any source different than the ones shipped direct to NORRA approved engine builder / sealer from OE manufacturer must be disassembled and have stock specifications verified. Cost of this verification and any modifications required as well as cost of engine sealing tag for competition is the responsibility of the engine owner.

13.9 Evolution Class 11

This category is intended to be stock VW type-1, hardtop or sedan, as delivered from the factory. Tech inspectors must approve that vehicles comply with this category regulations.

Stock combinations of irs/ball joint OR swing axle/link pin must be maintained. Conversion from one to the other is not allowed. This is a stock production category, and all components must remain stock except for modifications specified in these rules.

The definition of stock combinations shall be determined by the VW of American Booklet.

SUSPENSION COMPONENTS

FRONT SUSPENSION

Front axle tube centers may be cut, rotated, re-welded to increase ground clearance or front torsion adjusters may be used. Original seams may be welded (not reinforced) on front beam. Shock tower may be additionally supported by the adding of material. The use of a crossmember from shock tower to shock tower is allowed. Aftermarket spindles and stock length trailing arms in stock dimensions may be used due to the difficulty of sourcing good stock parts. No additional material may be added. Sway bars may be removed. Filling of speedometer hole is permitted. Steering arm on spindle may be reinforced by welding a .25" gusset from the top of the spindle to the end of the steering arm. Front snubbers may be of any manufacture but must retain stock VW dimension and mounting methods. Suspension limiters allowed.

REAR SUSPENSION

Rear suspension torsion bars may be of any origin. Rear suspension spring plates may of any origin. Torsion bar adjusters are allowed. Torsion bar grommets may be of any manufacture but must retain stock VW dimensions.

Rear torsion housing may be additionally supported only by the attachment of a terminal end (support member) of the roll cage.

Rear shock tower may be removed to body mounting bolt hole. Lower rear shock mounts may be removed and or replaced. Rear shocks may be relocated but must bolt directly to rear trailing arm or swing axle. No remote mounted

shocks. Rear trailing arms can be any manufacture but must retain original dimensions but may be reinforced by adding material.
Lower spring plate stop can now be modified to increase wheel travel. Spring plate cap can be modified by relocating rear lower bolt. Rear horn frame can be reinforced by adding material to lower section.

SHOCK ABSORBERS
Only one shock per wheel is allowed. Stock front shock mounts must be utilized. Front tie rods may be made of chromoly. Front beam may be reinforced by adding material and welding all seams. Shock mounting bolts may be enlarged a maximum .5" diameter. Any manufacture shock allowed with a 2" maximum outside diameter. Rear shock must not have an extended length longer than 18 inches, center of mounting hole to center of mounting hole. Cooling fins and/or reservoirs allowed and must be mounted inside body. No air shocks or coil over shocks are allowed. No hydraulic bump stops allowed. No bypass shocks allowed. Secondary suspension is not allowed.

WHEELS and TIRES
Wheels must be original manufacture or optional alloy wheel identical in dimensions to stock wheel.

Bolted hubs may be replaced with studded hubs.

Any manufacture tire and size allowed up to 31" tall and 10" wide as mounted and inflated on a 4.5" wide rim with 18 lbs. Spare tire is mandatory but may be mounted any place within the body shell or trunk.

STEERING
Any Steering Box may be used (No Rack & Pinions), shims may be used between pitman arm and steering box. Any Manufacturers steering wheel and adaptor may be used in the stock location. Ball joints and steering arms must remain stock. Tie rods may be manufactured or reinforced but must use stock rod ends. Steering column is open.

BRAKES
Brakes are open if they are original stock concept. Any combination of brake linings allowed. Any combination of VW master and wheel cylinder are allowed. Dual master cylinders allowed. Emergency brake is optional but if removed the resulting hole must be covered.

ELECTRICAL SYSTEM
Battery ignition only, no magnetos. Any distributor may be used. Any 6- or 12-volt VW type alternator or generator in the stock location may be used.

BATTERIES
Batteries may be relocated.

LIGHTS
Additional lighting is permitted. Stock headlights may be replaced with any brand so long as original mounting location is used. Pre 1967 model headlight lenses may be removed. Tail and stoplights must remain functional. Front and rear turn indicators are optional. Backup lighting may not be directed towards the engine compartment or in any gear but reverse. Additional rear brake lights may be installed inside rear opening in roof. Brake and Amber lights on the outside of roof are not allowed. Rear facing collision amber light may be installed inside of the body. No wings or light housings on roof.

FUEL SYSTEM
Fuel is not restricted.

FUEL TANKS
Fuel cell may be relocated from stock location. Any size fuel cell is permitted. Any type of fuel shutoff valve may be used. Electric fuel pump can be used. Stock fuel pump may be used as a backup and routed through the stock system. Fuel regulator is optional.

FUEL FILLERS, LINES, VENTS, and CAPS
Fuel fillers may penetrate and extend through the hood but must have a drain/catch boot or grommet system to prevent fuel spillage in front compartment. Fuel cell filler may be in center of tank and have a maximum 2.25" internal diameter neck.

ENGINE
Engine must be based upon a VW series type-1, 1600cc. The maximum displacement is 1600cc. Race Engine and all

Spare Engines should be verified and sealed by Tech Inspector prior to the start of the race or have it verified before the start of the next day if you change it during the event.

ENGINE CASE
Any VW type-1, 2, 3 or universal case is permitted. The following stock case modifications are permitted:

May be align bored and machined for cam bearing.
May be drilled and tapped for oil and temp sending units. May be machined for crank pulley seal.
Installation of case savers.
Cylinder seating surface may be machined.

Oil galleries may be enlarged to 10mm Threaded oil gallery plugs permitted.

MOUNT
The rear engine mount may be reinforced.

OIL PUMP
Any manufacturer's oil pump is allowed. No deep sumps, dry sumps, or sump alterations. Windage trays are allowed. The use of any oil-bypass pistons and springs are allowed.

FUEL PUMP
Any combination of stock fuel pump or electric fuel pump may be used. Any fuel filters and fuel pressure regulators may be used.

PISTONS
Pistons must be stock 3 ring only. Pistons and cylinders may be of any manufacturer if original stock dimensions are maintained. Any type of wrist pins retainers may be used. Piston assemblies may be statically balanced to the equivalent weight in grams of the lightest original non-balanced piston, wrist pin, etc.

CRANKSHAFT
Crankshaft must be stock VW. Crankshaft may be balanced. Crankshaft maximum journal re-sizing is limited to .030" undersize. No polishing or lightening of crankshaft is allowed. Offset grinding of crankshaft is allowed. Any crankshaft gear is allowed. Any manufacturer engine bearing may be used if the stock dimensions are maintained. Power pulleys are allowed. Pulleys may be balanced. Sand seals may be used. Any VW flywheel may be lightened and balanced. Flywheels may be eight dowels pinned and any gland nut and washer may be used. No aluminum flywheels may be used. Any manufacturers clutch disk or pressure plate allowed but must retain original stock VW diameter. Clutch and pressure plate may be balanced. 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. Connecting rods may be of any manufacturer but must retain stock dimensions. Minimum rod weight is 580 grams.

HEADS
Heads may be U.S. sedan stock single port or dual port or their equivalent. Heads may be fly cut for cleanup. No polishing or porting is allowed. Only dual port heads from Brazil, part number 040 101 375 2 or 040 101 375 13, 040 101 375 19, or stock OEM heads are allowed. Intake manifold is restricted to a stock 34mm original equipment center section or its replacement. A 1 1⁄2 inch (1.500) long by 1⁄2 inch (.500) diameter tube may be welded two inches below the carburetor flange. A maximum of a 1⁄4 inch (.250) may be removed from each end of the center section for clearance. A slip tube with a 1 5/8 inch (1.625) diameter, two inches (2.000) long may be welded to the end of the runners to allow the use of a better hose connection. Machine matching the I.D. of the valve seat to the port of the head only .250" below valve seat no hand grinding is allowed. End castings must be original equipment VW, with VW logo and part numbers. No porting, polishing or matching of ports allowed. Balancing slot may be welded closed. Vacuum hole may be plugged. A 34mm to 30mm carburetor adaptor must be used. The only carburetor adaptor that is allowed is the EMPI part number 98-1293-B.

CAMSHAFT, VALVETRAIN
Any camshaft, camshaft gear, valve spring retainers, valve springs, and lifters are allowed. Valve spring seat diameter, in head, must remain stock VW. Valves must be stock 45 degrees. One-piece valves are allowed. No polishing or profiling of valves allowed. Valve guides may be steel, bronze, or cast iron. Valve guide seats are allowed. No grinding or polishing in the port including valve guides. Any camshaft may be used which will allow the use of the standard stock VW 1600cc rocker arms. The rocker arm(s) may be resurfaced to permit the use of swivel feet or similar devices. No other grinding or changes to the rocker arms are permitted. No roller or needle bearings will be allowed as part of the camshaft or as an interface between the rocker arms and the camshaft. Push rods and push rod tubes may of any manufacturer. Rocker arm

valve adjustment screws and wave washers may be of any origin. Clips on rocker arms may be wire tied. Valve covers may be of any type and manufacturer.

FAN SHROUD
Aftermarket fan shrouds are allowed as long as they keep stock shape and dimensions. Heater tubes are optional.

CARBURETOR
Air cleaner location is optional and may be of any manufacturer. Velocity stacks may be used if they are not welded or bonded to the carburetor. Stock VW carburetor 30 Pict 1, 2, or 3 or the Solex H-30-PIC replacement must be used. Maximum venturi size of the carburetor is 24.10mm. No internal modifications in the carburetor venturi or throttle blade are allowed. This includes no removing of parts, no grinding, polishing or filling. Intake manifolds must be stock VW. Intake manifold may be cut to allow for head modifications. No chemical milling of manifold or carburetors. Automatic choke housing may be removed. Choke plate and shaft may be removed. Electric needle valves are 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 may be used.

OPTIONAL LOW COMPRESSION ENGINE RULE
1600cc maximum displacement with no more than 8:1 static compression ratio, stock replacement heads with no porting and the same valve and spark plug rules as above with stock end castings with no polishing may be used with an Empi or Webber 40 or 44 carb and any intake manifold. For this optional engine package, the maximum venturi is 26mm. This venturi must be made by PUM. Contact NORRA if you need contact info for PUM.

TRANSMISSION
Type 1 bug, 4-speed transaxle only. Any brand of gears may be used. Use of close ratio 1st, 2nd, 3rd and 4th gears is allowed. Heavy duty side plates and differential allowed. Any aftermarket main shaft is allowed (must be stock gear ratio). Gear shifter must use the stock VW mounting holes. Aftermarket ring and pinion are allowed with ratios of 8:31 (=3:88), 8:33 (=4:12) or 8:35 (=4:37). Axle over tubes are not permitted. Other internal mods are optional. Rear transaxle mounts may be supported by a maximum of two (2) vertical straps of 0.25”x1” dimension. Adjustable straps are optional. Any gearshift is allowed. May use any manufacturers Type 1, 2, or 181 stub axle. May use any VW CV joint. Oversized bolts allowed.

THROTTLES
Throttle pedals are open. Any manufacture of pedal is allowed.

EXHAUST
Any exhaust system may be used.

FLUID COOLERS
Any oil coolers permitted with the location optional. Full flow system is permitted.

DRIVERS COMPARTMENT
It is highly recommended that flammable items such as the rear seat, upholstered panels, headliners and carpets be removed. Removal of dash and firewalls is prohibited. Dash may be covered with aluminum to install gauges. Pedals must remain in the stock fore and aft location.

SAFETY HARNESS
All belts must show year of manufacture or date of expiration.

SEATING
Any manufacturer racing seat is allowed but must remain the approximate stock location. If stock seat mounts are used, they must be reinforced using at least two U-bolts per seat runner.

DOORS AND LATCHES
Doors must remain functional and in original stock location with original hinges and working latches. Secondary positive latching devices are mandatory.

FLOORBOARDS
No alterations to pan permitted except for heating, bending or cutting of pan to a maximum of 1-inch to allow for tie rod and CV joint clearance. Frame head may be interchanged from early to late or late to early.

BUMPERS
Original stock bumpers and over-riders must be retained. Stock VW bumper stiffeners are allowed. Brush guards may be added to stock bumpers.

SKID PLATES
Any type of front and rear skid plate permitted. Front skid plate may be attached to lower torsion bar tube with a maximum of two (2) 0.375" U-bolts or two (2) U clamps with a maximum width of 1.5" attached to the skid plate. Skid plate may be extended forward and upward to but not above the top of the front bumper.

FENDERS
Fender lips on the underside may be flattened to prevent cutting of tires. A rod of 0.25" maximum diameter may be welded under the outside edge for additional strengthening. The bottom rear edge of the front fenders may be cut, and/or rolled as to bring it to the same level as the body pan. Front fenders may be trimmed to body and belly pan line but cannot exceed these lines.

Use of Fiberglass or plastic materials to fabricate fenders, hood and deck lid is allowed. These parts must be identical to stock metal components in appearance.

CHASSIS AND BODY
The vehicle must retain full stock chassis and body with no modifications except for fabrication allowed on the rear lid to allow for the air box on low compression engines; Rear apron may be removable to facilitate engine removal but must retain stock external appearance. Body must be VW type 1 bug or sun top bug. No convertibles, Karmann Ghias, 181's, Variants, or Super Beetles. Running boards may be removed. Front and rear hood latches may be modified or replaced. Hinges must remain stock. Front, rear and side glass is optional. Chrome strips, outside mirrors, antennas may be removed. A hole no larger than one (1) inch in diameter larger than the shock O.D. may be cut in the rear fender well to allow clearance for the rear shock.

Sand traction devices may be mounted on outside of vehicle.

13.10 Rally Cars

This is a class for rally cars or any vehicle which does not otherwise fit into another category such as modern production-based vehicles.

13.11 Class 6100

Class 6100 is an open production truck class, all components are considered open unless restricted in these rules, class is limited to specific sealed engines with maximum 525 hp, 2-wheel drive only with solid rear drivetrain and must use TH400 Transmission. Vehicles in this class must look like a Truck or SUV and have fenders on all four wheels.

SUSPENSION COMPONENTS
Track width is open.
Live valve shock absorbers are allowed.
Maximum tire size 40".

ENGINE
Teams are required to register race engine and spare engines seal numbers and fill engine specs registration sheet at Tech Inspection; seal numbers could be verified after everyday finish line randomly. Engine Valve Covers, Throttle Body, ECU, Oil Pan and OBD Ports must be accessible for Tech Inspectors.

Only Cup Style Tags are allowed.

Engines may be mounted in the front or middle of the vehicle.

All engines must be purchased through NORRA approved engine builders (see list below).

LIST OF APPROVED ENGINE BUILDERS / SEALERS

- Turn Key Engine Supply - (760) 966-2663

- Jeff Ginter Racing Engines - (562) 972-9763
- Moruzzi Race Motors - (909) 754-4941
- Dougan's Racing Engines - (951) 681-1961
- Danzio Performance Engineering (951) 245-2537
- Wiks Racing Engines - (702) 837-2522
- Herbert Performance Company - (775) 324-0222
- Redline Racing Engines - (714) 777-5758
- CBM Motorsports – (909) 291 7550
- Klein Engines – (602) 258 4363

APPROVED ENGINES:

1. Ford 5.0L V8 engine kit part number **M-6007-M50C** with wire loom and control pack part number **M-6017-M50B**

2. General Motors LS3 (430HP) V8 engine kit part number **19370416** with wire loom and control pack part number **19258270 - Upgrade option:** GM Cam Shaft part number **88958770** that comes in the GM LS3 (525HP) motor.

3. Ford 3.5 twin turbo Ecoboost engine

4. Ford 351 V8 Engine - Kit Part Number **M-6007-S374W.**
5. Ford Boss (535 HP) - Part number **M-6007-Z2427FFT**

6. GM LS3 (525 HP) - Part number **19370413** with GM Control Pack Part number **19354332**

7. General Motors Crate 525 RLB **PART NO. 19435005**

8. GM LT1 - Part number **19416592** with LT1 Control Pack Part number **19417227**. Can use intake manifold part # 12697714.

ALLOWED MODIFICATIONS TO NEW CRATE ENGINES
• Billet Fuel rails allowed.
• Water pumps are open, must be mechanical factory concept, no electric pumps allowed.
• Spec Engine control module programming open.
• A race quality harness may be installed with the required Factory ECU.
• **Fuel Injectors** – Only One Stock Production Fuel Injector per cylinder in their stock location is allowed for a total 8 Injectors.
• **Air Intake** – Only the Mass Air Flow Sensor is allowed to be attached or in the Air Intake[68]Tube/Air Filter before the Stock Throttle Body.

GM LS 3 Engine - Permitted Modification to NEW CRATE ENGINES:
• No Dry Sump oil systems allowed. Engine may utilize any GM wet sump oil pan with STOCK Baffle paired with that Oil Pan.
• No aftermarket pans are permitted. Oil pans may be modified to fit chasses. Modified pans must use stock baffling and no increase in volume is permitted.
• Engine may have a high-volume wet sump oil pump and an aftermarket harmonic balancer.
• LS 3 Cam Chain Tensioner - Part #12588670
• No external oil pumps allowed.
• You may install an external oil cooler and external oil filter. Installation must be done without modification to the engine block or oil system in any way. Oil filter adapters are permitted.
• 3-Quart oil accumulator is allowed.

GM 525 RLB Permitted Modification to New Crate Engines
• Replacement of oil pump to a High Volume Wet Sump Oil Pump.
• Any Style LS 3 Oil Pan With STOCK baffling
• GM Engine Seals on oil pan and timing cover must be replaced with new seal tags provided by the licensed engine sealer after replacing oil pump
• Must use stock LS3 Intake, Fuel Injection Manifold with Stock Throttle Body, injectors and coil packs used on GM LS3 (525 HP) - Part number **19370413** with GM Control Pack Part number **19354332**

Ford Engines:
• No Dry Sump oil systems allowed. Engines must use wet sump stock oil pan as delivered in the engine kit from the manufacturer. May be modified to fit chassis so as long as not to add any increase to oil volume capacity.
• All Ford Motors are allowed to use either of these two carburetors – 650 CFM Holley part# 80541-1 or 750 CFM Holley part#80528-1

ENGINE REPLACEMENT - ENGINE REBUILDS ARE ALLOWED UNDER THE FOLLOWING REGULATIONS:

• All parts must remain factory spec, per crate engine part number unless otherwise stated below.

• An engine can ONLY be rebuilt by an approved NORRA Licensed Engine Sealer.

• All engines must have the following:

a. Cup Tags only – Must have Engine Builder/Sealer Identification and Serial Number on tag.

b. A rebuilt Engine must be sealed as rebuilt **(with a "REBUILT" Tag Attached to the Drivers side Valve Cover)** and a log or spec. sheet of the rebuild must be presented to NORRA Tech Director prior to use.

All replacement parts must be Factory GM part # as the stock part it is replacing and installed as purchased from the manufacture with exception of:

a. Aftermarket piston set - must be same configuration and design as factory piston set.

b. Ring set – rings must be of convention style factory ring set, no gapless rings, no gas ported rings. The use of "tool steel top ring" is permitted. All rings and pistons must use factory ring package which is 1.5 top and 1.5 second x 2.5 – 3 oil rings.

c. Head gaskets – the use of ANY head gasket is permitted so that a 10.7:1 compression ratio will be achieved.

d. Oil pump – see notes above.

e. Timing Chain – must retain factory stock GM single roller. No adjustable timing set allowed.

f. Timing chain guide - #12588670 allowed as replacement.

g. Camshaft – part number GM #88958770 only, No Modifications allowed.

h. Lifters – Must be original GM #12649190

i. Crank and Rod Bearings - Stock, Clevite 77 or any style Babbit bearings allowed.

j. Valve Seals – Must be original GM (top hat style only)

k. Valve Springs – Must be original GM #12713265

l. Push Rods – Open as long as 5/16th (five sixteenths) diameter and maintain a MAXIMUM WALL THICKNESS OF 0.080

m. Injectors – must be factory original GM LS3 42CC only, NO MODIFICATIONS ALLOWED.

n. Engine Block - can be reconditioned with a maximum of a 4.070 bore.

o. Crankshaft - may be turned to 0.010 under, and NO OFF-SET GRINDING.

p. Minimal machining of heads and surfacing of block is allowed as long as stock compression ratio of 10.7:1 is maintained with head gaskets or machined piston dish.

q. None of the following will be allowed: Porting, Port-matching, Polishing, Deburring, offset crankshaft grinding, valve seat grinding or Machining of any kind (except stated above) are strictly prohibited.

r. None of the following will be allowed: coatings, heat treating, cryogenic treating of any engine components with exception of aftermarket pistons.

• ANY Engine Protest in 6100 must be in writing, presented to the Race or Tech Director with **$5000** in cash.

• Any team deemed to have an illegal engine will be forfeit that event finish position along with any cash prize.

• The Engine Builder responsible for rebuilding and tagging the engine will be eliminated from the NORRA approved engine builder / sealer list, All other engines tagged by said company, will have to be re-inspected and tagged by other NORRA approved engine builder.

• NORRA reserves the right to have an engine pulled via competitor protest or by NORRA Tech Inspectors and be disassembled and inspected by another NORRA Licensed Engine Sealer.

TRANSMISSION
Transmission must be a TH400 and have 3 forward gears and a working reverse gear. Under drives and over drives are allowed. Rear suspension must be a straight live axle type equipped with a standard Ford 9" style removable third member, standard type bearings, floating hubs and drive plates. Gear reduction hubs are prohibited.

13.12 Heavy Metal Category

Heavy Metal is a grouping of several categories designed to create larger fields. The following categories are included in the Heavy Metal category: Class 8, Pro Truck, Class 1450, Class 6, Class 3, Class 2. As this is a grouping of cars from various categories, NORRA reserves the right to allow any vehicles into the category that NORRA deems to be within the spirit of "Heavy Metal".

Production based open truck / SUV. Entries in this category must be based upon a production truck or SUV.

Suspension Components
Front suspension must remain stock concept as delivered on the vehicle as determined by the frame/chassis (solid axle, a-arm, I-beam, etc.). Spring and shock method and type are open. Front springs (leafs, coils or torsions) may be replaced with coilovers.

Rear suspension is open.

Engine must be mounted in the stock location as delivered from the manufacturer, for the frame used, +/-1". This will be measured from the centerline of the front spindle to the back of the block. Height will be measured from the top of the frame rail to the centerline of the crank. Engine is open to any manufacturer regardless of chassis make.

Forced Induction is allowed.

Fenders are required for all four wheels. Independent rear suspension not allowed unless factory equipped on the chassis from which the vehicle is built.

Must look like the truck or SUV from which it was built, as determined by the frame/chassis, at the discretion of NORRA.

The original wheelbase for the frame/chassis used must be within +/-2" from stock. Frames may be strengthened by adding material but must retain original stock configuration. Removal of frame material is not allowed. The frame length and width cannot be altered from stock however the front 8" of the bottom of the frame may be removed for ground clearance if the top of the frame is left intact. The rear of the frame may be notched at the axle centerline. The notch cannot extend more than 4" fore or aft of the axle centerline nor can it extend more than 3.75" up from the bottom of the frame rail or to the bottom of the top frame rail, whichever is shorter.

13.13 Class 7100

This is a limited category for mini and mid-sized trucks with rear leafs. Restricted items follow:

Front suspension must be of the same configuration as was originally produced. Suspensions may be strengthened and reinforced or fabricated in any manner if the stock original concept (a-arm, I-beam, etc.) is retained. Lower A-Arms must

retain stock pivot points but may be reinforced. Upper A-Arm pivot points are open. No J-Arms. I–beams must mount in factory pivots in the stock location; pivots can be reinforced. Radius arms can be custom and pivot point location is open. Pivots can be custom, reinforced and/or gusseted. Ball joints may be of any manufacturer. Spindles may be of any manufacture and may be reinforced. Aftermarket suspension kits and components are allowed. Pivot mounts may use spherical bearings in place of the stock rubber. Spring buckets maybe clearanced to provide room for shocks and coilovers, only minimum frame material may be removed for the purpose of mounting shocks or clearance for steering. Front and rear track width is open.

Rear suspension must utilize an automotive style differential. Rear springs may be relocated to the side of the frame. Frame may not be modified or notched in any manner. Springs may be mounted above or below the axle. Spring rates and capacities are open. Two single point rear differential anti-wrap bars or a single wishbone may be used. Rear wheel travel limit is 18" axle to frame rail. Stock sway bars may be removed. Hydraulic bump stops are permitted. Air shocks are not permitted. Secondary suspension is not permitted except as provided above.

Maximum tire size is 35".

Steering box must remain stock and original concept as produced by the mini or mid-sized truck manufacturer. Steering box mounting may be reinforced by adding material but must remain in the stock location. Aftermarket steering column mounted "steering quickeners" may be utilized. Steering components (tie rods, tie rod ends, idler arms, relay rods and turning arms) may be specially made providing they mount in stock location and operate in the original manner. Pitman arms must be stock and original but may have material added. Any manufacturer steering wheel may be used. A maximum of three inches fore or aft may be made in the steering wheel location.
Vehicles with 3000 - 4300cc engines must retain the vehicle manufacturers stock CPU / ECU computer and ignition as delivered by the factory.

Engine must be one delivered in the vehicle or one that is available from any truck from same manufacturer (with the provisions listed herein) from the manufacturer / importing distributor with a maximum of six cylinders. Engine must be available to the public of the U.S.A. Maximum engine displacement is a) Stock production 3000cc - 4300cc or b) modified 2999cc and smaller (187.5ci). Rotary piston engines are not permitted. Engine block must be of the same type of material as that of the block originally delivered in that chassis body combination. Water and vapor injection is not permitted. Engine location must be the stock mounting location as delivered from the manufacturer plus or minus 1-inch. Engine mounts are open. This will be measured from the front spindle centerline to the back of the block.

2999cc and smaller engine rules:
Alternate manufacturer's/importing distributor's engine provisions:
A. It retains a maximum of six cylinders as originally produced by the manufacturer.
B. It does not displace more than 2999cc.
C. It has a manufacturer's stock number.
Any head may be used providing it is offered by the manufacturer as an option or as a replacement. Head may be used as long as the following apply:
A. Retains the same number of camshafts.
B. Retains the same number of valves per cylinder.
C. Has manufacturer's stock number.
D. Is available to the general public of the U.S.A.

Unrestricted engine items include:
A. Strengthening and balancing
B. Valve train and camshaft
C. Pistons
D. Blueprinting
E. Oil and water-cooling systems. Radiator must be in stock location.
F. Air cleaners
G. Fuel pumps
H. Exhaust system

Any make of carburetor or fuel injection may be used but must maintain a maximum of one venturi per cylinder.

3000cc - 4300cc engine rules:
Engine must be stock production as produced by the vehicle manufacturer for that model of vehicle. Engine must remain stock with no modifications made to the block, internal components, or heads. All engine components must bear the part

number as that of a stock engine as available from the vehicle manufacturer. Engine may not be a high performance engine as available from the vehicle manufacturer for replacement of the stock performance engine that is normally installed in a mass produced vehicle.

Restricted items:
A. Intake manifold. (Must remain stock vehicle manufacturers factory intake manifold)
B. Fuel injectors
C. Mass air flow sensor
D. All internal components IE: pistons, cam, crank etc.
E. Block and heads

Unrestricted engine items include:
A. Oil and water-cooling systems. No Dry sumps.
B. Air cleaners - open
C. Fuel pumps - open
D. Exhaust system – open

Stock production vehicle manufacturers factory fuel EFI must be maintained as delivered.
TRANSMISSION
Any OEM style transmission may be used T400, T350, C4, C6, etc. No underdrives allowed. Any shifter may be used.

DIFFERENTIAL
Front differential must remain original stock as delivered by the manufacturer, with the exception of gear ratios. Materials may be added for strengthening purposes only. Front differentials, including traction beam type, may be reinforced.
Rear axle assembly must use standard automotive style. Housings are open. Gear ratios, carriers, axles and floating hubs are optional. No gear re-ducted rear ends allowed. Only a single ring and pinion rear end is allowed. Axles are limited to a maximum of an industry standard 40 spline 1.750” diameter axle.
Knock-off hubs are not permitted.

DOORS & LATCHES
Doors must be full doors and must operate on stock hinges and latches. Doors must have a secondary latching device.

FIREWALLS
Firewalls must remain stock, complete and in original location. Firewall clearance is permitted only to make room for transmission. Holes left in stock firewall must be covered with metal and sealed. Firewall maybe modified for tire and shock clearance and replaced with sheet metal.

Alterations to floorboard, for the routing of exhaust to rear of vehicle, are permitted but floor must remain stock.

CHASSIS & BODY
Specified year chassis and cab combinations of manufacturer must be retained. Front fenders hood, grill and rear fenders open.

CHASSIS
Original wheelbase must be maintained plus or minus 1-inch. Frame may be strengthened by addition of material but must retain stock configuration. Lengthening or narrowing of frame is not permitted. Removal of material is not permitted.
Frames may not be altered.

Frame rail exceptions:
The front end of the frame rail may be notched a maximum of 7 inches from the end for ground clearance. Top of frame rail must remain stock.

BODY
Original body shape, size, configuration and appearance must be maintained. Additional body strengthening mounts or parts may be added. Original stock mounting location (vertical, horizontal, and lateral) in relation to the frame and mounting methods must be retained. The measurement from the spindle centerline to the back of the b-pillar post must remain stock plus or minus 1-inch. Body mounts may be modified for tire clearance. Internal body structural members may be removed. Clearance holes may be cut or drilled for roll bars, supports, shocks, etc. Hoods, trunk-lids, doors fenders and bedsides are required to be in original stock locations. Hoods, front fenders and bedsides may be of any material. Tailgates and pickup bed front panels are optional. Stock front grill assemblies are mandatory. Safety glass windshields, side and rear

glass is optional.

WEIGHT
Vehicle must weigh dry 3250 lbs. minimum

13.14 Class 7 / 7200

This is an open class, and all components will be considered open unless it states otherwise with these class rules.

WHEELS & TIRES
Maximum tire size of 37” tall Knock-off hubs are permitted.

ENGINE LOCATION & DISPLACEMENT
Engine is limited to a maximum of six cylinders. Engine may be located front or mid chassis as needed. No rear engine chassis permitted. Forced induction and dry sump systems are allowed.

SEATING
Maximum of three (3) seats may be used.

CHASSIS & BODY
Body must resemble a truck or SUV and must have emblem of manufacture of type of truck (ie. Ford Oval, Chevy bowtie, Honda H…) Overall width is limited to 87 inches as measured from outside of tire to outside of tire at the center line of the spindle and rear axle at ride height. Suspension, steering wear and damage are the responsibility of the vehicle owner and are considered in the overall width.

FENDERS Vehicle must have fenders. No open wheeled vehicles permitted.

13.15 Ultra 4x4

Unlimited 4-wheel drive vehicles.
Vehicles in this category must be able to be driven by all wheels at the start of the event.
Forced Induction allowed.

13.16 Trophy Lite / 3000

This is a Spec category for Trophy Lite vehicles and Class 3000 vehicles. This is a spec engine class for two and three seat trucks or SUV’s. All components will be considered spec unless stated within these class rules. Engines will be spec crate engines from Ford & GM manufacturers. **Motor must be tagged prior to start of race or penalties up to disqualification can be assessed.**

VEHICLES WILL NOT TO EXCEED 118” WHEELBASE AS MEASURED AT RIDE HEIGHT

SUSPENSION COMPONENTS
Shock absorbers shall not exceed 3.5 inched outside diameter.
Maximum tire size of 37” tall.
Knock-off hubs are **NOT** allowed.

STEERING & BRAKE COMPONENTS
Steering or turning brakes are permitted.

ELECTRICAL SYSTEM
Control pack programming is permitted but must have easy access for removal and visual inspection.

ENGINE TRANSMISSION AND DRIVELINES
Engine is limited to a 4 cylinder motor. No engine rebuilds are permitted. If engine fails a new sealed engine must be installed.
Engines must be mounted in the front of the vehicle like a truck with all pulleys facing forward. No mid or rear engine truck or SUV chassis configurations will be allowed.

1. FORD 2.3 TURBO ECOBOOST ENGINE, CONTROLL PACK **#M-6007-23TA** WITH CONTROLL PACK **#M-6017-23TA** WITH 310 HP AND 320 FT LBS TORQUE.

2. GM 2.7 TURBO ECOTEC 300 HP WITH 340 FT LBS TORQUE.

TRANSMISSION
All vehicles must use production based automatic or manual transmissions.

DIFFERENTIAL
Rear axle assembly must use a light automotive type straight axle housing with standard Ford 9" removal type ring & pinion third member. Standard type bearings, drive plate, floating hub is to be used. Ring and pinion is to be no larger than 9" with axles no larger than 40 spline. Gear ratio is open. Open to 2 and 4 wheel drive chassis.

13.17 Meyers Manx

This category is for any model of genuine Meyers Manx vehicle. Meyers Manx vehicles of any age (including new) may enter this vintage category.

13.18 Modern Military Vehicles

This is an open category for any stock military 4 (or more) wheeled vehicles produced for the US or a foreign military. Limited production prototypes are allowed. Forced induction allowed.

13.19 Prerun Trucks

This is a category for prerunner trucks/suv's defined as vehicles with operational hinged doors. No buggies in this category. Front and rear suspension is open. Forced Induction allowed.

13.20 Prerun Buggies

This is a category for prerunner buggies defined as buggies with back seats such as "4-seaters" (or 3-seaters). No trucks/SUV's in this category. Front and rear suspension is open. Forced Induction allowed.

13.21 RV (Recreational Vehicles)

- This is an open category for any vehicle originally sold by the manufacturer with overnight sleeping quarters, refrigeration, and cooking capabilities.
- 4x4 is allowed.
- Typical vehicles in this category would include VW Westfalia and van conversions such as Sportsmobiles, Quigleys, and others, as well as all class A, B, and C motorhomes.
- The bed must be built into the interior as a permanent installation such as a folding dinette or sofa sleeper or bed in the pop-up, etc.
- An air mattress or hammock in an empty cargo van, or a pop-top tent bolted on top of a vehicle, would not qualify, for example.
- Entries in this category are subject to approval by NORRA.
- Safety items such as seats and harnesses subject to NORRA approval as well.

13.22 Hybrid Vehicles

This is a category for hybrid vehicles.

- This is an open category for any electric / internal combustion engine hybrid vehicle.
- 4x4 is allowed.
- Typical vehicles in this category would include any vehicle originally sold by the manufacturer as an electric/IC engine hybrid, or a custom-built vehicle powered by an electric/IC engine hybrid power plant.
- Entries in this category are subject to approval by NORRA.
- Safety items such as seats and harnesses subject to NORRA approval as well.

13.23 Electric Vehicles

This is a category for full electric vehicles.

- This is an open category for any electric vehicle that does not have an internal combustion engine.
- 4x4 is allowed.
- Typical vehicles in this category would include any vehicle originally sold by the manufacturer as an electric vehicle.
- Entries in this category are subject to approval by NORRA.
- Safety items such as roll cage, seats and harnesses must comply with NORRA safety regulations on weight and roll cage construction, fire extinguishers shall be class C for electrical fire.
- Vehicles in this category are allowed to transport the entry via trailer during transit stages to recharge batteries.

13.24 JeepSpeed 3700

This category is created to welcome JeepSpeed racers to NORRA using the 3700 class restrictions. This is an open class for Jeep and Dodge branded vehicles with the following restrictions:

- Manufacturers recognizable body profile and grill must be used.
- Maximum overall width is 96” measure from the bulge of the tire. Maximum wheelbase is 119”. Stock wheelbase trucks may have a longer wheelbase if the full frame is retained and the wheelbase is maintained within 2” of stock. If the frame is modified, then the 119” max limit shall prevail. The front 8” of the frame can be bevel cut for ground clearance such that the top of the frame is still intact. This modification is excluded from the frame modification rule regarding wheelbase restrictions.
- Maximum front wheel travel is 15” measured metal to metal. Maximum rear wheel travel is 24”. These are measured as vertical travel (both sides at once on solid axles) metal to metal. Shocks limiting travel do not apply to this measurement.
- Maximum tire size is 37”, mandated Yokohama.
- Fuel cells required.
- Any manufacturers engine block may be used. Any make 4/6/8 cylinder but must be a production block or available in crate form to the public in the USA. Engine blocks may be modified but must maintain the same number of cylinders as originally equipped. Heads must be available to the public in the USA. Must maintain the same number of valves as the engine was originally equipped. 4- or 6-cylinder engines may be turbo or supercharged, 8-cylinder engines must be naturally aspirated.
    - Open Items are:
        - 1. Strengthening and balancing
        - 2. Valve train and camshaft
        - 3. Bore and stroke
        - 4. Pistons
        - 5. Blueprinting
        - 6. Oil system
        - 7. Cooling system
        - 8. Air cleaners
        - 9. Induction
        - 10. Carburetors or fuel injection
        - 11. Fuel pumps
        - 12. Exhaust system
- The vehicle cannot weigh less than the showroom delivered weight and must weigh at least 3500 lbs.
- Vehicle must have a minimum of 2 seats and a maximum of 3 seats.
- Additional restrictions may be imposed at the discretion of the JeepSpeed organization if a NORRA race is being used as an official JeepSpeed event.

13.25 Showroom Stock Late Model

This class is for current model showroom stock trucks and SUVs. This is a restricted class with the only modifications allowed listed below or for conformance to the NORRA safety regulations.

- Interior plastic, carpet, seats, etc. may be removed
- Glass may be removed
- Fuel cells allowed OR OEM factory tank configuration allowed. If a fuel cell used, it may be sunk in bed through sheet metal. Aftermarket fuel pumps, filters, etc. are allowed
- Stock tire size as delivered.
- Body must remain stock as delivered from OEM. Tailgates may be removed.
- OEM suspension points for any suspension links and dampers
- Frames must maintain stock configuration, no lengthening, narrowing, etc. Wheelbase must remain stock.
- Unnecessary brackets / tabs may be removed from the frame.
- Weld in cross-members must remain and be unmodified. Bolt in cross members may be modified or replaced.
- Aftermarket dampers allowed but must be OEM style
- Limit straps allowed, Stabilizer bars may be disconnected and/or removed
- Stock steering but reinforcing allowed
- Aftermarket exhaust allowed
- Additional oil, transmission, and fluid coolers allowed
- AC / heater may be removed. Dash must retain stock appearance.
- Must have functional operable stock doors on stock hinges.
- Stock bumpers required but minimal modifications allowed. Aftermarket reinforcement / tube protection allowed.
- Aftermarket bash plate and skid plates allowed.
- Aftermarket lighting allowed

14 Motorcycle and ATC / ATV Categories

Road Book ONLY classes, must have 200km fuel range:

14.1 Pro Rally

A roadbook-only Ironman class for experienced Rally riders. Motorcycles of any age, size, or type are allowed.

14.2 Amateur Rally

A roadbook-only Ironman or Multirider class for riders who have completed no more than 3 prior NORRA roadbook rallies. Motorcycles of any age, size, or type are allowed.

14.3 50+

A roadbook-only Ironman or Multirider class for riders who are all at least 50 years of age at the start of the rally. Motorcycles of any age, size, or type are allowed.

14.4 60+

A roadbook-only Ironman or Multirider class for riders who are all at least 60 years of age at the start of the rally. Motorcycles of any age, size, or type are allowed.

14.5 Vintage

A roadbook-only Ironman or Multirider class for riders with motos made in 1999 or older.

14.6 XR650

A roadbook-only Ironman or Multirider class for riders with Honda XR650 motos made from 2000 to 2008 and XR650L.

14.7 Two Stroke

A roadbook-only Ironman or Multirider class for riders with any motos, ATC (3-wheelers) and ATV (quads) with two stroke engines.

14.8 Moto GPS

A GPS Trail class for Ironman or Multiriders with any motos, ATC (3-wheelers) and ATV (quads), GPS unit required such as Garmin Montana or Tread XL that supports .GPX files. A navigation tower is needed to fit tracking device along with GPS unit.

15 Safari Expedition

15.1 Overview and Spirit of the Safari Expedition

15.1.1 The NORRA Safari Expedition is for OEM highway vehicles, modified stock vehicles, pre-approved classic/vintage race vehicles and SXS (UTV´s).

15.1.2 The spirit of this category is to allow OEM and aftermarket vendors the opportunity to showcase their products on vehicles in a non-competitive environment as well as to provide the opportunity for those who wish to run their vehicles, the ability to participate in the NORRA experience.

15.1.3 The Safari Expedition Category is a non-competition category that will run separate from the race car categories. All entries in the Safari category will run behind a NORRA official Safari leader. Depending upon the quantity of Safari entries and the speed at which they are comfortable running, the group may be split into a faster and a slower group each lead by a NORRA official Safari leader. Safari entries are prohibited from passing the official leader of the group they are in and must follow any deviations from the planned route which the official leader deems necessary for safety reasons, typically to ensure Safari and race cars are not on the same part of the course at the same time.

15.1.4 All vehicles in this category will be required to carry a GPS tracker, provided by NORRA at tech inspection. The cost of the tracker rental is included in the entry fee however the tracking mounting kit, antennas and power cables must be purchased and installed by the entrant prior to arriving at tech.

15.1.5 All vehicles in this category must carry a GPS (ie- Lowrance or Garmin) or an iPad or Tablet on a RAM mount with the LeadNav App capable of displaying the Safari category course route. NORRA will provide the GPS route no later than the day before the event. The course is kept secret until the event to prevent preruning and unauthorized use of private properties prior to event day. If you have doubts about the suitability of a given GPS unit model for this, please contact NORRA in advance of the event at info@norra.com Safari entries will be required to demonstrate they have the Safari course loaded at tech inspection.

15.1.6 All vehicles in this category must carry a VHF 2-way radio of at least 50 watts with the official NORRA frequency programmed into it (151.625MHz).

15.1.7 Safari vehicles will be subject to a 60 mph speed limit in the dirt. Violation of this speed limit may result in disqualification and elimination from the event (loss of wristbands). Enforcement will be via the required GPS tracker and final penalty decisions shall be made by the Race Director.

15.1.8 All entries in this category must be street legal, currently registered, or pre-approved by NORRA officials (classic/vintage race cars) and must carry Mexican road insurance. SXS (UTV´s) are now allowed and NORRA´s liability insurance will cover highway sections of the daily course.

15.1.9 Race safety equipment (helmets, race suits, window nets, seatbelts) are required for SXS (UTV´s) and pre-approved race cars with cages or open cars to protect head and arms in the event of a roll over, for the rest of street legal vehicles this is not required however it is recommended for safety.

15.1.10 All entries in this category must display number badges supplied by NORRA. These must always be visible from the front (windshield) and both sides of the vehicle.

15.1.11 Only vehicles specifically registered/entered in the Safari Expedition may follow the group down the course. No support vehicles, chase vehicles, nor non-registered vehicles may participate even if the occupants of such vehicles are wrist-banded participants (in another vehicle).

15.1.12 Drinking and driving has no place at NORRA and is strictly prohibited. There will be plenty of time for social drinking after the day's driving is concluded. Drinking and driving is illegal in Mexico, it is irresponsible and cannot be tolerated by NORRA. We appreciate you're understanding and cooperation on this matter.

15.2 Route Conditions and Minimum Vehicle Requirements

15.2.1 Although the route used for the Safari category may bypass the most difficult sections which the race cars use, the track can still be very primitive in sections and may include obstacles including soft sand, silt, steep loose terrain, ruts, rocks requiring negotiation/clearance and overgrown shrubs.

15.2.2 The spirit of this category is to have fun and stay together as a group while experiencing the best Baja has to offer in scenery and remote beauty. The category will be led by Baja veterans with years of off road experience. For the enjoyment of all in this category it is important that only vehicles which are suitable and capable of covering the terrain be allowed to join in with the Safari Category. For this reason, we present the following suggested minimum vehicle capabilities. If you would like to run a vehicle that does not conform to this, please contact NORRA in advance to discuss this at info@norra.com

- Vehicles such as Subaru's or similar AWD car-based vehicles typically do not have sufficient ground clearance nor large enough tires to traverse the course unassisted.
- The types of vehicles suitable for this Safari Expedition include body on frame SUV's and Trucks and some unibody SUV's provided they have the following:
    - Aggressive tread LT tires with a minimum diameter of 32" and minimum tire sidewall height of 7". For most vehicles this will require some sort of lift to fit the oversized tires. 33"-35" tires highly recommended. Low profile tires are not suitable for the terrain.
    - 4-wheel drive or 2-wheel drive allowed if equipped with locking rear differential and tires at least 33" tall.
    - Front and rear tow hooks advised.
    - Skid plates suitable to prevent puncture of engine oil pan.
    - Enough fuel capacity to travel 150 miles off road (for example in 4-High).
- If the car has a roll cage, then seatbelts, helmets and race suits are recommended to be worn when in dirt.
- If the car does not have closable side windows, then it is recommended that the car be equipped with window nets or the occupants wear arm restraints to keep the arms in the vehicle during a roll over. It is also recommended that cars with closable side windows close windows while in the dirt for the same reason.
- All Safari cars must be equipped with a rear facing amber or white light that is on whenever in the dirt.
- All Safari category vehicles must carry the following equipment on board:
    - Tow strap and means to attach it to your tow hook
    - First Aid kit
    - 1 gallon of water per occupant
    - Camping gear, you may be camping at Bay of LA and possibly in Loreto due to limited hotel capacity. There will be food and drink and secure camping available.
    - Basic survival gear, in case you must spend the night on the trail (any required meds)
    - Full size spare tire (same size as your other tires)
    - Tire jack and tools to change tire, suggest a block of wood to place under jack in sand
    - VHF 2-way radio of at least 50 watts with tuned antenna properly mounted on vehicle. Mag mount is ok but be forewarned they can bounce off and they also do not work on aluminum bodies. A hand held radio is not a suitable replacement for the main radio but can be very helpful for use by your codriver when out of the car as a spotter.
    - GPS unit capable of displaying the NORRA Safari trails. Suggest you have a Baja background map for this such as the one sold by PCI.
    - NORRA GPS tracker (The mounting kit, antennas, and power cables must be purchased and installed on the vehicle prior to arrival at tech. Once at tech, the actual tracker will be installed by officials into your mounting kit and tested). See the www.norra.com website for information on ordering your tracker installation kit. This information will be posted as the event gets closer. Questions can be sent to

info@norra.com

- Mexican Auto insurance
- Valid Driver's License
- For US citizens, an FMM Tourist Permit is required, and a US Passport or Passport Card is required in order to obtain this. The FMM may be obtained through discoverbaja.com or at the border at Mexican Immigration. A US Passport is also required in the event of a medical airlift across the border.
- Recommend Equipment:
    - Tire plug kit
    - 12v or compressed air supply to air up tires (from flat repair or in case you must deflate to become unstuck)
    - Basic tool kit for your vehicle
    - Lubricants, Antifreeze, Brake Fluid, Power Steering Fluid, Motor Oil, Transmission Fluid
    - Engine belts, hoses, etc.
    - Spare air filter
    - Spare Alternator and water pump
    - Spare of any failure prone parts on your car

16 Appendix A – Change History

Version 1.0
October 19, 2011
Initial Release

Version 1.1
January 20, 2012

- Changed category EG, Stock VW, to allow for a wider range of modifications to accommodate full body / fender beetles as raced in CODE and as in common use as prerunners in Baja.
- Created two motorcycle categories for Adventure Riders as defined by a minimum fuel capacity of 5 gallons.
- Changed maximum engine displacement in category VB from 2.0l to 2.2l.

Version 2
November 15, 2012

- Reformatted and condensed rules.
- Switched category codes to more descriptive scheme
- modified rally car rules

Version 2.1
December 28, 2012

- Corrected omission of revised motorcycle category definitions.
- Updated starting order

Version 2.2
January 30, 2013

- Corrected omission that allows for 2.3l type 1 VW engine in category VOB22.
- Added rule to restrict VOT category such that vehicles built without production frames must have been built in 1988 or earlier. Open category trucks built without production frames from 1993 to present are welcome in the Evolution Unlimited category.

Version 2.3
February 7, 2013

- Added Vintage Unlimited category
- Added rules to the VOB category to require independent rear suspension if built in 1993 or newer.

Version 2.4
June 28, 2013

- Eliminated Vintage Unlimited category, Unlimiteds of any age can enter Evolution Unlimited.
- Combined EVWS & EVWL and moved them to vintage under VVW (Vintage VW Beetle).
- Created V108-77
- Eliminated E100 which can run in V108, V108-77, or E108
- Eliminated categories for Evolution leaf sprung trucks which can fit into other categories.
- Increased maximum engine size in vintage leaf spring truck with limited engine from 4.0l to 4.5l
- Clarified that categorizations are based on chassis not body and prohibited IRS in truck categories
- Removed water cooled engines from VOB22
- Created new category VOB30 for air cooled engines to 3.0l or water cooled engines to 2.5l. (Class 5)
- Eliminated EOB24 which can run in EOB45
- Eliminated ELB16 which can run in VOB22
- Added a category for electric vehicles
- Added a category for electric motorcycles
- Added a category for RV's or trailers
- Removed limited engine ATV category
- Merged sidecars and ATC (3-wheelers)
- Reduced Rally Car categories to two: AWD and 2WD
- Reduced number of motorcycle categories (now is Open and Limited, New and Old, plus 50+ and Rally Raid)
- Banned GPS from Rally Raid category and opened category to all motorcycles
- Added category V5-16

Version 2.5
December 26, 2013

- Added Vintage Unlimited category
- Added Super Vintage motorcycle category, for 1984 and older bikes
- Eliminated Snell 2000 helmets, added Snell 2010 (racers to be given 2014 as grace period with warning)
- Added requirement that driving suits be SFI 3-2A/1 (or greater) certified (racers to be given 2014 as grace period with warning)
- Banned GPS from Rally Car categories
- Eliminated the maximum tire size rule

Version 2.6
March 6, 2014

- Reversed decision to ban GPS from Rally Car categories – GPS is now allowed in all cars.
- Added Classic British Thumper category

Version 2.8 (Ver 2.7 was internal work in progress, not published)
December 16, 2014

- Removed Snell 2000, all Snell rated helmets must now be Snell 2005 and up.
- Added requirement for SFI 3-2A/1 (or greater) certified fire suits
- Noted that navigation for Evolution and Moto categories shall be by roadbook only, no GPS file will be provided
- Vintage shall run a different route and will be provided with a GPS file
- Changed requirement for Vintage to be 1992 and earlier with two exceptions, a) beam cars of any age may enter Vintage, and b) production based vehicles later than 1992 shall be allowed in Vintage if the body style of the vehicle was available in 1992 or earlier.
- Added 35” maximum tire size limit for all Vintage categories
- Added 37” maximum tire size limit for Historic Trophy category
- Added 37” maximum tire size limit for all Evolution categories
- Replaced VUNL (Vintage Unlimited) category with HTT (Historic Trophy) category for unlimited vehicles at least 20 years old, this category will run under Evolution rules and on the Evolution route.
- Restricted rear coilovers in VOB22 category to only vehicles that ran rear coilovers in 1992 or earlier.
- Added a Vintage category for genuine Meyers vehicles
- Added an Evolution category for leaf sprung mini/mid-sized trucks
- Eliminated the E108 and RV categories
- Updated rally categories

Version 2.9
January 8, 2015

- Added category for 2-stroke motorcycles

Version 2.10
March 14, 2015

- Increased tire size restriction for all Vintage categories to 37” (unless noted otherwise in category specific rules)
- Removed tire size restrictions from Historic Trophy and Evolution categories (unless noted otherwise in category specific rules)
- Clarified rules on Forced Induction which were inadvertently removed from previous rule book edits.
- Clarified the pre-1980 exception for the VOB22 category, no change in policy nor to VOB22 rules.
- Removed requirement that motos and Evo navigate via roadbook only. GPS files will now be made available to all competitors in the Mexican 1000.
- Modified EOB45 to allow truck/suv bodies to be used on buggy chassis
- Modified EOT and EOT45 to allow IRS if so equipped on the chassis from which the vehicle is built
- Added UTV rules

Version 2.11
March 26, 2015

- Added Pro Unlimited and Pro Moto categories which race for a cash prize (when included in event).

Version 3.0
August 30, 2015

- Major overhaul to create technology Era based categories. Publishing for public feedback, will revise and make final on September 30, 2015 for the 2016 event.

Version 3.1
September 13, 2015

- Removed statement about 1" bigger tires as it was misunderstood. The specified tire size limits are the limits.
- Allow Pioneer and Legend trucks & 4x4s to use 35" tires to avoid track blockages from getting stuck
- Removed a mistaken comment that said solid front axle was required in Vintage Short Wheelbase 4x4
- Clarify that shock reservoirs and shock water cooling is allowed in any era unless specifically restricted by category
- Restricted Pioneer and Legend Bugs to 95" wheelbase and stock pans. Bugs that are eliminated by this can run in the Buggy category for that era (provided they meet the buggy rules)
- Added rule that no rear links are allowed in Pioneer truck and 4x4
- Added rule that a maximum of 2 rear links are allowed in Legend truck and 4x4
- Added rule that 3 or 4 links are allowed in Challenger truck and 4x4, but must still be sprung by leafs.
- Changed name of Vintage Limited Buggy to Vintage 6-Cylinder Buggy
- Added Vintage 4-Cylinder Buggy with a 2.5L limit
- Changed name of Vintage Limited Truck to Vintage 6-Cylinder Truck
- Added Vintage 4-Cylinder Truck with a 2.5L limit
- Reworded class 11 rear trailing arm to insure they are stock but can be reinforced and clarified that stock combinations of irs/ball joint or swing axle/link pin must be maintained.

Version 3.2
September 20, 2015

- Require solid front axle 4wd in Legend 4x4, Challenger 4x4, Vintage Short Wheelbase 4x4 (this was previously required in Pioneer 4x4 and still is).
- Allow for 4WD in Pioneer Trucks, Legend Trucks, and Challenger Trucks so that IFS 4wd trucks have a home.
- Shorten the wheelbase limit in Vintage Short Wheelbase 4x4 to 108" which allows for Jeeps, Blazers and Solid Axle Broncos. Longer wheelbase 4x4's as well as IFS 4x4's are welcome in Vintage Open Truck 4x4.
- Challenger Bugs, limit the water cooled option to VW engines only. Non conformers welcome in Challenger Buggy.
- Challenger Buggy, allow 3.2L Porsche based engines with a displacement limit of 3.5L (allows for rebuild using more common 3.6L crank).
- Added note for racers to expect more restrictive "era correct" engine technology rules in 2017 addressing items such as EFI and engine designs.

Version 3.3
September 30, 2015

- Corrected wording in Vintage Class 11 rules.
- Finalized the UTV rules (no changes other than to remove the request for rule feedback).

Version 3.4
February 17, 2016

- Added category for Stock UTV, renamed existing UTV category as Modified UTV

Version 3.5
July 20, 2016

- Restricted Vintage Era buggy categories to beam front suspension except for cars documented to have had A-arms 20 years ago (tribute cars can no longer run A-arms in Vintage Era)
    - A-arm tribute cars are still welcome in the Historic Era
- Eliminated the Pro Unlimited and Pro Moto categories. (The optional race-for-cash is a side bet open to all categories, not a category in and of itself.)
- Merged Class 8 and Class 6100 into Heavy Metal Category (Evolution Era)
- Updated Helmet rules

Version 3.6
October 3, 2016

- UTV categories allowed to use 2-inch wide harnesses
- UTV categories allowed 32” max tire diameter as marketed by the manufacturer
- Stock UTV category allowed to use aftermarket suspension arms as long as stock width/length maintained
- May split Stock UTV into two categories for Turbo, non-turbo depending upon demand for this.

Version 3.7
October 13, 2016

- All vehicle categories allowed to use 2-inch wide lap and shoulder harnesses if SFI 16.5 certified. UTV categories may use 2-inch belts that are SFI 16.1 certified.
- Announced the maximum harness age will be reduced from 5-years to 3-years in 2018.

Version 3.8
October 29, 2016

- Added note to Stock UTV category that a fuel cell larger than the stock tank is a performance upgrade and is therefore not allowed. Aftermarket fuel cell, if used, must maintain the same capacity as stock in this category.

Version 3.9
January 22, 2017

- Added Spec TT to the Heavy Metal group (which already includes 6100) in recognition that there are now differing rule sets for these categories. Both 6100 and Spec TT will race together in Heavy Metal at NORRA, along with several other limited truck categories.
- Added the RV category back in due to customer request.

Version 3.10
March 5, 2017

- Added note to 6100 rules that tire size is not limited.
- Added class 3000 to the Trophy Lite class as was the case in 2016.
- Split Vintage Production cars into Stock and Open in the interest of fair competition.
- Dropped requirement for fuel cell in Modified UTV Category

Version 3.11
September 6, 2017

- Changed requirements for race number decals to facilitate faster staging.
- Now four (4) UTV categories: Stock N/A, Stock Turbo, Modified N/A, Modified Turbo
- Vintage truck categories now require production frames from front of truck to rear of truck (or to rear of cab depending on category). The lower front 8” can be removed for ground clearance. Vintage Open Trucks, Vintage 6-cylinder trucks, Vintage 4-cylinder trucks only require the full frame from front of truck to rear of cab. Vintage trucks without this amount of frame are welcome in Historic Era.

Version 3.12
February 23, 2018

- Split the Evolution Unlimited category into two (2) categories for 2018:
    - Evolution Unlimited Buggy
    - Evolution Unlimited Truck
- **For 2019, the Evolution Unlimited Truck category is eliminated (but still allowed in 2018)**
- **For 2019, all categories/categories in all Eras will have a maximum tire diameter of 37” as branded by the tire manufacturer.**
- Eliminated listing of former (obsolete) categories

Version 3.13
April 12, 2018

- Vehicle number rules updated (Section 1.10) to facilitate faster staging and shorter start gaps allowing teams more time to finish each day

Version 3.14
April 20, 2018

- Motorcycle number rules updated (Section 2.6)

Version 3.15
September 10, 2018

- **Reversed decision to eliminate Unlimited Trucks and reversed decision to limit all categories to 37" tires**
- Eliminated Race for Cash
- Allowing aftermarket clutch springs in Stock UTV categories for more holding power
- Further restricted the RV category rules
- Created Safari Categories which are untimed, non-competition categories that will run separate from the race categories
- Changed Classic British Thumper category into Classic Bike category allowing any motorcycle 1974 and older.

Version 3.16
December 10, 2018

- Removed wheelbase limit from Open UTV categories, Stock UTV wheelbase must remain stock.
- Allow 35" tires on all UTV categories
- Clarified air bumps rules in Section 4.1.1 (they are legal in all Era's subject to diameter restrictions and individual category restrictions/prohibitions.)
- Added moto category for 60+ riders

Version 3.17
January 30, 2019

- In Pioneer, Legend, and Challenger Eras, renamed Bugs category to Cars category to allow period correct cars other than VW's into the category.

Version 3.18
October 19, 2019

- Added a multi-cylinder motorcycle category intended for adventure bikes.
- Overhauled Pioneer Era Truck and 4x4 categories to bring the categories closer to what was run during the Era including engine restrictions.
- Restricted engines for Legend Era trucks and 4x4's.
- Eliminated fuel injection on Pioneer buggy and cars.
- Updates to Safari rules

Version 3.19
November 19, 2019

- Clarified Pioneer truck & 4x4 engine rules.
- Added SCORE Class 2 to Heavy Metal.
- Removed Safari category restrictions. This is not a racing category. It is intended for street legal vehicles with or without aftermarket kits who would like to be a part of the NORRA adventure.

Version 3.20
March 9, 2020

- Added category for Vespas.

Version 3.21
March 11, 2020

- Added lighting requirement for all Moto categories.

Version 3.22
September 15, 2020

- Revised Safari rules. Added minimal vehicle requirements.

Version 3.23
October 15, 2020

- Added an IRS class to the Historic Era as a future home for A-arm buggies which may be removed from Vintage at some point.

Version 3.24
December 15, 2020

- Added a class for Hybrid vehicles

Version 3.25
January 26, 2021

- Changed rules for Stock UTV to require timed stops for refueling (even if fuel not needed) and allow any size fuel cell (taking the advantage of longer range out of the equation to better equalize competition).

Version 3.26
February 25, 2021

- Added EV's to Hybrid class

Version 3.27
March 18, 2021

- Created separate class for EV's as they will be allowed to trailer the entry during transits to charge batteries

Version 3.28
November 4, 2021

- Retired Snell 2010 helmets
- Allow harnesses up to 5 years old to be consistent with tech inspection practices
- Re-brand Evolution Class 10 as Evolution Limited Engine Buggies. In this class, NORRA now allows 6-cyl air cooled engines to 2.2L (single seat) or 2.4L (two seat) and UTV with engines greater than 1000cc but no larger than 2000cc.
- Require specific navigation equipment for all moto entries, gps files no longer available for moto routes. All moto entries must navigate using roll charts.

Version 3.29
February 12, 2022

- Moved naturally aspirated UTVs greater than 1L from Buggy category into UTV category for Modified Turbo.
- Revised Safari rules. Updated to two categories (Slow Baja and Rapido). Further clarified rules.

Version 3.30
February 15, 2022

- Created new category: Open UTV. Allows any size engine, turbo or not, any cylinder count, as well as allowing modifications.
- Removed naturally aspirated UTV's great than 1L from Modified Turbo category (this category is the same as it was in prior years).
- Added the Mexican requirement that all US citizens have an FMM Tourist Permit (which requires a US Passport or Passport Card to obtain).
- Changed Vintage Moto categories from a 1993 cutoff to a rolling 20-year limit. For 2022, Motos up to 2002 now allowed in Vintage Moto categories.
- Modified the Moto taillight rule.
- Modified the Moto number plate rule.

Version 3.31
July 7, 2022

- NORRA to provide branded numbers to all entries as part of entry fee.
- Clarify tracking and gps rules. Clarify firewall and loose fuel bladder rules.
- Modify Class 11 to allow aluminum wheels of same size as oem steel (4.5x15).
- Modify Class 11 & Pioneer Bug/Buggy to allow combo spindles and aftermarket stock length front trailing arms.
- Modify 6100 to allow 40" tires and under drives and engine tag to include Adam Wik. Danzio, Redline, Turnkey.
- Safari, if car has roll cage then must wear helmets which pass tech but allow DOT in Safari.
- Safari, if car does not have side windows then must have nets or arm restraints.
- Safari, rear facing amber or white light.
- Add Pro Rally and Am Rally Moto classes (ironman only, single rider. After 3 Rallys, must ride Pro)
- Put Evo Rally car class in, stock fuel tank allowed.
- Rename Limited Buggy to Class 10
- Split 6100 out of Heavy Metal into their own class due to growth of entries
- Eliminate Modified non-turbo UTV class due to low entries. UTV classes are now:
  1. Stock UTV (no turbo)
  2. Stock Turbo UTV

3. Modified UTV (now includes both turbo and non-turbo but limited to 1000cc)
4. Open UTV (anything up to 2000cc, includes turbos, modified suspensions etc.)

Version 3.32
August 18, 2022

- Changed size of front/rear number plates from 4x6 to 3x6 inches. Clarified front number plate location requirements. Allow rack and pinion steering in Pioneer and Legend VW classes due to limited availability of quality original steering boxes. Clarified that steering is open in Challenger.

Version 3.33
August 25, 2022

- Split Modified UTV into Turbo and non-turbo classes as they were before.

Version 3.34
October 16, 2022

- Updated title to 2023 rulebook.

Version 3.35
November 30, 2022

- Updated Safari safety rules.

Version 4.0
July 5, 2023

- Added optional blue light for motos.
- Updated Safari rules.
- Overhauled UTV categories
  - Former Stock UTV classes are now Production UTV classes
  - UTV's modified beyond what is allowed in Production classes go to Open UTV
  - UTVs with engines greater than 1000cc go to the new 2000 class
  - A 4-seat UTV class added for fun with friends and family (3 or 4 occupants required)
- Class 10 goes to new 2000 class

Version 4.1
September 10, 2023

- Updated UTV harness rules to match car rules.
- Changed number plate rules such that sponsor branding removed and customer must supply. NORRA will not be supplying numbers for the 2023 NORRA 500.

Version 5.0
November 8, 2023

- Allow IRS (Independent Rear Suspension) in Unlimited Truck (still need truck body).
- Clarified Class 2000 rules including limited to 1 shock per wheel if 4wd.
- Expanded Challenger Era from 1983-1988 to 1983-1992, technology restrictions remain unchanged.
- Split classes into two groups, Group 1, and Group 2 to enable alternate race routes to be used be used based on typical class speed and capabilities.
- Reorganized all Moto classes.

Version 5.1
November 24, 2023

- Added JeepSpeed 3700 and Showroom Stock Late Model classes in the Evolution Era.

Version 5.2
November 27, 2023

- Clarified that vintage atc/atv are in same class as vintage moto

Version 5.3
November 28, 2023

- Fixed errors in new moto rules

Version 5.4

November 29, 2023
- Clarified Class 2000 / Class 10 mixed class

Version 5.5
January 24, 2024
- Harness rules updated to 3-year max from date of manufacture. If harness has an expiration date, then they cannot be expired.
- Added note that reclining seats are specifically not allowed.
- Removed provision for original cars that raced NORRA prior to 1974 stating cars can use original seating. All cars must have modern racing seats as harnesses may not be effective on some older seat designs in use prior to 1974.

Version 5.6
March 22, 2024
- Removed Sportsman moto GPS class. All moto classes are roadbook only.
- Added separate class for ATC/ATV, 3 and 4 wheel handlebar class.
- Added requirement that all handlebar classes must have 100 mile fuel range.
- Made VHF radio optional if equipped with satellite communications that enable outgoing phone calls.

Version 5.7
September 18, 2024
- Modified Vintage Class 11 rules to USA rules.
- Moved old Vintage Class 11 rules (international rules) to Evolution.

Version 5.8
September 20, 2024
- Updates to Evolution Class 11 rules.

Version 5.9
December 31, 2024
- Add Evolution Class 5.

Version 5.10
January 3, 2025
- Add more specific rules to Vintage Class 11. Misc. updates.

Version 5.11
January 30, 2025
- Updates to Evolution Class 10 rules.

Version 6.00
Dec 16, 2025
- 1.1 SA2015 Helmets no longer allowed, Open Face Helmets no longer allowed, FHR Frontal Head Restraints HANS Device now mandatory.
- 1.2 Fire Retardant Gloves mandatory.
- 1.5 (eVDSD) Lights allowed instead of signal flares.
- 1.8 (2) 2.5lbs Fire Extinguishers required or (1) 5lb.
- 1.11 M2015 Helmets no longer allowed.
- 2.2 Starlink allowed or Garmin In-reach or SPOT.
- 2.4 GPX only formats will be shared and new Moto GPS Class.
- 2.6 Driver’s License added to list of ID´s needed.
- 8.0 Pioneer Era few engines’ changes.
- 9.0 Legends Era few engines’ changes.
- 10.0 Challenger Era few engines’ changes.
- 11.8 C Notch now allowed, IFS now allowed.
- 11.9 C Notch now allowed, IFS now allowed.
- 11.13 Engine seal and verification at Tech required.

- 11.15 Engine seal and verification at Tech required.
- 11.16 Engine seal and verification at Tech required.
- 11.18 Engine seal and verification at Tech required.
- 13.4 Lower Chassis Portion Required now, One Shock per wheel, no stock roll cage, must have body parts.
- 13.5 Lower Chassis Portion Required now, One Shock per wheel, no stock roll cage, must have body parts.
- 13.6 New Sportsman SXS (UTV´s) class.
- 13.7 Lower Chassis Portion Required now, One Shock per wheel, no stock roll cage, must have body parts.
- 13.8 Engines Updated
- 13.9 Engine seal and verification at Tech required.
- 13.11 Engine Rules Updated.
- 13.14 Class 7 / 7200 Created.
- 13.16 Engine Rules Updated.
- 14.2 Multirider Class now.
- 14.6 XR650 Class created.
- 14.7 2 Stoke Engine Class created.
- 14.8 Moto GPS Class created.
- 15.0 SXS (UTV´s) now allowed in Safari Expedition.

Version 6.1
Dec 30, 2025

- 1.1 Open-Face Helmets are only allowed in vehicles equipped with a windshield.