

TECHNICAL BULLETIN

5th CATEGORY – COMPONENT CONDITION TESTING

REFERENCE:

CAMS Online Manual of Motor Sport; 5th Category Historic; 3.2 Historic Sports & Racing Cars: Groups Ja, Ka, Lb, M, O, P, Q, F5000, R, F, V, T
http://www.camsmanual.com.au/08_historic.asp

RATIONALE:

Our duty of care to participants in historic racing requires that we take reasonable precautions to ensure the mechanical integrity and safety of competing vehicles. Visual inspection of components known to be potentially subject to failure is often an inadequate means of checking their integrity. The AHMSC proposes to introduce crack-testing of key components, initially as an integral part of the process for obtaining a CAMS historic logbook and CoD, and then at regular intervals, yet to be finalised. In line with current FIA practice, it is proposed that this process apply to all racing and sports racing cars of 2-litres capacity and over from the Group O (1966-1969) period onwards, to commence from 1 January 2013 for new cars and from a date yet to be finalised for existing cars that fall within these criteria.

ACTION:

To amend the following:

3.2 HISTORIC SPORTS & RACING CARS

3.2.1 GENERAL REQUIREMENTS

This section details the requirements common to all historic sports and racing cars with a competition history. The "General Requirements" set out in article 3.1 also apply, together with additional specific requirements for individual groups detailed in the individual group sections.

- (a) **Chassis:** The chassis must be original and unmodified from period specification other than the addition of material to limited areas of the structure to provide local stiffening. Such modifications must not add new stressed members to the chassis and must not be designed to have an interacting effect which could be considered to provide a general stiffening of the structure. Suspension pick-up points may not be moved.
- (b) **Bodywork:** Must be original and unmodified from period specification, or replaced with a new body manufactured to the original design from materials and utilising construction methods evident in the period.

Vehicles are to run with all bodywork intact unless it was customary for the particular vehicle to do otherwise within the group period (eg, some mid-engined vehicles customarily ran without an engine cover).

- (c) **Cockpit:** The cockpit configuration, particularly seat/s, steering wheel and instruments must be as fitted to the particular vehicle within the group period.

- (d) **Engine:** Cylinder block, crankcase and cylinder head/s must be original.

Internal components of the engine are free,

Crankshaft stroke must remain unaltered from the period specification on the subject vehicle. The bore may be increased to a maximum of 1.5mm beyond the dimension evident on the subject vehicle within the group period.

Toothed belt drives and dry sump lubrication systems may be used only if fitted to the subject vehicle within the group period.

The use of Roller Rockers is prohibited in all historic racing and sports car groups, up to and including Group M. Unless period evidence exists of their use on the specific vehicle in question.

- (e) **Exhaust system:** The exhaust system is free, but must be of a style evident in the group period. Any vehicle which was fitted with a distinctive or characteristic exhaust system in the group period is encouraged to retain it.

- (f) **Induction system:** With the exception of Formula Ford Vehicles, manifolds are free, but carburettors must be of the period make, type and number fitted to the vehicle. The size may be altered. Superchargers, fuel injection and turbochargers are permitted only if fitted to the subject vehicle within the group period and must be original and unmodified.

- (g) **Transmission:** Gearbox casings must be original and contain the original number of forward ratios. Internal components are otherwise free.

- (h) **Final Drive:** All external components of the final drive assembly must be original, with the exception of the "nose piece" which is free. All internal components are free.

- (i) **Suspension:** The suspension must be unaltered from the period specifications on the subject vehicle.

Spring rates, ride height and damper settings are free. Fore and aft axle location on beam axle vehicles may be varied. Transverse location may not be altered from group period specification.

Externally adjustable shock absorbers and "Rose"-type joints are permitted only if fitted to the subject vehicle in the group period.

- (j) **Wheels and tyres:** Wheels must be unaltered from period specification of the subject vehicle in diameter, width and style. Cast alloy wheels may be replaced with wheels cast in a different material, provided that the replacement remains identical in dimensions and appearance.

On individual application, cast alloy wheels may be replaced with a composite version, using the same style as the original wheels. Applications must be based on the substitution criteria to justify the replacement (refer art. 3.6.4 – Component Substitution Criteria).

Tyres: Subject to individual group specific requirements and within the limitations of availability and practicality, tyres must be consistent in general appearance and tread pattern with those fitted to the vehicle or similar vehicles during the group period.

- (k) **Brakes:** The braking system must be of the same type fitted to the vehicle within the group period. Drum brake systems may not be replaced by disc brake systems.

Brake discs and calipers must be of the make, style and size fitted within the group period.

Drum brakes may be replaced by others of period type. Cooling fins, scoops and ventilating holes may be added.

Dual/tandem master cylinders may be fitted.

Mechanical actuation may be converted to hydraulic operation.

- (l) **Electrical equipment:** Electrical equipment must be unaltered from period specifications and be fully operable.

Electronic ignition devices are permitted if used on the vehicle in the group period but must be to historic specifications.

An electric starter motor may be fitted.

Sports cars must be fitted with operable lighting and generating equipment compatible with the period.

Electrical equipment: Engine management systems are not permitted unless originally fitted to the vehicle during the group period.

- (m) **Aerodynamic Aids:** Aerodynamic aids in the form of “flaps”, “tabs” or “spoilers” integral with the vehicle bodywork are permitted provided they are identical to those fitted to the vehicle during the group period. Such devices must be unaltered from period specifications in design, materials and mountings. Modern wing sections and aerodynamic technology inconsistent with the relevant period are not permitted.

- (n) **Component Condition Testing: The following items must be checked for structural integrity and corrosion by non-destructive tests:**

- tubular suspension wishbones,**
- light alloy suspension parts,**
- steering columns,**
- light alloy wheels,**
- aluminium alloy tubular chassis.**

It is strongly recommended that similar inspections should be carried out on components that are vital to the integrity of the car but which may not be contained in the list above.

New parts are also covered by this and subject to this condition testing.

All of the above components must be tested and certified using methods appropriate to the material and type of construction of the component in question. Each component must be clearly identified and be indelibly etched or marked.

The certificate will be valid for a period of five years, from the date of testing.

The test certificate/manufacturer’s declaration must be appended to the Certificate of Description.

The tests must be carried with reference to the following standards:

Visual Inspection - BSEN 970:1997 (or current edition)

Penetration Flaw Detection - BSEN 571-1:1997 (or current edition)

Magnetic Particle Flaw Detection - BS 6072:1981 (or current edition)

X-Ray Flaw Detection - BSEN 1435:1997 (or current edition)

Any new application for a Certificate of Description (see categories concerned below) must be accompanied by a valid certificate showing that the components listed above have positively undergone the tests of condition.

Categories concerned by this standard are, racing and sports racing cars of a 2 litre capacity and over, from the Group O (1966-1969) period onwards.

(Note: At present the above regulation is advisory only, with an effective date of 1 January 2013 for new CoD applications and from a date yet to be finalised for existing CoD vehicles that fall within these criteria.

Initially the testing will be an integral part of the process for obtaining a CAMS historic logbook and CoD, then to be redone at regular intervals, yet to be finalised.)

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