

## PROPOSED 2021 MINI-STOCK RULES

### RULES INTERPRETATION:

If it does not say you can, you cannot. Build to the rules.

Any car or equipment that the officials, board members, and directors consider exotic, UNSAFE or not in the best interest of the Track will be considered illegal for competition. In the interest of fairness, the rules may be adjusted to create a balance of competition.

If needed, for competition purposes head tech official can make the decision to add weight to any car prior to entering a competition. No grandfathered and NO graces races.

### COMPETING MODELS

Competition will be open to American and Foreign vehicles, 104" stock wheelbase or less, originally available with a four-cylinder engine. No all-wheel drive, four-wheel drive or four-wheel steering.

Year, make, and model to be approved by the RAR Mini Stock Board members before being raced.

No turbochargers, superchargers, or rotary engines allowed.

No convertibles, roadsters, AWD or VW'S allowed.

### WEIGHTS

Minimum weight, including driver:

1. Carbureted front engine, front wheel drive : 2000 lbs.
  2. Front engine, solid axle, rear wheel drive:
  3. 0 - 2359cc motor: Hydraulic Cam, non-roller or ported – 2200 lbs.
  4. 0 - 2359cc motor: Roller Cam and ported - 2300 lbs.
  5. 2360 – 2600cc motor: Roller Cam and ported – 2400 lbs.
  6. Small engine/ fuel injected cars under 1800cc 2200 lb / over 1800cc 2300 lb
  7. All independent rear suspension: 2450 lbs.
  8. Left side maximum weight, 56% - no exceptions.
  9. Post-race inspection will allow a 1% tolerance to the above weight rules
  10. All lead added to cars must be painted white, have car number on them, and must be securely mounted.
- Any lead found on racing surface subject to fine of \$5 per pound.

\*\*Head tech official can make the decision to add weight or lower left side percentage if deemed necessary to keep cars competitive in the competition field

### ENGINES

Only standard production four-cylinder engines approved; Honda to Honda, Chevy to Chevy, Nissan to Nissan, Ford to Ford. NO EXCEPTIONS.

S2000 or Duratech Engine not allowed.

S-10 with Ford engine setback: Engine setback is not to exceed the number one spark plug with the upper ball joint.

OEM blocks only. Modifications allowed.

Internal parts modifications allowed, aftermarket allowed.

Maximum 2600cc overall displacement.

### CYLINDER HEADS

Cylinder head must be OEM for make of car. No racing heads allowed (i.e. Yates, Ford Motorsports, Cusworth, etc.) No aftermarket heads of any kind. No 2.3 or 2.5 aluminum heads.

Porting and polishing allowed only on two-and three- valve per cylinder heads only. No porting or polishing allowed on four valve heads or fuel injected engines.

Four valve heads are to be used on correct cc motors as per factory design.

Any aftermarket or OEM valve-train component allowed.

Cylinder heads must be a production head and available. Ford 2.3 / 2.5 must have casting number and Ford castings.

2200 lbs head non-ported, hydraulic cam; non-roller; Ford 2.3 only for this option

## INTAKE MANIFOLDS

Modifications, aftermarket and adapters allowed.

## CARBURETORS

Any single or two -barrel carburetor allowed, must be 4412 or 4412XP gauge legal (1.375 Venturi x 1.6876 throttle bore).

Choke horn may be removed.

Air cleaners are always mandatory. Air cleaners cannot protrude above hood of car.

No forced or inducted air to the air cleaner.

Must have at least two return springs.

## FUEL INJECTION

Fuel injection must be stock for year, make and model. Modifications allowed. OEM or aftermarket ECU allowed. Fuel mapping, timing, delete sensors, etc. may be modified.

Only single throttle body allowed on fuel injected cars. Aftermarket throttle body OK.

Aftermarket injectors allowed. 450cc maximum size.

Aftermarket air box allowed.

No complete standalone fuel injection systems allowed. Must use some stock components for year, make and model.

Inspection: When teched, injectors must be removed by the race team and will be confiscated by Tech. They will be sent to a testing facility of the tech choice. Injectors that test at or below the 450cc threshold will be returned to the team at no charge. Injectors that test in excess of 450cc will be deemed illegal and not returned. If a team does not follow tech direction, they will be deemed illegal with loss of points and purse earned for the full event.

In fairness of competition, the Tech Director may adjust minimum weight on specific cars.

## ELECTRICAL SYSTEM

Must always have working starter.

Crank-triggered ignitions ok

Battery must be mounted securely in an approved battery box (wet cell in fully contained box, dry cell in speedway style containment), subject to tech.

All batteries must be mounted behind driver (back seat area) either driver or passenger side, subject to tech.

Battery not permitted in the fuel cell area.

Alternator optional.

No in-car adjustable ignition timing within reach of the driver.

Aftermarket distributors allowed, MSD boxes allowed

No ignition style traction control. TRANSPONDERS. Must be located 10' 6" ( $\pm 1$ "') from the tip of the front nose of the car with a clear sight of the track surface (sheet metal will degrade the signal).

## COOLING SYSTEMS

No antifreeze or ethylene glycol coolants allowed water wetter only allowed.

## LUBRICATION

No dry sump systems, external oil pumps allowed.

#### EXHAUST

Mufflers are mandatory. Maximum noise level is 95 dba at 100 feet. This is a track mandated rule.

Any exhaust system mounted through car must be covered in a clean, safe manner and is subject to tech

Must be securely mounted.

If an exhaust system is exiting out the passenger side of car it must be flush with the body.

#### TRANSMISSION

OEM standard for make, adapters allowed.

Must have working first and reverse gears.

Scatter shield mandatory steel or approved blanket/belt, subject to tech.

Starter mounting position must remain in stock location.

#### REAR WHEEL DRIVE: DRIVESHAFTS

Aluminum or steel, no carbon fiber.

Must have two straps or driveshaft containment, one front/one rear, fastened to vehicle to keep drive shaft from becoming dislodged.

Must be painted white.

#### FRAMES

Original frame rails required; no lightening, may be reinforced. ; subject to tech. Tube from front firewall forward ok. No full tube chassis allowed. Center section of car must have original frame rails, please refer to tech with any clarification on frame rules.

Unibody must remain intact, reinforcement allowed.

Firewall of a minimum of 20-gauge steel is required between the driver's compartment and the fuel cell.

Original front fender wells and strut towers may be removed

Stock unaltered firewall must remain in original location from floorplan to pinch rail at base of cowl. Holes may be cut to allow roll cage to pass through but must be patched adequately.

Severely rusted floors may be replaced using steel of like thickness to patch those areas only.

No full tube chassis. Tube from fire wall forward ok.

**CONTACT HEAD TECH OFFICIAL IF YOU HAVE ANY QUESTIONS OR A FLOORPAN THAT IS NON-CONFORMING TO THESE RULES IN ANY WAY. NON-CONFORMING FLOORS MUST BE AND SHOULD BE APPROVED PRIOR TO FINAL CONSTRUCTION. AFTERMARKET / FABRICATED FIREWALL SUBJECT TO TECH / WEIGHT PENALTY**

#### SUSPENSION

Must be per manufacturer layout and design (strut to strut, coil to coil, leaf to leaf, etc.).

Coil overs allowed only on factory coil over cars.

Rear springs may be mounted from center line housing forward.

Weight jacks and screw jacks allowed.

Sway bars optional; one-piece bars only.

Spindles must be stock OEM cast iron or aftermarket replacement cast iron spindles only and must remain in stock location. Aftermarket caliper bracket ok.

No fabricated spindles. No drop spindles.

Stock K member with stock mounting points. No aftermarket allowed. **STOCK ONLY** per make and model.

Front lower Control arms must be stock, make to make. (Ford to Ford, Chevy to Chevy, etc.)

Front upper control arms can be aftermarket and do not have to be in stock location.

Shock or strut mounts may be extended for travel but may not protrude thru the body.

No 3rd link allowed unless per manufacturer.

Wheelbase must be within 1" +/- of stock.

Minimum ride height for all body and frame components FOR SCALING ONLY - ALL VEHICLES WILL NEED TO SCALE WITHOUT ISSUE. Aluminum or steel single non-adjustable shock or strut per manufacturer. no Re-buildable shocks/struts allowed. One shock/strut per wheel. No canister or external reservoirs. Subject to \$50 per shock or strut (\$50 per corner of car) claim. (see general rules for claim guidelines).

Bump stops not allowed.

Rear upper control arms must be in stock location with stock mount used, non-adjustable and may be reinforced or vertically slotted. No dual or single heims.

Lower rear trailing arms to be stock length and non-adjustable. May use neoprene or rubber bushings. No dual or single heims. Panhard bars ok.

## REAR ENDS

No aluminum housing or axle tubes. Spherical bearings may be used in upper ears.

No quick change rear-ends.

No traction control to include electronic traction control devices (see electrical section).

All differentials to include 9 in. must be either open, welded, or spooled. NO LSD, lockers, or gold tracks.

9-inch rear end ok. Steel housing with welded steel tubes only, cast iron 3rd member only. No bolt on snouts, no bolt in tubes and no floaters.

## STEERING

Steering racks or boxes must be stock OEM.

Steering racks or boxes may be relocated for oil pan clearance within reason.

## BODIES

### NO STREAMLINING

All cars must have stock roof, A & C pillars (can be made from material with like thickness to stock), complete bodies, trunk/deck lids, hoods, fenders, etc.

Front fenders can be Steel or Aluminum and may be homemade but must remain stock appearing. Quarters to be Steel or Aluminum, may be homemade but must remain stock appearing. No exotic materials such as carbon fiber to be used.

Door panels may be steel or aluminum but must be stock appearing and securely fastened.

Complete hood is required; may be lightened. Hood can be Fiberglass or Aluminum, no exotic materials (ie carbon fiber).

Front hoods must use hood pins. Rear lids/trunks, if operable, must use hood pins.

Side skirts allowed. Side skirts are between the front and rear wheels. Front splitters allowed. Rear spoilers allowed; must be securely fastened to back only. No forward mounted spoilers; no air dam style mounting this includes sides and middle of spoiler. Rear spoilers cannot be wider than the width of the mounting surface and cannot impair rear vision. No dirt-style wings allowed.

Maximum height as measured from deck/mounting point at a right angle to the top of the spoiler will be 6".

The maximum spoiler material is 8". Single plane aluminum or clear polycarbonate (no Plexiglas), or replacement in stock configuration for make and model of car.

Sunroofs must be removed and covered with minimum 20-gauge steel. No aluminum.

*Wheels tires can protrude 3" maximum from the body.*

*64-inch track width center to center; MAX (front and rear will be check)*

*No channeling air on side of car or on top of quarter panels.*

*You may use any late model front nose and/or rear bumper cover. Must maintain the stock roof.*

Sides need to be within 1" front to rear.

Bodies must be in the spirit of the class. Numbers must be at least 18" high and 3" wide and be legible from both sides of the car and the roof. Rooftop numbers shall be legible from the passenger side.

## BUMPERS

No down force bumper or streamlining.  
Cannot extend outside of body lines.  
Nerf bars allowed but must be clean and flush with body.  
Maximum 1.5" O.D. tubing or 1" x 2" rectangular tubing.  
Ends must be plugged and smooth – no jagged or rough edges.  
Must not extend past outer edge of tires.

## GLASS

Lexan / Polycarbonate Windshields are mandatory – must be mounted in original position and within windshield cavity.  
Windshield must be securely mounted with four safety clips – two top and two bottoms. Polycarbonate windshield must be riveted in a safe manner, subject to tech. Lexan is strongly preferred.  
Mirrors must be mounted within the body lines of car.  
Quarter and back windows may be replaced with polycarbonate (Lexan), no glass or acrylic.  
No side windows.

ROLL CAGES. A full four-point cage over and around the driver, including: One (1) dash bar.. (1) diagonal bar behind the seats from the top corner to the opposite bottom corner of the cage. Two (2) bars from the top rear of the car to the rear frame or trunk floor. Doors Bars- Three (4) horizontal and two (2) vertical bars on the driver and passenger door. No offset, chopped, or narrowed cages. The right side of the cage must be no narrower than the right side of the front and rear sub-frames. Gussets for all pipe and tubing angles are optional but strongly recommended, and may be required by technical discretion. Extra safety bracing allowed. All areas around the driver must be padded Mounting. Frame Each upright post must be welded to the frame side rail.

Full roll cage constructed of minimum 1-1/2" mild steel tubing, minimum .095" wall thickness, and no water pipe.  
Minimum three door bars tied together with at least four studs evenly spaced front to rear on driver's side. Two bars on passenger side.  
Windshield: two to three windshield braces. An Earnhardt bar (a roof support running down the middle of the windshield from top of cage to cowl area to prevent cave in, suggested 1.5" x .095") is suggested but not mandatory.  
Minimum .025" diameter inspection hole in driver's side vertical support required.  
All cars must have window net on driver's side; must be securely fastened, subject to tech.  
All main cage and driver's side door bars must be gusseted.  
Roll cage installation and workmanship are subject to tech.  
1/8" steel plates to be welded between door bars and skin to extend from upright to upright.  
Roll bar padding on all bars within reach of the driver is mandatory.

## SEATS

Aluminum racing seats mandatory; no homemade seats allowed.  
Approved headrest mandatory.  
Must be securely fastened to roll cage with two bolts at top and four bolts at bottom, subject to tech.  
Padded rib protection and seat leg extensions are recommended.

## SAFETY BELTS

Quick-release lap belt no less than 2-3/4 inches wide is mandatory. Both ends of the belt must be fastened to the roll cage with high quality bolts, minimum .375" diameter.  
Shoulder harness no less than 2-3/4 inches wide is mandatory and must be mounted from behind the drivers' seat. Where the harness crossed the cage it must pass thru a steel guide welded to the cage that will prevent the harness from sliding side-to-side. Harness inertia reels are not allowed.  
Center 'crotch' belt at least two inches wide must be securely mounted to the lower seat frame.

Where the belt passes thru the seat, a grommet must be installed or edges rolled and/or padded to prevent the belt from being cut or frayed.

All belts and harness must connect at the lap belt with an approved quick-release buckle, subject to tech.

Belts and window nets must have a manufacturer's date of no more than 5 years old, subject to tech.

## FUEL SYSTEMS

Gasoline only! No methanol or exotic fuels of any kind.

Fuel cell mandatory and must be mounted in the trunk area in a safe and secure manner, with a minimum of two straps, as close to the firewall as possible, subject to tech approval.

Electric fuel pumps allowed. If mounted in the rear area, pump must be protected by a skid plate, subject to tech. Oil pressure override required. Oil pressure shut off mandatory on electric fuel pumps.

No aluminum fuel tanks or cells or covers.

Fuel vent lines and/or filler necks must be equipped with check valve and must be vented outside the car on the left rear.

Extra tanks, cells or lines, concealed or otherwise are prohibited.

Steel firewall of no less than 20-gauge steel must be located between the fuel cell and driver

Any fuel lines that run through the driver's compartment must be one-piece steel braided line or encased in steel tube. No connections inside driver's area. Steel braided line highly recommended. Wrap all fuel lines with red tape and label "Fuel Line".

No glass or plastic fuel filters allowed

Fuel cell height: 8-inch from the ground.

## BRAKES

All cars must have four-wheel brakes in operating condition. Tilton style dual master cylinder with brake bias allowed one proportioning valve per car.

Only allowed one brake bias in car. No other inside car adjustments allowed.

No grace race will be given if you are missing or have non-working brakes.

## WHEELS AND TIRES

The wheel width has an eight-inch maximum.

One-piece steel or tech approved stock aluminum wheels only.

Tire softener/soaking will not be allowed.

Tires will be marked prior to qualifying: you must run the same tires you qualify on, in any points event for that evening. If you need to change a tire for any reason, after qualifying you must have tech approval.

## Transponders

Transponders required

Transponder are to be mounted 11 ½ inches from center housing back.

Transponder must be ran at all times / multi-car practice.

Drivers are responsible for Transponders and mounting per tech, Race vehicles without working transponders will be disqualified after last practice. Driver disqualified will start one lap down in each event.

## Radios

In-car radios will be mandatory, one-way communication at minimum. You must have a spotter in the Spotter area designated by the track to provide communication between the officials and the driver. Spotter is to have the car number on radio headset identifiable by officials.

## Personal Safety Equipment

Safety comes first. If an official sees something on your car that is deemed unsafe and asks you to change it, please do so. Safety rules contained throughout the construction rules and listed below will be strictly enforced.

## General

RAR is not responsible for the effectiveness of any personal safety equipment.  
Each competitor is solely responsible for the effectiveness of all personal safety equipment used.  
Each competitor is expected to investigate and educate himself/herself fully in respect to the availability and effectiveness of personal safety equipment.

#### Protective Clothing

Fire resistant clothing and equipment must protect all parts of a driver.  
Drivers must wear a suit made of fire-retardant material in good condition, no holes.  
Gloves must be worn, preferred made of fire retardant material.  
Fire retardant shoes mandatory. Tennis shoes or rubber shoes of any kind will not be allowed.  
It is recommended that all drivers wear fire retardant neck sock and socks.

#### Helmets

Drivers must wear a helmet meeting the specifications set forth in The Federal Regulations, Federal Safety Standard, or meet the specifications set forth by the American National Standards Institute Inc. at all times on the race track  
Helmet must accompany the car at time of inspection.  
Snell SA2010 required.  
Full face helmets required. No exceptions.  
The driver must wear the helmet in accordance with the directions provided by the helmet manufacturer. Any modifications to the helmet for any purpose should not detract from its effectiveness.

#### Head and Neck Restraint Devices

At minimum, you must wear a fire-retardant neck brace.  
It is strongly recommended that at all times during any event (practice, qualifying and competition) drivers must connect their helmet to a head and neck restraint device system. The head and neck restraint device/system when connected must conform to the manufacturer's mounting instructions and it must be configured, maintained and used in accordance with the manufacturer's instructions.  
It is the responsibility of the driver and crew member, not RAR, to ensure that his/her device/system is correctly installed, maintained, and properly used.

#### Fire Extinguisher:

It is mandatory that each car have a 2.5 lb. fully charged fire extinguisher within the driver's reach.  
Fire extinguisher must be securely mounted with metal brackets (no duct tape, or wire to be used to install fire extinguisher).  
It is strongly recommended you have built in, fully charged Halon 1211 or equivalent fire extinguishing equipment with a visible operating pressure gauge, but it must not be dry powder or liquid type.  
All entrants must always have in their pit area a fully charged minimum 5-pound capacity dry chemical Halon or its equivalent with a visible operating gauge and current inspection certificate. (This mandate is per tracks we have contract races with). Those teams not conforming to this rule will receive a \$30 fine each and every race they do not have one in their pits.