

## 2009 WATERFORD SPEEDBOWL LATE MODEL RULES

**NOTE: In 2010 the only Late Models allowed to compete will be an ACT Tour type Late Model. Please see the 2009 Waterford Speedbowl "ACT Tour type Late Model" Rulebook for details.**

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

### **3G.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 are 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](http://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.

### **3G.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

### **3G.1 APPROVED MODELS:**

This Division is open to all stock OEM frame rear wheel drive cars with a minimum wheelbase of 108". The full stock front clip, center section, and rear clip (at the suspension points) must be stock OEM as manufactured. The rear frame rails may be fabricated from 2X3 steel box tubing aft of the suspension points.

### **3G.2 CAR BODY REQUIREMENTS:**

The body must retain OEM dimensions, lines and angles. All floorpans may be stock OEM or be fabricated from a minimum of 22 gauge (.030") sheet steel. Floorpans may be modified for "x" clearance. Floor pans may be raised so they are level with the top of the frame rails. The Vehicle Identification Number (VIN) of frame being used must be on the windshield bed/dashboard and be clearly visible.

### **3G.2.2 CAR BODY SPECIFICATIONS:**

The stock OEM body for your car may be used. Aftermarket LM style body panels may be used.

A) Front fenders may be stock OEM, or fabricated/aftermarket steel, aluminum, or rubber.

B) Doors may be stock OEM, or fabricated/aftermarket steel or aluminum.

C) Quarter panels may be stock OEM, or fabricated/aftermarket steel, aluminum, fiberglass, or rubber.

D) Nose and tail must be aftermarket approved rubber.

E) Roof may be stock OEM steel, or aftermarket fiberglass. Roof posts may stock OEM steel or aftermarket fiberglass.

F) Hood must be fiberglass and must fit flush to windshield.

G) Trunk may be steel or aluminum.

H) All panels must be complete in length and width.

I) No Carbon Fiber panels are allowed.

J) ABC bodies are recommended. ABC body hanging specs may be obtained from 5-Star.

### **3G.3 CAR WEIGHT:**

Cars may be weighed after each event. The minimum post race weight is 3000 lbs. with the driver.

#### **3G.3.2 ADDED CAR WEIGHT:**

Magnetic steel or solid lead bricks are 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.

Weight must be welded or bolted to the chassis or frame with two or more (Grade 5 minimum) bolts, minimum 3/8" diameter, with washers and locknuts.

### **3G.4 DETAILED CAR BODY REQUIREMENTS:**

#### **3G.4.1 SPOILERS:**

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

#### **3G.4.2 FRONT SPOILER / NOSE PANEL :**

An approved rubber nose panel must be used.

It must maintain a minimum of 4" ride height at all times.

No bumper or tubing brace may be lower than the front nose panel.

#### **3G.4.3 REAR SPOILER:**

A) Only clear blade spoilers from ABC approved manufacturers are allowed.

B) The maximum spoiler size is 5" tall X 60" wide.

C) All spoilers must be a clear polycarbonate (lexan) blade, a minimum of 3/16" thick.

D) The width of the spoiler will be measured across the rear of the spoiler blade.

E) The spoiler must maintain the same contour as the bumper cover.

F) The spoiler must be centered on the bumper cover.

G) The spoiler must have a 1/2" to 5/8" split in the center to accommodate the centerline template.

H) The base of the spoiler at the centerline may not exceed 47" from the centerline of the rear axle.

I) Brackets on the front of the spoiler are not allowed.

J) Brackets on the rear of the spoiler down to the rear bumper cover are allowed.

K) The top 3 1/2" of the rear spoiler blade must be made of clear, flat polycarbonate (lexan).

L) The minimum spoiler angle allowed is 55 degrees.

M) The maximum spoiler mounting height (rear deck lid height) is 36".

#### **3G.4.4 WINDSHIELD:**

A) A stock dimension 1/8" thick polycarbonate (lexan) windshield must be used.

B) 3 internal windshield straps/braces, fabricated out of a minimum 1" wide x 1/8" thick steel or aluminum, must be used.

C) The 3 braces must be centered on the windshield and must be evenly spaced at least 5" apart.

#### **3G.4.5 REAR WINDOW:**

A) A stock dimension 1/8" thick polycarbonate (lexan) rear window must be used.

B) 2 external windshield straps/braces must be used.

**3G.4.6 SIDE WINDOWS / WINDOW NET:**

A) Clear polycarbonate (lexan) rear quarter windows are permitted.

B) "A" pillar (front roof post) windows not to exceed 6" in any direction from the forward door/roof post joint may be used.

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

D) 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.

**3G.4.7 TAIL LIGHT PANEL / BACK PANEL:**

An approved rubber tail panel must be used.

It must maintain a minimum of 4" ride height at all times.

No bumper or tubing brace may be lower than the rear tail panel.

**3G.4.8 REAR VIEW MIRROR:**

One mirror mounted in the upper center of the windshield may be used. Additionally, one mirror may be mounted to the left side of the driver, but it may not extend outside of the "A" pillar (front roof post).

**3G.4.9 DASHBOARD:**

A full width dashboard is required. The vertical surface of the dash must be in a single plane, and must be continuous from side to side. The horizontal surface of the dash must be a single plane, and must be continuous from side to side, fully enclosing the entire area beneath the windshield. Instruments must be mounted neatly in the vertical plane of the dash.

**3G.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 from the engine compartment, the trunk area, the tires, and the track surface.

D) For safety purposes, the drivers foot box area, the right side of the driveshaft tunnel, and the area directly behind the seat should be made from a minimum of 18 gauge steel.

**3G.4.15 BUMPERS:**

Tubular bumpers made out of a maximum 1-3/4" diameter round tubing may be used. The bumper tubing must follow the contour of the bumper cover. Cars may not compete without a front and rear bumper securely and mechanically fastened.

**3G.4.16 NERF BARS:**

Commercially manufactured clear polycarbonate (lexan) nerf bars may be used. They must fit tight to the body.

**3G.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".

**3G.5.1 ENGINE LOCATION:**

- A) The centerline of the crankshaft must be centered (+/- 1/2") between the lower ball joints when measured left to right.
- B) The #1 spark plug hex must line-up with the upper ball joint centerline, front to rear.
- C) The engine may not be tilted side to side or front to back.

**3G.5.2 ENGINE GROUND CLEARANCE:**

- A) The crankshaft centerline must maintain a minimum of 11" of clearance to ground at all times.
- B) A skid plate must be used if the oil pan is below the crossmember.

**3G.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.

**3G.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.

**3G.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.

**3G.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.

**3G.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.

### **3G.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.

### **3G.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.

### **3G.5.10 VALVE SPRINGS:**

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

### **3G.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.

**3G.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

**3G.5.13 VALVE LIFTERS:**

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

**3G.5.14 TIMING CHAIN:**

Stock OEM type chain and gears must be used.

**3G.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.

**3G.5.16 INTAKE MANIFOLD:**

The following Edelbrock Performer Intake manifolds must be used:

Chevrolet- # 7101,  
Ford- # 7181, 7665, or 7750  
Chrysler- # 7176.

Buick, Pontiac and Oldsmobile please call the tech staff for your legal intake manifold specs.

The intake manifold 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.

**3G.5.17 CARBURETOR:**

One Holley manufactured 4 barrel carb with 850 CFM or less may be used.

- 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 may not be removed.
- D) The boosters may not be changed. The size, shape and location of the boosters may 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.

#### **3G.5.18 CARBURETOR SPACER:**

One solid spacer made of aluminum or phenolic, a maximum of 1" tall may be used. The spacer may have one standard thickness gasket on each side.

#### **3G.5.23 CARBURETOR AIR FILTER/AIR FILTER HOUSING:**

A) Only one round, dry type, paper air filter element, 12" to 14" in diameter and 2" to 4" 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.

#### **3G.6 ENGINE/CAR ELECTRICAL SYSTEM:**

##### **3G.6.1 IGNITION SYSTEM:**

A stock dimensional HEI type distributor must be used. The MSD # 6AL6420 with rpm rev limit chip is optional.

MSD 6AL box must use external coil, not dial.

All connection ends must be original factory MSD or weather pack connectors installed by MSD.

The Waterford Speedbowl reserves the right to swap out MSD boxes at their discretion. It is the responsibility of the car owner to make his MSD removeable. MSD box must be located on right side of dash panel.

##### **3G.6.2 ALTERNATOR:**

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

##### **3G.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 on the engine.

C) All cars must be capable of starting under their own power.

##### **3G.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 must be suitably covered.

C) The battery may not be installed in front of the radiator or behind the rear end housing of the car.

##### **3G.6.5 ELECTRICAL SWITCH LOCATION:**

A) All electrical switches must be located within easy reach of the driver.

B) A labeled on/off master battery switch must be installed, and be accessible from either side of the car.

#### **3G.7 ENGINE COOLING SYSTEM:**

##### **3G.7.1 WATER PUMP:**

An OEM type mechanical water pump must be used.

##### **3G.7.2 FAN:**

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

##### **3G.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.

C) The overflow can must blow-off via a hose at the base of the windshield, on the passenger side.

### **3G.8 ENGINE EXHAUST SYSTEM:**

#### **3G.8.1 EXHAUST PIPES/MUFFLERS:**

- A) Only commercially manufactured mild-steel headers are permitted.
- B) 180-degree, Tri-Y, merge 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  $\frac{1}{2}$ " 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) Maximum pipe diameter is 2-1/2" OD.
- F) Exhaust pipes must come out of engine and extend rearward beyond driver.
- G) 2 unaltered Lobak # RCM-25-12-25 or Moroso #94050 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.
- H) Exhaust may be run out side of body or exit under the car.
- I) Thermal wrap is not permitted anywhere on exhaust system.
- J) 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.

#### **3G.9 DRIVE TRAIN:**

##### **3G.9.1 FLYWHEEL AND CLUTCH:**

- A) A Stock OEM type and size flywheel and clutch assembly may be used.
- B) The # QUA 298103A- 7.25 (2) disc v-drive assembly and # QUA 235170- throw out bearing assembly and 153 tooth stock flexplate / flywheel may be used.

##### **3G.9.2 BELL HOUSING:**

- A) A commercially manufactured steel bell housing made from a minimum 1/4" magnetic steel must be used with the stock OEM type clutch.
- B) An aluminum bellhousing may be used with the 7.25 v-drive clutch assembly.
- B) The bellhousing must enclose the flywheel and clutch completely, 360 degrees around.
- C) An opening in the bottom of the bellhousing no larger than 2" diameter may be used for inspection.

##### **3G.9.3 TRANSMISSION:**

A stock OEM production 3-speed or 4-speed may be used. All forward and reverse gears must be intact and in working condition.

##### **3G.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, front and rear.
- C) All driveshafts must be painted white.

##### **3G.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" or GM 12-bolt).
- B) "Floating" axles and hubs may be used. Axles must be made of magnetic steel.
- C) Center sections and bells may be made of magnetic steel, aluminum, or magnesium.
- D) A steel or aluminum spool may be used. No ratcheting, limited slip, or torque sensing differentials are allowed.
- E) Solid type, non-cambered drive flanges and plates must be used.
- F) No titanium parts allowed.

##### **3G.9.6 WHEELS AND LUG STUDS/NUTS:**

- A) Steel wheels with a 15" diameter and an 8" width must be used.
- B) One-piece wheel spacers may be used. One 1/2" thick spacer allowed per wheel, maximum 65.5" track width.

##### **3G.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.

**3G.9.8 APPROVED TIRE REQUIREMENTS:**

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

**3G.10 FRAMES:**

**3G.10.1 GENERAL FRAME ELIGIBILITY:**

The frame and all its components must be stock OEM for your make/model car, and meet the requirements described in the following paragraphs.

**3G.10.2 FRAME REQUIREMENTS:**

The frame must retain all factory listed dimensions, lines and angles. 2"x3" rectangular steel tubing may be used to replace the frame rails from the aft side of the rear shock mounts to the rear bumper, and forward of the steering box area to the front bumper. The replacement 2x3 rails must be stock OEM height at the bumper ends. Unibody cars must connect subframes with 2"x3"x.125" wall rectangular steel tubing. You may install an "X" brace in the center section (C - channel area) of the frame, located between the rear trailing arm brackets and the front rise in the frame. The "X" brace may be made of

2" max diameter round or square steel tubing. You may also re-inforce the "C" channel area of the frame rails using box or round tubing, as long as the tubing fits into the stock "c" channel shape.

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. Two additional support bars, one at each corner of the protective bar, must extend forward and be welded to the rear frame assembly.

**3G.11 SUSPENSION:**

**3G.11.1 COILS:**

A) Front and rear coils must be magnetic steel, and be at least 5" OD.

B) Spring rubbers are allowed.

**3G.11.2 SWAY BARS:**

A) One solid steel swaybar is allowed.

B) Swaybar must mount on underside of front clip and be attached to the lower a-frames only.

C) No rear swaybars are allowed.

**3G.11.3 SHOCKS:**

Aluminum or steel shocks are allowed.

Shocks may not have an external reservoir.

Shocks may not be adjustable from the drivers compartment.

**3G.11.4 UPPER/LOWER A-FRAMES:**

A) Any stock or aftermarket upper a-frame is allowed.

B) Stock OEM lowers (for your frame) only, must be the same length left and right.

C) Lower a-frame bumpstops are not allowed.

**3G.11.5 SPINDLES, WHEEL BEARINGS, AND HUBS:**

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

B) Bolt-on steering arms may be steel or aluminum.

C) Left and right spindles must be same offset/inclination.

D) Any small bolt-pattern safety or racing type hub allowed (no wide fives).

E) Hub may be made of steel or aluminum.

F) The left and right hubs must be the same offset.

**3G.11.6 TRACK WIDTH REQUIREMENTS:**

A) The track width must be a maximum of 65.5", measured center of tire to center of tire.

B) A solid, one-piece wheel spacer is permitted. One per wheel, maximum 1/2" thick.

**3G.11.7 WHEELBASE REQUIREMENTS:**

A) The frame must be stock OEM listed as 108" wheelbase or longer.

B) The minimum wheelbase permitted is 107.5".

C) The maximum wheelbase permitted is 112.5".

### **3G.11.8 BODY HEIGHT AND GROUND CLEARANCE REQUIREMENTS:**

#### **3G.11.8.1 BODY HEIGHT REQUIREMENTS:**

A) The minimum roof height is 47", measured 10" behind the top of the windshield on the roof centerline at all times.

B) The rear decklid (mounting point for the spoiler) must be no higher than 36" at all times.

#### **3G.11.8.2 GROUND CLEARANCE REQUIREMENTS:**

A) A minimum distance of 4" of frame and body clearance, with the driver in the car, must be maintained at all times.

B) The fuel cell container shall be a minimum of 8" off the ground at all times.

#### **3G.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.

#### **3G.11.10 REAR SUSPENSION:**

A) Rear suspension must be stock OEM 4-point, steel truck arm, or 3-point type rear mounting only.

B) Rear lower trailing arms may use rubber bushings and/or heim joints. Rubber compression bushing is allowed on lower trailing arms. No spring rods or shock rods are allowed on lower trailing arms.

C) One upper link with one pivot on each end allowed. Upper link may have one rubber bushing only. No spring rod or shock rod allowed on upper trailing arm.

D) One solid tubular panhard bar may be used. It must consist of one bar and two heims. No rubber bushings, springs, or shocks allowed on panhard bar.

E) Aluminum truck arms, fifth coil systems, watts links and torque arms are not allowed.

F) No titanium parts allowed anywhere.

#### **3G.12. STEERING COMPONENTS:**

A) 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 two steering shaft universals must be used along the length of the steering shaft.

F) The power steering pump must be belt driven off the front of the engine.

#### **3G.13 BRAKES AND BRAKE COOLING:**

##### **3G.13.1 BRAKE COMPONENTS:**

A) A fully operational 4 wheel hydraulic disc brake system must be used.

B) The calipers must be made of steel and be a single piston unit.

C) Front rotors must be steel and be a minimum of 1" thick.

C) Rear rotors must be steel and be a minimum of 3/8" thick.

D) Any master cylinders and pedals allowed.

E) Brake ducts are allowed. Brake coolers and brake blowers are not allowed.

F) Brake ducts may be installed for front brakes only.

##### **3G.13.2 BRAKE COOLING:**

A) Brake ducts and brake returns are allowed. Brake ducts may be installed for front brakes only.

B) Brake coolers and brake blowers are not allowed.

#### **3G.14 FUEL:**

##### **3G.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.

##### **3G.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.

#### **3G.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.

#### **3G.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.

#### **3G.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 20 gauge steel.

B) Fuel cells must be a minimum of 15 gallon and a maximum of 24 gallons.

#### **3G.14.6 FUEL CELL AND FUEL CELL CONTAINER INSTALLATION:**

A) The fuel cell and fuel cell container must be installed no less than 14" from centerline of rear axle to forward edge of fuel cell container.

B) The fuel cell must maintain a minimum ground clearance of 8", with the driver in the car .

C) The fuel cell must be protected in the back and on its sides by 1-3/4" x .095 wall magnetic steel tubing.

D) 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.

#### **3G.14.7 FUEL FILLER:**

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

#### **3G.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.

#### **3G.14.9 FUEL LINES AND FUEL PUMP:**

##### **3G.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.

##### **3G.14.9.2 FUEL PUMP:**

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

No fuel pressure regulators allowed.

**3G.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 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.

**3G.15 ACCESSORIES:**

**3G.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 penalties.

**3G.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.

**3G.16 ROLL CAGE:**

A typical 4 point roll cage, as described in the General Rules, must be installed professionally and safely. The roll cage may not have any offset in it, as measured from the main cage downtubes to the center of the frame rails. See the details in the General Rules regarding roll cage construction.

Typical front and rear hoops must also be used. All required roll cage and hoop tubing must be made from 1-3/4" x .090 wall HREW or DOM steel tubing.