



2023

REDWOOD ACRES RACEWAY BOMBERS

CONSTRUCTION RULES

**These rules apply to the Redwood Acres Bomber Class
And the Upstate Bombers when they race at
Redwood Acres Raceway.**

IMPORTANT NOTE: It is the expressed intention of these rules to ensure that the 602 Sealed Crate engine is preferred engine, and will be the basis for competitive balance. Cars not running the Sealed 602 Crate may have additional restrictions or weight added to maintain that balance. In short, do not spend a lot of money on a 2 Barrel non-crate engine that meets the compression and CID rule, because you may still be handed a restrictor plate.

The rules are intended to promote fair competition and control racing costs. The most commonly available and most prevalent makes, models and engines will be used as the basis for competition and given the advantage when competition is not in balance. No pretense is made for having designed a foolproof set of rules and regulations. **If this rulebook does not specifically state that you can alter, change, or otherwise modify something on your car, you should consider it a violation of these rules.**

OEM- Original Equipment Manufacturer. OEM will mean that a part or dimension must be from a standard production vehicle. OEM does not include GM Performance, Ford Motorsports, SVO, Direct Connection, Marine, or any generally any part purchased from a performance catalog. All parts with identification numbers removed or covered will be considered non- OEM and potentially illegal.

Any driver 14 years or older may race regardless of their experience level. A driver that has not raced three main events cannot start on the pole.

1. COMPETING MODELS

- 1a. Year -1960 or newer, American made mid/full size passenger cars
- 1b. Production wheelbase of 108" to 128". (3rd Generation Camaros running at RAR in 2018 grandfathered into this rule)
- 1c. The board of directors may allow other models by special written permission.

1c. EXCLUDED cars/pick-ups:

- i. Pick-ups
- ii. Convertibles
- iii. Vans
- iv. 4WD/AWD
- v. Convertibles

2. WEIGHT

- 2a. Minimum weight, including driver at the start of each race and qualifying:
Sealed 602 Crate- Rear coil- 3200 lbs Rear leaf- 3300 lbs
Other Engines- Rear coil- 3300 lbs Rear leaf- 3400 lbs
- 2b. Maximum left side weight 53%- At all times
- 2c. Additional added/reduced weight

Non-Conforming intake manifold: Add 50 lbs

3. CHASSIS/ BODIES

3a. Cars must be equipped with a passenger seat and race with both a driver and a passenger sitting side-by-side and facing forward in the car. The passenger must be at least 16 years of age. A lower age may be approved by Redwood Acres Officials, Anyone under the age of 18 must have a parent's permission sheet on file. A photo ID is required of passengers.

3b. Stock appearing bodies, mounted in stock manner, maintaining the stock silhouette; neat and well painted.. Roof must remain stock. Bodies must maintain the stock silhouette of the make, model and year of the car. Hoods may be fiberglass but all other body parts must be steel or aluminum.

3c. Doors must be welded, bolted, chained, or riveted shut. Door skins may be .040" thick steel or aluminum sheet metal. Optional single horizontal 1" wide x 2" high bar for each side to protect the body work. Must be mounted flush to the body with end mount points must be within 6" from the end of the bar. Ends must be closed and angled or turned into the body. No sharp edges or protruding ends that might be hooked.

3d. All body panel openings must be covered. (i.e. Headlamp holes, sunroof holes, trunk areas, air cleaner reliefs in hood). Body panels must be properly fit to avoid gaps. No bars may be exposed outside of the body. Inner front fender may be removed. Fenders may be trimmed to allow for a maximum of 6 inches tire clearance and must have rolled edges. Fender wells may be removed, except those portions required for suspension mounting.

3e. 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 read able from the passenger side. Numbers will be assigned/permitted at the discretion of Redwood Acres Raceway.

3f. An 8" number must be displayed on the upper right corner of the front windshield displaying the required weight for the car.

3g. Front firewall and floor pan may not be altered

3h. Original wheelbase may not be altered.

3i. Original uni-body construction and frame rails must extend to the most forward and most rearward suspension mount to include shocks and sway bars. **Frame rails must remain stock and in the stock location.**

3j. Aftermarket nose and tail pieces are permitted but must match the year, make and model of the car.

3k. Rear spoiler permitted; maximum six-inch (6") height off the deck lid and may not be wider than the mounting surface.

3l Air dams and brake ducting permitted that do not interfere with body lines and meet ride height minimums.

3k. Cars must have complete set of bumpers, any type of bumper allowed. Ends must be attached to body.

3l. OEM front windshield, mesh windshield or break resistant polycarbonate plastic is required. Polycarbonate windshields must have two centrally placed vertical braces of ½ inch tubing. Rear window is optional.

3m. Side glass must be removed.

3n. Side mirrors must be removed. Rear view mirror may be aftermarket or modified.

3o. Window net is mandatory on both the driver and passenger side. Recommended minimum window net size will be 22" x 16" of ¾" rib type nylon material. Window net tabs must be welded to the roll cage, with a steel rod run through the net for mounting. The net must latch at the top and the latch must be accessible to safety officials. No plastic fasteners allowed.

3p. The minimum ride height of 4" is required when measured at the underside of the dog leg of the front frame with the driver and passenger in the car.

3q. The rear of the body may be left open.

4. ELECTRICAL

4a. One 12 volt battery only permitted. Battery must be enclosed inside a covered and vented box that is mounted on the floor of the driver compartment. The battery box must be mounted with at least two (2) 3/8" or larger bolts attached to at least a 1 1/4" x 1/8" metal strap across the top.

4b. Starter must be in working order.

4c. The ignition on/off switch must be located within driver's reach when belted into their seat and clearly marked and visible from the outside of the car.

4d. A master on/off battery switch must be located on the roll bar directly behind the driver's seat or in the center of the dashboard that is accessible from the outside of the car.

4e. Electric fuel pumps must have a low oil pressure cut off switch.

5. DRIVETRAIN

5a. Driveline must be steel and painted white. A steel strap that completely encloses the driveline in a circle must be mounted within 12 inches of any u-joint. Strap shall be no less than two inches (2") wide and 1/8" thick material.

5b. Transmission must be OEM and have at least two (2) forward and one (1) reverse gear in working order.

5c. Cars with an automatic transmission must use a stock-type torque converter, filled with OEM fluid

5d. Must be a stock-type single-disk clutch (10 inch) with a stock-type pressure plate

5e. Any bell housing around the clutch must be an approved explosion-proof type.

5f. Ford 9 inch permitted in any chassis. Stock rear ends may be converted to floaters and gear ratio may be changed. Rear end must be functionally open

5g. Quick change rear end not permitted

5h. Rear caliper brackets may be added for disc brake conversion

5i Pinion angle maximum downward -6 degrees

6. FRAME, SUSPENSION AND STEERING

6a. Suspension and steering type, including links, spring type (strut, leaf or coil) must remain stock to make of the car with mounts in the stock location with the exception of the upper control arms, which may be aftermarket tubular but cannot be relocated except the front hole on stock tower can be relocated. **Adjustable tie rod ends are allowed.** Rear leaf springs must be parallel. One inch of variance is allowed in the parallel measurement of the rear springs. **The center of the upper bolt of the rear shackle of the leaf spring must be between 10 and 12 inches above the lowest level of the rear frame rail on a 1970 to 1981 Camaro.** Adjustable lower trailing arms are ok with 4-link suspension but they must maintain OEM wheelbase.

6b. Steering column may not have a locking device.

6c. Any coil spring permitted with a minimum of 5 inches in diameter. Any multi-leaf leaf spring permitted.

6d. OEM sway bars only, in stock location. Sway bar mounts may be modified to make adjustable (ie. Allthread). Sway bars must be mounted properly in the stock location. Sway bars may not be mounted upside down.

6e. Shims are permitted. Adjustable front spring buckets permitted. Weight jacks with easy access NOT permitted. Leaf spring shackle must be the same length.

6f. Steel, neoprene or phenolic bushings permitted.

6g. Steel one piece sealed OEM shocks only. May not be re-buildable or adjustable in any way. One shock per wheel. Shocks must be mounted within one inch of the stock locations with OEM mounts and fasteners.

6h. Front Camber, Left side maximum 3 degrees and Right side maximum 5 degrees. There is no tolerance on this rule.

6i. Maximum track width for all cars will be 78 inches measured from outside sidewall to outside sidewall in the front at spindle height.

6j. Aftermarket rebuildable ball joints are permitted but must be mounted in the stock location and be no more than 1/2 inch longer than the original ball joint.

6k. Tie rods, centerlink, idler arm, and pitman arm must be stock type with no heim joints.

7. BRAKES

7a. All 4 brakes must be operational. Any OEM brake caliper or drum assembly permitted. Caliper must be a single piston cast iron. Aftermarket caliper mounting permitted with OEM caliper

7b. Any master cylinder permitted. Aftermarket brake and clutch pedals allowed.

8. WHEELS AND TIRES

8a. Stock production wheels or steel racing wheels with 3/16" centers only

8b. Steel racing wheels required on right side

8c. Maximum wheel width 8".

8d. Must have 1 inch lug nuts. 5/8 inch studs recommended. No acorn lug nuts.

8e. No pressure relief valves for the purpose of controlling tire air pressure are allowed.

8f. American Racer AR970 is the designated tire.

8g. Tire may not be treated by chemical or altered in any way.

8h. Racers will be permitted an initial purchase of 6 tires at their first race of the year, after which, each car owner/driver will be permitted to purchase 1 additional tire per race, so long as the car starts a race that evening and makes a good faith attempt to run all races. A car that races for the 1st time at a later race may buy 4 tires for the 1st race then one per race thereafter.

9. ENGINES

602 Crate Engines

9a. Track approved factory sealed stock GM602 (PN 19258602 or PN88969602) crate engine. (must be run as delivered from Chevrolet meeting all GM Yellow Book Specs with all seal bolts & seals in place.)

- Designated crate motor dealer is Maita Chevrolet, Elk Grove, Ca.(916-647-8110.)
- Designated crate motor certification and repair is Peters Racing Engines 707-263-7151. Any repairs, excluding normal maintenance and valve spring replacement must go through Peters Racing and must be approved by designated track official. Must use GM designated replacement valve springs. Crate motors have multiple seals on motors, if any seal is removed, it will be deemed illegal. All motors must run a MSD Digital Soft Touch Rev Limiter. (Part number 8727CT at 6400 RPM max.) All 602 crate motors must have the original GM seals before it can be deemed legal to run. If the original seal from GM has been removed,damaged or tampered with, it must be dynoed and verified to meet GM Specs by Peters Racing Engines to be deemed a legal.

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Other Engines

9b. Engine block, crank and cylinder head must be cast iron OEM, unaltered, except as specifically outlined below. Must be a small block. No LS Engines

9c. Block and head surface and piston bore may be machined.

9d. Must be wet sump. Aftermarket wet sump oil pumps and pickups permitted

9e. Must be pushrod style with a flat tappet cam and a maximum of 2 valves per cylinder

9f. No sanding, polishing, relieving, grinding, porting, chemical treatment or addition of material (chemical or otherwise) to the cylinder head ports or combustion chamber

9g. Any valve spring permitted

9h. Aftermarket or modified motors mounts permitted

9i. Aftermarket or modified valve covers permitted

10. CARBURETION/ INTAKES/ RESTRICTOR PLATES

602Crate Engines

10a. Any four barrel carburetor permitted. Must have a minimum of 2 throttle return springs.

Other Engines

- 10c. Any two barrel with a maximum 500 CFM allowed. Maximum venture size is 1.376 inch. No variable venture carburetors (i.e. Predator). Must have a minimum of 2 throttle return springs.

10d. Engines exceeding 360 CID or 10.5:1 compression must run a 1.25 inch ID restrictor plate placed on the manifold or above an adapter plate, with a non-tapered spacer plate.

10e. Intake Manifold options (without weight penalty)

- A. OEM Cast Iron
- B. Edelbrock aluminum Performer manifold: Chevrolet #2101, Ford #2121, Dodge #2176,

11. COOLING SYSTEMS

11a. Any radiator may be used as it does not disturb the bodylines.

11b. Plastic radiator overflow tank required

11c. No antifreeze or ethylene glycol coolants allowed

12. EXHAUST

12a. Exhaust must meet track rules for decibels. (95 @ 100ft)

12b. Exhaust must exit behind the driver. Mufflers are mandatory.

12c. Must have a maximum of 2 1/2" OD pipes (single or double)

602 Crate Engines

12d. "Shorty" or "Block Hugger" headers permitted. Full length headers NOT permitted

Other Engines

12e. Cast Iron Exhaust Manifold required

13. FUEL SYSTEM

13a. Commercially produced fuel cell is required. Fuel cells must be encased in a metal container. Minimum 22 Guage. Fuel cell must be mounted in car in a secure manner.

Bottom of fuel cell must be eight inches (8") from the ground with protection. Must be

mounted with at least (2) 1" wide x 3/32" thick straps around the front and back, top and bottom. Cars must have a bar installed at the rear of the fuel cell. The bar must be a minimum of 1 1/2 " x .090 tubing. Bottom of fuel cell must be a minimum of 10 inches from the ground.

13b. Fuel line through driver's compartment must be steel encased, with no connectors. Fuel line must be securely fastened to the frame or under car body.

13c. Fuel cap must be secured with a chain

13d. Must have an electrical grounding wire from the fuel cap plate on the fuel cell to chassis ground.

13e. Methanol and other exotic fuels, oxygenation or additives not permitted.

13f. Maximum octane is 110. E85 is allowed.

14. IGNITION

14a. H.E.I. will be allowed except model ITK127212 that has an adjustable timing control and fingered tipped related system. No other ignitions control system allowed

14b. No traction control devices of any kind permitted.

15. TRANSPONDERS

15a. Must be located 13' (\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).

15b. If the bumper-to-transponder distance changes for any reason (like damage, repair, or modification), either the front nose or the transponder mount must be adjusted to re-establish that distance before every event.

16. OTHER SAFETY ITEMS

16a. For all safety devices it is the responsibility of the driver, not Redwood Acres Raceway, its officers, or its agents to ensure his/her safety device systems are correctly installed, maintained, and properly used at all times. As with safety items Redwood Acres Raceway strongly recommends that the driver carefully study all manufacturers' installation and usage guidelines and adhere to these recommendations to the highest extent possible.

16b. The driver must wear an SFI approved driving suit and **racing gloves**.

16c. Driver must wear a helmet with a valid SA 2005 standard Snell and/or SFI 31.1 or 31.2 sticker. Must have face shield or goggles.

16d. It is recommended that all drivers wear a head and neck restraint device.

16e. Must have at least one (1) fire extinguisher of at least 2 -3/4 lb., or a commercial fire system, mounted in easy access of the driver, and with gauges or status indicators readable from either the driver or passenger window.

16f. Must have a 5 point SEMA approved racing harness with at least a 3" wide lap belt, 2" wide shoulder harnesses, and a crotch strap. Must be directly secured to the roll cage. The shoulder harnesses must be mounted with stress point at shoulder height. All belts must have the manufacturer's date tag, be no older than five (5) years, and in good and serviceable condition.

16g. A steel or aluminum racing seat is required. Seat must be mounted with a minimum of (4) 3/8-inch grade 5 bolts.

17. ROLL CAGE

Material

17a. Roll bar tubing at least 1 3/4" OD .090" thick. No galvanized or black pipe.

17b. The design, materials, construction, and welds of each roll cage is subject to Technical Discretion.

Design

17c. A full four-point cage over and around the driver and passenger, including:

- i. One (1) dash bar.
- ii. (1) diagonal bar behind the seats from the top corner to the opposite bottom corner of the cage.
- iii. Two (2) bars from the top rear of the car to the rear frame or trunk floor.

Doors Bars

- iv. Three (4) horizontal and two (2) vertical bars on the driver and passenger door.
- 17d. 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.

17e. Gussets for all pipe and tubing angles are optional but **strongly** recommended, and may be required by technical discretion. Extra safety bracing allowed.

17f. All areas around the driver must be padded

17g. May have a front hoop made from up to 1 1/2" OD .125" thick tubing, with no more than two (2) uprights. This is meant to be stiff enough to protect the radiator, but not so stiff that it becomes a car damaging battering ram.

17h. May have a rear hoop made from up to 1 3/4 OD .125" thick pipe or tubing, with no more than four (4) uprights. This is in addition to the required fuel cell guard (see §9.2.7).

17i. Must have exposed tow hooks or straps on the front and rear. Chain or cable must be strong enough for a quick tow around or off the race track.

Mounting

17j. **Frame** Each upright post must be welded to the frame side rail.

17k. **Unibody** Each upright post can be welded to a foot plate – minimum ¼” thick 6” square. The foot plate must be bolted through the pan to another foot plate underneath with a minimum of four (4) 3/8” (grade 5) bolts.