

CAMS
MANUAL
OF
MOTOR
SPORT

with 1980 National Competition Rules

Appendix C

Automobiles

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The specific requirements for cars are contained at PART 3 of Appendix C. In order to determine the exact requirements for any given vehicle, it is necessary that you first know whether it is to compete in races, rallies, off road events, or speed events; and to which group or formula (and thus category) the car belongs — Part 1 will assist here.

Having determined the type of competition and the category of car, reference must be made to Part 2 for the General Requirements which apply; then, for the specific requirements, look to the appropriate formula or group in Part 3. Parts 5 to 14 give detailed specifications and information, also necessary in order to properly construct or prepare a competition car.

Part 1—Classification

For the purpose of attempting records, vehicles shall be classified according to their total cylinder capacity as follows:

VEHICLES WITH POSITIVE DISPLACEMENT RECIPROCATING ENGINES

Over 8,000 cc.	Class A (F.I.A. Class (11)
5,001-8,000 cc.	Class B " (10)
3,001-5,000 cc.	Class C " (9)
2,001-3,000 cc.	Class D " (8)
1,501-2,000 cc.	Class E " (7)
1,101-1,500 cc.	Class F " (6)
751-1,100 cc.	Class G " (5)
501- 750 cc.	Class H " (4)
351- 500 cc.	Class I " (3)
251- 350 cc.	Class J " (2)
Below 250 cc.	Class K " (1)

(See Supercharging, below.)

VEHICLES WITH ROTARY COMBUSTION (WANKEL-TYPE) ENGINES

According to the above classes, as calculated by the following F.I.A. formula, viz., twice the volume determined by subtracting the minimum capacity of the working chamber/s from its/their maximum capacity gives the piston displacement equivalence (and hence the relevant class). (See para Supercharging below.)

VEHICLES WITH ELECTRIC, TURBINE, OR STEAM ENGINES

Such vehicles are allotted to classes on a basis of unladen weight, viz.:

Up to 500 kg.	Class 1
501-1,000 kg.	Class 2
Over 1,000 kg.	Class 3

SUPERCHARGING

If the engine of a car includes a separate device for supercharging it, 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 obtained.

A supercharger is deemed to be:

- a device designed to and capable of producing positive (above atmospheric) pressure in the induction system of an engine throughout its operating range;
- any device which effects a measurable increase in the B.M.E.P.

A dynamic air inlet for ducting air from the atmosphere into the engine intake shall not be considered as a supercharging device.

In competitions other than attempts on records, automobiles shall be classified as follows:

1st Category—Racing Cars

- Australian Formula I* V8 production pushrod engines up to 5,000 cc; and Formula Pacific engines up to 1600 cc.
- Australian Formula II* up to 1,600 cc.
- Formula Libre* (in races) up to 1,300, 1,301-2,000, 2,001-3,000, 3,001-5,000
- (In other speed events) as for Record classes, or as for races.

2nd Category—Sports Cars (Group A)

- Up to 1,300 cc. 2,501-5,000 cc.
- 1,301-1,600 cc. Clubman—up to 1,300 cc. only.
- 1,601-2,500 cc.

2nd Category—Sports Sedans (Group B)

- Up to 1,300 cc. 2,001-3,000 cc.
- 1,301-2,000 cc. 3,001-4,000 cc.
- 4,001-6,000 cc.

3rd Category—Production Cars (Group C)

- Up to 1,600 cc.
- 1,601-2,000 cc.
- 2,001-3,000 cc.
- 3,001-6,000 cc.

Production Sports Cars (Group D)

- Up to 1,300 cc. 2,001-3,000 cc.
- 1,301-2,000 cc. 3,001-6,000 cc.

4th Category (Other Automobiles)

As may be specified in Supplementary Regulations.

5th Category (Historic Cars)

As may be specified in Supplementary Regulations.

Notes: Organisers are permitted to amalgamate any adjoining classes, but not to use any other class limits than those stated for the relevant category or group.

In all full International, International and National open competitions events shall be conducted only in accordance with the above categories, unless specific written authority is granted by CAMS to classify otherwise.

Part 2—General Requirements of Automobiles

1. ALL AUTOMOBILES SHALL, OF NECESSITY, IN ALL COMPETITIONS:

- (a) Comply with the definition of an automobile;
- (b) be fitted with some form of protection between engine and driver's compartment suitable and sufficient in the case of fire for preventing the passage of flame;
- (c) be so constructed that the driver is protected from the entry of foreign matter into the driving compartment from the road and/or road wheels;
- (d) be equipped with a transmission system so arranged that—
 - the propeller shaft and universal or carden joints, if passing through or beneath the driver/passenger compartment, shall be under the floorboards, or fitted in tubes or casings; such floorboards, tubes or casings shall not be of a temporary nature, but shall be joined together and firmly fixed to the coachwork or chassis;
 - any chains used in the transmission of power or for driving any auxiliary component, shall be effectively guarded;
- (e) be fitted so that all fuel tanks are vented externally to the bodywork.
- (f) The carrying of equipment providing radio-communication between vehicle and pit or service crews is prohibited, save in such events as CAMS may specify as exempt from this prohibition.
- (g) *Steering column locks on any car not registered for use on the road shall be removed prior to such car competing.*
- (h) If required to be fitted with roll-over protection by the provisions of these rules, to be equipped with such protection only in accordance with the provisions of Part 10 of this Appendix.

2. ALL AUTOMOBILES SHALL, OF NECESSITY, IN ALL SPEED EVENTS:

- (a) (if fitted with hinged bonnets and/or panels forward of the driver) be fitted with at least two independent fastening systems, of adequate strength and limited extensibility, which simultaneously hold the bonnets or panels fully closed;
- (b) (if fitted with crankcase breather/s discharging to atmosphere) have 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 of under 2,000 cc.) or three litres (for cars of over 2,000 cc.) except in Autocross, Rallycross and other events on unsealed surfaces, save however that Supplementary Regulations may require fitment for any particular event;
- (c) In other than one-car-at-a-time closed speed events, all cars in speed events and races shall be fitted with a roll bar or roll cage and safety harness complying with such specifications as are determined by CAMS from time to time. (See Sections 9 and 10.)
(*Note:* Cars of Group C do not require a roll bar in competition other than Rallycross and races.)
- (d) be fitted with a fire extinguisher or fire extinguishing system in working order and of a type and capacity as specified in Part 8 of this Appendix as is appropriate;
- (e) be so constructed that, in the event of any breakage of the tailshaft, its components or mountings, it shall be effectively prevented from striking the ground;
- (f) be fitted with wheels which meet the requirements of specifications determined by CAMS from time to time (see Part 5);

- (g) be so constructed that any aerodynamic device fitted shall be in accordance with specifications determined by CAMS from time to time (see Part 6);
- (h) comply with any Supplementary Regulations for a specific event which require the fitment of locking or wiring devices adequate for the prevention of any loosening of any oil drain plug.
- (i) be fitted with a scatter shield if required under the provisions of Part 13 of this Appendix.

Notwithstanding the above requirements, cars registered for road use shall not, when competing in one-car-at-a-time speed events, be required to comply with the provisions of sub-sections (b), (c), (e), (h) and (i) of this Section.

3. ALL AUTOMOBILES OF THE 1st CATEGORY SHALL, OF NECESSITY, IN ALL SPEED EVENTS, AND IN ADDITION TO THE PROVISIONS OF 2 ABOVE:

- (a) if employing a battery electrical system, be provided with either an automatically or manually operated battery-circuit breaker or isolating switch. In the case of a manually operated device, it shall be accessible to the driver and to persons outside the car and shall be clearly identified by a 6-inch blue triangle on a white ground if necessary for contrast. The switch must be on the live side of the battery, and fitted in accordance with the switch manufacturer's directions. *A clear indication of "off" and "on" positions must be marked adjacent to the relevant positions.*
- (b) be equipped 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 braking system, the pedal shall still control two wheels on the same axle. Provided that in "straight-line" sprint events, and in events exclusively for historic or vintage cars, braking systems operating on two wheels of the same axle shall be acceptable;
- (c) be equipped with exhaust pipes, the orifices of which, when directed horizontally to the rear, must be between 300 mm and 600 mm above the ground, and may not protrude by more than 250 mm beyond the rearmost portion of the car;

4. ALL AUTOMOBILES OF THE 2nd, 3rd AND 4th CATEGORIES SHALL, OF NECESSITY, IN ALL SPEED EVENTS, AND IN ADDITION TO THE PROVISIONS OF 2 ABOVE:

- (a) be equipped with an exhaust system, the outlet pipe/s of which shall be directed either rearwards or sideways. If rearwards, their orifices shall be between 100 mm and 450 mm above the ground, and they shall not protrude by more than 150 mm beyond the rear-most portion of the car. If they are directed sideways, their orifices must be located aft of a vertical plane passing through the midpoint of the wheel base. They may neither project in any way beyond the maximum width of coachwork nor terminate at a point more than 50 mm within the projected plan of the coachwork. Adequate protection shall be provided to prevent heated exhaust pipes from causing burns.
- (b) be fitted with an operable reverse gear;
- (c) be marked with a 150 mm blue triangular sign indicating the location of the battery;
- (d) be fitted with a windscreen in accordance with Part 3, Group A, or as may be required in Production Category.

5. ALL AUTOMOBILES IN CIRCUIT RACES SHALL, OF NECESSITY, IN ADDITION TO THE PROVISIONS OF PRECEDING PARAGRAPHS 2, AND EITHER 3 OR 4, AS APPLICABLE:

- (a) be fitted only with laminated glass in any glass windscreen;
- (b) be fitted with tyres which have not been retreaded, recapped, repaired or in any way reconditioned; if tubeless racing tyres, shall have been fitted only to suitable rims; if tubeless touring tyres, may be fitted only to rims classified as optimum sizes for the covers concerned (fitting of such tyres to so-called "permissible" or oversize rims is specifically prohibited); in all cases, shall be required to carry a manufacturer's speed rating appropriate to the type of automobile and competition concerned;
- (c) be fitted with bodywork which generally encloses (when viewed from above and each side) the chassis frame and basic mechanical elements, from the front of the automobile rearwards to the vertical plane immediately to the rear of the driver's seat. Provided that, in the case of a vehicle driven by a provisional licence holder, such further panel/s must be fitted as may be necessary to comply with the requirements of Part 11, para. 11.2;
- (d) be fitted with locking or wiring devices adequate to prevent the loosening of any oil drain-plug (Note: Supplementary Regulations for speed events may also require the fitment of such devices);
- (e) be fitted with at least two (2) rear vision mirrors, of which each must have a reflecting surface of at least 500 sq. mm, and provide an unobstructed view to the rear of the car, save that, in automobiles with closed bodywork (whether of sports or touring types), one such mirror shall be fitted internally and one externally.
- (f) be fitted with a fuel tank as specified in Part 14 of this Appendix as is appropriate.
- (g) be fitted with readily accessible towing eyes, having an internal diameter of 40 mm: one each forward of the front axle and rearwards of the rear axle.
- (h) be fitted with fuel lines only of metal, braided Neoprene, or other CAMS-approved material.
- (i) In closed cars, have the driver's window fully open at all times during practice and racing.
- (j) In closed cars first registered with CAMS after 1st January 1980, and in which the relevant regulations permit the replacement of the driver's seat, be fitted only with such replacement seat which—
 - incorporates a head restraint
 - has no provision for mechanical adjustment of the rake of the squab
 - if the original seat mountings are not used, is mounted in four places using 100 mm x 45 mm plates, of thickness 6.4 mm aluminium or 4.6 mm steel, each attached by at least 2 bolts of 10 mm diameter or the approved equivalent thereof.

5th CATEGORY

(Historic Cars)

1. PREAMBLE

- .1 The following definitions and general requirements governing Historic cars are recorded to facilitate the organisation of competitions and meetings in which such cars are involved.
- .2 In addition to running each group separately—entries permitting—events combining Group J, K & L would be generally acceptable. In no circumstances shall Group M be combined in events for any of the preceding Groups. However, it is permissible for selected suitable cars from Group L to compete by invitation in Group M events. In all cases cars invited to participate should be in accord with the period of motor racing it intends to portray so far as their general appearance is concerned. Combinations of groups other than as indicated above is strongly discouraged, and CAMS reserves the right to disallow variations therefrom.
- .3 The express purpose of these regulations is to see that cars in the various groups compete in a condition, mechanically and visually, compatible with the period of racing being portrayed. "Updating", in whatever form, is not condoned. CAMS reserves the right to reject any vehicle which it considers not within the spirit of these regulations.
- .4 CAMS, in its absolute discretion, reserves the right to accept or reject any car for Historic classification. The issue of all Log Books must be firstly authorised by CAMS head office, and a general register of Historic cars in all groups will be maintained.
- .5 CAMS reserves the right to classify or re-classify a car to a category which in its absolute discretion CAMS believes it conceptually belongs having regard to Australian Motor Racing History.

2. GROUPING

Group J — Vintage Cars

- .1 Factory-built racing cars and sports cars, all constructed before December 31, 1930,
or
 - .2 Special racing cars and sports cars, all constructed at any time, employing primary, engine, transmission and chassis components, and modes of suspension, of cars constructed before December 31, 1930, in any combination.
 - .3 Cars in this Group *only* shall be eligible for any prize or trophy to be awarded to a "Vintage" car.
- A statement "Pre December 1930, referred to as Vintage", should be included in programmes, above the list of entries of vehicles in this class.

Group K — Post Vintage Cars

- .1 Factory-built racing cars and sports cars, all constructed between December 31, 1930, and December 31, 1940,
or
- .2 Special racing cars and sports cars all constructed at any time, employing primary, engine, transmission and chassis components, and modes of suspension, of cars constructed before December 31, 1940, in any combination.

- .3 Cars in this Group *only* shall be eligible for any prize or trophy to be awarded to a "Post-Vintage" car.
- A statement "Pre December 1940, referred to as Post Vintage" should be included in programmes, above the list of entries of vehicles in this class.

Group L — Historic Racing and Sports Cars (1940/60)

- .1 Sub Group (a) Sports Cars manufactured after December 31, 1940 but prior to December 31, 1960, employing original major engine, transmission, body, chassis and suspension components. Suspension shall remain unmodified from original specification, except that spring rates, ride height and damper setting may be altered, and fore and aft axle location improved.
- .2 Sub Group (b) Racing Cars and Sports Racing Cars manufactured after December 31, 1940 but prior to December 31, 1960 employing original major engine, transmission, body, chassis and suspension components.
- .3 Non-factory built cars in either sub group may be admitted after individual assessment.

Group M — Historic Racing and Sports Racing Cars (1961/65)

Racing cars, sports-racing cars and clubman cars manufactured after 1st January, 1961 and before 31st December, 1965, employing original engine, transmission, suspension and chassis components.

(Note: Production sports cars are not eligible in this Group.)

3. GENERAL

- .1 Cars in all groups—while competing in events specifically limited to such cars—are exempted from CAMS requirements in respect of fire extinguishing systems (but not fire extinguishers), scatter-shields, roll-bars, safety-harness and safety fuel tanks.
- .2 Cars in Groups J, K and L shall generally not be bound by any regulation concerning self-starting devices, lights, road equipment or minimum or maximum dimensions or weights. However sports cars and sports racing cars in Groups L and M will be required to conform with the minimum requirements of Category 2, Group A, so far as electrical equipment is concerned.
All cars must comply with the appropriate provisions of Part 2 of Appendix "C", except that cars which raced without bodywork in the respective group period are exempted from the requirements of Part 2, Par. 5(c) as regards bodywork.
- .3 *Fuel*
Cars in Groups J, K and L shall have freedom to use any type of fuel. Cars categorised under Group M will be restricted to commercial fuel as defined by CAMS.
- .4 *Suspension*
Suspension media must remain unchanged in all groups from the specification evident during the applicable group period, excepting that with "new" group J and K cars, the suspension medium shall be compatible with the group period portrayed. Fore and aft axle location may be improved in all groups.

SPECIFICATIONS

.5 Coachwork

In all groups, fibreglass panels are not normally permitted unless fitted as original equipment. Exceptions may be considered based on individual assessment.

In production cars, all internal and external trim must be intact, except that carpeting, windscreen and bumpers may be removed and seats may be replaced by others of period and type appearance.

.6 Wheels

If original wheels are not fitted, then the following minimum and maximum dimensions shall apply, unless there is evidence to establish beyond doubt that a car was otherwise equipped—

Non-original Wheels

Group	Minimum Diameter	Maximum Width	Tyres *Minimum aspect
J	28"	3.5"	70%
K	16"	4"	70%
L	15"	5"	70%
M	13"	6"	60%

* as determined by the Tyre & Rim Association Manual.

.7 Specific Components (Conditions of use)

	Production Cars	Others
Toothed belt drives	only if original equipment	only if used on subject car within group period
Electric fans "Rose"/Uniball joints		
Gear box	original number of ratios internal mechanism otherwise free	number of ratios as in group period
Brakes	original system only	a system fitted to the subject car within group period
	dual/tandem master cylinders may be fitted. Mechanical to hydraulic conversion permitted	
Starter motor, electric	may be fitted	
Differentials and axle	axle tube outers must be as original differential, carrier and axles are free	
Induction system	carburettors must be of a type and make available in the applicable group period. Single choke carburettors may not be replaced by multiple choke units (Groups J, K, L & M)	
Supercharging	only if original equipment	only if used on subject car within group period

.8 Nothing in the foregoing definitions shall affect any rights or powers conferred upon organisers or others by CAMS, in relation to the refusal of entries or exclusion of competitors.

.9 CAMS foreshadows the introduction, at some appropriate time, of Groups within this category for Production Sports Cars beyond 1960, and for Racing and Sports-racing Cars beyond 1965.

Fastman



- ★ Nomex Suits
- ★ Nomex Underwear
- ★ Nomex Balacavas
- ★ Racing mechanics 1 pce.
- ★ Nomex Helmet Skirts
- ★ Nomex Suits
- ★ Club and Team Jackets
- ★ 1 pce. & 2 pce. Proban Suits
- ★ T-Shirts for clubs

★ Made To Measure Driving Suits

Fastman Clothing — PETER & BEV CANDY

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