Supplementary Rules

Australian Wingless Sprint Racing Inc.

11. SUPPLEMENTARY RULES

It is the intention of the AWSR rules to allow competitors to race a standard engine from a road going Commodore and be competitive. These rules are intended to allow freshening of a standard engine only.

IF A SPECIFICATION IS NOT OUTLINED IN THE RULE BOOK.
THE OEM SERVICE MANUAL MUST BE USED AS A REFERENCE POINT, CORE ENGINE TO REMAIN STANDARD. MANUFACTURING TOLERANCES MUST BE TAKEN INTO CONSIDERATION WHEN COMPARING TO OEM SPECIFICATIONS.

Australian Wingless Sprints class must meet all of the SCCA inc. Regulations and specifications as listed in the rulebook. (Unless they are in conflict with these supplementary rules), plus meet any additional Australian Wingless Sprints supplementary rules.

11.1 WEIGHT.

a □ For Australian Wingless Sprints class only, minimum 635 kg. (1400 lbs) With driver as raced.

b □ Ballast is permitted as per SCCA open Sprintcar rules.

11.2 TRACK

□ The front track of all cars shall be 1700mm maximum (From centre tyre to centre tyre)

11.3 ADDITIONAL CHASSIS BARWORK.

a □ Head protection bars (HPB) are mandatory and all HPB's must be professionally welded or clamped to the top of the chassis roll cage or if a halo is fitted must be welded or clamped to the halo.

b □ Clamp on HPB's must use minimum grade 5 bolts. Minimum bolt size 5/16" x 2 bolts per clamping point. Clamps must be approved type only.

c "T" style HPB must be professionally welded or clamped to the rear roll cage on the first straight piece of tube across the rear of the roll cage or halo if fitted. Minimum tube size for T style HPB to be 1 ¼"OD x 0.083" W.T.

d □Parallel 2 bar type HPB's must have 2 bars with a minimum tube size of 1"OD x 0.095" W.T.

e □ The driver must be able to exit through the roof of the car with all of their safety gear fitted.

f □ All HPB's must be Chrome molly Steel tubing.

g □ HPB's must offer protection of a min 130mm from the rear of the roll cage

h □ HPB,s must be curved upwardly to give added strength.

i □ HPB's must pickup 3 spots min on the top of the roll cage or halo if fitted.

j □ The clearance between the topside of the roll cage or halo if fitted and the top of the driver's helmet when fitted correctly and correctly seat belted into the seat, not including the HPB (no padding) is a min of 80mm.

k □ AWSR Only, Halo's when fitted to roll cage as per SCCA Rule, Halo spacers maximum length 75mm (3")

11.4 NUMBERS

a □ All cars to have a number fitted on the nose cone / bonnet, Numbers must be a minimum of 200mm high and carry a visible prefix according to car registration state, Northern Territory cars to have a NT prefix.

b □ State Title holder may use number 1 with state prefix provided title was won in drivers' home state.

11.5 WINDOW NET

a □ Approved design compulsory on right hand side.

b □ Cars Fitted with a Halo must have one on both sides.

c □ Exception, cars fitted with professionally built full containment seat, safety net is optional, including if fitted with a Halo.

d □Full containment seat if fitted must be fitted as per manufacturer's requirements and or tech committee / scrutineers satisfaction.

11.6 WINGS.

□ For Australian Wingless Sprints class NO wings or aerofoils permitted.

11.7 TRANSMISSION.

a □ For Australian Wingless Sprints class direct drive only.

b □ Must be able to disengage drive either (in out) in diff or driveline. Flex plate and ring gear must be forward of the engine plate.

c □ Aftermarket flex plates allowed.

11.8 ELECTRICAL.

a □ Battery location in the car is optional and can be placed under the seat.

b □ All batteries must be sealed no wet cell batteries allowed.

c □ Battery Mounts must be welded, bolted or clamped to the chassis, if clamped, substantial clamps must be used; no worm drive hose clamps are to be used as the primary attachment method.

d □ All cars must have a cover over the battery that will prevent shorting of terminals on any metal work.

e □ All cars must be capable of starting by a starter motor permanently fixed.

f □ All hard wired transponders are to be fitted with a low amperage fuse. The fuse must be rearward of the radiator.

11.9 SUSPENSION

□ No cockpit/driver adjustable sway bars allowed.

11.10 TYRES

□ Tyre make and compound is open.

11.11 ENGINE.

For approved component *part numbers refer to the AWSR website. Any part numbers not on the approved list are to be referred to the National Technical Committee.*

a □ Engine must be a standard 3800cc V6 as used in the Holden Commodore and Toyota Lexen VN series II, VP or VR pre-Ecotec.

b □ VN series I and Ecotec engines are not permitted.

c □ The core engine including cylinder heads must remain standard as per OEM

d □ Harmonic Balancers must remain standard and cannot be modified at all. Different sized steering pump and water pump pulleys may be used.

e □ External modifications, which do not in any way affect performance gain, are allowed. **Example:** Aftermarket rocker covers, external oil filters.

f □ All engines must have bolts suitably drilled to allow engine sealing. One bolt head on the rocker cover and the closest corresponding bolt head on the inlet manifold on both the left and right hand bank, and also two bolt heads close together and accessible on the timing cover.

11.12 COMPRESSION RATIO

a □ Compression ratio must not exceed 9.5:1 as measured by use of (Katech Inc. Whistler Model 100A) whistler compression checking device. If any Cylinder tested records a reading in excess of 9.5:1 then the engine is deemed to have failed the compression ratio check and procedures and penalties as per the SCCA rule book will be applied.

□As a guide the following website calculator can be used to calculate compression ratio: http://www.csgnetwork.com/compcalc.html)

11.13 CYLINDER HEADS

a □ Must remain standard OEM

b □ The mating surfaces of the cylinder head may be resurfaced by parallel machining only. Angle grinding of cylinder heads is not permitted.

c □ No VN series I, Ecotec or aftermarket heads permitted.

d □ Valves may be replaced by .254mm oversized OEM valves.

e □ No head porting or valve inserts permitted.

f □ Valve seat min 1.0mm

g □ Valve springs may be replaced with aftermarket springs that comply to the same physical dimensions as the OEM springs

h □ Shims may be used under the valve springs to obtain uniform seat pressure.

i □ VR rocker assemblies may be used on VN/VP cylinder heads. The following methods may be used to affect this interchange.

1. Down-sizing of the threads of the early model heads from 3/8'' to 5/16'' using a helicoil type thread repair method or similar.

2. Opening the late model rocker pivot from the original 5/16'' to 3/8'' to accept the early model size mounting bolts.

j □ K Line Valve Guide Inserts can be used to bring valve stems in cylinder heads back to within standard specifications.

11.14 NON TECH ITEMS

a □ Engine Fasteners other than **NO** titanium allowed in the engine.

b □ Gaskets

c □ Alternator

d □ Power Steering Pump

e □ Air Cleaner

f □ Sump

g □ Rocker covers

h □ Power Steering and Water Pump although non tech must be belt driven no electric driven Water or Power Steer Pumps allowed.

i □ Extractors, headers and mufflers although non tech should not exceed 95 db.

j □ Radiator and cooling system including pipes and hoses, but welsh plugs must remain standard (not modified) ie. No external water fittings from welsh plugs.

11.15 BORE AND STROKE

a□ (nominal) 96.52 x 86.36 mm

b □ Stroke must remain standard 86.3mm

c □ Maximum overbore of 0.040" allowed. Standard type replacement pistons can only be used. No race series pistons allowed.

11.16 CAMSHAFT

a □ Camshaft may be replaced with a standard aftermarket camshaft AWSR to supply source of replacement camshaft.

b □ Aftermarket timing chains and gears may be used. Cam timing must be set to the zero mark as per the fitting instructions when using adjustable chain/gear sets. Any engine found with the timing marks not aligned dot to dot will constitute an immediate 12 month suspension.

11.17 INLET MANIFOLD AND ACCESSORIES.

a □ Throttle body must remain standard but may be repositioned on the manifold, internal dimension is 60mm max. The throttle body may stay in the original OEM position but if in the original position all original mounting housings unaltered must be used including the plastic spacer.

b □ Inlet manifold must remain std except for the following modifications:

c □ Throttle body mount may be repositioned on top of the manifold by welding maximum 3" OD and minimum of 2.5" ID parallel aluminium tube in the centre of the top of the manifold without any major modifications, clean up of the underside of the tube to the internal profile of the inlet manifold only. If the throttle body is repositioned as above the throttle body must be straight up and down and not facing forward. The throttle body mounting flange must be no higher than 60mm above the upper surface of the manifold to the top of the flange, no additional venturies or inserts may be fitted below the butterfly. The rear opening of the manifold may be closed off by bolting or welding a plate over the opening. The manifold must be mounted in the original OEM forward facing position and direction.

d □ PCV Valve or passage **must** be blocked off and the return to the throttle body from the inlet manifold may be vented to the atmosphere. Additional natural crankcase ventilation via tappet covers allowed, no vent pumps, etc allowed.

e □ Water jackets maybe drilled and tapped to allow fitment of additional cooling outlets and fitment of water temperature sensors. No other water jacket reworking allowed.

f □ Inlet manifold may be EXTERNALLY coated or machined for aesthetic purposes only.

g □ No Internal modifications allowed.

h □ Throttle Linkage must be fitted with 2 independent return springs one on the butterfly and one on the pedal. The OEM return spring fitted to the butterfly shaft is counted as one spring.

i □ A half stirrup toe clip must be fitted to the accelerator pedal to enable manual closing of the throttle.

11.18 BALANCE

a □ Engine may be balanced as per OEM ie EXTERNAL BALANCE

b □ No "knife edge", no major modifications to con rod balance pads, no counter weights or balance shafts to be removed or disabled.

11.19 Fuel Cell /Tank

Fuel Cell / tank capacity to be a minimum of 25 gallons

11.20 INJECTORS AND FUEL RAIL

a □ Fuel injectors may be modified to suit methanol.

b □ Aftermarket fuel injectors allowed provided there is no additions to the engine management system, fuel rails or manifold

c □ Fuel rails and injector ports in the inlet manifold must remain standard.

d □ A dash 6 fitting may only be added to the end of inlet spigot tail that bolts to the fuel rail. The inlet spigot tail must attach to the fuel rail by the standard method.

e □ The pressure regulator is not to be modified in anyway. The Vacuum line may be disconnected.

f □ Maximum fuel pressure to be 400kpa tested between the fuel pump and the inlet fuel rail with the injector wiring removed and the AWSR rev checker connected.

g □ No Mechanical forced induction or carburettors permitted.

11.21 FUEL PUMP AND LINES

a □ Electric fuel pump must be used, wired with a tachometric or oil pressure signal required for operation. Single fuel pump only to be used.

b □ Fuel pump must be mounted forward of engine plate and in the engine bay..

c □ Fuel return line must be fitted to the standard OEM fuel pressure regulator and return back to the fuel tank without any restriction. Bulk heads are allowed but must not be used as a restrictor (i.e. max pressure 400kpa.)

d □ Fuel tap must be fitted to the feed line between the fuel tank and fuel pump on the right hand side of the cockpit, clearly marked ON/OFF.

11.22 SUMPS

a □ Engine oil pan and pick up may be modified.

b □ External pick up line permitted.

c □ No dry sumps permitted.

d □ A minimum 25mm inspection plug must be mounted into the oil pan above the oil level and close to the oil filter. (Or owner/driver must be prepared to remove sump if asked to do so for checking)

e □ Removal of the lump on the centre of the rear main cap is allowed for the fittment of aftermarket sumps.

11.23 ENGINE MANAGEMENT.

a □ Standard VN,VP or VR OEM Electronic Control Module must be used,

b □ Fitted with a standard or after market MEMCAL that must be visually standard.

c □ Maximum rev limit up to 6000 rpm.

d □ Sequential Fuel Injection not permitted.

e □ Memcals. “programmable on the fly” MEMCALs , MEMCALs that can be reprogrammed by the driver whilst racing or multiple rev limit MEMCALs are not allowed and must not be used.

11.24 DATA LOGGING

a □ Only dedicated, non downloadable, engine RPM measuring devices allowed.

b □ Multi channel data logging devices not allowed

11.25 IGNITION SYSTEM

a □ Direct fire ignition module and coil pack must be used.

b □ After Market Brands permitted.

11.26 PRE RACE SCRUTINEERING.

a □ All AWSR car owners/drivers are to complete and sign a pre-scrutineering sheet prior to presenting their car for scrutineering at every race meeting

b □ It shall be the responsibility of the driver to make avalible to the Technical Committee all safety equipment for inspection when requested at each event. All uniform and footwear worn by drivers must meet SFI or equivalent standards.

c □ Aproved design arm restraints, balaclava, gloves, helmet, race suit, underwear and head / neck safety device are mandatory and must be worn at all times while driving on the course.

d □ All engines to be sealed by AWSR representatives at National Titles before competing.

11.27 CHECKS.

a □ Engine sealing optional at state level, may be over ridden by event supplementary regs

b □ Engines and rev limits may be checked at any time by race officials or scrutineers.

c □ The owner/driver or their representative must remove any required components as directed by the scrutineer/machine examiner or tech committee with in one hour of being asked to do so.

d □ Engines may be checked and sealed prior to and throughout the season by appointed AWSR engine measurers at the car owners discretion, sealed engines will not be required to undertake reinspection of sealed components as long as seal is intact

e □ If the engine or rev limit is outside the above specifications the engine will be deemed illegal and the penalties as per open sprintcar will apply.

f □ At the discretion of an AWSR scrutineer any suspect engines may be sealed and will be required to be presented to a location as directed, within the registered State of the car in question within 21 days for further technical inspection / measuring**.**

g □ Infringements for engine rule breaches may be handed out up to 21 days after an event where further technical investigation / measuring is required.

h □ **IF IT’S NOT IN THE RULE BOOK IT’S NOT ALLOWED**

11.28 MISCONDUCT

 Member clubs have the right to suspend or fine drivers within a period of 7 days from the completion of an event for non technical breaches of the SCCA rules.

11.29 PENALTIES.

 If a driver is given a penalty for a breach of the engine or rev limit rules and wishes to appeal the decision they may do so but if the appeal is dismissed and the original decision is found to be correct then the penalty will be doubled. (i.e. 12 months becomes 24 months)

11.30 LICENCES.

a □ All Australian Wingless Sprints Drivers must have a minimum Speedway Australia "A" licence.

b □ No AWSR driver is to compete in a wingless sprint race meeting not sanctioned by the state body or with non registered cars.

c □ Ambulance requirements to be as per relevant Speedway Australia safety standards.

11.31 REGISTRATIONS

 All cars must pass a daylight inspection and all fees must be paid before log book will be issued.

11.32 TIME LINES

a □ The Engine Rules Are Frozen until 30/6/2014

b □ An option to extend these engine rules for a further 2 years subject to engine availability.