

- **ONTARIO OFF ROAD RACING ASSOCIATION RULES**

TECHNICAL RULES Version1.0

These regulations apply to all classes unless otherwise noted in supplementary regulations. Unless the class requirement or safety regulations specifically state that a modification or optional equipment is permitted, it will not be allowed. OORA's intent when prescribing specifications for safety equipment for vehicles that will compete under OORA rules is to provide adequate protection to all entrants and spectators. OORA does not intend to restrict the general or specific design of any vehicle or the development of competitive vehicles. But does wish to encourage all entrants to give full attention to safety requirements and specific class rules as to legality. Any deviation from general rules at any sanctioned event will be subject to approval of the technical inspectors in writing in advance of the event.

All entrants, when operating vehicles on the racing course at all times, including warm-ups, must wear an approved helmet, protective clothing, safety belts and shoulder harness and all doors, if any must be properly secured. In addition, all occupants competing in vehicles without full windshields must wear eye protection and those occupants competing in closed cars must have eye protection available in the event the windshield should be broken or knocked out.

**ACR1-DRIVERS ATTIRE
SUIT: REQUIRED**

A manufactured one-piece suit or fire resistant material that covers the entire body (excluding the head, hands and feet). Suits must be free of holes, tears, rips, oil and grease.

RECOMMENDED

Leather or fire resistant boots and driving gloves are recommended.

HELMET: REQUIRED

2015 or newer Snell Memorial Foundation Rated "SA" for automotive use Helmets will carry validation until 2025. (Green or orange sticker attached). (Legal stickers are found inside the helmet only).
"D" rings on the straps.

RECOMMENDED

Painted on helmet: name, blood type, allergies and pertinent medical history

NOT ALLOWED

D.O.T. Rated only
Snaps or Velcro strap connections
1995 or older.

Resin helmets intended for Karting or Motorcycles.

EYE PROTECTION: REQUIRED

Drivers and co-drivers in open vehicles must have eye protection (goggles or shields).

1. Drivers and co-drivers of closed vehicles (Full Windshield) need to have protection available in the event of a windshield failure.

NOT ALLOWED

Vehicular movement without eye protection, during race conditions.

ACR2: HORN

Optional

RECOMMENDED:

Device that emits a loud sound.

NOT ALLOWED:

Sirens

ACR3: FIRE EXTINGUISHER REQUIRED:

- UL approved portable dial type 2.5 ABC rated dry chemical or Halon extinguisher or larger in each race vehicle. Must have metal head-No plastic head extinguishers allowed. On board flame out systems are allowed as long as release button is within driver's reach with seatbelt on.
- Must be fully charged and secured (quick release type) within reach of the driver and co-driver during all racing.
- Only UL approved dial type, metal head (minimum 5 pounds) ABC rated dry chemical or Halon extinguisher in each pit (any area for vehicle repair) within easy reach of anyone working on a vehicle. This extinguisher must be marked with either the vehicle number or the driver's name.

RECOMMENDED:

Approved on board fire extinguishing equipment using dry foam or Halon. Nozzles should be in each of these areas: occupants, fuel and engine.

NOT ALLOWED:

Duct tape or other temporary means of securing. Fire extinguishers with plastic heads.

ACR4: SHOCK ABSORBERS REQUIRED:

All vehicles must start racing with at least one working shock absorber on each wheel. Other systems subject to prior approval.

ACR5: WHEELS AND TIRES REQUIRED:

1. Tight lug nuts secured with at least one full thread through the nut.

RECOMMENDED:

1. Remove paint from the mounting side of the wheel and drum, as this is a cause of lugs nuts to loosen.

NOT ALLOWED:

1. Wheels with cracks
2. Worn or damaged lug holes
3. Snap-On type hubcaps or any type of snap in center covers (i.e. Bead Lock Centers)
4. Closed end lug nuts
5. Multiple tires
6. Tires larger than 40" OD at 18psi.

ACR6: SUSPENSION SYSTEMS, CHASSIS AND RUNNING GEAR REQUIRED:

All systems must be secured with lock washers, lock nuts, safety wire or cotter key.

All bolts secured with a nut must have at least one full thread through the nut.

NOT ALLOWED:

Worn or loose part, such as spindles, axle nuts, pivot points, ball joints, etc.

Active suspension in any OORA Class. DEFINITION: Active suspension is defined as any device that electronically adjusts or changes the suspension while the vehicle is in motion. Mechanical devices that are controlled by the driver and through no other means are allowed.

ACR7: STEERING REQUIRED:

1. Safe steering systems with end play at a minimum.
2. All parts wired, keyed or with lock washers.
3. Reinforcement is necessary for all welded parts.
4. The wheel-mounting flange must be welded to the shaft if it is not a stock production shaft.
5. Steering shaft must be at least 7/8" OD x .060" wall thickness if it is not a stock production shaft.

NOT ALLOWED:

1. Any steering system not considered safe by the Technical Committee.

ACR8: BRAKES REQUIRED:

1. Functional brakes on all four wheels unless otherwise noted.

ALLOWED:

1. Turning or steering brakes.

ACR9: IGNITION REQUIRED:

1. A switch enabling the system to be turned on or off within the reach of the driver and plainly marked IGNITION on and OFF.

ACR10: BATTERY REQUIRED:

1. One capable of turning the starter and starting the engine. This does not apply to mini buggies that do not have an electric starter.
2. Securely mounted with metal tie downs.
3. Wet cell batteries mounted in the driver's compartment (no firewall between the driver and the battery) must be covered with a case sufficient to hold the entire acid content of the battery in the case of a rollover.
4. Any uncased batteries must have the posts covered.
5. Battery disconnect switch (kill switch) must be located furthest left upper corner within drivers reach.

NOT ALLOWED:

1. Aircraft batteries in the drivers compartment without a case.

ACR11: LIGHTS

1. All production classes must retain the headlight openings but they can be closed with any flat material.

TAILLIGHTS: REQUIRED

- ‡ Two at least three inches in diameter either stock position or 36" minimum height from the ground.
- ‡ Must be in working condition and on during the race.
- ‡ Must be fully visible from the rear of the vehicle.

NOT ALLOWED:

1. Disconnect switch for taillights.

BRAKE LIGHTS: REQUIRED

- Two at least three inches in diameter either stock position or 36" minimum height from the ground.
Must be fully visible from the rear of the vehicle.

NOT ALLOWED:

1. Disconnect switch for taillights

ACR12: STARTER REQUIRED:

1. One starter capable of turning and starting the engine.

ACR13: FUEL ALLOWED:

1. Any of the following commercially available gasoline or LPG or diesel fuel may be used: Service Station type pump fuel
Racing gasoline as manufactured Commercial aviation gasoline as manufactured Commercially produced, nationally advertised fuel additives may be used only in the quantities specified by the manufacture and only if a sample of the gasoline with the additive is supplied for technical inspection prior to the event. Fuel samples may be taken at random before and after the event at the discretion of the technical inspector.
2. For testing purposes OORA's Godman DT-15 Fuel tester will be used. This instrument is designed to detect the addition of oxidizers to a gas/oil fuel mixture. This is done by comparing the resistivity and the dielectric constant of a competitor's fuel to a known base. To make sure your fuel is within the guidelines, have it checked by the Tech Director. His readings are official and final.

NOT ALLOWED:

1. No oxygen bearing fuel, including alcohol or nitromethane is allowed.

**NOTE: SEE TECHNICAL DIRECTOR REGARDING NATURAL GAS
ACR14: FUEL CELL MANDATORY REQUIRED: NUMBERING IS IN
QUESTION**

Secure mountings to the frame or floor with bolts and/or steel straps.
Rear mounted cells must have a chassis or body cross member or substance between it and the driver and be protected from ground obstacles.
Fuel cells accepted by the OORA Off Road Rules Committee and safe for its type of racing.

A. Bladders composed of nylon or Dacron fabric coated and impregnated with fuels resistant Elastomers. Specifications other than those above may be approved by OORA if it is demonstrated to the satisfaction of the association. Independent tests and analysis of fabrics and material may be necessary to satisfy the OORA Off Road Rules Committee.

4. Bladder must be encased in smooth casing consisting of aluminum .060", 20 gauge steel or .125 Marlex. (Magnesium not allowed)
5. If the fittings are not built into or bonded to the skin of the cell, they must be mechanically bound by a ring and counter ring or a flat joint.
6. All cells must have internal baffling with foam.

7. Acceptance of any fuel cell may be withdrawn.

RECOMMENDED:

If fuel cell is beneath the bottom frame rail it should be protected by a safety cage. CSA and ASA approved.

ACR15: FUEL FILLING SYSTEM REQUIRED:

1. Positive locking cap.
2. Design of system to be such as to insure there is no loss of fuel if the vehicle is on its side or totally inverted.
3. A check valve to prevent fuels from leaking if the cap and filler neck is pulled from the cell. The check valve is not required if the filler is located within two (2) inches of the cell membrane.
4. Fuel filler must be in a location so as not to be disturbed in forward portion of the vehicle or in adverse motion such as an endow or rollover.
5. When filling with fuel, it must be directed away from the engine exhaust system and the driver of the vehicle by a splash system of any design that accomplishes its purpose. If the fuel filler penetration were sealed, a body panel would be sufficient.
6. A flexible coupling to the cell must be provided for all fillers attached to the body or frame.

RECOMMENDED:

1. All line fillers and vents are made at one opening at the top of the bladder.

NOT ALLOWED:

1. Monza or flip type caps.
2. Vented filling caps.
3. Vents in the drivers compartment
4. No glass or plastic fuel filters.

ACR16: DISPLACEMENT ALLOWED:

No more than specified for the limited classes.

Engines are subject to a check by OORA or member organizations technical people at any time before or after the race.

***** THE OORA P&G TEST IS THE VALID TEST FOR DISPLACEMENT**

ACR17: THROTTLES

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

ACR18: TRANSMISSIONS

every vehicle (except mini buggies) in competition must have a functional reverse gear. Four wheel drive vehicles must be capable of being driven through the front wheels.

RECOMMENDED:

Shields covering both manual and automatic transmissions on front engine vehicles to protect their driver and co-driver.

ACR19: EXHAUST REQUIRED:

Exhaust pipes at least to the rear of the driver's compartment.

Installation to minimize dusts and directs gas out of the body to the rear away from the fuel and tires.

Exhaust systems going through driver or passenger area must be insulated so that heat or fire is improbable.

Mufflers or forestry approved spark arrester.

ACR20: DRIVESHAFTS REQUIRED:

1. On open drive shafts in front engine vehicles a retainer hoop 6" back from the front universal joint sufficiently mounted to secure the driveshaft in the event of a joint failure. This hoop may be constructed of 2" nylon webbing or a 1/4" x 2" steel strap.

ALLOWED:

1. Retaining hoop is not necessary on the front driveshaft of 4 wheel drive vehicles.

ACR21: FLYWHEEL SHIELDS REQUIRED:

1. A SEMA approved bell housing on all front engines with standard transmissions and solid motor mounts.

ACR22: OIL COOLERS REQUIRED:

1. Installation designed so as to prevent the oil from the cooler or its lines from blowing on the driver or co driver in the event of a failure. See ACR40.

2. Shroud installation if necessary.

ALLOWED:

1. Cooling fans.

ACR23: ELECTRICAL SYSTEMS & COOLING SYSTEMS REQUIRED:

Complete and functional generator or alternator, water pumps (if applicable) and fans except on not applicable on mini buggies.

Belts tight enough to operate sufficiently.

ALLOWED:

1. Thermostatically controlled fans and accessories.

ACR24: TURBOCHARGERS AND SUPERCHARGERS

not allowed unless specified in class rules.

**ACR25: ROLL CAGES MUST MEET MINIMUM MATERIAL REQUIREMENTS
CAGE DESIGN-REQUIRED:**

Front Hoop-One.

Rear Hoop-One.

Top connecting bars-two.

Down braces-two straight.

Diagonal braces-one on rear hoop.

Necessary gussets.

Braces, down and diagonal, must angle at least 30 degrees from vertical.

All intersections (of required parts) must be gusseted.

Cages mounted to the body of cab must be bolted with plates of minimum thickness of 3/16". These plates must be doubled one on either side of the body or cab.

Terminal ends of the roll cage must be attached to the frame or body structure so as to support a maximum impact and should allow more than 1.5" of movement without shearing.

Vehicles without a stick steel door between the exterior and the driver's compartment must have sidebar (1) on each side to protect the driver and co-driver from side impact. This bar must be located as near to horizontal as possible so as to provide maximum protection and yet not cause problems with entrance and exit. This bar must be treated as part of the cage and welded accordingly and must meet minimum material requirements.

CAGE AND FRAME MATERIAL ALLOWED:

1. Mild carbon steel types:DOM, CRW, WCR and WHR.

2. 4130 Chromoly.

3. Bolt and nut minimum dimensions of 8" diameter and grade 8 (SAE) or aircraft construction quality.

4. Gussets may be constructed of:

Flat plates 1/8"x3"x3".

Corner tubing split, formed and welded

Tubing gussets the same thickness as the main tubing.

NOT ALLOWED:

1. Material used as structural members-aluminum, titanium, magnesium, carbon fiber or other composite material.

MATERIAL REQUIREMENTS MINIMUM TUBING DIAMETER AND

THICKNESS: Weights Tube Size

Cockpit Under 2,000lbs 1.5" x .090"

Open Under 2,000lbs 1.5" x .090"

Closed Over 2,000lbs 1.75" x .120"

Open Over 2,000lbs 1.5" x .120"

Closed Over 3,000lbs 2" x .120"

Open Over 3,000lbs 1.75" x .120"

Closed Over 4,000lbs 2.25" x .120"

Open Over 4,000lbs 2" x .120" **Closed**

CAGE CONSTRUCTION REQUIRED:

1. Minimum material and structural design as laid out in this document. Items 1 through ~~6 six~~ under cage design.
2. All materials not listed must have previous OORA approval.
3. Welding of high quality and good penetration.
4. All intersections gusseted and braced as well as areas where any single weld fracture could affect driver safety.
5. A 3/16" diameter inspection hole may be drilled into a roll cage bar (in an area that is not critical) for thickness inspection. Technical persons will drill hole or holes.
6. All cage bars that might contact driver's helmet must be padded.

ALLOWED:

1. Exception forms the diagonal brace in single seat buggies.

NOT ALLOWED:

Undercutting of original tubing or metal or poor quality welding.

Brazing in roll cage construction.

Welding of primary mount of cage to cab or body (must be bolted). See number 10 under CAGE DESIGN. **RECOMMENDED:**

1. V bar in front windshield area.

ACR26: SEAT BELTS AND SAFETY HARNESS BELTS REQUIRED:

Heavy-duty five points seat belt and shoulder harness for each driver and co-driver/co-rider.

Metal to Metal connections and fast release buckles.

Two 3" shoulder straps and a 3" lap belt plus a minimum of a 2" anti-submarine strap.

Manufacturer's name and date of manufacture on a label.

Harness material of nylon or Dacron.

Clean belts in new condition dated within 3 years of the manufactured date. Dating proof is the driver's burden if the date is not legible.

Adjustment buckles must be at least 1 ½" from the seat to prevent chaffing or loosening.

RECOMMENDED:

1. Seat belt replacement every 3 years.

NOT ALLOWED:

"Y" TYPE BELTS.

Dirty, stained, frayed or cut belts.

Surplus Harness's.

ATTACHMENTS: REQUIRED:

Crotch strap as close to the front of the seat as possible so upward movement of the belt is kept to a minimum.

Shoulder harnesses behind the driver approximately 4" below the top of the shoulders.

Lap belts 2 ½" ahead of where the seat and backrest meet.

All mountings must be directly to a structural member (1.5" x.090 tubing with gussets).

Mounting material must be hardened steel bolts at least 5/16" in diameter, washers 1 ½" diameter attached through the frame or body with a cotter key or lock nut.

Belt hardware must be safety tired or cotter pinned.

"D" rings if used must be doubled (two) per each attachment.

ACR27: SAFETY NETS REQUIRED:

1. All open areas on vehicles must be covered with approved safety netting to keep body parts inside the vehicle during an endow or rollover.
2. Sheet metal or aluminum must cover the roof of the driver's compartment. SEE ACR30.
3. Borders of netting and ties must be of material at least as strong as the netting itself.
4. Upper corners of nets on open vehicles must be fastened with steel mounting methods; i.e. Bolts and eyelets, steel hose clamps or riveted to the inside.

ATTACHMENTS REQUIRED:

Fasteners every 4" to 6" on the outside edge of the netting.

Methods accepted in the past (not limiting) are: electrical ties (nylon), Velcro, hose clamps, steel rods, Lift-A-Dot and metal hooks. Velcro and steel rods work well on the bottom of the netting if the full distance is fastened. Velcro must be watched, as it tends to loosen in the dirt.

The driver and co-driver must be able to unfasten the netting unassisted in any vehicle position for an emergency escape.

The netting location should be inside of the roll cage so it will remain inside in the event of a rollover or side damage.

Roof must be fastened with steel pop rivets or Dzus fasteners. If Dzus fasteners are used, they must be placed every 8" and is safety wired.

ALLOWED:

Arm restraints but they do not replace nets.

Netting of the entire doorframe if secondary latching of the door is present and operable. SEE ACR29.

ACR28: SEATS REQUIRED:

All seats must be securely fastened so as to allow no movement up and down, fore and aft or side to side.

Seat construction must be such as to take the intended abuse of this racing.

A minimum of four (4) points is to be used in fastening any seat.

Stock VW seat rails must be fastened to the floor with a minimum of two (2) U-bolts per rail. A one- (1) inch washer must be used under the floor.

NOT ALLOWED:

Folding and cushioned seats.

Seats mounted to the cab floor.

Mounting of seat cradle to any part of cab.

HEAD AND NECK RESTRAINTS REQUIRED:

1. The seat behind the head and neck area must be padded (at least 2" thick over an approximate 36 square inch area) with a material of sufficient quality to prevent whiplash.

ALLOWED:

1. Head and neck bracket subject to approval of the Technical Committee.

ACR29: DOORS AND LATCHES REQUIRED:

Operating doors must have a positive locking mechanism.

This can be the stock handle and latch.

Secondary latching devices are necessary on all doors.

ALLOWED

1. Quick release pins, pins and clips, etc.

ACR30 ROOFS ALLOWED:

1. Roof escapes made of metal must be a minimum of .060" thickness. Substantial hinges (piano type is ok) and 2 acceptable latching devices (such as rubber snubbers) must be used a minimum of 30" apart. **NOT ALLOWED:**

Velcro latching devices.

Any type of netting or vinyl type material.

ACR31: FIREWALL REQUIRED:

1. An all-metal firewall must separate the driver's compartment from the engine and any fuel sources. The firewall on the vehicle with a production body is that part of the body between the outside edges of the frame rails.

2. This wall must be fuel tight and extend from shoulder height to the floor and sides of the body.

3. The firewall must extend at least 1" higher than any part of the fuel cell.

4. Firewall modifications if approved required repairs with metal of like material and thickness.

5. The hood of front engine vehicles is considered part of the firewall and necessary for operation unless provisions are made in case of hood loss.

ACR32: BALLAST REQUIRED:

1. Material used to make up weight requirements must be securely fastened to the structure of the vehicle.

2. Hoses must be drilled in the material to allow wiring to the main structure so as to prevent removal. Fuel may be used for ballast but must comply with ACR33.

ACR33: WEIGHT

Wet weight is the weight used if minimums require a weight.

The vehicle must weigh the minimum any time before, during or after the race with the driver.

Any "attempts" to enter a race underweight will result in disqualification.

ACR34: FLOORBOARDS REQUIRED:

Belly pans or floorboards must cover the complete driver's compartment.

If the floor is not a part of the body or chassis at least five (5) 1/4" bolts per side must be used to fasten it to the structural parts of the vehicle.

ACR35: BUMPERS REQUIRED:

Safe bumpers front and rear.

Flat or round surfaces on front bumpers.

Custom fabricated bumpers, front and rear, must be 2" within the bodylines as viewed from above. Ends must be looped. If inside bodylines, ends must be capped.

Front bumpers must not exceed 12" forward of the end of the frame.

All ends must be capped.

ALLOWED:

Nerf bars or frame heads or other protrusions but must be flat or round to the side or front. Nerf bars must be capped if not rounded.

Angle iron on rear bumper.

NOT ALLOWED:

1. Channel iron or angle iron on side or front bumpers, nerf bars, etc.

ACR36: MIRRORS

Rearview mirrors are optional.

ACR37: SKIDPLATES

Except for vehicles that have complete floorboards as part of the body.

REQUIRED:

Protection for front suspension, braking and steering components.

Metal design unable to hold fluids.

ACR38: EQUIPMENT, TOOLS, PARTS, ETC. REQUIRED:

1. Anything on or in a vehicle must be fastened securely enough so that they will remain attached during competition.

ACR39: BODY COMPONENTS-DOORS, HOOD AND FENDERS

REQUIRED:

1. Hoods, doors and fenders must be fastened securely enough so that they will remain attached during the competition.

ALLOWED:

1. Bolts and/or quick release or Dzus fasteners.

NOT ALLOWED:

1. Racing without hood, fenders, etc. Racing without these body components subjects the driver to disqualification. Physical damage (accidental impact) is the only exception.

ACR40: HOSES REQUIRED:

1. Acceptable condition of hoses.

2. Hoses securely clamped and/or safety wired.

3. Acceptable protection for any hose passing through the driver's compartment to protect the driver in case of hose failure. Hot fluids can cause severe burns.

NOT ALLOWED:

1. No rubber fuel hose over 6" long.

ACR41: NUMBER FOR IDENTIFICATION REQUIRED:

BLOCK NUMBERS only.

BLACK NUMBER on WHITE BACKGROUND only.

Side numbers: one on each side of the body.

Top Plate: number visible both sides.

These numbers must have a minimum height of eight (8) inches with one (1) inch width.

Rear number: one (1) six (6) inches minimum height.

Front Number: one (1) 4(4) inches minimum height.

NOT ALLOWED:

1. Styled number or numbers made of tape, ink, markers, crayons, etc.

ACR42: ADVERTISING REQUIRED:

1. Good appearance and in good taste.

2. Not to interfere with identification numbers.

ACR43: ANTENNAS-RADIO EQUIPMENT ALLOWED:

1. Radio communication is allowed between car and crew and/or driver and co driver.

NOT ALLOWED:

1. Radio communication between two race vehicles is not allowed.

ACR44: WORKMANSHIP REQUIRED:

Good professional appearance.

Approval of the Technical Committee.

ACR45: SECONDARY SUSPENSION

Allowed is unlimited classes and other only if specified: includes any item that changes the wheel travel rate other than the primary suspension in use on the vehicle.

INCLUDED ITEMS ARE:

1. Leaf springs, torsion bars, coil over shocks; Hoga balls, air bags or anything other than shocks that change the wheel travel rate.

2. Air shocks-All shocks with large diameter shafts; i.e. Diameter greater than 1/3 the diameter of the shock body can be considered an air shock unless a working reservoir of 1/3 capacity of the shock it is attached to.

3. BUMP STOPS:

ALLOWED: a) Rubber, plastic, urethane, etc.

NOT ALLOWED:

a) the stop cannot contact the suspension unit with more than 4" of travel left.

ACR46: WHEELBASE

Wheelbase is measured from the center of the wheel on the front axle to the center of the wheel on the rear axle at ride height. If a difference is encountered, an average will be used.

ACR47: TRACK WIDTH

The track width is measured from the centerline of one tire to the centerline of the opposite tire at ride height. Measurements will be taken through the centerline of the spindle. Measurements are to be taken at both front and rear of wheels and averaged to compensate toe in/toe out. The burden of proof of actual track width is that of the driver via the factory shop manual that he must have in possession for his vehicle.

ACR48: AIR CLEANERS ALLOWED:

1. Hood scoops for air cleaners allowed but must be done neatly and subject to the approval of the Technical Committee. Any air cleaner hood opening must be covered with an approved scoop.

ACR49: METHOD OF MEASURING LEAF SPRING

Center of eye to center of eye.

ACR50: BATTERY DISCONNECTION SWITCH REQUIRED:

1. Kill switch must be located further left upper corner, within driver's reach and accessible from the outside of the vehicle. It is to be marked with a triangle around it, yellow in color on dark paint and black on light paint.