

2009 WATERFORD SPEEDBOWL MODIFIED DIVISION RULES

By registering as an owner or driver you agree to be knowledgeable and bound by the contents found in these divisional rules and in the General Rules.

2.0 GENERAL DIVISION RULES:

A) In the following rules you will see the term "stock OEM" used. This means "original equipment manufacturer". These parts must come on a standard production car.

B) No carbon fiber or titanium parts allowed.

C) None of the following will be allowed in or on any engine or driveline component or part: abrasive cleaning, acid dipping, chemical milling, coating, epoxying, finishing, grinding, painting, plating, polishing, porting, etc.

D) The rules herein are for the Waterford Speedbowl only, with no expressed or implied agreement with any other Division or Speedway as to their interpretation and/or method of inspection.

E) All equipment must be approved by track officials. No equipment is considered to be approved by reason of having passed through a technical or safety inspection unobserved. No car will be considered as having passed inspection for the event until the finish is made official.

F) All engine models, equipment changes, or modifications not specifically addressed in this rule book must be submitted to the Waterford Speedbowl for consideration of approval prior to competition.

G) All equipment is subject to the approval of the Waterford Speedbowl Officials.

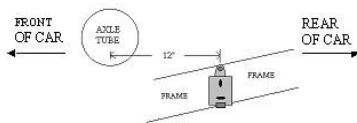
H) Once a car has been presented to the Waterford Speedbowl Officials for post race inspection the entire car and all of its components become subject to inspection. This includes but is not limited to items designated for inspection following a particular event

I) All rule changes and updates made during the course of the season for the current rulebook will be posted to the Waterford Speedbowl website (www.speedbowl.com). This will serve as the only form of official notification until the printing of the 2010 Waterford Speedbowl rule book.

J) An aftermarket, aluminum fabricated racing seat, sized correctly for the driver, must be used. The seat frame must be made of steel tubing (min 1" round or square) and must be welded to the rollcage and/or frame. The seat cannot attach to any part of the floorpan. The seat must be bolted at 4 places at the bottom of the seat, and 4 places at the back. The bolts must be 3/8" diameter grade 8, with large fender washers on the seat side. You must have (2) head supports, (2) shoulder supports, and (2) leg supports bolted to your seat.

2.0.1 SCORING TRANSPONDER LOCATION:

Transponder mounting brackets will be installed on the inside (or outside) of the right rear frame rail. The round post of the bracket must be on top and the square tab on the bottom flush with the lower edge of the frame rail. The bracket must be mounted with its center line exactly 12" to the rear of the rear axle centerline and must be completely vertical to the ground. Transponder are required on the cars at all times. Any car not registering a transponder signal during practice will be black-flagged to be made aware of their scoring transponders failure and is required to remedy it before proceeding further in the event.



Transponders are available from:

AMB, US, Inc

32 Highlands Parkway, Suite 104

Smyrna, GA 30082

Tel 678-816-4000 Fax 678-816-4001

2.1 DETAILED RULES FOR MODIFIED DIVISION:

2.1.1 COMPETING BODY MODELS:

This Division is open to these 1982 and later models of American-made steel bodied cars:

BUICK- Skyhawk

CHEVROLET- Cavalier, Monte Carlo

DODGE- Daytona, Stealth

FORD- Mustang II, Probe, Escort

MERCURY- Merkur

OLDSMOBILE- Firenza

PLYMOUTH- Laser, Sundance

PONTIAC- Sunbird, J-2000, Grand Prix

Other models may be approved providing they are the same in body configuration and meet the spirit and intent of these rules. Obtaining approval for other models must be done prior to competition.

2.2 GENERAL CAR BODY REQUIREMENTS:

2.2.1 CAR BODY:

A) The car body and interior sheet metal must be neat appearing.

B) Window openings must remain stock appearing. A distance of 43" to 45" must be maintained across the body at the bottom of the front windshield.

C) Bodies must not extend below the frame rails. No skirts or additional material may extend below the body and frame.

D) The floor area directly beneath the seat forward to the front engine firewall (left side floor) must be made using a minimum of 1/8" thick steel. The remainder of the floor area to the right of the seat must be made from a minimum 22 gauge (.030") magnetic steel. Driver's side floor panels must be welded to frame rails.

E) No streamlining at the top of the windshield. Bodies must have standard appearing windshield opening

and the front and rear window posts (A, B, and C posts) must resemble the stock OEM configuration.

F) No car will be allowed to compete with excessive body damage.

G) No belly pans allowed. Bottom panel (tray) of the front nose panel may not extend rearward past the front edge of the engine harmonic balancer.

H) The driver's compartment may be enclosed with additional magnetic steel (minimum .024"/24 gauge) sheet metal. No interior sheet metal can be higher than or enclose any of the window openings. Sheet metal in driver's compartment must be horizontal from the top of the drive shaft tunnel to the right side door bars or angle from top of drive shaft tunnel upwards to top of right side door bars.

This angled or horizontal sheet metal must extend from the main roll cage hoop or the back of the seat a minimum of 26" forward.

I) The interior sheet metal behind the driver (right and left side) must be made of magnetic steel (minimum .024"/24 gauge), and be roll formed or angled upward to meet the top of the tail light / rear panel.

J) Double panels, wind deflectors, wings, or interior spoilers are NOT allowed.

2.3 CAR WEIGHT:

2.3.1 Cars will be weighed after the feature event. They must meet the following:

A) The minimum weight is 2600 pounds including the driver.

B) The maximum left side weight is 56% of the total car weight including the driver.

C) Nothing may be added to or taken from the car to meet total or left side weight after a race. An amount equal to .5% of the total weight will be added for loss in weight due to race wear.

2.3.2 ADDED CAR WEIGHT:

Magnetic steel or lead is the only acceptable added weight. Weight must be in block form in no less than 5 pound blocks. Weight must be painted white with your car number on it. No weight is

permitted inside the driver's compartment. Weight must be encased in steel and welded or bolted to the chassis or frame with two or more (Grade 5 minimum) bolts, minimum 3/8" diameter.

2.4 DETAILED CAR BODY REQUIREMENTS:

2.4.1 SPOILERS:

A spoiler is a dedicated part of the body which controls/directs the flow of air over 1 surface only.

2.4.2 FRONT SPOILER / NOSE PANEL:

An aluminum front spoiler / nose panel must be used.

A) It must not extend forward past the rear edge of the front bumper.

B) It may not be wider than the front frame rails that it attaches to.

C) It may not be higher than the leading edge of the hood.

D) The front spoiler / nose panel must maintain a minimum of 2" ground clearance at all times.

An approved aluminum or plastic air dam may be mounted perpendicular to the ground, under the nose panel bottom tray, no more than 3" behind the leading edge of the nose panel. All air dam support brackets must be mounted to rear side of the air dam. No horizontal or flat air deflectors may extend past the outer edges of the front nose panel side walls. The air dam must maintain a minimum of 2" ground clearance at all times.

2.4.3 REAR SPOILER:

A) A solid rear spoiler of clear polycarbonate (Lexan) may be installed at the rear edge of the rear deck lid.

B) The maximum spoiler size is 8" high X 48" wide. The rear spoiler may not be wider than the width of the rear panel, measured across the top. No part of the spoiler may be located behind the trailing edge of the rear bumper.

C) A maximum of two 1" wide adjustable supports may be used on the front of the spoiler.

D) A maximum of 3 supports may be used on the backside of the spoiler. The front and rear supports must be attached to the spoiler using a piece of 1"x1" aluminum angle 1" long.

E) A maximum of 36" measured from the ground to the spoiler mounting point is permitted. A maximum of 44" measured from the ground to the top of the spoiler is permitted.

F) One 1" X 1" X 1/8" aluminum angle, a maximum of 48" long, may be attached to the backside of the rear polycarbonate spoiler.

G) No decals or logos are permitted on the rear spoiler.

2.4.4 WINDSHIELD:

A) A polycarbonate (lexan) windshield must be used on the driver's side. A full front polycarbonate windshield is optional.

B) The windshield must be mounted flush with the cowl or dash panel and extend up to the top of the windshield opening in front of the driver.

C) A complete steel screen (with maximum openings of 1" x 2") must be installed in the right side of the windshield opening.

D) No decals or logos are permitted on the windshield.

2.4.5 REAR WINDOW:

The use of a polycarbonate (lexan) rear window is permitted. When a rear window is used, it must completely enclose the rear window opening. No decals or logos are allowed on the rear window.

2.4.6 SIDE WINDOW GLASS/WINDOW NET:

A) Polycarbonate "C" pillar (side) windows are permitted.

B) An SFI rated nylon window net must be installed in the left side door window opening. It must be positioned to cover the driver.

C) The window net must be rib type, made from 3/4" or 1" wide nylon material with a minimum 1" and a maximum 2-1/4" square opening between the ribs. The minimum window net size must be approximately 22" wide by 16" high. All window net mounts must be a minimum 1/2" diameter solid steel rod on the bottom and a minimum 1" wide by 3/16" thick flat steel bar, or a minimum 1/2" diameter solid steel round bar on the top, with mounts welded to the roll cage. The window

net, when in the closed position, must fit tight and be secured with a lever-type quick release latch acceptable to Track Officials. The lever must be secured by a detent ball in the lever and may be supplemented by a Velcro® fastener only – pins or clips will not be permitted. The latch must mount at the top in the front to roof bar (#3) and release from the inside.

2.4.7 TAIL LIGHT PANEL / BACK PANEL:

All cars must be equipped with a solid aluminum tail light (back) panel.

A) No vents, holes, or louvers may be in the back panel.

B) The back panel must not be any higher than 36" from the ground, it must extend down to the top of the frame rails, it must not be any wider than the quarter panels, and have a maximum 1 1/2" lip on the bottom edge.

2.4.8 REAR VIEW MIRROR:

One mirror mounted in the upper center of the windshield may be used. No other mirrors are allowed.

2.4.9 DASHBOARD:

The dashboard must be approved by Track Officials.

2.4.10 FIREWALLS:

A) A front and rear firewall of not less than 22 gauge steel (.030") must separate the driver from the engine compartment and fuel cell area.

B) The front firewall must be positioned below the leading edge of the windshield.

C) The firewalls must completely seal the drivers compartment.

2.4.11 DOORS:

A) The top of the door panel must be roll formed similar to a stock production car.

B) The door panel must be made of a minimum .024" steel or .040" aluminum.

C) Seams, creases or accent lines in the doors must be made parallel with the top of the door.

D) A distance of 72" to 78" must be maintained when measured from the center of the rear axle housing forward to the front of the door.

E) A maximum distance of 45" is permitted when measured across the car at the front outside edges of the door panels.

F) The doors must maintain a minimum of 2" ground clearance at all times.

2.4.12 QUARTER PANELS:

A) The top of the quarter panel must be roll formed similar to a stock production car.

B) The quarter panel must be made of a minimum .024" steel or .040" aluminum

C) The rear wheel opening on the right side must be a minimum of 11" radius to a maximum of 14" radius, measured at the center of the rear axle.

D) A distance of 34" to 42" measured from the center of the rear axle to the rear of the body must be maintained.

E) A maximum distance of 60" is permitted between the top of the quarter panels measured across the body at the rear axle housing.

F) The maximum height of the rear quarter panels measured from the ground to the top/rear of the quarter panel is 36".

G) The rear quarter panels must maintain a minimum of 8" ground clearance.

H) A maximum of 4 degrees of rake is permitted in the body, measured anywhere along the quarter panels and doors.

2.4.13 HOOD / ROOF / WINDOW POSTS:

A) A hood manufactured from a single piece of aluminum or fiberglass is mandatory.

B) The hood must completely cover the engine compartment from left to right and turn down a minimum of 4" on each side.

C) Only openings (cut-outs) for the air cleaner and the distributor are permitted.

D) No part of the hood may be higher than the bottom of the air cleaner.

- E) Hood must be fastened with at least 4 hood pins.
- F) Roof must be stock appearing for the make and model of body used. All roof panels must be a stock OEM magnetic steel roof, or an IMCA approved fiberglass roof. All fiberglass roofs must be pre-approved by the Waterford Speedbowl Officials.
- G) Window posts (A, B, and C posts) must maintain the same angles as the stock OEM body style used.
- H) **The Front Window Post** (A post) must be made of aluminum and attach to the roof and the leading edge of the door.
- The Mid Window Post** (B post, if used) must be made of aluminum and attach to the roof and the door.
- The Rear Window Post** (B and/or C post) must be made of aluminum and attach to the roof and the rear quarter panel. No part of the rear window post may be taller than the mounting point at which it attaches to the roof.
- I) Roof and roof posts must be fastened for quick removal with "DZUS" type fasteners.
- J) Roof numbers must be readable from passenger's side of car.

2.4.14 REAR DECK LID:

The rear deck lid must be made of magnetic steel, a minimum of .024" thick (24 gauge).

2.4.15 BUMPERS:

- A) The front bumper must be made of 2 identical pieces of 1-1/2" to 1-3/4" diameter round magnetic steel tubing, 4" to 6" apart, center to center.
- B) The 2 bars must be convex in shape, have rounded corners, and be mounted to the front frame rails.
- C) The 2 bars must have 2 to 4 vertical connectors made of 1-1/2" to 1-3/4" diameter steel tubing. If 4 vertical connectors are used, 2 must be welded at the radiused corners.
- D) 2 additional support bars may be added from the center of the bumper bars angled back to the bumper attaching brackets. They must be made from a maximum of 1" round or square steel tubing.
- E) A maximum distance of 30" from the center of the front spindle to the front of the front bumper must be maintained.
- F) The horizontal centerline of the front bumper must be 15" off the ground.
- G) The rear bumper must be made from a solid (no holes) aluminum extruded "I" beam, with a minimum size of 2-3/4" high x 4" wide x 3/16" thick.
- H) The rear bumper must be 48" to 50" long, with each end of the bumper cut square and capped with aluminum plates.
- I) The rear edge of the rear bumper must be a maximum of 46" behind the centerline of the rear axle.
- J) The horizontal centerline of the rear bumper must be 15" off the ground.
- K) The rear bumper extensions must be a minimum of 1-1/2" x .125 wall round or square magnetic steel tubing. Bumper extensions may be welded or bolted directly to the rear sub-frame crossmember. If bumper extensions are bolted to the rear sub-frame crossmember, four 3/8 diameter quality steel bolts must be used. Bumper extensions must have a rear bumper mounting flange a minimum of 1/4" thick flat magnetic steel welded completely to the bumper extension. Four rear bumper mounting bolts per side must be used and be a high quality minimum 3/8 inch diameter solid magnetic steel.

****Cars may not compete without a front and rear bumper securely and mechanically fastened**.**

2.4.16 NERF BARS:

ALL nerf bars must be constructed using 1-1/4" to 1-3/4" diameter round magnetic steel tubing with a minimum .083" wall thickness.

The nerf bars must be constructed as follows:

- A) Right side nerf bar must be constructed by using two pieces of steel tubing. The bottom bar must attach to the rear of the frame rail and extend upward and outward even with the outside of the tires, or up to a maximum of 1/2" outside of the tires. The bottom side bar must extend

forward parallel with the frame rail and angle in to the front sub frame rail with minimal tire clearance. The bottom bar must be mounted centerline with the rear axle and front spindle. The top side bar must be attached centerline with the rear hoop cross bar extending outward and forward to the forward most point of the bottom bar. An additional support bar must be added in the center. That support bar must be attached to the frame rail and the lower side bar. Two additional vertical support bars must be added, one at the rear and one in the center of the side bars. The distance measured at the front, center to center, of the top and bottom bars at the turn down must be a minimum of 6". The distance measured at the rear center to center must be 6" to 9".

B) Left side nerf bar must be constructed using the same guidelines described above except that the rear support bar may be a radiused bar that attaches to the rear hoop bar centered on the cross bar and extending down and attached to the frame rail. Left side bars must be mounted by centering the two parallel side bars with the center of the rear axle and the front spindle, or the left side bars may be raised a maximum of 2" from centerline.

C) Rear corner nerf bars (left and right) must be constructed by using two pieces of tubing identically formed and welded to a steel bracket bolted to the rear bumper end. Each of the two formed tubes must be welded to the rear bumper bracket. The tubing must angle out and upward even with the outside of the tires, or up to a maximum of 1/2 inch outside of the tires and maintain a 6" dimension measured center to center. The bars must then turn in with a minimal tire clearance and attach to the frame or to support brackets welded to the frame. Two vertical support bars must be welded between the two nerf bars, one at each radius.

** No car will be allowed to compete without left or right side nerf bars.

** No car will be allowed to compete without left or right corner nerf bars.

2.5 ENGINE:

GENERAL ENGINE ELIGIBILITY:

The following will not be allowed in or on the engine, any engine component, or part: abrasive cleaning, acid dipping, chemical milling, coating, epoxying, finishing, painting, plating, polishing, porting, etc.

A static compression ratio measuring 11.5 to 1 or less is LEGAL.

A static compression ratio between 11.6 to 1 and 11.9 to 1 is legal IF:

Upon technical inspection the cylinder heads and pistons meet the rules herein.

A static compression ratio over 11.9 to 1 is ILLEGAL.

Chevrolet and Ford heads must have a minimum 60cc combustion chamber.

MOPAR heads must have a minimum 64cc combustion chamber.

The engine will be checked for compression using the Waterford Speedbowl "Whistler".

2.5.1 ENGINE LOCATION:

A) The engine must be mounted between the frame rails in front of the driver.

B) The centerline of the crankshaft when measured to the center of the lower ball joint, left and right, must be within 2" in distance.

C) The engine may not be tilted side to side or front to back.

2.5.2 ENGINE GROUND CLEARANCE:

A minimum of 2" height must be maintained between the ground and the bottom of the oil pan.

2.5.3 ENGINE BLOCK:

A) The following stock OEM cast iron V-8 engine production blocks must be used:

GM- Chevrolet 350

Ford (Cleveland or Windsor)- 351

Mopar- 360

B) Maximum cylinder overbore is .060":

C) The engine block must be an OEM standard production cast iron engine block.

D) The engine block may not have more than 2 cylinder sleeves installed and they must be made of cast iron material.

E) The engine block must retain all standard external dimensions.

- F) No angle cutting of the block deck permitted.
- G) The engine block may have lifter bore corrections.

2.5.4 PISTONS:

- A) Any flat top, 3 ring, aluminum piston is permitted.
- B) All 3 rings must be used, must be flat and made of magnetic steel, with minimum ring thickness as follows:
Compression rings- .043" , Oil ring assembly- 3.0 mm
- C) Valve reliefs (for valve clearance only) may be cut into the top of piston.
- D) No portion of piston may protrude above the top of the block deck.
- E) Only a magnetic steel piston pin maintaining a minimum diameter of 0.927" is permitted.
- F) The piston pin must be retained by a bushing. No bearings of any type allowed.
- G) A full floating pin is permitted.
- H) Piston pin hole must be in a fixed location in the piston and connecting rod.
- I) No self-centering connecting rod type pistons.

2.5.5 RODS:

- A) Stock OEM connecting rods or after-market steel I-beam "sportsman" style connecting rods must be used.
- B) Only normal engine balancing and the use of after-market bolts are permitted.
- C) Connecting rod length must be:
GM- 5.700" to 6.250"
Mopar- 6.000" to 6.250"
Ford- 5.778" to 6.250"
- D) All 8 connecting rods must be the same length.
- E) Aluminum, billett steel, magnesium, stainless steel or titanium connecting rods are not permitted
- F) Rods must align off the crankshaft rod journals.
- G) Minimum weight for piston, pin, rings, connecting rod and bearings (assembly) is 1075 grams.

2.5.6 OIL PAN:

- A) Aluminum or steel wet sump oil pans only.
- B) OEM type in the pan oil pumps only.
- C) Oil coolers are allowed.
- D) No oil tanks, external oil pumps, or accusump systems allowed.
- E) No external oil return lines are allowed.

2.5.7 CYLINDER HEADS:

Chevrolet engines must run one of the following cylinder heads:
Stock OEM cast iron GM# "461", "462" or "492" straight plug head or the DART part # 10024266.
Intake valve size must be 2.02" and exhaust valve size must be 1.60"
Combustion chamber size must be 60cc or larger.
If the tech inspector deems the cylinder head runners or combustion chambers have been chemically or mechanically altered in any way, the heads will be confiscated.

Ford Cleveland and Windsor engines:
Must run stock OEM cast iron cylinder heads of two barrel design that came on a passenger vehicle with an intake valve size of 2.05" and exhaust valve size of 1.66".
Stock valve diameter must be maintained. Combustion chamber size must be 60cc or larger.
Ford Motorsport Heads are not permitted.

Mopar engines:
Must run stock OEM cast iron cylinder heads of two barrel design that came on a passenger vehicle with an intake valve size of 2.02" and exhaust valve size of 1.60".
Stock valve diameter must be maintained. Combustion chamber size must be 64cc or larger. W2 or TA heads are not permitted.

No more than two intake-mounting holes may have HeliCoils. Intake or exhaust manifold mounting holes may not be added or relocated. Holes must take stock OEM diameter intake

manifold bolts.

Head gasket surface milling tolerance for all engines is 0.00" to 0.050" from true 23.00 degrees of stock OEM valve position.

There is no chemical or mechanical machining allowed in the combustion chamber or runners of the cylinder head.

If the tech inspector deems the cylinder head runners or combustion chambers have been chemically or mechanically altered in any way, the heads will be confiscated.

2.5.8 VALVES:

All valves must be identical in appearance and construction as the stock OEM type, and must be magnetic steel or stainless steel. No air directional devices will be permitted on any of the valve surfaces. Valve stems must have a minimum diameter of 11/32 inch.

2.5.9 VALVE JOBS:

All cutting and/or grinding must be centered off the centerline of the valve guide. Absolutely no hand grinding or polishing of any part of the head. On the combustion chamber side of the intake seat, no cutting and/or grinding may be larger in diameter than 2.350". On the combustion chamber side of the exhaust seat, no cutting and/or grinding may be larger in diameter than 1.930". On the bowl side of the intake and exhaust seats, the maximum angle of cutting and/or grinding will be 90 degrees. No cutting and/or grinding within 1/8" of the valve guide boss.

The following are the only modifications allowed on any heads:

Milling of the head gasket surface.

Installation of screw-in studs and pushrod guide plates.

Milling of the intake manifold gasket surface.

Installation of replaceable type valve guides or valve guide liners.

Replaceable type guide can be no larger in diameter than .564.

The bottom of the guide must also be exactly the same height as the original guide.

The bottom of the guide must be cut perpendicular to the valve stem.

Installation of replaceable type seat inserts.

Machining the top of guide for seals.

Enlarging of spring pockets.

All other head modifications are not allowed, including but not limited to:

Altering the position or angle of the valve or valve guide.

acid/chemical milling, dipping or machining, porting, polishing, grinding, glass beading, painting, coating, removal of any flashing or casting marks.

Welding, cutting, epoxying, or sectioning.

Cooling lines in the sides of the head.

Angle milling any gasket surface.

Note: Cylinder heads will be checked for volume numbers as a routine part of post race tech.

2.5.10 VALVE SPRINGS:

Any type magnetic steel valve springs allowed. Valve spring retainers must be made of magnetic steel.

2.5.11 CRANKSHAFT:

A) Only stock production OEM crankshafts are allowed.

B) The maximum allowable stroke tolerance is:

Chevrolet and Ford +/- .015".

Mopar +/- .005".

C) Minimum main journal size .020" under stock.

D) Minimum rod journal size .030" under stock.

E) Minimum crankshaft weight is:

Chevrolet 50 lb

Ford and Chrysler 54 lb.

F) Normal engine balancing will be the only acceptable modification that can be performed.

- G) Holes drilled in counter weights for balancing may be capped.
- H) Small journal crankshafts will not be permitted.

2.5.12 CAMSHAFT/TIMING GEARS:

- A) Only flat tappet camshafts made of magnetic steel are permitted.
- B) The maximum camshaft bearing journal size is 1.870" (47.5 mm).
- C) OEM sleeve type cam bearings only.
- D) OEM rotation and firing order only.
- E) Maximum lift at the valve with zero lash is .550".
- F) Stock OEM firing order must be maintained:
Dodge- 1-8-4-3-6-5-7-2
Ford- 1-3-7-2-6-5-4-8
General Motors- 1-8-4-3-6-5-7-2

2.5.13 VALVE LIFTERS:

OEM type flat bottom magnetic steel lifters with OEM diameter and length must be used.

2.5.14 TIMING CHAIN:

Stock OEM type chain and gears must be used.

2.5.15 ROCKER ARMS:

- A) Stock type or aftermarket roller rocker arms permitted.
- B) Chevy and Ford must run independent stud type rocker arms.
- C) Mopar may run stock type shaft rocker system.
- D) Stud girdles are permitted.
- E) No aftermarket shaft rocker systems allowed.

2.5.16 INTAKE MANIFOLD:

An unaltered stock OEM cast iron passenger car intake manifold of 2 barrel design (originally utilizing a 2 barrel carburetor on it) must be used.

It must be unaltered, with no modifications of any kind, including but not limited to: acid/chemical milling, dipping or machining, drilling, porting, polishing, grinding, glass beading, internal painting or coating, removal of any flashing or casting marks.

Welding, cutting, epoxying, or sectioning.

Angle milling of any gasket surface.

A track supplied stock intake manifold must fit your engine complete with stock gaskets.

All bolt holes must maintain stock alignment and diameter.

Absolutely no coolant lines in the intake manifold.

Note: Intake Manifolds will be checked for volume numbers as a routine part of post race tech.

2.5.17 CARBURETOR:

The only approved carburetor shall be the Holley two-barrel model # 4412. All parts must be a Holley part for the 4412.

- A) No polishing, grinding or drilling of holes permitted anywhere on the carburetor.
- B) The choke assembly must be removed, and all screw holes must be permanently sealed.
- C) The choke horn must not be removed.
- D) The boosters must not be changed. The size, shape and location of the boosters must not be altered.
- E) The venturi area must not be altered in any manner. Casting ring must not be removed.
- F) Alterations to allow additional air to enter below the opening of the venturi such as altered gaskets, base plates and drilling holes into the carburetor is not permitted.
- G) The base plate must not be altered in shape or size.
- H) The butterflies must not be changed, thinned or tapered. Idle holes may be drilled in butterflies. Screw ends may be cut even with shaft but screw heads must remain standard.
- I) The throttle shaft must remain standard and must not be thinned or cut in any manner.

2.5.18 CARBURETOR SPACER:

- A) One solid spacer made of aluminum or phenolic with a maximum height of 1" must be used.
- B) Only one .075" max. gasket per side.
- C) No wedge shaped mounting surfaces, both top and bottom surfaces must be parallel.
- D) Spacer can be no larger than base of carburetor.
- E) Port holes or hole must be vertical to the surfaces with no beveling, tapering, or flaring.
- F) No additional openings for the induction of air allowed.

2.5.19 CARBURETOR JETS:

Holley 4412 type jets must be used.

2.5.23 CARBURETOR AIR FILTER/AIR FILTER HOUSING:

- A) Only one round, dry type, paper air filter element, 12" to 14" in diameter and 1-1/2" to 5" tall must be used. All air must be filtered through this element.
- B) The air filter housing top must be round, 12" to 15" in diameter, and made of steel or aluminum. The air filter housing base must be round, 12" to 15" in diameter, made of steel or aluminum, and must have one 5" to 5-3/8" diameter round hole in it (for mounting on the carburetor). The air filter housing top and bottom must be the same diameter, and must sit level and centered on the carburetor.
- C) The bottom of the air filter element must measure within 1" in height to the carburetor top (air filter housing mount) flange.
- D) A shield may be run on the front of the air filter element. It may cover up to 1/2 the diameter of the element, and must be no taller than the element.
- E) Anything that alters air flow in, on, or around the carburetor and air filter is illegal.
- F) No part of the air filter element may be lower than any part of the hood.

2.5.20 AIR INTAKE:

No cowl air induction permitted. Absolutely no ducts or baffles permitted on or leading to the air cleaner or element.

2.6 ENGINE/CAR ELECTRICAL SYSTEM:

2.6.1 IGNITION SYSTEM:

- A) An OEM type HEI distributor must be used. The distributor must have a stock type housing, have stock type controls and modules, be equipped with a magnetic pickup, be gear driven, and be mounted in the stock location.
- B) Only one ignition coil is permitted and must be mounted on engine side of the firewall.
- C) Electronic firing module amplifier box is not permitted.
- D) Computerized, multi-coil, dual electronic firing module box or crank trigger systems are not permitted.
- E) Magnetos are not permitted.
- F) Adjustable timing controls are not permitted.
- G) Retard or ignition delay devices are not permitted.
- H) Only MSD # 8728 External RPM limiter with the violet wire cut back flush to the unit's housing, with the green and the white wires run directly to the coil negative, mounted on the engine side of the firewall in plain view, will be permitted (if used.)
- I) Accessories to regulate the power supply are not permitted.
- J) The tachometer wire must run from the distributor to the tachometer along the #8 dash bar separate from any other wires and in unobstructed view for inspection. The tachometer wire must be isolated from any other wires, connection or devices. The entire length of the tachometer wire must be visible from distributor to gauge.
- K) The Vacuum advance unit may be replaced with a manual non-electronic timing adjuster that does not extend more than two inches beyond the distributor housing.

2.6.2 ALTERNATOR:

The alternator (if used) must be mounted to, and driven off of, the front of the engine.

2.6.3 STARTER:

- A) An OEM style or a gear reduction style starter is allowed.
- B) The starter must mount in the stock OEM position for your make of engine.
- C) All cars must be capable of starting under their own power.

2.6.4 BATTERY:

- A) One automotive type lead acid or gel battery must be used.
- B) The battery must be located between the frame rails and under the hood or floor of the car. If located under the floor, the battery must be completely encased. If located under the hood, the battery must have a suitable cover.
- C) The battery may not be installed in front of the radiator or behind the rear end housing of the car.

2.6.5 ELECTRICAL SWITCH LOCATION:

- A) All electrical switches must be located on the dash panel or within easy reach of the driver.
- B) A labeled on/off master battery switch must be installed on the cowl behind the windshield opening on the right side of the driver. The switch must be easily accessible and in plain view.

2.7 ENGINE COOLING SYSTEM:

2.7.1 WATER PUMP:

- A) An OEM type mechanical water pump must be used.
- B) Any serpentine, cog or V-belt pulley system is allowed.

2.7.2 FAN:

An engine mounted, pulley driven mechanical fan or an electric fan may be used.

2.7.3 RADIATOR:

- A) The radiator must remain in front of the engine.
- B) Only water and "water wetter" brand additive may be used in the cooling system.

2.8 ENGINE EXHAUST SYSTEM:

2.8.1 EXHAUST PIPES/MUFFLERS:

- A) Headers are permitted. Headers must be a commercially manufactured header.
- B) 180-degree headers, Tri-Y headers and Multi merge headers are not permitted.
- C) The exhaust header flange must mount directly to the cylinder head with no spacers between the flange and the cylinder head. A maximum header flange thickness of 1/2" is permitted.
- D) Inserts are not permitted in any part of the header or collector. Only one collector allowed per side. Crossover and pyramid type collectors are not permitted.
- E) Exhaust pipes must come out of engine at cowl and must extend a minimum of 6" rearward past the cowl.
- F) Unaltered LOBAK # RCM 30-12-30 or LOBAK # 35-12-35 mufflers are required at all times. Modifications or repairs of any type are not permitted on the muffler. Both muffler flanges must be intact. Mufflers must be removable for inspection.
- G) Thermal wrap is not permitted anywhere on exhaust system.
- H) Only one muffler and exhaust pipe allowed per side.
- I) Race teams are responsible for the condition of their mufflers. Mufflers found to have deteriorated baffles due to rust/rot will be treated the same as if they were modified. Your mufflers must be in good condition and have complete baffles.

2.8.2 HEAT SHIELDS:

Heat shields to cover exhaust header can be no more than 6" wide and no longer than the valve cover.

2.9 DRIVE TRAIN:

2.9.1 FLYWHEEL AND CLUTCH:

- A) A Stock OEM steel flywheel, or a replacement steel billet flywheel with OEM stock dimensions must be used.
- B) Pressure plate must be stock OEM or a stock OEM replacement, with a minimum diameter of 10".
- C) Clutch disc must be stock OEM type or approved "paddle type", with a minimum diameter of 10"
- D) Minimum weights:
Flywheel- (no bolts) 12.5 LBS.
Pressure plate- (no bolts) 13 LBS.
Disc- 3 LBS.
- E) Drilling or lightening of any part is not permitted.
- F) Steel bolts only. Flat surface machining allowed only on the face of the flywheel, any cutting on the back side of the flywheel is illegal.

2.9.2 BELL HOUSING:

- A) A commercially manufactured steel bell housing made from a minimum 1/4" magnetic steel must be used.
- B) It must enclose the flywheel and clutch completely, 360 degrees around.
- C) An opening no larger than 3-1/2" x 4" may be used for throw out bearing access. This hole may be covered with magnetic steel sheet metal.

2.9.3 TRANSMISSION:

Only an OEM production stock 3 speed cast iron transmission, an OEM production stock 4 speed cast iron or aluminum transmission, the Richmond 2-speed transmission (part # 7020010, 7020026, 7027010, 7027026) as produced by Richmond, or the Jerico oval track 2 speed transmission (part # 2SP) as produced by Jerico are allowed.

- A) OEM production 3 speed cast iron transmissions may be run, and the only modification allowed is the tailshaft bushing may be relaced with a needle type bearing. No other modifications of any kind permitted.
- B) OEM Cast iron or aluminum 4 speed transmissions may be run, and the only two modifications allowed are:
 - 1) The removal of first gear.
 - 2) The tailshaft bushing may be replaced with a needle type bearing. No other modifications of any kind allowed.
- C) The Richmond 2 speed transmission may be run, with only the following 3rd gear options allowed: 1.2250, 1.3391, 1.4588, 1.5956, and 1.7442. The dogrings inside the Richmond transmission may be replaced with aftermarket ones.
No modifications or options are allowed to the base Richmond 2 speed. Any coatings, finishings, lightweight parts, added machining, or special bearing upgrades are not allowed.
- D) The Jerico 2 speed transmission may be run, with only the following 3rd gear options allowed: 1.2250 to 1.7100.
No modifications or options are allowed to the base Jerico 2 speed. Any coatings, finishings, lightweight parts, added machining, or special bearing upgrades are not allowed.
- E) All forward and reverse gears (except the ones that have been legally removed) must be in working order, and they must be operational from the driver's compartment.

2.9.4 DRIVE SHAFT:

- A) The drive shaft and universals must be similar in design to standard production type. Only a 1 piece magnetic steel drive shaft is permitted.
- B) It is mandatory that two 360 degree solid steel brackets, no less than 2" wide and 1/4" thick, be placed around the drive shaft and torque arm(s) and be fastened to the cross member of the car.
- C) All driveshafts must be painted white.

2.9.5 REAR AXLE:

- A) Commercially manufactured quick change and non-quick change rear ends are allowed. Stock

OEM rears are allowed (like the Ford 9"). "Floating" axles and hubs must be used. Axles must be made of magnetic steel. Axle tubes must be made of magnetic steel. Center sections and bells may be made of magnetic steel, aluminum, or magnesium. Aluminum or steel spools must be used. No ratcheting, limited slip, or torque sensing differentials are allowed. All rears must run a spool, permanently locking the left and right axles together.

B) The distance, measured from the center of the rear end housing to the rear hubs, left and right, at the point the wheels bolt on, must be within 3" in length.

C) The rear end must be mounted so that the inside edge of the left rear tire is even with or outside the outermost edge of the left side frame rail.

D) On all cars constructed for 1989 or later, the rear end must be mounted so that the inside edge of the left rear tire is even with, or outside, the inside edge of the left frame rail between the front and rear firewall. Cars competing under this amended rule must have roll cage widened and mounted on top of the frame rail the same as current models.

E) **GEAR RULE** – 5.38 maximum and 4.86 minimum for quick-change rears. 5.28 maximum and 4.86 minimum for straight rears

F) Coatings or finishings of any kind are NOT permitted anywhere in or on the rear axle assembly.

G) Only 10" ring gear rear ends are permitted.

2.9.6 WHEELS AND LUG STUDS/NUTS:

A) 15" diameter magnetic steel wheels with a maximum width of 15" must be used.

B) Any offset is permitted.

C) Solid 5/8" magnetic steel lug studs and magnetic steel lug nuts must be used.

D) Bead locks are not permitted.

2.9.7 TIRES:

A) A track tire rule is in effect (See tire rule as posted by track).

B) All tires must be purchased from the track tire dealer.

C) No grooving, buffing, grinding, and/or cutting on the tires is allowed.

D) The use of tire altering chemicals is forbidden ("soaking", inside or out).

Notice: Participants competing in any race at the Waterford Speedbowl specifically agrees that he/she acknowledges it is illegal to soak or treat racing tires and that said soaking or treatment of racing tires is against EPA regulations and further contains carcinogens and hazardous material which are unfit for his/her health and the health of all competitors and spectators.

2.9.8 APPROVED TIRE REQUIREMENTS:

All tires must be used in approved positions, as dictated by the track tire rule in effect.

2.10 FRAMES:

2.10.1 GENERAL FRAME ELIGIBILITY:

The frame and all its components must be made of welded magnetic steel box tubing, and meet the requirements described in the following paragraphs.

2.10.2 FRAME REQUIREMENTS:

A) A minimum ground clearance of 2" must be maintained on all parts of the frame, at all times, with the driver in the car.

B) Side frame rails and rear kick up must be constructed using 2" x 3" x .120" wall thickness steel box tubing. The distance from the centerline of the driveline to the left side frame rail, measured anywhere along the frame, must be within 6" (8" on 1989 and newer models with the frame rail and roll cage extension) of the distance from the centerline of the driveline to the right frame rail. A distance of 34" to 46" must be maintained measured from center of left frame rail to center of right frame rail in the driver's compartment. A distance of 31" to 46" measured from center of left frame rail to center of right frame rail, must be maintained on the rear kick up, with exception for suspension and tire clearance. All rear kick ups must maintain a minimum of 18 degrees* from side frame rails to top of kick up.

C) A fuel cell protector bar, using a minimum 1-1/2" seamless steel tubing, must be installed

behind the fuel cell. This protective bar must be as wide as the fuel cell and as low to the ground as the fuel cell with a minimum of two uprights from the protective bar to the rear frame crossmember, evenly spaced behind the fuel cell. An X crossmember made of 1" x .083" steel box 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 additional support bars, one at each corner of the protective bar, must extend forward and be welded to the rear frame assembly.

D) The front sub-frame assembly must be constructed using 2" x 3" x .083" steel box tubing. A distance of 27" to 32", measured from center of left frame rail to center of right frame rail, must be maintained from the mounting point of upper control arms forward. All front sub-frame assemblies must maintain a minimum of 30 degrees of "up" angle from side frame rails up to the top of the sub-frame. All sub-frame assembly support bracing shall be a minimum of 1-3/4" x .090" round steel tubing. Frame support bars, left and right, must extend from the roll cage to the sub-frame and must have a downward radius bent into the bars before they are welded to the sub-frame. The left and right support bars must not have any additional braces added between the front leg bars and where they attach to the front sub-frame assembly. A tube may be added to the front support bar at the radius and extend forward and be attached to the crossmember.

E) In order to increase the driver compartment area, the left side frame rail and roll cage may be moved out a maximum of 2". This rule applies to all cars being constructed for 1989 and later.

2.11 SUSPENSION:

2.11.1 COILOVERS:

A) Front coilovers must mount to lower control arm and chassis.

B) Rear coilovers must both be located either inside or outside of frame rails.

2.11.2 SWAY BARS:

One front sway bar made of magnetic steel may be used. No rear sway bars allowed.

2.11.3 COIL OVER SHOCKS:

A) No double adjustable shocks.

B) No remote adjustable shocks.

C) No shock with a published Racers Net Price of greater than \$300.00 will be permitted.

D) Any shocks to be approved must be available to all competitors.

E) Competitors may be required to supply the retail receipt (price/cost documentation) for their shocks.

2.11.4 UPPER/LOWER A-FRAMES:

Upper A-frames and lower control arms must be acceptable to Waterford Speedbowl Officials.

2.11.5 SPINDLES, WHEEL BEARINGS, AND HUBS:

A) Any type OEM or aftermarket magnetic steel spindles are allowed.

B) Standard aftermarket wide 5 aluminum or magnesium racing hubs must be used. Hubs with "oiled" bearings are not allowed.

C) Wheel bearings must be magnetic steel.

D) NASCAR approved wheel tethers must be used on the front spindles/hubs.

2.11.6 TRACK WIDTH REQUIREMENTS:

A) The front and rear track width, measured at spindle height must be a maximum of 84" or less.

B) Wheel spacers are permitted.

2.11.7 WHEELBASE REQUIREMENTS:

A) The minimum wheelbase permitted is 107".

B) The allowable tolerance is +/- 1" on the other side.

2.11.8 BODY HEIGHT AND GROUND CLEARANCE REQUIREMENTS:

2.11.8.1 BODY HEIGHT REQUIREMENTS:

- A) The minimum roof height is 40", measured 6" behind the top of the windshield on the roof centerline, with the driver in the car.
- B) The rear of the roof at the highest point shall be no more than 3" higher than the front measurement.

2.11.8.2 GROUND CLEARANCE REQUIREMENTS:

A minimum distance of 2" of frame and body clearance, with the driver in the car, must be maintained at all times.

2.11.9 WEIGHT SHIFTING DEVICES:

- A) No mechanical devices for shifting weight is permitted inside the driver compartment.
- B) No hydraulic or electronic weight shifting devices are permitted.

2.12. STEERING COMPONENTS:

- A) Rack and pinion or steering box type steering must be used.
- B) Magnetic steel steering shaft must be used.
- C) The center of the steering wheel must be padded.
- D) A quick release coupling must be used on the steering wheel. The coupling cannot be covered with plastics or coatings.
- E) At least one steering shaft universal must be used along the length of the steering shaft.
- F) A collar must be installed on the steer shaft to prevent it from disengaging the splines on the rack.

2.13 BRAKES AND BRAKE COOLING:

2.13.1 BRAKE COMPONENTS:

- A) A fully operational 4 wheel hydraulic disc brake system must be used.
- B) Rotors must be steel and fully circular (no scalloped rotors allowed).
- C) Aluminum or magnetic steel brake calipers must be used.
- D) No drilled or slotted rotors allowed.
- E) The brake rotors must bolt to the hubs (floating brake rotors are not allowed).
- F) No inboard brakes allowed.
- G) No electronic brake actuators allowed.
- H) No power assisted braking systems allowed.

2.13.2 BRAKE COOLING:

One air duct per wheel may be used for brake cooling. Front brake ducts must be a maximum of 3" x 8" , and may be mounted to the front bumper, frame or front suspension components. Rear brake scoops must be a maximum of 10" long x 8" wide, and may be mounted in the quarter panel or door. Brake ducts, front and rear, may have one piece of screen covering their opening, with a mimum of 1/2" openings.

2.14 FUEL:

2.14.1 DEFINITION:

The word "Fuel", whenever used in this document shall be understood to mean automotive gasoline which complies with the specifications given in this section.

2.14.2 FUEL SPEC'S:

A) The Waterford Speedbowl has instituted an approval process for all racing gasoline. The intent of this rule is to help control costs, to eliminate very expensive fuel blends and fuel additives, and to insure that the fuels used are available to all. Only the specific fuels listed alphabetically below may be used in practice or competition. Blending of fuels or use of any additives is not permitted. The following fuels are permitted:

Power-Mist Race Fuels-	TWS, T112
Rocket Brand Racing Fuel-	111L
**Sunoco Race Fuel-	Standard, Supreme
Turbo Blue Race Gas-	Turbo Blue Leaded

VP Racing Fuels-

VP 2BBL, VP C-12

These fuels are available for purchase at Waterford Speedbowl

Several testing procedures will be utilized to insure that all racers use only approved fuels. Any and all fuel samples taken must exactly match all of the manufacturer's printed specifications for that brand and grade of fuel, or penalties will result.

B) Icing or cooling of the fuel system is not permitted at any time.

C) Gasoline may be tested and certified at any event through the application of various chemical analyses as considered appropriate by officials. Gasoline may be checked before, during and after the racing events.

D) Nothing may be placed in the fuel line other than a standard fuel filter. The use of any type of fuel catalyst or other fuel-altering devices is not permitted.

2.14.3 FUEL SYSTEM:

A) Fuel cells, containers, or check valves which appear to be damaged will not be allowed in competition.

B) Fuel cell vent check valves are mandatory.

C) No pressure systems allowed. Any concealed pressure type containers, feed lines or actuating mechanism are not permitted, even if inoperable.

D) No fuel catalysts or converters.

2.14.4 FUEL CELL & CONTAINER:

The use of a commercially manufactured fuel cell with a flexible bladder is mandatory.

A) The maximum fuel cell capacity, including the filler spout and overflow, is 24 gallons. The nominal fuel cell dimensions are 24-1/4" x 16-3/8" x 13-1/4".

B) No material other than standard foam as provided by the fuel cell manufacturer is permitted to make the fuel cell meet the 24 gallon capacity.

2.14.5 FUEL CELL CONTAINER:

The use of a magnetic steel fuel cell container is mandatory.

A) The fuel cell must be encased in a container of not less than 22 gauge (.030") steel. Fuel cells must be fitted within the container so that the maximum capacity, including filler spout will not exceed 24 gallons.

B) The 24 gallon capacity fuel cell container size shall be 25" x 16-3/4" x 13-5/8" (inside dimensions).

C) Interior sheet metal configuration must allow access to top of fuel cell for inspection.

2.14.6 FUEL CELL AND FUEL CELL CONTAINER INSTALLATION:

A) the fuel cell and fuel cell container must be installed as far forward as possible, behind the rear axle, and maintain a minimum ground clearance of 6", with the driver in the car .

B) The fuel cell container must be secured by 1" x 1" square steel tubing or 1" x 1/8" thick steel straps, two lengthwise and two crosswise. The straps must be located as close to the fuel filler check valve housing as possible.

C) A rear fire wall of a minimum 22 gauge (.030") steel sheet metal must be located between fuel cell and the driver's compartment.

2.14.7 FUEL FILLER:

For Dry Coupling / Dry Break rules, consult the 2008 NASCAR Modified rules. If a gas cap is used it must be painted white with your car number on it for identification.

2.14.8 FUEL CELL VENT:

A 1" maximum ID vent to outside of body at left rear corner must be used. A fuel vent check valve is mandatory.

2.14.9 FUEL LINES AND FUEL PUMP:

2.14.9.1 FUEL LINES:

A) Either (or both) right or left side pickup in the fuel cell may be used.

- B) Only one fuel line permitted from fuel cell to fuel pump, and one fuel line permitted from fuel pump to carb.
- C) The fuel line can be no larger than 1/2" ID.
- D) Fuel line from cell to pump must remain under floor of car.

2.14.9.2 FUEL PUMP:

An OEM style mechanical fuel pump that mounts in the stock location on the engine must be used.

2.14.9.3 FUEL SHUT-OFF:

A 1/4 turn fuel shut-off valve of minimum 3/8" NPT with minimum 4" handle is required in the fuel line. The fuel shut-off valve must be located 8" inboard of the passenger side frame rail and 24" forward of the main roll bar (#1 bar). The fuel shut-off valve must be mounted securely to the under side of the driver's compartment sheet metal. The fuel shut-off valve shank must protrude through a maximum 1" diameter hole in the sheet metal to the interior of the driver's compartment. The fuel shut-off valve handle must be parallel with the sheet metal that the valve is mounted to. The fuel shut-off valve handle must be a minimum of 4" in length, red in color with a minimum of 1" clearance from the sheet metal throughout its full travel. A minimum 6" x 6" square area must be painted white with the fuel shut-off valve's ON and OFF positions clearly labeled with 1/2" tall, black in color lettering. The shut-off valve must rotate clockwise from the "ON" position with the handle parallel with the frame rail, pointing towards the rear of the car, to the "OFF" position with the handle perpendicular to the frame rail pointing toward the driver.

2.15 ACCESSORIES:

2.15.1 RADIOS:

Spotters are mandatory. Every car must have a spotter monitoring race control by way of scanner or radio. All Spotters will be located in a central area designated by The Waterford Speedbowl with 2-way radio communication to their car. Each spotter will be identifiable as to which car they are spotting for. Failure to monitor and obey radio direction will result in removal of race teams car from the event.

2.15.3 ELECTRONICS:

No Onboard Computers, Automated Electronics, Recording Devices or Digital Readout Gauges of any kind are permitted. "Tell-Tale" Type Tachometers are the only standard exception to this rule.

You must get approval before using any in-car camera equipment.