Group 3D – Sports Sedans

Important note: It is envisaged that a significant review of the Group 3D Sports Sedan Regulations will take place in 2006, with new regulations likely to be implemented in 2007. Members who envisage the construction of new Sports Sedan vehicles are asked to keep in communication with their state Sports Sedan Association to keep abreast of likely developments in this regard.

1. GENERAL

1.1 This group envisages a considerable degree of modification to automobiles so as to render them more suitable for competition without modification to the external body shape except as specifically allowed for in these Regulations.

1.2 The basis for the vehicle, and the name by which it is known, will be the body/chassis unit.

1.3 Cars must conform with General Requirements (as applicable) defined at Schedules A, B and, in races, C.

1.4 Electronic traction and/or brake and/or handling devices are specifically prohibited.

2. ELIGIBILITY

To be eligible for this group cars must be four-seat series production closed cars, manufactured primarily from steel and must be or have been:

(1) On sale in Australia through a recognised manufacturer franchised dealer network, or;

(2) Of a type which a minimum of 5000 examples have been manufactured world wide, or;

(3) Automobiles which otherwise do not comply with (1) and (2) above but which have been recommended by NSSC and approved by CAMS. Cars which are presently so approved:

- Toyota MR2 AW-11 only when fitted with normally-aspirated reciprocating engine (of up to two litres) or twin-rotor rotary engine. Such vehicles, where issued with a log book prior to 1 August 2002, may continue to compete in mid-engine format with the engine to the rear of the midpoint of the wheelbase until 31 December 2007.

- Nissan 300 ZX

Note 1: Mid-engine cars will only be eligible where the complete engine is positioned forward of the midpoint of the wheelbase.

Note 2: Manufacturer-supplied optional body kits, where each component is identified by a manufacturer's part number, will be considered for approval by NSSC and CAMS, each being evaluated on its merits.

Note 3: In all cases the base model of each eligible vehicle will be the reference for wheelbase, track width, maximum width and length of coachwork.

3. COACHWORK

3.1 The body shell (deemed to be the roof, A, B and C pillars, sill panels, scuttle/plenum panel and front door frames) shall be unchanged in material and external shape except as hereinafter provided.

3.2(i) The bumper bars and grilles must retain their original shape and position save that the material (refer 3.11) and method of attachment are free. The shape of wrap-around bumper bars/fascias may be modified only to accommodate the fitment of mudguard flares and air dams except as hereinafter provided.

3.2(ii) The rear bumper, fascia, or beaver panel may be modified to facilitate the passage of exhaust pipe/s. A maximum of two circular openings is permitted, each with a maximum diameter of 100mm. The clearance between the exhaust pipe/s and any such opening/s is not to exceed 10mm in any direction. No part of the opening is to be above a horizontal plane passing through the centre of the rear wheel hubs.

3.2(iii) Cars manufactured as standard with a sunroof must have a permanent replacement panel fitted into the sunroof opening so as to make the roof section one piece. Such panels must be of similar material to the remainder of the retained roof panel.

3.3 External body trim decoration greater than 150mm in width must remain in place.

3.4 Mudguards:

3.4(i) When viewed from above, the coachwork must cover the complete wheels to the horizontal centre line of the hubs.

3.4(ii) The rear extremities of the front and rear mudguards and/or extensions must continue below a horizontal line drawn through the wheel hubs and must cover the full width of the tyres down to hub height when viewed from the rear.

3.4(iii) No holes are permitted in mudguards other than those originally provided by the manufacturer.

3.4(iv) Mudguards may be flared and/or extended in order to cover the tyres as required in paragraphs (i) and (ii) above. The flares may be extended in width up to a maximum of 100 mm per side in excess of the original width of the body at the measured point. From the reformed wheel arch the mudguard flare must merge from the allowed 100mm to 50mm by 50% of the length of flare, and thereafter merge with the original body at an included angle of not more than 45° (refer to drawing 1). Flares may be made of alternative material (ref 3.11).

Any flares or extensions of mudguards which are less than the maximum permitted dimension must fit within the silhouette which would have been created by a flare of the maximum dimensions.

A line drawn from the outer lip of the flare to the point at which the flare joins the original body panel must meet that panel at an angle of not more than 45°.

3.5(v) The mudguard and/or flare may be modified to permit the exhaust pipe outlet to pass through a cutout/relief therein and which is located forward of the rear wheel, such that no part of the modification is above a horizontal plane passing through the centre of the rear wheel hub.

3.5 Aerodynamic aids:

3.5(i) The use of undertrays, fairings, or other aids to aerodynamic form (including aerofoils) is not permitted unless specifically provided for in these Regulations.

3.5(ii) It is permitted to fit a spoiler or air dam on the front of the car such that no part of it is more than 100mm ahead of the original coachwork at any point.

The bumper must retain its original appearance and location in relation to the unmodified area of the coachwork. However it may be integral with the air dam and surrounding coachwork.

The bumper or fascia returns may be spread horizontally to merge with the front mudguard flares. No part of the bumper or air dam shall be wider than the widest point of the modified front mudguards (see diagram 2). The shape of the original bumper or fascia may be modified to merge with the air dam below a horizontal plane passing through the centre of the front wheel hubs (see diagram 3).

Air dam undertrays may be installed and used as an aerodynamic aid. No part of the undertray may extend further rearward than the leading edge of the front tyres and must be within the vertical projection of the vehicle, including modified coachwork (tyres must be inflated to a minimum of 1.8 bar pressure.

3.5(iii) It is permitted to fit a rear deck lid spoiler of maximum height 200mm above the coachwork where mounted, and of width not exceeding the width of the coachwork excluding any flaring of the mudguards. It must be fitted contiguously with the rear deck, shall not restrict rearward vision below that required, may not extend rearwards of the rearmost extremity of the coachwork, and must be fitted rearwards of the rear window. It must be fixed in position and not moveable whilst the car is being driven.

In the case of a car which has a hatch-back a spoiler may be fitted rearwards of the centre line of the rear axle.

3.5(iv) Alternatively to (iii) above, it is permitted to fit a rear wing assembly subject to:

(a) It extending no further rearward than 100mm beyond the original coachwork (diagram 3, measurement B).

(b) It extending no further forward than 500mm beyond the rear most point of the original coachwork (diagram 3, measurement E).

(c) the wing element/s have an overall front to rear measurement of no greater than 400mm when measured horizontally (diagram 3, measurement C).

(d) Maximum two elements per wing assembly.

(e) The overall width of the wing assembly to be no wider than the coachwork or 1600mm whichever is the lesser when checked at 'datum line A' (diagram 2) drawn vertically from the foremost point of the wing chord (diagram 3).

(f) No prat of the wing assembly to be higher than a horizontal line drawn from the highest point of the roof (diagram 3, Datum line D).

3.5(v) Aerodynamic aids may not be used for any additional alternative function, eg, for the mounting of an oil radiator.

3.6 Body panels:

3.6(i) Body panels, other than those referred to in Articles 3.1 and 3.6(ii), may be replaced by panels identical in external shape to the original (see 3.11).

3.6(ii) Bonnet and boot lid may be replaced by panels identical in external shape to the original. They may be incorporated into one-piece panels but be distinguished by a moulded outline 3mm deep. Resulting panels must be detachable within 30 seconds by two persons for fire response and mechanical inspection. Fasteners necessary for removal must be clearly marked. Any tools required for removal shall be carried on board the car in an easily-accessible location.

3.6(iii) Changes to the shape of the engine cover are permitted where the position of the engine or its actual induction components (excluding brackets, linkage, etc.) prevents the full closing of a panel of the original shape and size. Save that the maximum increase in height must not exceed 100mm, that lateral clearance of the alterations around the offending components does not exceed 75mm, and that the maximum width does not exceed 450mm. A panel of modified shape must completely cover the part or parts which cause the change to be effected and must have no external openings, must not hinder the safe operation of any part of the vehicle, and must not impair the driver's vision.

On Morris/Austin Mini cars, the modified part of the bonnet panel may incorporate holes for the passage of air into the engine; provided that such holes are at the forward edge of the engine cover, are directed towards the ground, and are not visible to a person standing in front or to the side of the car.

3.6(iv) Front doors: Front door must be functional and retain the original external shape and appearance. All window regulator mechanism may be removed. Original front door catches must be retained, but hinges may be replaced with suitable alternative fittings. Internal anti-theft locks must be rendered inoperative.

3.6(v) Rear doors: On four-door cars, the door skins of the rear doors may be made integral with the surrounding bodywork. On cars where the door skins do not extend around the window frame the original appearance and shape of window frame trims must be retained. The rear mudguard flares may extend over part of the surface of the door skin. The area of coachwork under the flare, which may include part of the "C" pillar, may be removed. If the original external door handles on rear doors are removed the resulting aperture must be filled.

3.5(vi) Scuttle/Plenum or Bonnet to Windscreen Opening: Where any area of the windscreen and associated lower panel or trim is below the profile of the bonnet as viewed from the front, the windscreen and associated lower panel or trim are free in such area. A flame- and liquid-proof panel must be installed to prevent engine fluids or fire from escaping between the windscreen and bonnet.

3.7 Interior:

3.7(i) All interior fittings and/or trim are free.

3.7(ii) When front door trim is removed, it must be replaced with flush-fitting rigid material, save that local modifications are permitted to facilitate fitment of roll over bar and anti-intrusion bars.

3.7(iii) All windows may be replaced by a suitable rigid transparent material of adequate strength (eg, Polycarbonate), which must be of not less than 3mm thickness for side and rear windows, and not less than 6mm thickness for the windscreen, save that the fitment of front side windows is optional.

3.7(iv) All passenger seats in the vehicle may be removed and the space for other than the driver may be encroached. If the original driver's seat is removed, the replacement seat must comply with Schedule C. The driver's seat may be moved backwards, but the rear of the squab of the seat may not project beyond the vertical plane defined by the front edge of the original rear seat in a standard model.

3.8 Front-engined vehicles may be required to be fitted with a scatter shield of the specified dimensions and standard (see Schedule M).

3.9 The front and rear firewall/bulkheads are free, subject to their being flame and fluid-proof and manufactured from material specified at Regulation 3.11.

3.10 Floor pan:

3.10(i) The floor pan may either:

(a) remain original, or

(b) may be replaced by a component whose lower surface is flat and is mounted parallel to the bottom edge of the sill and complies with the following:

- It may not extend further forward than the leading edge of the sill panel.
- It may not extend further rearward than the trailing edge of the original sill panel.
- It may consist of a number of flat surfaces, all of which must be horizontal when viewed from the front and may only be joined by vertical sections.

  NOTE: on vehicles where the bottom edge of the sill is not a straight line (see (b) above) the lower edge of any replacement floor pan must be parallel to a straight line drawn along the lowest straight edge of the door/s on either side of the vehicle.

3.10(ii) In all cases (original or replacement floor pan) an additional flat surface may be fitted in addition to, or in place of, the original panel work which would normally constitute the boot floor or rear hatch floor. If fitted, this panel must:

- Be added to the rear of the trailing edge of the original sill panel or cockpit bulkhead.
- Extend no further rearward than the underside of the beaver panel or rear bumper bar assembly (at any point across the width).
- Its leading edge must be parallel to the floor pan or any replacement surface from the side; its lower surface must be parallel to the Note mentioned in 3.10(i).
- Rearward of the centreline of the rear axle it may be inclined at an angle, the maximum of which will necessitate that it meets the underside of the beaver panel or rear bumper bar assembly.
- The lower surface must be the lowest horizontal (or near horizontal) panel of the vehicle.

3.10(iii) It is prohibited to include any vertical or near vertical vanes or other aerodynamic devices into the flat surfaces other than those mentioned in 3.10(i) or 3.10(ii).

The creation of any aerodynamic device in the floor pan is prohibited.

Holes are allowed in both the flat surfaces mentioned in 3.10(i) or 3.10(ii) only for mechanical or suspension associated components or attachment purposes, or as otherwise provided in the relevant regulations.

The rer beaver panel and/or bumper bar, whichever is the lower must remain original in shape and position.

3.10(iv) It is permitted to fit flat panels, parallel to the vehicle sills, to protect the engine and ancillaries from the ingress of debris. Such panels must not extend forward of a vertical plane tangent to the leading edge of the complete front wheel assemblies, nor rearward of a vertical plane tangent to the foremost points of the front doors.

3.11 Material: Replacement, modified and additional body panels where permitted must be manufactured from one of the following:

3.11(i) material of the same gauge and composition as the original part; or

3.11(ii) aluminium, or aluminium alloy, or gauge not thinner than 1.25 mm; or

3.11(iii) glass fibre, or glass reinforced plastic, the minimum thickness of which is 3 mm.

3.11(iv) Carbon fibre/Kevlar composite materials of gauge not thinner than 1.5mm.

4. MECHANICAL COMPONENTS

Modifications may be made to the vehicle subject to the following restrictions:

4.1 Brakes:

4.1(i) All cars in circuit races must be fitted with a double circuit braking system so arranged that the pedal normally operates on the four road wheels and, in the event of leakage at any point in the system, the pedal shall still control two wheels on the same axle. Electronically controlled brakes are specifically prohibited, eg, ABS.

4.1(ii) Only brake disks manufactured from ferrous material may be used.

4.2 Suspension and Chassis:

4.2(i) The wheel base and the location of the centre lines of the front and rear hubs may not be changed.

4.2(ii) The chassis, sub-frame and all body components other than the shape of the external coachwork are free.

4.2(iii) Cars must be so constructed that when all tyres on the same side are deflated, no part of the car shall touch the ground.

4.3 Transmission:

The design of the transmission is free, save for the following:

- The clutch must be controlled exclusively by the driver by either mechanical or hydraulic actuation. The use of any electronic clutch actuation systems is prohibited.
- The gears must be selected by the driver exclusively via a mechanical linkage.
- The use of any electronic, hydraulic or pneumatic gear selection device or assistance is prohibited.
- On models of cars built in 1980 or later the end of the car to which the power is transmitted is free, otherwise rear-wheel drive cars must remain thus, as must front wheel drive cars.
- Four-wheel drive is prohibited and on cars originally produced thus, freedom is permitted as to which end of the car the power is transmitted.
- An operable reverse gear must be fitted.

4.4 Engines:

4.4(i) Engine and ancillary equipment is free, provided that:

the engine block is derived from a car eligible under the provisions of Article 2(1) and (2) hereof;

the road use mass produced three rotor rotary engine assembly is acceptable (Mazda 20B).

the engine is located in the same general area as envisaged by the manufacturer of the body. In rear-engined cars the engine must be in the original location relative to the rear axle.

It is permitted to use a cylinder block manufactured by an aftermarket supplier provided that:

(a) It is an identifiable replacement for a permitted, original equipment cylinder block;

(b) The centrelines of the crankshaft, camshaft, and lifter bores are in the same relative positions as per the original equipment cylinder block; and

(c) It is made from the same material as the original block.

4.4(ii) Engines mounted in front (subject to the above) may intrude into the space originally intended for passengers, save that no part of the cylinder block may extend across a line drawn at right angles to the longitudinal axis of the vehicle at a point halfway between the front and rear wheel hub centres.

4.4(iii) To establish total engine capacity.

A multiplying factor of 1.30 applies to reciprocating engines with more than two valves per cylinder if the swept volume exceeds:

- 2500cc if normally aspirated
- 1500cc if fitted with forced induction.

- A multiplying factor of 1.7 applies to forced induction engines.
- A multiplying factor of 1.75 applies to rotary engines.

4.4(iv) The maximum engine capacities are:

- Naturally aspirated two-valve/cylinder 6000cc
- Naturally aspirated multi-valve 4615cc
- Naturally aspirated rotary engine 3428cc
- Forced induction two-valve/cylinder 3529cc
- Forced induction multi-valve 2520cc
- Forced induction rotary engine 2016cc

5. FUEL

Only fuel as defined by CAMS may be used (see Schedule G).

6. WHEELS AND TYRES

The complete wheel (tyre + wheel + flange) maximum width 14.4" (all measurements must be made with at least 1.8 bar pressure in the tyre).

7. ELECTRICAL SYSTEM

The original external shape and location of all lighting and signalling equipment must be retained. If original headlamps and turn indicators are not used, their replacements may be blended with the surrounding coachwork. Front lighting and signalling equipment need not be functional. For vehicles with retractable headlights, the external shape shall be determined to be that attained whilst the headlights were in their parked position. Tail lamps and brake lamps must remain operable, with a minimum power of three and 20 watts respectively.

The location of the battery must be marked by a blue triangle (sides of 150mm) on the coachwork. For events of National status, a high-intensity rain light must be fitted to the upper rear lip of the boot lid as close to the centre as practical and must be used in races declared wet.

8 MINIMUM RACING WEIGHTS

Up to 1300cc	680kg
1301 – 1600cc	730kg
1601 – 2000cc	780kg
2001 – 2500cc	800kg
2501 – 3550cc	900kg
3551 – 4500cc	975kg
4501 – 5100cc	1050kg
5101 – 6000cc	1125kg

Note. These are minimum racing weights for rear-drive vehicles, and include the driver. Front-wheel drive: subtract 50kg from the above weights.

Commodore Cup

The technical regulations for Commodore Cup, which are to be read in conjunction with Group 3D, are approved by CAMS and are available from the Commodore Racing Association.

See Section 17 for contact details.

DIAGRAM 1
(not printed at original scale)

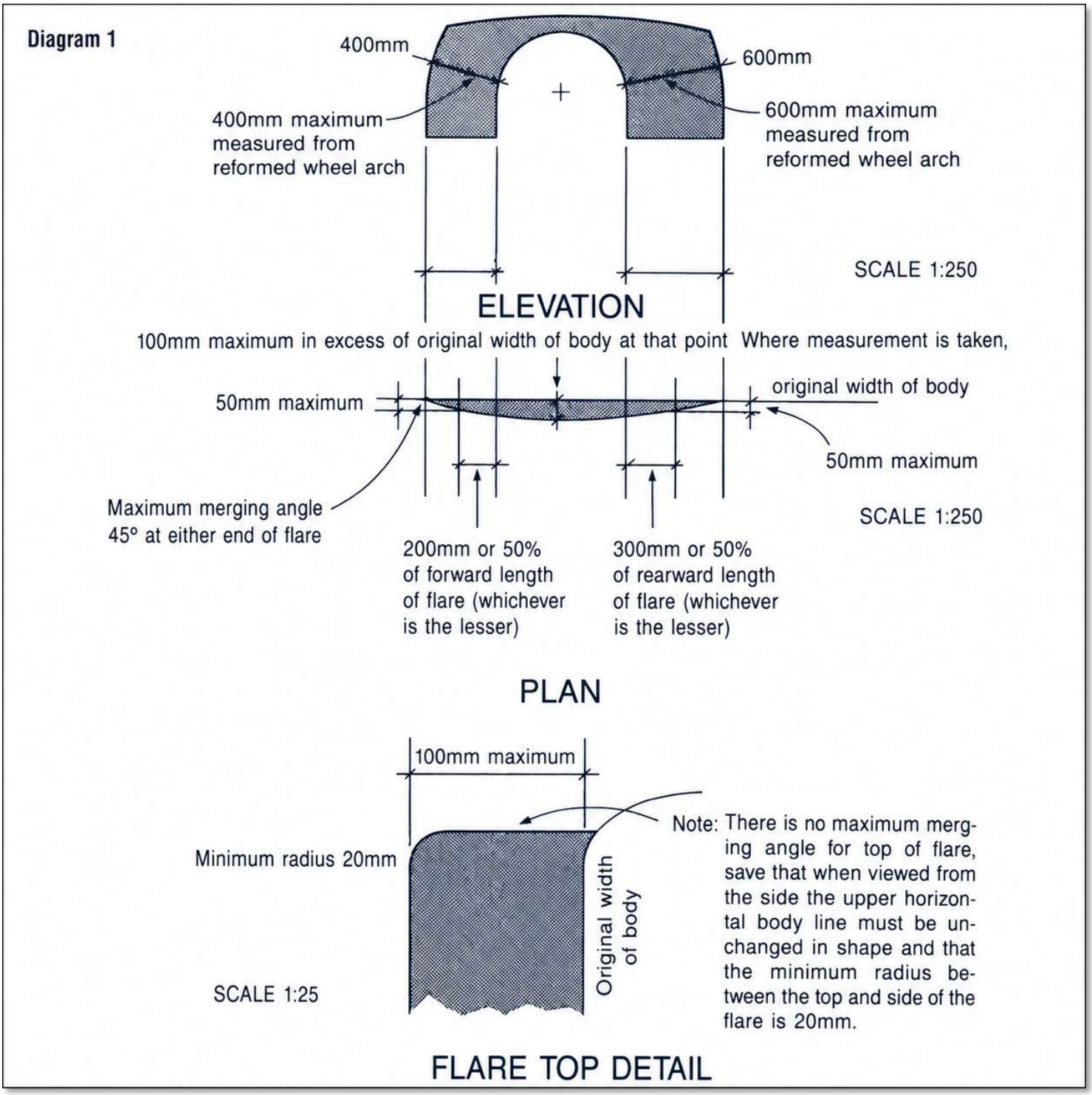

DIAGRAM 2 - DIAGRAM 3
(not printed at original scale)

Diagram 2

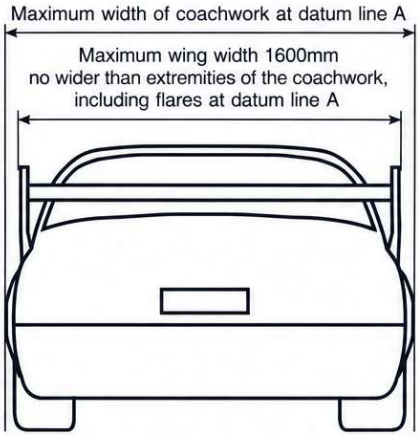

Diagram 3