



TWIN STATE SPEEDWAY'S 2012 MODIFIED CRATE ENGINE POLICY

TSS RESERVES THE RIGHT TO MODIFY OR ADJUST THIS POLICY / RULES BELOW AS T.S.S. FEELS A NEED TO. IF YOU FEEL THAT YOU INTERPET THIS POLICY DIFFERENT THAN T.S.S. OFFICIALS DO ASK NOW. 11-9-2011.

T.S.S. strongly recommends all competitors to buy their engines from R.P.M. @ 1-802-524-7406. This will save a lot of time and the cost of inspections and sealing.

1. The only engines allowed is the G.M. Part # 88958602, # 1925-8602, and # 88958603 sealed by R.P.M., Butler and MacMaster or T.S.S. **T.S.S. will seal any new G.M. # 88958602, # 1925-8602 or # 88958603 engines that are in an unopened crate from G.M. There will be a fee for this. {Contac Tech.}**
2. This engine must be used as manufactured by G.M. The only modifications allowed to this engine is the changing of the oil pan, the oil pump pickup tube, welding the mechanical advance in the distributor and the carburetor.
3. The only carburetors allowed on the GM # 88958602 and the G. M. # 1925-8602 is the four barrel **Speed Demon Barry Grant** Carb. Part #1282010 **650 C.F.M.** with no prefixes or suffixes added to the part number and the Holley 650 cfm carburetor Part #80541-1 with no prefixes or suffixes added to the part number. **The only modifications allowed are the changing of the fuel jets in the metering block, the power valves, the squirters, the accelerator pump cam and external linkages to make the carburetor work.** A one inch spacer will be allowed on these engines. One .075 thick gasket will be allowed on the top and the bottom of this spacer.
4. The only carburetor allowed on the GM # 88958603 is a Holley # 4412. A one inch Canton #85060 or a Moroso #64964 carburetor spacer is allowed. No modifications allowed to these spacers. A .075 inch gasket is allowed on the top and the bottom of the spacer.
5. **All carburetors must fit T.S.S. gauge, pin, and visual checks that T.S.S. or people appointed by T.S.S. do.**
6. Any work that requires breaking any engine seal must be authorized by T.S.S. T.S.S. will work with all competitors to get their engine eligible to compete at T.S.S. If you take your engine any where except a engine builder that T.S.S. approves or cut your seal or remove the G.M. seals your engine must be disassembled by an engine builder that T.S.S. approves for inspection and correct anything that is found out of spec. and resealed before the engine is allowed to compete at T.S.S. The engine builder will decide how much of the engine will be disassembled and if the engine needs to be run on the dyno. All camshafts may be sent out to be checked on a cam doctor if the engine builder or T.S.S. feels a need to. There will be a fee for this.
7. T.S.S. will work with all crate engine competitors that wish to get their engine approved to allow them to compete at T.S.S.
8. Do not attempt to do any modifications to this engine. If any modifications are discovered at any time by T.S.S. or any approved engine builder the minimum penalty is listed below.
9. All money and points for the race meet that the violation is discovered in will be taken away, all previously accumulated points will be taken away and a \$1000.00 fine. The driver of the car will start at the rear of the qualifiers and features for a minimum of three race meets.

10. All fines must be paid to T.S.S. in full before the driver, owner, car, or engine is eligible to compete at T.S.S.
11. The engine must be repaired at an approved T.S.S. engine shop before the engine is eligible for competition.
12. The owner of any engine that fails any dyno and/or physical checks/tests that T.S.S. does or has done, the owner of the engine will pay all the fees that are incurred before they get their engine back. The engine will be disassembled as far as one of T.S.S.'s approved engine builder feels a need to correct the issue/issues. If the engine owner refuses to have the engine repaired and resealed at this time all seals associated with T.S.S. will be cut off and T.S.S. will issue a report of the findings to all the speedways that use these engines in this type of Modifieds. The engine must be resealed at the owner's expense. If the engine that is being checked passes all checks and inspections, the speedway will pay all fees.
13. All engines that are taken that pass all checks and tests will be returned no later than four days from the day the engine is taken. If the engine fails the competitor will be called.

Shock Policy:

1. Shocks may be 5", 7", and 9" stroke.
2. T.S.S. will be working with Brownie's Auto and Speed Parts to assure that all shocks that are being used are within the specifications listed below. T.S.S. suggests that all shocks be dynode and serial numbered at Brownies Auto to avoid any issues when T.S.S. confiscates shocks to be evaluated. There will be a fee for this documentation. Call Wally @ 603-632-7788. **The legality of any shock at any time will be determined by T.S.S. tech.**
3. Any shock found out of spec. at any race event will be deemed illegal and the minimum penalty will be:
 - A. The lost of the events points,
 - B. The lost of the events money.
 - C. Start last in the next three weeks events that you compete in.
 - D. Possible fine.
 - E. The owner of the shock that is found to be out of spec. will pay all expenses occurred during the inspection.
5. No shock will cost more than **\$195.00** new retail to anyone including ends.
6. Aluminum threaded body shocks allowed
All shocks must be used as manufactured by the manufacturer of the shock being used. No modifications, internal or external.
7. The owner of the shock that is found to be out of spec. will pay all expenses occurred during the inspection.
8. No Schrader valves
9. No Nitrogen filled shocks.
10. No external adjustments or reservoirs.
11. No adjustable canisters.
12. No gas filled shocks.
13. Conventional compression and rebound must be used in all shocks.

Twin State Speedway's 2012 Modified Rules

These rules are to be used as a guide:

The modified rules listed below are for an affordable modified division at Twin State Speedway. The intent of this division is to bring the modifieds back to the weekly racing program at T.S.S. at an affordable dollar. This modified car has the same appearance as its big sisters and brothers, the true open modified car that races on the many tours and divisions through New England. The rules below limit the engine, carburetor, transmission, clutch, shocks and exhaust. T.S.S. feels that with the rules listed below it will open the doors for anyone who may want to compete in a modified car.

Weight:

1. All cars will be weighed before any race. The driver must be race ready sitting in normal race position with the helmet in lap and both hands on the steering wheel. All tires must be at race pressure. The minimum car weight before any race is 2593#. The maximum left side weight before any race is 56% of the total weight.
2. All add on weight must be steel or lead in block form. All added weight must be securely bolted to the frame with two 7/16" grade eight bolts or in a box welded to the frame. All weight must be painted white with the car number painted in black.
3. All weight that is added on must be outside the driver's compartment and must not be below the bottom of any frame rail.

Engine:

1. The only engines allowed are listed in the Crate Engine Policy listed above.
2. The fuel pump may be up-graded to a conventional performance pump.
3. All starters must mount in the O.E.M. location.
4. The alternator system, if used, must be mounted on the front of the engine in O.E.M. location.
5. The water pump must be mounted in O.E.M. location
6. The only oil pan allowed is a wet sump. The pump must be in the oil pan.
7. No engine oil coolers allowed.
8. The oil filter must be in the o.e.m. location on the block.
9. The GM engine part # 88958602 and the GM engine part # 1925-8602 must use the O.E.M G.M. Part #10212811 valve springs. The maximum assembled height valve spring seat pressure is 80 lbs. The maximum open pressure is 195 lbs.
10. The GM engine part # 88958603 must use O.E.M. G.M. Part # 12551483 valve spring. The maximum valve spring seat pressure is 101 P.S.I. The maximum open pressure is 260 lbs.
11. **All the valve spring assembled heights, measurements, ratings, retainers, and keepers must meet GM specifications And be G.M. parts.**
12. Rocker Arms: Must be the O.E.M. G.M. Part #10089648.
13. Rocker arm nuts: Must be the O.E.M. G.M. Part #25534352.
14. Push Rods: Must be the O.E.M. G.M. part #14095256 for the # 88958602 and the # 195-8602 and the O.E.M. G.M. part # 10046173 for the # 88958603.
15. Distributor: Must be the O.E.M. G.M. part #93440806 or an aftermarket O.E.M. replacement HEI. All distributors must operate off a standard 12 volt system. The only modification to these distributors is the welding of the mechanical advance and eliminating of the vacuum canister.
16. The harmonic balancer must be a minimum of 6 ¾".
17. Engine location: The centerline of the crankshaft when measured to the center of the lower ball joint, left and right must be within two inches in distance. The engine ground clearance will be measured with the driver in the car at the oil pan. A minimum height of two inches from the bottom of the oil pan to the ground.

Air Filter, Housing, and Carburetor Spacers

1. Only one round air filter element allowed. All air filter elements must maintain a maximum of 14" in diameter. All air must be filtered through the element.
2. Only round air filter housings allowed. The top and bottom of the air filter housing must be solid. The air filter housing carburetor mounting ring must have one round hole. Tubes, funnels, spacers, or any other device that may control the flow of air will not be permitted.

Exhaust – Headers – Mufflers - turn outs

1. The minimum muffler inlet and outlet allowed is 3". The body must be 12" long and round. All mufflers must be approved by T.S.S. The minimum diameter of the turn outs allowed is a 3". No devices allowed inside or outside the mufflers or headers to increase flow.
2. The suggested headers are listed below: The part numbers are listed below.
3. Troyer chassis --- Kooks headers Part # TSS1033 FLOWRITE PART #TSS 25
4. C.D. chassis --- Kooks headers Part # TSS1435 FLOWRITE PART #TSS 35
5. Spafco Chassis---FLOWRITE #TSS 55
6. Raceworks chassis --- Kooks headers Part # TSS1233 FLOWRITE PART #TSS 45.
7. Call Richie @ United Exhaust @ 1-631-474-0010. Ask for Richie.
8. Other headers that are compatible in performance and money will be allowed. These headers will be looked at on a one on one basis. Mufflers must be able to be removed for inspection. The header flange must bolt directly to the cylinder head. A tapered shim that is the same bolt pattern as the header flange may be used to allow the headers to clear chassis front bars. The min. collector outlet will be 3".

Frame Requirements

1. A minimum ground clearance of two (2) inches must be maintained on any part of the frame. All frame components must be made of magnetic steel measuring 2"x 3".The distance from the centerline of the driveline to the left side frame rail, measured anywhere along the frame, must be within eight (8) inches of the distance from the centerline of the driveline to the right frame rail. A minimum width of 34 inches, and a maximum 46 inches, measured from the center of the left frame rail to the center of the right frame rail, must be maintained in the driver's compartment.
2. The fuel cell reinforcement bar must be a minimum of 1-1/2 inches magnetic steel tubing, must be installed behind the fuel cell. This reinforcement bar must be as wide as the fuel cell and as low to the ground as the fuel cell with a minimum of two (2) uprights from the reinforcement bar to the crossmember, evenly spaced

behind the fuel cell. An X crossmember made of one (1) inch magnetic steel tubing must be installed beneath the fuel cell from corner to corner. The X crossmember must be welded or bolted to the rear frame rails in a secure manner. Two (2) additional support bars, one (1) at each corner of the reinforcement bar, must extend forward and be welded to the rear frame assembly.

3. The front sub frame assembly must be constructed using two (2) inches wide and three (3) inches high magnetic steel tubing. All front sub-frame assemblies must maintain a minimum of a 30 degree angle from the side frame rails up to the top of the sub-frame.
4. The Rear sub-frame assembly must be a minimum width of 31 inches and a maximum of 46 inches, measured from the center of the left frame rail to the center of the right frame rail, must be maintained on the rear sub-frame assembly, with the exception for suspension and tire clearance. All rear sub-frame assemblies must maintain a minimum angle of 18 degrees from the rear axle housing up to the top of the sub-frame assembly.

Roll Bars - Cage

1. All roll cages must be 1 3/4" o.d. x 0.095 magnetic steel tubing.

Shocks - Springs

1. See shock policy above.
2. All coil springs must be constructed using round magnetic steel wire.
3. No coil bind allowed.

Clutch- Flywheel –Pressure Plate-Bell-housing

IN 2012 T.S.S. will be researching and testing a clutch assembly that will be a cost Effective and readily available to all teams.

1. The clutch disc must have a steel center. Minimum 10" clutch disc mandatory.
2. All cars must use: an approved safety bell housing.
3. The flywheel must be steel.
4. The pressure plate must be a 10" minimum and magnetic steel.
5. The minimum wt. for the clutch, pressure plate, flywheel and bolts is 30 pounds.

Transmission

1. All transmissions must be a standard G.M. production transmission.
2. All transmissions must have two working forward gears.
3. All transmissions must have a high gear ratio of 1:1.
4. All transmissions must have a working reverse gear.

Drive shaft

1. The drive shaft tube, universal joints and yokes must be magnetic steel and be similar in design to the standard production type.
2. Only a one piece magnetic steel drive shaft will be permitted.
3. Two 360 degrees solid magnetic steel brackets, without holes or slots not less than two inches wide and 1/4 inch thick, must be placed around the driveshaft and torque arm and be welded or fastened to the crossmember of the car.
4. All drive shafts must be painted white.

Rear Axel

1. Only aluminum or magnesium quick changes and straight rears allowed with a minimum of a 10" ring gear allowed. All cars with a straight rear will be monitored to keep the competition equal.
2. All spur gears must be on the backside of the center section.
3. All spur gears, jackshafts and axels must be magnetic steel.
4. Full floating magnetic steel axel assemblies must be used.
5. Only locked rear drive axel assemblies will be allowed. Spools mandatory.

Wheels - Lug Bolts - Lug Nuts

1. Only 15 inch diameter five lug reinforced magnetic steel wheels with a maximum width of 15 inches will be permitted.
2. Only solid one piece, heavy duty 5/8" magnetic steel lug bolts and standard one inch magnetic steel hex lug nuts will be permitted. The first thread on each lug bolt must be visible when the lug nut is installed.
3. Bead locks will not be permitted.

Tires

1. Tires listed below must be used as manufactured by American Racer.
2. 26.0 x 13.5 x 15 Right side.
25.5 X 13.5 x 15 Left side.
Tires listed below must be used as manufactured by Hoosier.
3. 26.0 x 13 x 15 M45 on the left
27.0 x 13 x 15 M46 on the right
4. No mixing tire brands.
5. Each team will be allowed one new tire for each week that the team competes.

Suspension

1. No nonferrous suspension parts allowed.
2. Only magnetic steel sway bars allowed. The sway bar must be used for the purpose of anti roll.
3. No rear sway bars.
4. All a-frames must be made of magnetic steel.
5. When attaching the upper A-frames to the mounting plate, only standard type castor-camber shims or washers will be permitted.
6. Heavy duty magnetic steel spindles must be used.
7. Wheel bearings must be magnetic steel.
8. **Aluminum, magnesium, and magnetic steel hubs allowed. No Billet hubs. No machining of any hubs to reduce weight.**
9. All front spindles must be attached to the frame using one tether per wheel.

Tread width

1. All cars must maintain a minimum of 82 inches and a maximum of 84 inches tread width measured from the left outside bead seat to right outside bead seat measured at the spindle pin height. This is the same for the front and rear.
2. Wheel spacers allowed.

Wheelbase

1. The minimum wheelbase that will be permitted will be 104 inches.
2. When measuring the wheelbase, the maximum allowable tolerance must not exceed one inch + or – one inch on the opposite side.

Body Height - Details

NOTE: Any older style body that does not fit the rules listed below must be TSS tech approved.

1. The body height will be determined with the tires at race air pressure. The driver must be sitting in normal driving position with helmet in lap and both hands on the steering in normal driving position. The minimum height six inches behind the top of the windshield on the roof centerline is forty inches. The rear of the roof at the highest point must not be more than three inches higher than the actual front measurement.
2. An approved air dam may be mounted to the front underside of the cars. The nose panel and air dam must not extend past the outer edge of the frame rails. The air dams must have a ground clearance of two inches.
3. A solid rear spoiler of a minimum one quarter inch thick clear polycarbonate must be installed at the rear deck lid and meet the following requirements. The rear spoiler size permitted must be eight inches high by forty eight inches wide. The rear spoiler must be installed in the center at the rear of the quarter panels where the rear panel meets the interior sheet metal. The rear spoiler must not extend past the rear edge of the rear bumper. Decals or logos will not be permitted on the rear spoilers.
4. A maximum of two one inch wide adjusting supports will be permitted on the front of the spoiler.
5. A maximum of three supports may be attached to the rear of the spoiler. The supports, front and rear may be attached to the spoiler using a piece of one by one inch aluminum angle one inch long mounted one inch down from the top of the spoiler.
6. A maximum of thirty five inches, measured from the ground to the spoiler mounting point, will be permitted.

Windshield

1. A complete steel windshield screen with a maximum opening of one inch by two inches may be installed in the windshield area.
2. A single one piece flat or radiused type polycarbonate windshield may be used on the driver's side. If this is used on the drivers side a complete steel windshield screen with a maximum opening of one inch by two inches must be installed in the right side of the windshield.

Firewalls

1. ***A front and rear firewall of not less than 22 gage 0.031 inch thick magnetic sheet steel or a minimum 0.125 inch thick aluminum must separate the driver from the engine and fuel cell.***
2. The front firewall must be positioned below the leading edge of the windshield.
3. The firewalls must seal the driver from the engine bay and the fuel cell.
4. ***The floor pan under the driver must be a minimum of 0.125 inch magnetic steel.***

Roof - Hood

1. **1. All roofs may be steel, aluminum, or fiberglass.** The roof support posts must maintain the same angles as a stock production car. The front "A" posts must be mounted to the top front of the door panel.
2. All cars must be equipped with a hood.
3. The hood must be manufactured so that it will completely cover the engine compartment from the left side to right side, turn down a minimum of 4" on each side. The only openings allowed in the hood will be for the carburetor, air filter housing, air filter and the distributor. All hoods must be fastened with positive pin fasteners.

Doors

1. All doors must be magnetic sheet steel or aluminum.
2. All seams, creases, or accent lines fabricated in the doors must be made parallel with the top of the door.
3. A minimum distance of 72 inches up to a maximum distance of 78 inches will be permitted when measured from the center of the rear axel housing forward to the front of the door. A minimum distance of 43 inches and a maximum distance of 45 inches will be permitted when measured across the car at the front outside edge of the door panel.

Quarter Panels

4. The top of the quarter panels and door panels must maintain the same degree of rake (within $\frac{3}{4}$ ") from the front of the rear window "C" post to the rear of the front windshield "A" post. All quarter panels must be magnetic sheet steel or aluminum.
5. All cars must have rear wheel openings on the right side a minimum of 11" and a maximum of 14" radius measured from the center of the rear axel housing.
6. Quarter window openings must maintain the same shape as the make and model car being used. The minimum size for any quarter window opening will be 9" high by 14" wide.
7. A minimum distance of 34" measured any place at the rear of the quarter panels and a maximum distance of 42" measured from the center of the rear axel to the rear of the body will be permitted.
8. A minimum distance of 49" and a maximum distance of 60" will be permitted between the top of the quarter panels measured across the body at the rear axel housing.
9. A minimum distance of 58" and a maximum distance of 60" will be permitted between the outer edges of the quarter panels.
10. The maximum height of the rear quarter panels measured from the ground to the rear of the quarter panel will be 35".
11. The rear quarter panels must maintain a minimum of 8" ground clearance behind the rear wheels.
12. The rear body panel located between the quarter panels must maintain a minimum of 32" and a maximum of 35" when measured from the ground to the top of the panel at the rear spoiler mounting point. The panel must be solid with no open holes and be mounted flush at the rear of the quarter panels. The center must not be higher than the top of the rear quarter panels.
13. The rear roof quarter panel must be made from a single piece. The top of the rear quarter window panel must not be higher than a straight line when measured from the most rearward point of the roof down to the rear top of the quarter panel at the spoiler mounting point.

Bumper - Side Rails

1. All bumpers and side rails and rear corner rails must be equivalent to the standard type that is used on the typical asphalt modified in New England. No side rail will extend out past the rear tires any more than two inches.

Ground clearance

1. The frame rail and the sheet metal ground clearance will be a minimum of two inches with the driver in race ready position.

Steering Components

1. Rack and pinion steering will be permitted.
2. All cars must have a magnetic steel steering shaft.
3. A quick release magnetic steering wheel hub must be used.
4. The power steering pump must be mounted and driven off the front of the engine.

Brakes and Components

1. Four wheel disc brakes must be used. Only magnetic cast iron or cast steel rotors will be permitted.
2. Inboard brakes will not be allowed.

Fuel Cell

1. All cars must have a bladder type fuel cell.
2. The fuel cell vent must be one inch maximum and vent to the outside of the left rear taillight area only.
3. The fuel cell container must be installed as far forward as possible in the trunk compartment behind the rear axle and maintain a minimum ground clearance of six inches.

Battery

1. Only a single 12 volt conventional battery will be permitted. The battery must be located between the frame rails.
2. The battery can not be forward of the radiator or rear of the rear end housing of the car.
3. All batteries must be covered.

Overflow tanks/ surge tank – vents:

1. All overflow tank and surge tank vents must exit out of the rear panel where the right rear quarter panel is attached to the rear panel.