

## THUNDER CAR RULES

COMPETING MODELS: 1950 through present Domestic Made, all steel bodies, sedans, coupes, and station wagons. MINIMUM wheelbase must be 105". Pickup trucks, convertibles, four-wheel drives or trans-axle type cars will NOT be allowed.

CONSTRUCTION: *Equipment will not be considered "legal" simply because it went through inspection unobserved, or because a rule has not been written excluding it.*

### Thunder Car Bump To Pass Racing

Even though the sport of Thunder Car racing is similar to Demo Derby, it is different in that there are rules governing when, where, and how much contact can be made. The following are some of the rules that the Officials will be using in making judgment calls during Thunder Car events.

- A. Dashes: There is no contact in trophy dashes.
- B. Heats: Bumping is allowed provided that the person you bump does not spin. If they go around you will be subject to a penalty at the discretion of the Officials.
- C. Mains: The first three laps will be non-dumping racing. On the third lap the blue flag with the yellow diagonal stripe will be displayed and you will be required to make contact with any car you pass thereafter.
- D. Head Hunting: If you wait for someone that has dumped you to come around so you can pay them back, or if you go out of the racing line to hit someone, you will be guilty of head hunting and subject to a penalty.
- E. Brake checking: Is a demo move that is not to be used in Thunder Car racing.
- F. Excessive Contact: Pushing someone up the back stretch and into the wall; crowding a person into a tire; shoving a car into the front stretch wall; hitting after the checkered flag; and hitting the driver's door are examples of excessive contact. They are all subject to penalties.
- G. On restarts: Top four (4) leading cars will start in the top four (4) positions with no lap cars between them.

Keep in mind that this is not a Demo Derby. They expect to use the car one time only. Our cars have to race five to six times a month. Our drivers would like their cars to last an entire season. If you cannot separate the contact from your personal feelings then we suggest you find another form of entertainment.

The rules promulgated in this set of rules are intended as guidelines for the sport of stock cars and truck racing and the rules relative to the safety of equipment are the responsibility of each driver/owner who participates in the sport under these rules. No expressed or implied warranty of safety is intended nor may be inferred from the publication of these rules, nor compliance therewith. Nothing contained herein shall be construed as a guarantee against injury or death to participants, bystanders, crew, or spectators.

## CAR PREPARATION-MUST DO:

### I. BODY

#### A. INTERIOR:

1. All upholstery **MUST** be removed with the exception of the front seat and dashboard. Both front door and panels may be reinstalled after removing door and window mechanism. If stock dash is removed, a 2", one-piece spreader bar is to be installed above the steering column, and the column must be attached to the spreader bar. Spreader bar material must be schedule 40 black iron pipe or equivalent.
2. All key-locking mechanisms on steering columns **MUST** be removed. Must have a kill switch plainly labeled On and OFF. Horns and radios must be disconnected.

#### B. WINDSHIELD: Windshield is mandatory.

1. Material is to be glass or polycarbonate.
2. ALL OTHER GLASS/PLASTIC **MUST BE REMOVED**. THIS MEANS GLASS/PLASTIC FROM DOOR PANELS, ETC. THIS ALSO INCLUDES HEADLIGHTS, TAILLIGHTS, DIRECTIONAL LIGHTS AND BULBS.
3. Cars will have a vertical bar of 1 ½ x ¼ steel **MINIMUM** fastened to body top and bottom or cage top and bottom at center of windshield opening. Two bars are recommended. Windshield must be safety strapped or hooked on each corner if stock metal molding is removed.

#### C. DOOR BARS: Required on both sides of the car. GUARDRAILS ARE NOT PERMITTED.

1. Must be a minimum of ¼ thick and 8" wide channel iron (or equivalent) and have corners removed.
2. Must be mounted on outside of doors and located half way up the door skin. Optional: A second channel may be mounted on lower side of driver's door, but may not extend past bottom of car body. Combined height of the two driver door channels must not exceed 18". Single Spanaway door bar optional. (See method 1 diagram.)
3. Must run from front to rear, and extend at least 5" past each end of the door openings. Max. front wheel well at tech's discretion.
4. Mounted with ¾" bolts (or equivalent) and have 6" square minimum backing plates. The bolts must be spaced: (1) through the front fender (1) through the door and (1) through the rear fender or rear door. Threaded end of bolts must face inside the car. Driver door bolt(s) must not exceed more than 1" beyond the nut inside or outside of the vehicle.

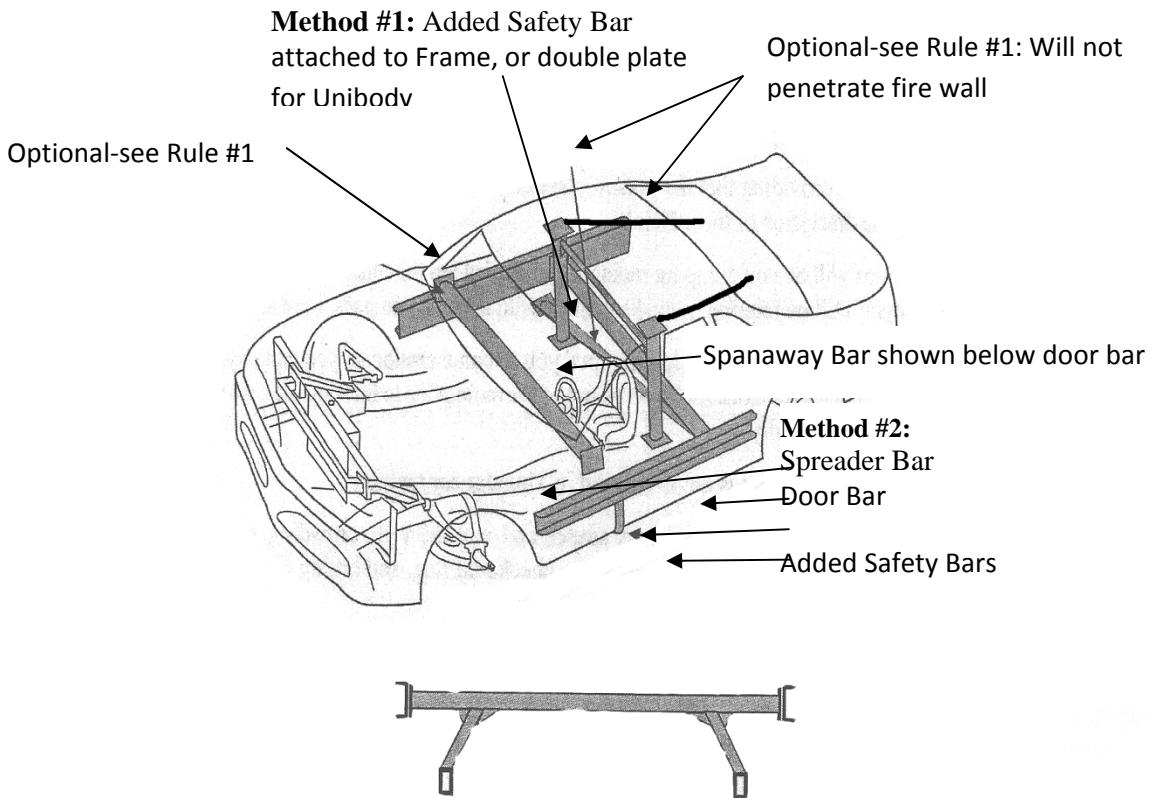
#### D. ROLL OVER PROTECTION REQUIRED: Must have at least 1" clearance between helmet and roof.

1. **UPRIGHTS:** 2 upright posts required or roll cage. Material to be a **MINIMUM** of 2" pipe or steel equivalent. Minimum 6" square by ¼" thick steel plate must be welded to both top and bottom of roll over posts. Must also have a 6" square by ¼" thick steel backing plate to sandwich the roof and floor. They will then be bolted to the roof and floor with at least four ½" bolts, one at each corner. Roof bolts must have no more than ½" protruding through interior of car. One post to be built behind the driver's seat, and be no more than 3" behind back of seat. Second roll over post must be located in the passenger's seat area, and may be internally connected at the top to the driver's side roll-over post, with the minimum 1½" schedule 40 pipe or tubing, or externally connected with 6"x¼" flat steel, or 1¼" x 1¼" x ¼" minimum angle iron. May be welded or through bolted (see diagram.) Maximum 2" diameter pipe may be installed from top of roll over posts to rear window opening or rear firewall on both sides of

car. Must have minimum 6" X 6" X ¼" steel plate on ends, with minimum 6" X 6" X ¼" backing plates sandwiching rear firewall. MUST NOT BE IN LINE WITH FUEL TANK. (Tech to determine if placement is acceptable) **All cars must have headrest attached to the seat or roll bar. Back of seat must be securely attached to roll bar at or below shoulder height.**

2. **SPREADER BARS: MANDATORY ON ALL CARS.** Material to be 2" pipe or steel MINIMUM. One bar to span interior width mounted behind driver and passenger uprights. An additional 2" safety pipe bar(s) must be added. Method #1 is welded to the driver's side of the spreader bar and attached to the frame on the passenger's side. In the case of the Unibody car: a minimum 6" square by ¼" thick plate steel must be welded to the bottom of the safety bar. It will then be bolted to the floor with at least four ½" bolts, one at each corner. Must also have a 6" square by ¼" thick steel backing plate to sandwich he floor. Method #2 requires two additional bars added to the spreader bar. One over each frame rail. They are attached to the frame rails or sandwiched to the floor in the case of Unibody.

3. **ROLL CAGE OPTION:** Optional four-point roll cage must be mounted to floor per roll cage over specifications, or welded to frame per discretion of the Tech committee. No bracing shall penetrate firewall or splash shield. Must have at least 1" clearance between helmet and roof.

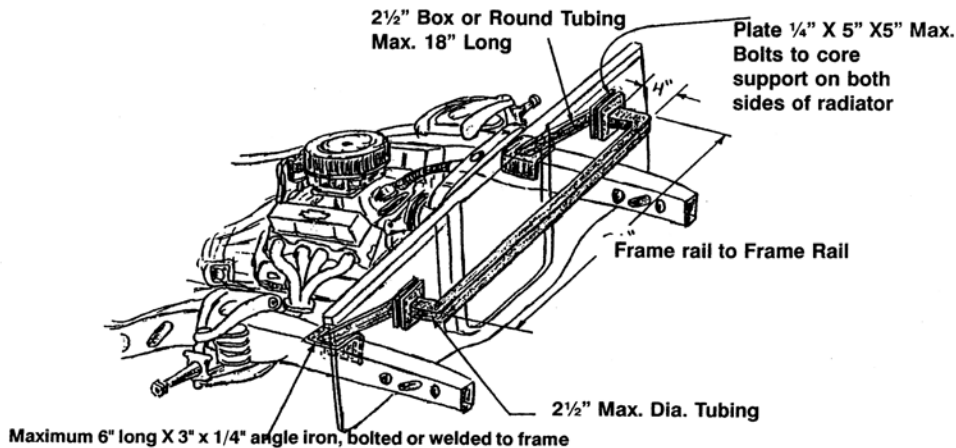


**E. SHEET METAL:**

1. Fender wells may be trimmed and/or radius, not to exceed four-inch clearance of tires. Removal of front inner panel optional. Cars with impact damage will be allowed to trim sheet metal as per Tech decision.
2. Hood and trunk lids must be pinned. If bolted must have wing nuts. If it is a four-door, back doors must be chained or welded shut, same for the rear gate of the station wagons.
3. 8"x8"x2½" deep firewall offset for distributor or equivalent required.

**F. REINFORCEMENT:** There will be NO reinforcing of front frames, rear frames or bumpers in any way except as noted below:

1. Sub-frame cars may tie frame rails together to existing frame rail.
2. A core support brace may be bolted or welded into position forward of upper control arm. Maximum outside diameter of brace tubing to be 2½" steel pipe at Tech's discretion. (See diagram for a core support-brace.)
3. A 2" spreader bar may be installed between rear frame rails or from hook plate to hook plate midway in the trunk. Spreader bar must be bolted or welded to frame rails.
4. Rear bumper hook plates may be installed. 6"x½" plate maximum, from bumper to opening of wheel well. Bolted or welded from bumper to skin and skin to frame; using a maximum 2" O/D pipe with 6"x6" backing plates from skin to frame.



**G. TOW POINTS:** Tow points required. Either four corner hooks or two chains between front and rear rails.

**H. MUFFLERS:** MANDATORY with MAXIMUM DECIBEL RATING OF 92 Dba AT 75 FEET. Exhaust to extend behind driver.

**I. BRAKES:** Cars must have four working breaks.

**II. SAFETY:**

- A. A 3" wide (minimum) racing harness MANDATORY. Belts may not be more than five years old. Must have date on harness. Driver's seat and racing harness must be bolted to roll protection. If you have any questions, see the Board. Tech has last say on acceptability of harness.
- B. Long sleeve shirts (no nylon) are MANDATORY for all drivers.
- C. Driver's door and steering wheel MUST be padded.

- D. Window net is mandatory.
- E. Must have fully charged fire extinguisher. Minimum 2.5 pounds ABC rating. Must have metal gauge and nozzle, and metal mounting brackets. Must be easily removable and within reach of driver.

### III. FUEL SYSTEM:

- A. Gas tank shall be eight (8) gallon MAXIMUM boat tank, or an eight (8) gallon racing fuel cell, and will be mounted over the rear end in center of the vehicle on the floor. (No plastic tanks or fittings are allowed.) The tank must be securely chained two ways and enclosed if it extends above the shelf. All fittings must be secured and ALL GAS LINES MUST HAVE A SCREW ON TYPE CLAMP. All tanks have an adequate splash shield. (20 gauge steel MINIMUM.) No fuel line is allowed inside the driver compartment. All fuel tanks to be vented to exterior of vehicle through a minimum 1" hole. Vent line must have a PCV valve clamped to the opening.
- B. Type of fuel used shall be pump gas only.
- C. 2 throttle return springs are required.
- D. No fuel injection of any kind.
- E. No electric fuel pumps allowed.

### IV. ELECTRICAL:

- A. Batteries must be removed from engine compartment. No trunk mounted batteries. Securely mounted battery in battery box is required. Battery must have metal hold down SEPARATE from battery box. Subject to Tech Committee. No plastic battery boxes. Master disconnect switch must be located behind driver's seat on roll bar clearly labeled ON/OFF. Switch must disconnect battery and stop engine.

### V. ENGINE:

- A. ENGINE MUST BE STOCK. **Must be corporate to car. I.E. Ford to Ford, GM to GM, etc.**
  - Engine to remain in stock location. Solid mounting is okay.
  - No Limited production or high performance parts.
  - Maximum .060" over bore on flat top pistons.
  - No high rise manifolds.
  - Stock cast iron intake, exhaust, and heads only. No porting, polishing, or gasket matching allowed. No internal alterations to heads allowed, with the exception that replacement type screw-in studs may be used, but stud towers **cannot** be milled. Pinning of stock studs is okay.
  - Maximum one four-barrel carburetor. A 1" maximum space/adaptor is allowed.
  - Only camshafts meeting specifications on "Schedule A" are allowed.
- B. Must have either an air cleaner or suitable flame arrestor on the carburetor.

**SPECIFICATIONS FOR STOCK CAMSHAFT**

All camshafts must be OEM SPEC., for ordinary factory installed assembly line camshafts. No high performance camshafts.

The following is a list of camshaft specifications to be used in this racing division. The camshaft specifications are for reference and will be used by the Tech Committee should any questions arise regarding a camshaft. Cam duration may be checked with vacuum gauge. Must draw minimum of 19 inches of vacuum at 1000 RPM. If there is a doubt the cam may be taken and checked on a Cam Doctor. Each car must provide a place to check manifold vacuum.

**SPECIFICATIONS FOR STOCK CAMSHAFT**

**ABSOLUTELY NO OTHER SPEED EQUIPMENT OF ANY KIND WILL BE ALLOWED. THIS WILL BE DETERMINED BY THE TECH COMMITTEE AND BE STRICTLY ENFORCED - WITH NO EXCEPTIONS!**

	<i>Engine</i>	<i>Valve lift</i>	<i>Rocker Ratio</i>	<i>Duration @ .006 Cam lift</i>	<i>Duration @ .050 Cam lift</i>
		<i>Int./Exh</i>		<i>Int./Exh.</i>	<i>Int./Exh.</i>
Rambler	290,304,343 360,390,401.	426/426	1:6	263/263	196/196
Chrysler	273,318 340 360 383,400,440	373/400 429/444 410/410 445/445	1:5 1:5 1:5 1:5	240/248 252/252 252/252 288/288	181/192 210/220 206/209 206/209
Ford	260,289,302 351C, 400 351W 352,390,427 429,460	368/381 427/433 416/416 438/438 443/487	1:6 1:73 1:6 1:73 1:73	270/248 256/272 256/256 256/256 256/270	184/189 197/196 195/195 186/186 193/206
Buick	350 455	390/380 380/440	1:55 1:55	270/293 282/324	189/208 194/225
Chevrolet	Small block Big block	390/410 398/398	1:5 1:7	256/262 286/286	194/203 210/213
Oldsmobile	301,350,455	440/440	1:6	272/294	196/208
Pontiac	All	405/408	1:5	273/284	198/208

## **VI. DRIVE TRAIN:**

- A. Drivelines must be painted white and a safety chain must be looped under the forward half of the driveline.
- B. Lock or welded rear ends are okay.
- C. Transmission cooler and/or remote oil filter allowed. **Must not be in driver's compartment.**

## **VII. SUSPENSION**

- A. **SUSPENSION MUST BE STOCK.** No air or spring assisted shocks. No adjustable springs or adjustable spacers. All springs must be stock.
  - Coil Springs: May be heated and/or cut, etc.
  - Leaf Springs: May be reconfigured, cut, heated, re-stacked, etc.
  - MINIMUM 5" clearance required at front of "X" member to ground.

## **VIII. TIRES**

- A. Approve DOT 60 series or bigger passenger tires only. Wheels and tires must be of the like size. **NO** low profile type tires. **NO** "NU treads" or racing tires are allowed.
- B. **Through Mid-Season 2010,** only special racing tires or compounds allowed are:
  - 5 Star 3-groove treaded recaps.
  - Spanaway Nutread Red or White DOT treaded recaps.
  - Diamond back V Class 8" DOT treaded tires.

**After Mid-Season 2010, NO re-caps, racing tires or compounds will be allowed.**

- C. All rims must be steel with a maximum 15" diameter, maximum 8" rim width and maximum 5" offset from face of wheel to bolt pattern.
- D. Larger wheel studs okay.

## **IX. REPAIRS**

- A. When repairing damaged cars, no material stronger than what you are repairing or replacing may be used, per Tech Committee.

## **X. MISC.**

- A. Numbers must be on both sides of the car, and on roof facing passenger side. Numbers should be 18" high and 2" wide. (See General Rules) Can run roof top sign board with numbers on both sides instead.

**IF IT DOESN'T SAY YOU CAN, YOU CAN'T!**