



**A reproduction of the specifications of Group C Touring Cars as set out on pages 306 to 314
inclusive of the 1984 CAMS Manual of Motorsport**

3rd Category

Group C (Touring Cars)

(Valid until 31 December 1984)

1. PREAMBLE

- .1 Group C (Production Touring) Cars are intended to be representative of mass produced motor vehicles, made more suitable for competition by a number of modifications. Only those modifications which are expressly permitted may be effected. In addition to the requirements of Group C, herein, all cars are required to comply with the “General Requirements of Automobiles” – see Part 2 of Appendix C.
- .2 Cars become eligible for Group C upon acceptance by CAMS of the model as an Australian Touring Car – in general terms –
 - (a) a vehicle produced in Australia for which CAMS has issued recognition documents;
 - or (b) a model recognised by the FIA as being of Group A or 1, and for which that body has issued recognition documents;
 - or (c) a model not manufactured in Australia, but which CAMS accepts, notwithstanding that it does not comply exactly with the relevant FIA document – e.g. being a model uniquely for the Australian market.
- .3 Persons contemplating an investment in an imported car particularly are urged to first ascertain from CAMS that the car would be accepted as an Australian Touring Car. All amendments (variants, evolution, etc.), to FIA Group 1 papers may not be acceptable. It is suggested that the fullest enquiries be made of CAMS Head Office before commitment.
- .4 It is emphasised that Group C cars must be production based; the car to which the permitted modifications are made must be of a configuration which properly represents a model of car as manufactured and sold to the public and which is properly described in the relevant documents.

2. Eligibility

- .1 Cars recognised as Australian Touring Cars, the criteria for such recognition being as follows –
 - (a) FIA Group A or 1 homologation or
 - (b) Cars manufactured in Australia in quantities of not less than 1000 basically similar units and which shall be the subject of recognition by CAMS.
- .2 These cars shall compete in events without having undergone any preparation likely to improve their performance or their conditions of use, save that which is permitted hereunder. Except for that which is specifically authorised, any part damaged through wear or accident may be replaced only by an original one identical to the one damaged.
- .3 Compliance with the requirements of this Group shall be determined if possible, by comparison with the Recognition Document. Whilst recognition documents aim to define the standard specification of the car in question, there may remain areas where the recognition documents are not definitive of some feature of a component. If considered necessary, reference may be made to the manufacturer's workshop manual or service manual and any supplements or service bulletins duly promulgated by such manufacturers or distributors in accordance with normal trade practice. Comparison of the component in question with an example or examples of standard components purchased through normal spare parts channels shall provide prima facie evidence of conformity or otherwise of the parts in question.
- .4 Removal of any item included in recognition and not specifically permitted to be varied by the provisions of this Group is prohibited.

3. Coachwork

- .1 The coachwork must remain as specified on the recognition document (subject only to specific modifications authorised hereunder).
- .2 Supplementary accessories not included in the recognition documents are authorised without restriction, such as those concerning the aesthetics or the inside comfort i.e., lighting, heating, radio, etc., or those enabling an easier or safer driving of the car (screen washers, etc.) provided that they do not affect, even indirectly, the mechanical performance of the engine, steering, transmission, roadholding or braking.
- .3 Metal may be removed from panels only when mudguard flares, as described in (d) hereof, are fitted. The only reforming permitted is –
 - (a) The flattening of wheel arch beading against the inside of the mudguard, permitted only where such beading constitutes a potential danger to the tyre and must be effected so the outside contour of the mudguard remains unchanged.
 - (b) The rendering safe of body jointing protrusions, which may be closed against the appropriate inner mudguard panel.
 - (c) It is permitted to create a recess in the floor pan sufficient to house a CAMS approved exhaust muffler. Exhaust pipes must remain below the level of the floor pan, and should such exhaust muffler be fitted, then all floor coverings must be removed.
 - (d) It is permitted to fit mudguard flares as described in the relevant recognition documents as issued by CAMS. It is permitted to remove such metal as may be necessary for this purpose.

- .4 Mufflers, if fitted, must be either of a CAMS approved type or, in cars where the complete original exhaust system is retained, as originally fitted.
- .5 Save for the carpet and underfelt none of the normal elements of coachwork (including dashboards and all inside quilting, whatever their location) and none of the accessories normally mounted by the manufacturer on the model, may be removed or replaced. However, their location may be varied, (within the same general location) so as to allow fitment of a roll cage.
- .6 The modifications derived from the fitting of supplementary accessories authorised herein, such as those necessitated by adding of a windscreen washer (drilling a hole in the bonnet) will be allowed.
- .7 All controls and their functions must remain those provided by the manufacturer, but it is permissible to arrange them in such a way as to make them more accessible and easier to use (e.g. fitting additional pads to the brake pedal, extensions to switches, etc.).
- .8 The front seats may be varied by the replacement of either or both seats with CAMS approved unit/s, provided that if both original seats are replaced the weight of both replacement seats is the same.
- .9 The addition of a radiator screen(s) is authorised.
- .10 Instruments and switches, in addition to those already provided may be fitted on a separate panel, provided that all original instruments and switches are retained in their original locations. Steering-column locks which entail the use of a key must be removed, or rendered inoperative (except on road registered cars in which case they may be removed or rendered inoperative).
- .11 Safety fasteners may be provided for the windscreen and rear window.
- .12 The driver must wear a CAMS approved harness, and any of the other places may also be so equipped. All seat belts originally mounted may be removed.
- .13 Plates of insulating material may be added in all places where they may be necessary so as to protect those aboard the car from risk of fire.
- .14 The windscreen must be of laminated glass.
- .15 Steering wheels may be replaced by one of a CAMS approved model of at least 30 cm. diameter.
- .16 During practice and competition, the driver's window must remain fully open. It is permissible to affix transparent material (e.g. Lexan) to the window frame, subject to the material being –
 - (a) transparent and free of colouring
 - (b) fixed to the door frame on the inside of the window channel so as to permit the free movement of the original glass
 - (c) fitted so that there is no gap between it and the front of the opening
 - (d) fitted so that it extends no further rearwards than 50% of the length of the window sill, then finishing in a line being either vertical, or parallel with the back of the window opening.

4. Engine

The engine shall be unmodified except for the following specific items –

- .1 The make and type of *carburettor* or *fuel injection* system is free. Substitution of a fuel injection system by carburettors or vice versa is not permitted. The inlet manifold must not be modified. An intermediate mounting plate to enable the mounting of a different carburettor or fuel injection system is authorised.
- .2 *Pollution control* devices, including manifold heating passages, may be rendered inoperative and/or removed.
- .3 “Facing” of the *cylinder head* is permitted provided that the final dimensions are within the manufacturer’s tolerances, and that the resultant combustion chamber capacity is not less than that specified in the Recognition Document.
- .4 The *thermostat housing* may be modified only as necessary to enable the fitting of a thermometer. The thermostat may be removed, replaced or modified, but if retained must remain in its original location.
- .5 The *valve* train components are free, except that:
Roller cam followers are not permitted.
Valves must be of the same head diameter and seat angle as the standard component.
The original type of valve spring must be retained.
The valve spring seating dimension in the cylinder head may be modified.
- .6 The *exhaust* system is free.
- .7 The *camshaft* is free.
- .8 *Piston* assemblies are free save the compression ratio must not exceed the higher of 10.5:1 or the ratio specified on the relevant recognition documents.
- .9 *Lubrication*
 - (a) The engine sump may be modified so as to vary the oil capacity, provided that this is achieved by modification to the original component in similar material.
 - (b) Baffling in the sump is free.
 - (c) The oil pump pickup may be modified or replaced up to that point where it meets the cylinder block (or pump, as appropriate).
 - (d) Additional or alternative oil pumps may be fitted and such oil pumps may be driven:
 - (i) from any external rotating shaft of the engine;
 - (ii) from the existing oil pump drive;
 - (iii) electrically.The effect of the foregoing may be that a “dry sump” lubrication system may result.
 - (e) One additional oil cooler of maximum capacity one litre may be fitted, provided that it remains within the confines of the coachwork (i.e. not mounted externally and no part projecting beyond the coachwork lines.) Should a “wet sump” be used this oil cooler may be attached only to the pressure side of the engine lubrication system, and no auxiliary pump/s may be fitted.
 - (f) Oil cooler attachments and hoses are free.

- (g) The fitting of an intermediate by-pass block between the oil filter and the engine is permitted as is relocation of the oil filter within the same coachwork compartment.
 - (h) If fitted with crankcase breather/s discharging to the atmosphere there shall be fitted to such breather/s an oil trap container (which must be empty at the start of the competition) of at least two litres (for cars under 2000cc.) or three litres (for cars over 2000cc.). Recovery of oil from this oil trap container is permitted.
 - (i) Oil breather pipes may be replaced.
 - (j) Should the oil filler cap be integral with the original oil breather pipe then the oil filler cap need not be retained.
- .10 *Connecting rods* are free.
- .11 *Crankshafts* are free except that the stroke, the phasing, the travel of the piston, and the types of bearings used must be as on the original crankshaft.
- .12 All engine *bearings* are free as to material, but unless subject to specific other freedoms within these rules, must be of the same type and dimension.
- .13 The crankshaft/harmonic damper and/or pulley is free.
- .14 Any flexible portion of the engine mounting system is free, however all designated dimensions must be retained.
- .15 The cooling *fan* and its pulley may be removed, modified or replaced. Belts may be replaced by others of a different type e.g. Vee by flat.
- .16 Parts of the engine normally balanced in manufacture may be further balanced.
- .17 Radiators are free subject to no modification being required to allow their fitment, and subject to their weight being not less than that of the original radiators.
- .18 *Turbocharged Engines.*
- 1. All freedoms allowed to normally aspirated engines are available, save those restricted below.
 - 2. The nominal cylinder capacity will be multiplied by a factor of 1.4 and the car will pass into the class corresponding to the nominal volume thus attained.
 - 3. The turbo charger, (i.e. the complete unit from inlet face to outlet face) may not be modified save that –
 - (a) the internal bearings of the turbo charger may be replaced by non-original items of the same type, of identical dimensions;
 - (b) the waste valve pressure is free;
 - (c) the lubrication system of the turbo charger may be modified;
 - (d) a cooling duct not exceeding 75 mm in diameter may be attached to the exhaust side of the turbo charger.
- .19 *Rotary Piston Engines* (Wankel type)
- 1. *Freedoms* available to reciprocating piston engines apply where applicable.
 - 2. *Rotor seals* are free.
 - 3. Freedom is allowed to increase the timing *overlap effect* by varying the ports of the rotor chamber viz:

- (a) *Exhaust* – by increasing the size of the port provided this is achieved only by the removal of metal,
- b) *Inlet* – by either,
 - (i) increasing the size of the port provided this is achieved only by the removal of metal, or
 - (ii) by removal of metal creating another port in the inlet quadrant of the side housing (i.e. side plate). This additional port must be no longer than, and remain parallel to, the existing port. It is emphasised that no work in the inlet or exhaust tracks is permitted beyond that described above.
- 4. The material of the rotor must be as originally provided by the manufacturer, or of such other material as is specifically approved by CAMS from time to time.

5. TRANSMISSION

- .1 Gearbox and final drive *ratios* must be as nominated on the recognition documents.
 - .2 Oil *coolers* and circulation pumps may be fitted to gearbox and differential.
 - .3 So as to allow for the conversion of *rear axles* to fully floating assemblies, the following freedoms are permitted:
 - (a) The *half shafts* – provided that the maximum diameter of the original shaft is not exceeded, and that the replacement half shafts fit the original differential unit (or in the case of independently suspended cars, the joint or flange);
 - (b) The type and number of *wheel bearing*;
 - (c) The hub/bearing carriers;

Modifications made under (b) and (c) above are limited to an area within 150 mm. of the extremity of the original axle housing.

It is prohibited to undertake any of the above modifications if the result is not a fully floating rear axle assembly.
 - .4 The size and material of wheel bearing shrink rings is free; the size and material of the wheel bearing retaining plate is free.
- It is permitted to machine the existing shrink ring bearing surface on the axle to no more than .002” depth to assist in the location of the shrink ring. All edges resulting from that machining should be appropriately machined.
- It is permitted to machine a fine thread onto the axle, outwards of the standard shrink ring, and to attach to this a bearing retaining nut.
- .5 The recognised *crown wheel* and pinion must be retained. Without permitting any modification to the housing, *differential* action is free.
- Splines* on axle shafts may be changed so as to take advantage of this freedom.
- .6 Clutch cover assemblies (pressure plates), driven plates and release bearing are free. The flywheel must be the type originally fitted to the vehicle, or may be replaced by one manufactured of steel. Clutch fixing bolt holes and dowel positions may be altered. All or part of the flywheel face may be modified by machining no more than 4mm therefrom so as to enable advantage to be taken of the foregoing freedom.
 - .7 The dimensions of *tailshafts*, the number of bearings, and the type and number of joints, are free.

6. SUSPENSION:

- .1 The suspension components and configuration shall be unmodified, except that freedom is allowed in respect of:
 - (a) *Springs*, provided the means of suspension and type of spring is unchanged.
 - (b) Noise *insulators* and bump stop *rubbers*.
 - (c) Material used in *bushings*. The dimensions and type thereof must remain unaltered, i.e. spherical bushes are not permitted as a replacement.
 - (d) *Packing* of springs to enable fitting to original mountings. Such packings must be positively attached to the mountings.
 - (e) Replacement or deletion of anti sway bars and Panhard rods, provided that they do not fulfil some other function; the addition of suspensions stabilisers and axle locating devices.
(Note – the above freedoms are related to devices which if removed would not prevent the car from being driven effectively.)
 - (f) The make and size of shock absorbers, provided that no addition is allowed, the system of operation is unchanged (i.e. lever, telescopic, hydraulic, friction etc.) and no modification of the mountings is required.
Note: In cars fitted with Macpherson strut type front suspension, only the internal damping mechanism is considered to be “shock absorber”; thus the external components e.g. strut, spring mountings, etc., are not free, and may not be modified).
- .2 All the original elements of the suspension, save as specially mentioned, must remain unaltered.
- .3 At all times, the freedoms and restrictions noted above have the following effect:
 - (a) The original spring having been removed, it is permitted to replace it with another spring together with any additional intermediary devices necessary to enable such spring to be fitted.
 - (b) It is not permitted to modify any original components other than those specifically mentioned in .1 above.
- .4 The car, supplied with enough fuel for starting the event, its oil and water tanks full, must be able to drive over without touching, under the power of its engine, and with its driver at the steering wheel, a block of 800 mm x 800 mm x 100 mm in height.

7. WHEELS, TYRES AND STEERING

- .1 The design of wheels is free, provided that the wheels may be fitted to the car without any modifications other than those expressly permitted herein.
- .2 Wheel spacers, i.e. their addition or deletion, are free.
- .3 Wheel retaining studs, nuts and set screws may be replaced subject to the original number remaining unchanged.
- .4 The make, type and size of tyres are free, on the condition that the tyres concerned are foreseen by their manufacturer to be fitted on the wheels without any modification of the rims, and without need of any intermediary device; and subject to the provisions governing maximum width (See Part 5 of App. C).

- .5 The track is free, provided that the wheels/tyres, in their entirety, are completely covered by the mudguard and/or mudguard flares when viewed from above; and when viewed from the rear, the width of the tyre, in its entirety, is covered by the mudguard and/or mudguard flare to a point not higher than the centre of the wheel.
- .6 Steering box ratio is free, provided that the original (recognised) steering box is retained, and the steering gears/ratio are provided by the manufacturer of the automobile as a listed component, and not necessarily for that model.

8. BRAKES:

- .1 The original form of brakes must be retained (i.e disc or drum).
- .2 Brake discs and callipers may be replaced by other brake discs and callipers, provided that the outside diameter of the disc is not varied by more than 5% from that recognised.
- .3 Brake drums and shoes may be replaced by other brake drums and shoes, provided the inside diameter of the drum is not increased by more than 5%.
- .4
 - (a) Backing plates and/or dustshields may be removed.
 - (b) Should the callipers be replaced with others as is provided in .2 above then modifications to the mounting boss are permitted as is their method of attachment.
 - (c) The original brake hoses may be replaced by other brake hoses; Hose run is free.
- .5 The replacement of lining is authorised and the brand, composition and system of attachment is free, as is pad and lining area.
- .6
 - (a) It is permitted to replace a brake master cylinder with another master cylinder, provided that neither the bore nor the stroke of the replacement cylinder is altered from its original construction.
 - (b) The mechanism linking the brake pedal to the master cylinder is free, provided that the pedal itself remains unaltered other than for the addition of pads as provided for elsewhere in these rules.
 - (c) Divided braking systems must be retained.
A dual line system may be fitted; if two master cylinders are fitted, a mechanical link to provide a balancing system between the two is permitted.
- .7 Wheel cylinders in drum brakes may be replaced by other wheel cylinders, provided that neither the bore nor the stroke of the replacement cylinder is altered from its original construction.
- .8 Brake fluid reservoirs which are normally part of the master cylinder are free, subject to their remaining in the same general location as originally positioned.
- .9 The park brake mechanism may be removed.
- .10 It is permitted to conduct cool air to front and/or rear brakes through ducts no larger than 3 inch (7.62 cm) diameter (or the rectangular equivalent thereof). One such duct may be fitted for each wheel. Air may be collected at the front of the car and for this purpose the front air dam or skirt may be neatly pierced. No air duct shall protrude beyond the perimeter of the body.
No other body modifications are permitted for this purpose.

9. ELECTRICAL:

- .1 The voltage of the electrical system may not be changed.
- .2 The make and capacity of the battery is free, provided that the location remains unchanged (i.e. the coachwork compartment in which the battery was originally located) save as provided for in .7 below.
- .3 The make and capacity of the generator and regulator are free and the complete electrical system, including lighting and warning apparatus, must be in working order at the start of the competition.
- .4 The coil, condenser and distributor are free subject to the ignition system remaining the same as that provided by the manufacturer for the model concerned, and the replacement of the said accessories do not entail any modification of the attachment systems provided by the manufacturer for the model concerned. However, it is specified that the fitting of an electronic ignition system is allowed in this group provided that no mechanical part other than that mentioned herein is modified or replaced.
- .5 The make and type of spark plugs are free.
- .6 Extra relays and fuses may be added to the electrical system.
- .7 The fitting of a separate exclusive power source for the sole purpose of radio communication is authorised in such events with permit the use of radios.

10. FUEL SYSTEM:

- .1 *Safety Bladder Tanks*
 - (a) The installation of an FIA approved bladder type tank is permitted provided that it is installed in the general location of the original tank and panel modifications are in accord with paragraph 9 of Part 14 of Appendix C.
 - (b) The capacity of such a safety tank may be varied from that fitted by the manufacturer of the car, provided always that the capacity does not exceed that nominated in paragraph 10 of Part 14 of Appendix C.
- .2 *Foam Filled Tanks*
 - (a) The fitment of a one-way valve on the fuel tank inlet for fuel ventilation (maximum breather outlet not to exceed 13 mm internal diameter) and designed to prevent the egress of fuel in case of accident is permitted, provided that the diameter of the fuel tank inlet or port is not increased beyond original specification.
 - (b) The fuel filling port may be relocated in those cars which have foam-filled fuel tanks. In the event of relocation –
 - (i) the filler orifice shall be located not more than 50mm from the tank.
 - (ii) original fuel port shall be rendered inoperative.
 - (iii) no panelling modifications are permitted save that the floor of the luggage boot may be modified to allow protrusion of the filler neck
 - (iv) regardless of the number of original fuel ports one port only may be utilised and this shall have no greater diameter than that of the original filler orifice; and in the case of cars fitted originally with multiple fuel ports, one of the original filler orifices.

.3 *Pumps/Filters*

- (a) The replacement of the fuel pump or pumps is permitted.
 - (b) Additional fuel pumps and supplementary reservoirs are prohibited.
 - (c) The fitment of fuel filters is permitted. (Note: fuel filters of inordinately large capacity, or of a capacity larger than is required to fulfil the prime function as a filter, will not be permitted).
- .4 All cars must be fitted with fuel lines only of metal, braided Neoprene, or other CAMS-approved material. Internal diameter is free, up to a maximum of 12 mm. Routing is free, provided that the fuel line does not run through the habitacle.

11. GENERAL:

- .1 Where freedom is permitted to fit nominated or homologated parts, such freedom is strictly limited to such components themselves, and it shall not be permissible to modify other parts, save only by the drilling of holes for supporting purposes so as to facilitate the fitting of or to take advantage of the freedom to fit, such nominated or homologated components or parts.
- .2 The addition of any protective device underneath the car is forbidden unless such device is mentioned on the recognition documents for the car concerned.
- .3 The use of any substances which leave a metallic coating on cylinder heads, combustion chambers, inlet ports and inlet or exhaust manifolds is prohibited.
- .4 Each car must finish competition equipped to conform with the specifications laid down, excepting that any body damage or glass breakage shall not be deemed an infringement of this regulation.
- .5 All ball and roller bearings may be replaced by non-original items of the same type and of identical dimensions.
- .6 Nuts and bolts, may be locked; nuts, bolts, screws, washers, fan belts, water hoses, clips and gaskets may be replaced with non-original items, provided always that they may be fitted without modification to any other component.
- .7 The requirements of Group A of this Appendix shall, where not provided for by the above requirements, be also applicable to cars of this Group.
- .8 CAMS will specify the minimum weight of car in this group. See "Definitions". At no time may cars be of less mass than specified. If necessary and having regard to the regulations governing this Group, ballast may be carried, provided that:
 - (a) it is firmly affixed to the floor in the rear passenger foot space;
 - (b) the mass of the ballast is noted in the log book
- .9 Only commercial fuel, as defined by CAMS, may be used.