

# Barbados Historic Rally Carnival

## Vehicle Regulations

*This event and these regulations exist so that Historic and Classic Rally Cars may be used for competition under a set of rules that preserve the spirit of their period. The Barbados Historic Rally Carnival celebrates the History of Rallying through the social interaction of enthusiast competitors in a unique environment. BHRC may grant dispensation to use non-original parts, parts from a different model, or parts from a later period, provided that the use of these parts does not confer an advantage in performance. The BHRC will consider written requests from Competitors who are unable to source vital components and may permit suggested alternatives thereto.*

## 1. Groups & Classes

### GroupPH (Post-Historic): Modified 2WD Production Cars marketed before 1975.

**Class PH1: 0 – 2000cc**

**Class PH2: Over 2000cc**

Only period modifications used in rallying on the specific model are permitted, the documentary proof of which must be provided by the competitor in the form of FIA homologation, RAC Historic Rally Vehicle Identification Form or similar. Modern wheels and tyres are allowed as per GroupC with no track-width restriction.

### GroupC (Classic): Modified 2WD Production Cars marketed before 1982

	8-Valve	Multi-valve
<b>Class C3: 0 – 1600cc</b>	810Kgs	890Kgs
<b>Class C4: 1601 - 2000cc</b>	890Kgs	970Kgs
<b>Class C5: 2000 - 3500cc</b>	970Kgs	1,050Kgs

Multi-valve engines limited to 2,500cc.

N/A Mazda 12A engines eligible for Class C4 at 970Kgs (1146cc x 1.7).

N/A Mazda 13B engines eligible for Class C5 at 1050Kgs (1308cc x 1.7). 6cyl, 2-valve/cyl cars weighted as multi-valve.

Lancer Turbos eligible for Class C5 at 1050Kgs with production turbos. 'Facelift' cars that are structurally/mechanically identical to period cars permitted (such as Mk3 Starlets and B2 Mantas).

**The following post-81 cars will be allowed in this Group but only with 1.6Ltr multi-valve or 2ltr 8-valve engines from the same vehicle manufacturer.**

Peugeot 205

Opel Corsa/Vauxhall Nova A

Vauxhall Astra Mk2/Opel Kadett E

VW Golf Mk2

Toyota E80 series (FWD and RWD)

Daihatsu Charmant A35

## 2. General Regulations – No regulation hereafter shall supersede these general regulations except where specifically stated.

**1. PRODUCTION** – the word production will be taken to mean any car or part thereof listed in the Glass's Guide (UK), Japanese Motor Vehicles Guide (Japan) or Used Car Buyers' Guide (US: Kelley Blue book or N.A.D.A. yellow book).

**2. FUEL** – Restricted to approved list, see addendum.

**3. ELIGIBILITY** - The following information needs to be available to the organisers in such form as to convince them of its authenticity, or will be

obtained from other technical sources as determined by the organisers, before any vehicle can be eligible for competition: Original Manufacturers' brochure; owners' manual and/or FIA Homologation papers; listing in Buyers' Guide; RAC Historic Rally Vehicle Identification Form. All material that is used to confirm the specification of a vehicle must be presented on demand.

**4.** All modifications are forbidden unless expressly stated in the regulations specific to the group in which the car is entered, by the general regulations or "Safety Equipment".

**5.** It is the duty of each competitor to satisfy the Scrutineers and the Stewards of the meeting that his vehicle complies with these regulations in their entirety at all times during the event.

**6.** Minimum weight is the real weight of the car as it competes, without persons or luggage aboard, with tools, jack and spares. All liquid tanks (lubrication, cooling, braking, heating where applicable) must be at the normal level, with the exception of consumable liquid tanks which must be empty. Additional headlights must be removed. It is permitted to complete the weight of the car by one or several ballasts provided that they are strong and unitary blocks, fixed by means of tools with the possibility to fix seals, placed on the floor of the cockpit or roll cage.

**7.** Suspension and brake parts or wheels made partially or entirely from composite materials are prohibited. Hubcaps must be removed.

**8.** Only the following accessories may be installed in the cockpit: spare wheels, tools, spare parts, safety equipment, communication equipment, ballast, windscreen washer container, battery. Containers for helmets and tools situated in the cockpit must be made of non-flammable material. If the battery is in the cockpit it must have a protection box which includes an air intake with its exit outside the cockpit if the battery is unsealed. If the battery is 'dry' or sealed, it must be protected/insulated electrically

**9.** Fuel tanks may be replaced by foam-filled fuel cells by a recognized manufacturer, either in the original location of the tank or in the luggage compartment. There must be an orifice to evacuate any fuel which may have spread into the tank compartment. The position and the dimension of the filler hole as well as that of the cap may be changed as long as the new installation does not protrude beyond the bodywork and guarantees that no fuel shall leak into one of the interior compartments of the car. If the filler hole is situated inside the car, it must be separated from the cockpit by a liquid-tight protection. Tanks may be ventilated through the car roof.

**10.** The top 1/3 of the wheel diameter must be covered by the wheel arch when viewed from above.

**11.** Throughout the car, any nut, bolt, screw, pipe or hose may be replaced and have any kind of locking device (washer, lock nut, etc.).

**12.** Interior insulation, lining, padding and minor interior trim may be removed. External decorative strips may be removed. The inner door and side panels may be replaced.

**13.** Jacking points may be strengthened, moved, and increased in number.

**14.** The fitting of under-body protection is authorised, provided that these have no other function and are removable.

**15.** All wiring may be replaced; switches, fuses, relays are unrestricted as is electronic control of non-driveline or suspension components.

16. Roof vents and any other mechanisms for increasing cockpit airflow are unrestricted

17. NOISE - The check which is done for exhaust noise is as follows: 1/2 meter from the end of the tail pipe at an angle of 45 degrees @ 4500rpm under no load to a maximum of 108 db's on 'A' scale (slow).

18. A functional starter must be fitted and be operable by the driver when seated.

19. Cars must be fitted with a gearbox including a reverse gear and be able to be operated by the driver when he is normally seated.

20. Cutting of holes in the front bodywork for lights and brackets is allowed and original lights may be replaced as long as they fill the original holes. Extra lights must be mounted below the highest point of the bonnet. Additional driving lights must be wired in such a way that they automatically go off when the headlight main beam is 'dipped'.

21. Tyres are unrestricted but must have 10% of their width treaded or grooved and must be mounted safely on the class-specified wheel rim.

22. Laminated front windshields are mandatory.

23. All accessories which have no effect on the vehicle's performance are allowed without restrictions, such as lighting, heating, radio, steering wheel, gauges, A/C systems etc., on the condition that they do not influence the performance of the car.

24. Additional safety fastenings for the windscreen and the side windows may be fitted provided they have no aerodynamic effect.

25. Fluid reservoirs are unrestricted as long as they are secured and sealed.

### 3. Group C Modifications

**1. Definition – Modified production cars;** modifications must be contemporary in nature. Implementation of the regulations will be from the point of view of the period clubman competitor (no homologation required). Axle, gearbox and engine internal components may be modern but externals such as fueling, ignition, casings etc. will be closely policed. Non-period engines with no performance advantage over period engines will be allowed but will be controlled by a committee-maintained list. Please inquire in writing to the organisers should you have a suggestion for an engine to be included on this list.

#### 2. Engine

- The production engine may be replaced with any engine from any manufacturer but must remain in the same general location and orientation as the original and have the same number of cylinders.
- The engine block and cyl head must be production items or aftermarket equivalent but may be modified in any way. Internals are unrestricted.
- It is possible to beat or shape the bulkhead situated in the engine compartment for the fitting of engine ancillaries. There must be no major cutting of the bulkhead to relocate the engine.
- Cooling: Oil coolers may be fitted. The water radiator, cap and fixation are unrestricted, as are the hoses linking it to the engine. A radiator screen may be fitted. Fans, drive systems and thermostats are unrestricted. The fitting of a water catch tank is allowed.
- If the lubrication system includes an open type sump breather, it must be equipped in such a way that the oil flows into a catch tank of 2 litres minimum capacity. An air/oil separator can be mounted outside the engine (maximum capacity 1 litre). Dry sumps and tanks may be fitted.
- Mountings - unrestricted provided that the angle and position of the engine within its compartment is similar to the original. Supports may be welded to the engine and to the bodywork and their position is unrestricted.
- Exhausts and manifolds are unrestricted. Thermal screens may be fitted.
- Only Production/homologated mechanical fuel injection is allowed in original specification; components may be modified to increase fuelling. Carburettors, filters, cold-air boxes and inlet manifolds are unrestricted.
- Electronic ignition (wasted spark or other) is allowed but must have no input other than engine speed (either crankshaft sensor or distributor) and manifold/venturi pressure/vacuum. No throttle position, air flow, exhaust mixture or temperature inputs allowed.

#### 3. Transmission

- Any production-based gearbox will be allowed but 6-speed and sequential gearboxes of any type will not be allowed. Gearboxes must be H-pattern and limited to five (or less) forward gears. Internal components are unrestricted. Bell housings, mounts, shifters, clutches and adaptor plates are unrestricted.
- Non-period axles will be allowed but must be conventional in design, construction and materials. Internals are unrestricted, hubs may be converted to fully or semi-floating. Range-change axles are not allowed.
- Propshafts and driveshafts are unrestricted in design and construction but not material which must be as production.

#### 4. Steering & Suspension

- Unrestricted except for the basic layout which must be similar to the original.
- Steering boxes may be replaced with steering racks and power-assistance may be added.
- Extra control arms can be added (compression/tension struts, radius arms, panhard rods etc.).
- Shock absorber turrets may be fabricated to allow the mounting of the struts/shocks in new pick-up points but dampers must not have remote reservoirs.
- Reinforcement bars may be fitted from the suspension mounting points to the bodyshell, rollcage or chassis.
- Strengthening of the mounting points and of the running gear by addition of material is allowed.
- Original wheelbase must be retained +/- 50mm.

#### 5. Wheels

- Maximum Rim Width is 8", maximum diameter 15", maximum tyre width 9" (checked with external calliper). The wheels/tyres do not necessarily have to be of the same diameter or width.

#### 6. Braking system

- Unrestricted except for the basic layout which must be similar to the original and fit without alteration to the bodyshell other than panel-beating to provide clearance.
- All 4 wheels must be braked on a dual circuit.
- The Handbrake must lock at least two wheels.
- Air-Cooling Pipes and hoses may be added, no water cooling allowed.

#### 7. Bodywork/Chassis

- Any aerodynamic devices such as front spoilers and rear wings must be period additions.
- Cooling and vent holes are unrestricted.
- Cross members and chassis legs may be cut, replaced or modified; this cutting or modification must not affect the rigidity of the chassis structure.
- Strengthening of the sprung parts of the chassis and bodywork is allowed.
- Unused supports (e.g. spare wheel holder) situated on the chassis/bodywork can be removed, unless they are supports for mechanical parts which cannot be moved or removed.
- Windscreen washer (size, position and nozzles), wipers, motor, position, blades and mechanism are unrestricted but there must be at least one windscreen wiper.
- Dashboards may be modified or changed but must function and look similar to the original.
- The original door, side-quarter and rear windows of the vehicle may be replaced with polycarbonate only if the vehicle is not carrying ballast to meet minimum weight. Any replaced windows must be identical in shape to the original.
- Lightening of production panels will be allowed, including bonnet, doors, tailgate/bootlid. Composite front wings, bonnets and bootlids are allowed on the same basis as polycarbonate windows.
- The original mounting points of the front subframe/crossmember may be moved within a sphere of a maximum of 100 mm.
- Wheel arches may be extended by 6" in steel, alloy or composite material.

## **8. Electrical system**

Unrestricted.

## **9. Fuel System**

a. Installation of collector tanks with a capacity of less than 1 litre is unrestricted.

b. Fuel pumps, filters and regulators are unrestricted but hoses must be stainless-steel braided if running through the cockpit.

## **10. List of modern engines allowed in Group C**

### **TOYOTA**

4A  
5A  
7A  
4A-GE (16 Valve)  
4A-GE (20 Valve)  
3S-GE  
5S-FE  
1ZZ

### **MAZDA**

### **FORD**

COSWORTH YB  
MILLINGTON YB  
ZETEC  
DURATEC 1.6ltr  
DURATEC 2ltr  
DURATEC 2.3ltr  
HOLBAY/WARRIOR PINTO

### **VAUXHALL/OPEL**

X14VE  
X16XE  
X20XE  
C20XE  
C20SE

### **PEUGEOT/CITROEN**

TU3  
TU5  
XU5  
XU7  
XU9  
XU10  
MI-16

### **NISSAN**

GA14DE  
GA15DE  
GA16DE  
CA18  
CA20

SR16DE , SR16VE  
SR18  
SR20DE ,SR20VE  
KA24  
QE25  
SD20  
SD25

### **MITSUBISHI**

4G92 (1600cc)  
4G93 (1800cc)  
4G63 (2000cc)

### **HONDA**

D16Z  
D16B  
B16A  
F20Z  
F20B  
F22B  
K20 (S2000 Engine only)  
H22A  
H23A

### **VOLKSWAGEN**

ABF (2000cc 16V)  
ADZ (1800cc)  
ADY (2000cc)

### **BMW**

M42 (B16) (4cyl)  
M42 (B18) (4cyl)  
M42 (B20) (4cyl)  
M43 (B16) (4cyl)  
M43 (B18) (4cyl)  
M43 (B20) (4cyl)  
M52 B20 (6Cyl)  
M50 Single Vanos (6cyl) 1991cc  
M50 Single Vanos (6cyl) 2494cc

### **ROVER**

K-Series  
1400  
1600  
1800