

1984 EDITION



GENERAL COMPETITION RULES

Sports Car Club of America, Inc.

6750 S. Emporia St.

P.O. Box 3278

Englewood, Colorado 80155

SPORTS RACING CATEGORY

All automobiles must comply to GCR Appendix A.1 "Automobiles General Regulations".

Supplementary Regulations for an event or series of events may provide or combining any of these classes.

3. **SCCA SPORTS RACING CATEGORY (SPORTS 2000, SEE SECTION 3.13)**

The SCCA Sports Racing Category shall be for automobiles which are designed and constructed for road racing competition, offering provisions for driver and a passenger, or driver alone (single seater). They shall conform to the following requirements.

Sports Racing Category cars built prior to January 1, 1966 need not comply with the minimum door and cockpit width dimensions specified herein, but must comply with all other requirements.

Former Formula A (F-5000) cars must have appropriate bodywork to compete as AS/R in national events, however if the car remains in its original Formula A (F-5000) configuration it may compete in regional events only as AS/R.

Cars conforming to the 1978- and on Can Am specifications, with aerodynamic skirts removed, may compete in ASR.

Sports racing cars shall be classied according to engine displacement and divided into classes as follows:

A- Sports Racing, Can-Am and former Formula A (F-5000)

C-Sports Racing

D-Sports Racing

A/SR will be a National Class for 1984. To have a Championship race at CSPRRC, 20 firm entries must be received in Denver by September 15, 1984.

3.1 ASR Classification--Cars Sports Racing cars shall be classified according to engine displacement as follows:

Engine Type	Displacement	Induction	Weight
Rotary Piston	2292cc Max	Free	1146 lbs.
Racing	1300cc-2000cc	Free	1146 lbs.
Racing	2001cc-3000cc	Free	1322 lbs.
Stock block & Cyl. Heads	3001cc-4000cc	Fuel Injection or Carburetor, one 4150 Holley 1 11/16	1422 lbs.
Stock block & Cyl. Heads	4001cc-5000cc	Fuel Injection or carburetor, one 4150 Holley 1 11/16	1631 lbs.

Engine, Rotary Piston

1. Engines may not change the capacity of the working chamber(s).
2. The eccentric shaft may be replaced with another of the same basic material, but no changes in eccentricity of journal dimensions are permitted.
3. The rotor is free providing the number of lobes remains unchanged.
4. Alternate rotor housing are allowed only when submitted by the manufacturer and recognized by the Competition Board. No changes are allowed in the epitrochoidal curve in alternate housing.
5. Rotary engine cars must be equipped with a suitable muffler.

3.2 CSR Classification--

Size	Type	Induction
850cc to 1300cc	2 - cycle or 4 valves per cylinder max.	free
up to 1450cc	OHC crossflow 2 valves per cylinder	carburetors only
up to 1615cc	OHV crossflow or non-crossflow or OHC non-crossflow 2 valves per cylinder	carburetors only

up to 1615cc OHC crossflow 36 mm Venturis,
2 valve per cylinder carburetors
only

Manifold: individual runner, no plenum, or balance pipes

All engine in class CSR over 1300cc must be derived from cars listed as eligible for the SCCA Production or GT Category.

C Sports Racing engines over 1300cc may be modified as provided for in the current GT 2, 3 & 4 rules, except that the bore, crankshaft stroke and flywheel are free providing the appropriate specified displacement limit is not exceeded. The induction restriction on the 1615cc overhead cam crossflow still applies. Turbocharging or supercharging is allowed with a displacement factor of 1.7, restricted to 1300cc equivalent (765cc).

3.3

DSR—Classification

Up to 850cc 2 cycle

Up to 900cc 4 cycle

Rotary piston of equivalent displacement
cc X 2 = 900cc

Up to 1025cc 4 cycle, 2 valves
per cylinder max.

Up to 1200cc Automotive based 4 cycle
2 valves per cylinder max.

NO ENGINES USED IN D-SPORTS RACING MAY HAVE MORE THAN FOUR CYLINDERS.

D/Sports Racing engines over 1025cc may be modified as specified in the current GT-2, 3, and 4-rules, except that the cylinder bore, crankshaft stroke and flywheel are free providing that the total displacement does not exceed 1200cc.

DSR Induction:

Carburetion Unrestricted, fuel injection unrestricted, "turbocharging and supercharging equivalent formula 1.7 restricted to 1025cc equivalent (603cc).

Rotary Piston Engines:

Cars with rotary piston engines covered by the NSU-Wankel patents shall be classified on the basis of a piston displacement equivalent of twice the volume determined by the difference between the maximum and minimum capacity of the working chamber.

Other Designs:

Turbine- and steam-powered engines are prohibited.

3.4

Safety Equipment —

Shall comply with GCR Appendix A, Section 1.5.1.

In addition:

- a. Batteries. See GCR Appendix A. 1.5.2.
- b. Glass headlight lenses and bulbs on the front of the car are prohibited.
- c. All Sports Racing Category cars must provide protection for lower torso and legs of the driver by means of tubing and/or monocoque structure.
- d. Cars will have two red brake lights fitted with 15 watt (minimum) bulbs.
- e. Roll cages/bars shall comply with Appendix Z for Sports Racers.

3.5

Bodywork (See GCR Appendix A 1.5.9).

Bodywork shall provide comfort and safety for driver and a passenger or for a driver only. All elements of the bodywork shall be completely and neatly designed and finished, with no temporary or makeshift elements.

- a. The bodywork as viewed from the side and above must cover all mechanical components except that the intake, exhaust and radiators may be exposed. The bodywork must extend over the full width of the tires for at least one third (1/3) of their circumference as viewed from the side, the tires shall not be seen as viewed from above, although the rear tires may be exposed as viewed from the rear. Ventilation slots are permitted. Cycle type fenders (which only cover the tire and are not continuous with the rest of the body) are prohibited. Fenders shall be firmly attached to the bodywork with no gap between body and fender.
- b. THIS SECTION APPLIES TO C & D SPORTS RACING ONLY:
It is the intent of these rules to minimize the use of "ground effects" to achieve aerodynamic downforce on the vehicle.

Thus, for the full width of the body the floor pan will be a minimum of 45% of the wheelbase, the lower surface (surface licked by the airstream) shall not exceed 2.54 cm (1 inch) deviation from the horizontal in any longitudinal section through that surface. (This is not to be interpreted as requiring a floor pan beneath the motor, transaxle, transmission or final drive housing.) No aerodynamic devices (e.g. "skirts," body sides, etc.) may extend more than 1 cm (0.394 inches) below this lower surface anywhere on the car to the rear of the front axle. Seat bucket or other protrusions shall not circumvent this rule. Aerodynamic devices must be securely mounted on the entirely sprung part of the car and not be moveable when the car is in motion. It is not permitted to duct air through any part of the bodywork for the purpose of providing aerodynamic downforce on the car. All ducted air for heat exchangers (water/oil) must pass through these heat exchangers.

c. Dimensions

- 1) Height: No part of the vehicle having special or significant aerodynamic function shall exceed a height of 115 cm (45 inches) above the ground with car in normal racing trim, driver aboard. Neither the safety roll bar or the engine induction intake shall provide an aerodynamic downforce.
- 2) Width: The maximum width shall not exceed 221 cm (87 inches) including all aerodynamic devices. However, no portion shall extend more than 10 cm (3.9 inches) beyond a plane tangent to the outer face of the front and rear wheels with tires. The minimum body width between the front and rear wheels shall not extend inwards beyond a vertical plane connecting the centerlines of the front and rear tires.
- 3) Length: The maximum overall length shall be 485.3 cm (195 inches).
- 4) Cockpit: The driver's seat must be capable of being entered without the removal or manipulation of any part or panel (except for those closed cockpit cars which are specifically allowed by the SCCA). The cockpit opening must comply with the following minimum dimensions for both single and two seater sports racers:
Cockpit length: 60 cm (23.662 inches)
Cockpit width: 45 cm (17.717 inches) maintained over 30 cm (11.811 inches) from the most rearward point of the seat backrest toward the front.

- d. Visibility: Bodywork shall provide visibility for the driver forward and to both sides adequate for racing conditions. Rearview mirror(s) shall provide the driver with visibility to the rear of both sides fo the car.
- e. Windscreens are optional.
- f. Bodywork shall provide comfort and safety for both driver and a passenger. There shall be seats of equal dimension and comfort for the driver an a passenger equally disposed on each side of the longitudinal axis of the car. Seats shall be firmly attached in the car, but may provide for adjustment of the size of the occupant. The body surrounding the driver and passenger compartment shall be symmetrical about the longitudinal axis of the car. The passenger's space and seat shall remain usable throughout the competition and shall not be encroached upon by an element of the car or equipment except as provided in these Rules.
- g. The following minimum weight apply to single seat Sports Racers as qualified and raced.
CSR 1230 pounds with driver
DSR --- 980 pounds with driver
Ballast may be added for minimum weights.

3.7 **Wheels and Tires —**

There shall be no restriction on the size of wheels except for a minimum diameter of 10 inches provided they are indentical for the right and left front axles, and identical for the right and left rear axles. Left and right front tires will be the same size; left and right rear tires will be the same size.

3.8 **Self Starter**

Cars shall be equipped with an automatic self starter and on-board power supply operated by the driver.

3.9 **Brakes**

These cars shall be equipped with a dual braking system operated by a single control. In case of leak or failure at any point in the system, effective braking power shall be maintained on at least two wheels.

A separate hand brake (emergency brake) is not required.

3.10 **Bulkheads and Tanks:**

Fuel tanks shall be isolated by means of bulkheads and vented so that in case of spillage, leakage, or failure of a tank, fuel and

fumes will not pass into the driver or engine compartment or around any part of the exhaust system. No part of any oil or water tanks shall be exposed to any part of the driver or passenger compartment. Safety fuel cells of approved manufacturers (Ref.: Appendix X) are highly recommended in all cars.

3.11 Sports Racers may be of new construction (design, plans/pictures must be submitted to Club Racing Technical Administrator for approval before competing).

3.12 **EXCEPTION:** Cars classified to compete in other SCCA Categories that have been modified and do not qualify for that category may be allowed to compete in the Sports Racing Category. These cars may exceed 45" in height provided that part of the vehicle which is higher than 45" above the ground shall have no special or significant aerodynamic function.

1.13 Sports 2000 —

1. Definition.

Open cockpit two seater rear engine sports racing car using a standard Ford 2000cc single overhead camshaft "NEA" series engine, or the 1971-1974 Pinto/Capri 2 liter single overhead camshaft engine (block casting number 70 HM 6015 BA).

2. Safety Requirements.

All safety equipment must comply with Appendix A.1.5.1 of the General Competition Rules.

3. Chassis.

- a. There are no restrictions on the type of construction. No engine oil or water tubes are permitted within the cockpit.
- b. It is the intent of these rules to minimize the use of "ground effects" to achieve aerodynamic downforce on the vehicle. Thus, the chassis and body surfaces which comprise the underside of the car must not deviate from a flat plane by more than 2.5 cm (1 inch). For this purpose the underside is defined as being within the rectangular area along the length between the front edge of the front wheels and the rear edge of the rear wheels and across the outside of the front and rear rims. No aerodynamic devices (e.g. "skirts", body sides, etc.) may extend below this surface anywhere on the car to the rear of the front wheels.

4. Bodywork Including Airfoils.

- a. The body must provide a cockpit for two seats and cover all mechanical components including wheels and suspension members except for the exhaust pipe, induction system and camshaft cover which may protrude through the engine cover.
- b. Between the front and rear axle lines the body must:
 - (i) Maintain over a minimum of 70% of the length of the wheelbase and over a depth of 20 cm (7.9 in) a minimum body width exceeding the greatest overall width across the tires less 15 cm (5.9 in).
 - (ii) Exceed in height the top of the tires over a width of 50 cm (19.7 in) excepting only cockpit and engine openings. There must be no gap between the main body and the mudguards. The mudguards shall cover the full width of the tires around an arc of 120 degrees, which must extend forward ahead of the axle center line on the front and rear wheels and behind the rear wheels to at least 7.5 cm (2.95 inches) above the axle center line.

- c. The body above chassis level in the region of the cockpit must not be reinforced in any way which would complicate or hinder the rescue of the driver.
- d. The cockpit opening seen in plain view must be symmetrical about the longitudinal axis of the car and must be large enough for a horizontal rectangle of 80 cm (31.5 in) by 40 cm (15.75 in) to be passed through with its minor axis aligned with the vehicle's longitudinal axis.
- e. Space for two seats must be provided each of at least 40 cm (15.75 in) width and be positioned symmetrically about the vehicle's longitudinal axis. There must be at least 25 cm (9.9 in) wide footspace for both driver and passenger measured at the pedals. The passenger space should provide as much seat space, elbow room, foot and leg room in terms of length, width and height as that of the driver. Battery boxes and fire systems are permitted in the passenger seat area.
- f. Maximum height with driver aboard, excluding safety roll-over bar, must not exceed at any time 90 cm (35.4 in) measured from the ground.
- g. Airfoils and/or spoilers which are capable of adjustment are only permitted if they are in the form of a flat surface mounted horizontally at the front of the vehicle and vertically $\pm 20^\circ$ at the rear. There must be no gap between these surfaces, or any other airfoil, and the main body-work. All ducted air for heat exchangers (water/oil) must pass through those heat exchangers.

5. Engine.

The only permitted engine is the Ford 2 liter single overhead camshaft "NEA" series engine or the 1971-1974 Pinto/Capri 2 liter single overhead camshaft engine (block casting number 70 HM6015 BA), with nominal bore 90.84 mm and stroke 76.95 mm. Production tolerances are permitted providing the total swept volume does not exceed 2000cc.

- a. The camshaft and rockers must remain entirely unmodified; they must be fully manufactured and ground by the Ford Motor Co. Offset keys are permitted. It is prohibited to grind from blanks, regrind or reprofile. Tuft-riding or Parkerising is permitted. Maximum valve lift at determined points by camshaft rotation will be established by using a low rate substitute valve spring. Load characteristics of special checking spring: 12 lbs. at 1.417 in. -- 30 lbs. at 1.000 in.

- b. A standard crankshaft must be used. Spot machining to achieve balance is permitted. Tuftriding, Parkerising, shot peening, shot blasting and polishing are permitted. Minimum weight 28 lbs.
- c. The flywheel must be a standard component. The clutch may be a standard unit or AP cover plate assembly CP 2511-1 with driven plate CP 2374 or 2374-1. Spot machining to achieve balance is permitted. Flywheel bolts are free and locating dowels are permitted. Flywheel and clutch assembly minimum weight 29 lbs. (13.16 kg). A 1600 GT starter ring gear may be fitted.
- d. Maximum compression ratio will be controlled as follows:
 - (i) Minimum Cylinder Head combustion chamber volume 50cc (not including head gasket). Polishing and/or tooling of the cylinder head to achieve only the required combustion chamber volume is permitted.
 - (ii) Standard Ford gasket; minimum thickness .9 mm, minimum diameter of cylinder aperture 92 mm.
 - (iii) Pistons must not protrude above cylinder block surface at TDC.
- e. It is permissible to reshape inlet and exhaust ports by removal of metal within limits. Addition of material in any form is prohibited. Maximum diameter of inlet port at manifold head face 39.5 mm. Maximum dimensions of exhaust port at manifold face 35.5 mm x 27 mm. The distance between the valve centers and the angles of the valves must not be altered.
- f. Pistons must be standard Ford production pistons, unmodified in any way except for balancing and as specified. Localized machining of the gudgeon pin bosses to achieve balance and weight and simple machining of the top surface of the piston crown within limits is permitted. Minimum weight of piston complete with rings and gudgeon pin and connecting rod less big-end bearings is 2 pounds, 15 ounces (1332.5 grams). Piston rings are unrestricted provided that:
 - 1. One oil control and two compression rings are used.
 - 2. No modifications are made to the piston for the installation of rings.
- g. Valves must remain standard, no reprofiling is permitted. The original 45 degree seat angle must be maintained.
 - Maximum face diameter inlet 42.2 mm
 - Maximum face diameter exhaust 36.2 mm

Maximum valve stem diameter 8.4 mm

- h. Connecting rods must be standard. Machining is permitted to remove metal from the balancing bosses to achieve balance only. Tuftriding, Parkerising, shot peening, shot blasting, polishing, etc., are permitted. It is permitted to radius the area around the big-end cap retaining bolts.
- i. Flexible mounts for the carburetor may be incorporated providing they do not exceed a maximum of 25.4 mm from flange to flange.
- j. Maximum valve lift against cam angle with zero tappet clearance: (Lift measured in mm.)

Angle	Inlet		Exhaust	
	Opening	Closing	Opening	Closing
0	10.442	10.442	10.442	10.442
5	10.36	10.36	10.36	10.36
10	10.11	10.11	10.11	10.11
15	9.69	9.69	9.69	9.69
20	9.11	9.11	9.11	9.11
25	8.37	8.37	8.37	8.37
30	7.45	7.45	7.45	7.45
35	6.38	6.38	6.38	6.38
40	5.17	5.17	5.17	5.17
45	3.86	3.86	3.86	3.86
50	2.59	2.58	2.58	2.59
55	1.50	1.47	1.47	1.50
60	0.86	0.81	0.81	0.86
65	0.65	0.56	0.56	0.65
70	0.54	0.43	0.43	0.54
75	0.46	0.33	0.33	0.46
80	0.37	0.19	0.19	0.37
85	0.26	0.08	0.08	0.26
90	0.20	0.01	0.01	0.20

- k. Engines will be mounted upright, and aligned fore and aft in the chassis.
- l. A single carburetor only will be used on a standard inlet manifold. The carburetor will be a Weber 32/36 DGV 26/27 mm venturi, its origin being from a 1600 GT "Kent" or 2000 SOHC NEA engine. The Holly 5200 32/36 carburetor also may be used, carburetor with the swaged fuel inlet fitting, must be replaced by drilling and tapping the carburetor

body for a threaded fitting. The air cleaner may be removed and a trumpet fitted, jets may be changed, both chokes may open together, cold start devices and diffused bar may be removed, internal and external antisurge pipes may be fitted, seals on emission control carburetors may be removed. No other modifications are permitted, chokes must remain standard and no polishing or profiling is permitted.

- m. The addition of material by any means to any component is prohibited.
- n. It is permitted as means of repair to replace damaged valve guides, valve seats and cylinder bores by replacement Cast Iron valve seat inserts and Cast Iron cylinder liners, valve guides may be replaced with cast iron or bronze, all to standard dimensions.
- o. Balancing of reciprocating and rotating parts is permitted only by removal of metal from locations so provided by the manufacturer.
- p. Non-standard rocker covers are permitted providing they in no way improve the performance of the engine.
- q. Standard valve spring retainers must be used and single valve springs only are permitted. Shims are permitted and valve springs are otherwise free.
- r. Exhaust system and manifold are unrestricted, within SCCA safety regulations.
- s. Lubrication system is free, dry sump is permitted. Localized machining of the cylinder block is permitted to allow fitting of the oil pump.
- t. Oil coolers are unrestricted.
- u. A liquid cooling system is mandatory but radiator and water pump are unrestricted. The radiator, if housed in or incorporating a cowl air-scoop deflector must comply with body regulations.
- v. Only the standard mechanical fuel pump for the engine is permitted.
- w. Distributors are unrestricted providing they retain the original drive and location.
- x. Only the standard inlet manifold may be used. No modifications will be permitted and the bore of the castings must remain untouched and in its original condition. The carburetor seat face may be machined to horizontal in the fore to aft plane. The water passage in the inlet manifold may be blanked off or plugged.

- y. Gaskets and seals are free except for cylinder head and carburetor to inlet manifold gaskets which must be standard Ford manufacture for the engine.
 - z. Pump, fan and generator drive pulleys are unrestricted.
 - aa. The crankcase breather may be altered or removed, but all breathers must discharge into a catch tank.
 - bb. Mechanical tachometer drives may be fitted.
 - cc. Generators are optional.
 - dd. Standard oversize and undersize bearing are permitted. This does not allow reducing the bearing surface area by reducing the width of standard bearings.
 - ee. The use of non-standard replacement fasteners, nuts, bolts, screws, studs and washers which are not connected with or which do not support any moving parts of the engine is permitted.
 - ff. Only modifications or additions specifically covered by these regulations are permitted. All engine components not covered by these regulations must remain completely standard and unmodified.
6. Suspension.
All parts must be of steel or ferrous material, with the exception of springs, hubs, hub adaptors and bushes. Front and rear hub carrier material must be steel or aluminum alloy. Rear hub carrier material on car manufactured before 1/1/83 material is unrestricted, but replacement parts shall be steel or aluminum alloy.
7. Brakes.
Aluminum alloy brake calipers are prohibited, otherwise unrestricted.
8. Shock Absorbers. Effective 1/1/83
Design: Unrestricted, Case material: steel
9. Steering.
Free.
10. Wheels and Tires.
13 in. diameter wheels with maximum front rim width 6 in. and rear 8 in. are the only wheel sizes permitted. Material is unrestricted providing it is metal.
11. Transmission.
a. The gearbox must include an operable reverse gear, capable of being engaged by the driver while normally seated, and contain not more than four forward gears. The ratios are free.

- b. Rear wheel drive, only is permitted.
- c. Final drive ratio is free.
- d. Torque biasing, limited slip and lock differentials are prohibited.

12. Fuel System

Metal tank(s) may be used providing they are covered externally with a fire-proof protective coating approved by the SCCA, and that they are mounted within the main chassis structure. (For cars registered prior to 1/1/83)

There must be a liquid tight and fire-proof bulkhead separating the fuel tank(s) from the cockpit.

13. Fuel Capacity.

31.8 lit. (9 gal.) maximum.

14. Electrical.

A self starter is mandatory operated by the driver.

Two stop lights and two tail lights each of at least 15 watts rating must be operable.

15. Weight

1240 lbs. minimum with driver.

16. Windscreens are optional.

17. Bulkheads and Tanks--

Fuel tanks shall be isolated by means of bulkheads and so vented in case of spillage, leakage, or a failure of the tank, fuel and fumes will not pass into the driver or engine compartment or around any part of the exhaust system. No part of any oil or water tank shall be exposed to any part of the driver and passenger compartment. Safety fuel cells specifically approved by the SCCA. (Ref.: GCR Appendix X) are required for cars registered after 1/1/83.