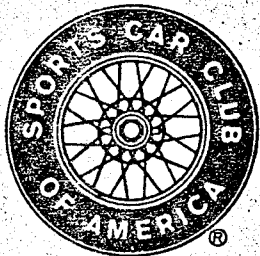


1978

(Abridged to cover FA, FB, and FSV Sections only)

**GENERAL
COMPETITION
RULES**



Sports Car Club of America, Inc.

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Denver, Colorado 80222

4. FORMULA SCCA

A. General

1. A single seat, four open-wheeled racing car with firewall, floor, and safety equipment conforming to the GCR, Appendix A, 1.5.1.
2. Cars must be equipped with on-board self starter controlled by the driver in normal driving position.
3. The driver's seat must be capable of being entered without the removal or manipulation of any part or panel.
4. Cars shall be equipped with a dual braking system operated by a single control. In case of failure or leak at any point in the system effective braking power shall be maintained on at least two wheels.
5. Superchargers are not permitted except 4.1 Section A.1 (under 3000 cc unrestricted engines).
6. Power may not be applied to more than two wheels.
7. Coachwork: The following aerodynamic restrictions will apply: All external parts of the car which are in the air stream and situated above a plane passing through the center of the wheel hubs with the exception of the units definitely associated with the functioning of the engine or transmission or the safety roll bar.
 - a. No part of the coachwork, with the exception of the safety roll bar, shall exceed in height a horizontal plane 90 cm (35.4") above the ground. The opening of the air box is included in that height. The total height of the air box may exceed that dimension by a maximum of 5 cm (2.0"). These measurements are to be made in any condition, driver on board.
 - b. Behind the front wheels, the coachwork shall not exceed a maximum width of 110 cm (43.307 inches) with the exception of lateral fuel tanks. The overall maximum width behind the front wheels to the leading edge of the rear wheels shall not exceed 140 cm (55.12 inches) for class A or 130 cm (51.18 inches) for class B. The maximum width of any

- aerodynamic device situated behind the front wheels, including the rear wing, shall not exceed 110 cm (43.307 inches).
- c. The coachwork ahead of the front wheels may be extended to an overall maximum width of 150 cm (59.055 inches) provided it does not extend beyond the outsides of the front tires.
- d. Any part of the coachwork ahead of the front wheels exceeding an overall width of 110 cm (43.307 inches) shall not extend above the height of the front wheel rims.
- e. Any specific part of the car which has an aerodynamic influence on the stability of the vehicle must be mounted on the entirely sprung part of the car and shall be firmly fixed while the car is in motion. Aerodynamic devices, including wings and end plates, may not extend to the rear more than one meter (39.4 inches) from the centerline of the rear wheel hubs.
- f. Neither the safety roll bar nor any of the units associated with the functioning of the engine or transmission shall have an aerodynamic effect by creating a vertical thrust.
- g. The leading edge of an aerofoil fixed to the front of the car shall not be sharp. Minimum radius—1.5 cm (0.6 inches).
- h. The fuel filler cap must be recessed within the coachwork line.
- i. All Class B cars registered with SCCA January 1, 1976 and after must be fitted with deformable structures per FIA regulations for Formula II. This requirement is waived for water cooled Formula Super V's complying with 1978 Robert Bosch/VW Gold Cup specifications.
- j. The minimum wheel diameter for classes A and B is 13 inches.

4.1 Class A

A. Engines

1. 3000 cc unrestricted.
 - a. Engines of unrestricted origin over 1100 cc below or equal to 3000 cc.
 - b. Superchargers permitted on engines below or equal to 1500 cc.
 - c. Rotary piston engines: cars with rotary piston engines covered by the NSU-Wankel patents will be admitted on the basis of a piston displacement equivalence. This equivalence is twice the volume determined by the difference between the maximum and minimum capacity of the working chamber.
2. 5000 cc restricted.
 - a. Engines approved by the SCCA, pushrod operated valve mechanism, and produced in quantities of at least 1000 per year.
 - b. Engines may be modified or altered as desired except as follows:
 - (1) Maximum displacement shall be 5000 cc and may be obtained by alteration of bore and/or stroke as desired.
 - (2) Cylinder block and/or cylinder head(s) may not be substituted.
 - (3) The location of the camshaft may not be changed.
 - (4) The number of main bearings may not be changed.
 - c. Engines approved for Formula SCCA, Class A are as follows:

Manufacturer	Orig. Disp. (cu. in.)
American Motors	287
American Motors	290
American Motors	327
American Motors	343
American Motors	360
American Motors	390
American Motors	401

Manufacturer	Orig. Disp. (cu. in.)
Buick	215 (Aluminum)
Buick	300
Buick	340
Buick	350
Buick	400
Chevrolet	283
Chevrolet	302
Chevrolet	307
Chevrolet	327
Chevrolet	350
Chevrolet	400
Chrysler	307
Chrysler	318
Chrysler	340
Dodge	273
Dodge	318
Dodge	340
Dodge	361
Ford	260
Ford	289
Ford	302 (Boss, not tunnel port)
Ford	351 (Windsor)
Ford	351 (Cleveland)
Ford	351 (Boss)
Ford	352
Ford	390
Holden	308
Kaiser Jeep	327
Mercury	260
Mercury	302 (not tunnel port)
Mercury	351 (Same as Ford)
Mercury	390
Oldsmobile	215 (Aluminum)
Oldsmobile	330
Oldsmobile	350
Plymouth	273
Plymouth	318

Manufacturer	Orig. Disp. (cu. in.)
Plymouth	340
Plymouth	361
Pontiac	326
Pontiac	350
Pontiac	400

B. Minimum Weight

Minimum weights are as qualified or raced; without driver:
 3000 cc unrestricted engine cars 1105 lbs.
 5000 cc restricted engine cars 1350 lbs.

C. Fuel Tank Capacity

3000 cc unrestricted engine cars 26 U.S. gallons
 5000 cc restricted engine cars 30 U.S. gallons
 (Note: SCCA approved safety fuel tanks are required. See Appendix X.)

4.2

Class B

A. Engines

1. Displacement — over 1100 cc and below or equal to 1600 cc. Cars with rotary piston engines covered by the NSU-Wankel patents will be admitted on the basis of a piston displacement equivalence. This equivalence is twice the volume determined by the difference between the maximum and minimum capacity of the working chamber.
2. Engines shall derive from automobiles recognized by FIA in Appendix J, Group 1 (series production touring), Group 2 (touring), or Group 3 (grand touring) approved by the SCCA, and shall conform to definitions and specifications shown on the FIA Recognition Form of the homologated car, except as permitted below.

The SCCA shall publish a list of approved engines at the beginning of the year. The following engines are approved for 1978: Lotus Ford 1600 Twin-Cam, Alfa Romeo 1600 Twin-Cam (incl. GTA), Porsche Pushrod 1582, Datsun 1600 SOHC, BMW 1600 SOHC, Ford 1500* Pushrod, Ford 1600 Pushrod, Fiat 124 DOHC

1438, Renault Gordini 1600, Ford Cortina 1600 SOHC, Toyota 1600 Pushrod, Fiat 1592 DOHC, Toyota 1588 DOHC, Audi 80, Ford BDA 1600 (4-valve), VW Rabbit/Scirocco 1600.

3. The following modifications are permitted.
 - a. The use of any carburetor(s), fuel injection or intake manifold(s), except BDA must use carburetors.
 - b. The use of any exhaust manifold(s).
 - c. The use of any oil sump.
 - d. The use of any oil pump(s).
 - e. The use of a dry sump lubrication system.
 - f. The use of any crankshaft of the stroke specified in the homologation forms for the engine.
 - g. Main bearing caps may be reinforced or substituted.
 - h. The make and location of the ignition coil and condenser may be changed.
 - i. Any distributor and/or transistor ignition may be used provided its installation does not require any modification of the engine.
 - j. Any make or type of spark plug may be used.
 - k. The use of any starter is permitted provided it can be fitted without any modification to the engine.
 - l. Substitution of the clutch and flywheel is allowed provided there is no increase in clutch diameter. The use of dowel pins is permitted.
 - m. Any pistons and piston pins may be used.
 - n. Any camshaft(s) may be used.
 - o. Cam followers may be altered or substituted.
 - p. It is permitted to lighten, balance or modify in shape by tooling, the standard or optional components of the engine, provided it is always possible to identify them positively as such.

It is not permitted to add any material to these components unless specifically authorized.
 - q. Engines may be rebored a maximum of 1.2 mm (0.047 inches) over the standard size provided the resulting increase in total displacement does not exceed 1600 cc.

8. FORMULA SUPER VEE

8.1 Definition

A formula for single-seat, open-wheel racing cars based on standard Volkswagon 1600 components.

No part of the required engine, drive line, brakes or suspension may be altered, modified, changed or be of other than VW manufacture unless specifically authorized herein.

It is permitted to lighten, balance or modify in shape, by tooling, standard VW parts, provided it is always possible to identify them positively as such. It is not permitted to add any material or mechanical extension unless authorized by these Rules.

8.2 Weight and Dimensions

- a. Minimum weight — 882 lbs., as qualified or raced, without driver.
- b. Wheel base — Free.
- c. Front track — Free.
- d. Rear track — Free.

8.3 Suspension

- a. Front suspension is free with the exception of the following standard VW Type 1, 2 or 3 parts:
 1. Steering knuckles (upright)
 2. Wheel hubs
 3. Brake drums, wheel cylinders and backing plates or brake discs and calipers. Splash shields may be removed from disc brakes. ATE caliper type FV/002 is permitted.
- b. Rear suspension is free with the exception of the following standard VW Type 1, 2 or 3 parts:
 1. Axle shafts
 2. "U" joints
 3. Wheel hubs
 4. Brake drums, discs, calipers, wheel cylinders and backing plates. Backing plates may be altered for brake cooling. ATE caliper type FV/002 also permitted.

8.4 Wheels

- a. Wheels are free except that:
 1. Diameter shall be 13, 14 or 15 inches.
 2. Rim width shall not exceed six inches front and eight inches rear.
 3. The bolt pattern shall enable the wheel to be attached directly to the VW hub without the use of an intermediate adapter.
 4. Wheels shall be identical for the right and left front axles, and identical for the right and left rear axles.
- b. Wheel spacers may be installed between the front wheels and hubs, but may not exceed ½ inch per wheel. Spacers are not permitted between the rear wheels and hubs.
- c. Wheel attachment bolts may be replaced with studs.

8.5 Brakes

- a. Brake lining and/or brake pad material is free.
- b. Cars must be equipped with a dual braking system operated by a single control. In case of a leak or failure at any point in the system, effective braking power shall be maintained on at least two wheels. Brake master cylinders are free.

8.6 Engine

The engine shall be standard VW 1600 from Volkswagon Type 1, 2 or 3 vehicles or a 1600 cc 127V (Type 4) industrial engine and shall be installed forward of the transmission. The following modifications are permitted:

- a. Induction system:

The induction system is free within the following restrictions:

 1. Maximum number of throats: four
 2. Maximum throat diameter at the throttle butterfly: 40 mm (1.575 inches)
 3. Fuel injection is prohibited
 4. Turbocharging and/or supercharging are prohibited.
- b. Exhaust system free, but pipes must terminate behind the driver and extend no more than 28 inches rearward of the rear axle centerline. The last four inches must be hori-

- zontal and be between 12 inches and 24 inches from the ground.
- c. The fan may be altered or removed. The fan housing may be altered or replaced. Cooling ducts may be altered, removed or replaced. The cooling fan may not direct air to the carburetor inlet.
 - d. Any standard VW distributor may be used.
 - e. Generator/alternator — free or may be removed.
 - f. Any oil baffles housed within the original sump may be used. Oil capacity may be increased by sump extension or oil filter(s). Dry sump systems are permitted.
 - g. The substitution of valve spring retainers and the use of any valve spring(s) of the same type is authorized.
 - h. The following standard dimensions of engine components are included as information and shall be observed.

Bore (Max.): 3.375" (Type 1, 2, 3)
3.4528" (Type 127V)

Stroke: 2.720" ± .005" (Type 1, 2, 3)
2.598" ± .005" (Type 127V)

Intake Valve — 1.614" maximum diameter
Exhaust Valve — 1.339" maximum diameter

- i. Camshaft including timing gear — free.
- j. The use of any cam followers except for roller type.
- k. The use of any standard VW rocker arms.
- l. Any standard VW clutch. Any clutch lining may be used.
- m. Any oil cooler is permitted.
- n. Any push rods.
- o. The use of alternate pulleys on the crankshaft, fan and/or generator.
- p. The use of alternate valve covers.
- q. The addition of dowel pins between the flywheel and crankshaft.
- r. Bushings may be installed where none are fitted as standard, provided they are concentric and that the centerline of the bushed part is not changed.

8.7

Transmission — Final Drive

Any transmission/final drive assembly utilizing a VW Type 1, 2 or 3 case with four forward speeds and an operational reverse gear may be used. The case may not be installed in an inverted position. Reverse gear must be operable from the driver's seat.

The final drive/differential unit is free except that limited slip and locked differentials are prohibited. The rear carrier and gearshift housing may be modified or replaced to permit the installation of a "quick-change" final drive assembly.

The final drive covers (side plates) may be modified or replaced.

8.8

Body

- a. No part of car body with the exception of the roll bar shall be higher than 90 cm (35.4 inches) above the ground. The opening of the air box will be included in that height. The total height of the air box may exceed that dimension by a maximum of 5 cm (2.0 inches). These measurements are made in any condition, driver on board.
- b. The cockpit opening must have the following minimum dimensions:
 1. Length: 60 cm (23.622 inches)
 2. Width: 45 cm (17.717 inches)
This width must extend over a length of 30 cm (11.811 inches) measured from the rearmost point of the seat backrest toward the front.
 3. The driver's seat must be capable of being entered without the removal or manipulation of any part or panel.
- c. Bodywork in front of the front wheels and lower than the top of the front wheel rim shall not exceed a maximum width of 135 cm (53.15 inches).
- d. Bodywork in front of the front wheels and higher than the top of the front wheel rim shall not exceed a maximum width of 110 cm (43.307 inches).

- e. Bodywork behind the front wheels shall not extend beyond a plane connecting the vertical centerlines of the front and rear tires.
- f. The material and shape of the bodywork are unrestricted, provided the body is symmetrical to the longitudinal axis of the vehicle and covers the entire length of the engine. The body shall not protrude beyond the rearmost point of the gearshift linkage. The carburetor may project outside of the bodywork.
- g. Canards, diveplanes, and "sports car noses" are permitted within the dimensional restrictions of items c. and d.
- h. Rear-mounted wings are permitted.
 - 1. Height—No part of the wing shall exceed in height a horizontal plane, 80 cm (31.5 inches) above the lowest point of the entirely sprung structure of the car.
 - 2. Width—The maximum width (as viewed from the front of the car) shall not exceed 95 cm (37.402 inches).
 - 3. Setback—Shall not extend rearward more than 80 cm (31.5 inches) from the rear wheel hub centerline.
 - 4. Area—Plan area shall not exceed one-half square meter (as viewed from above).
 - 5. Must be firmly fixed and symmetrically mounted on the fully sprung structure of the car.

8.9 Fuel Tank

Fuel tanks must be SCCA approved safety fuel cell(s). The total capacity shall not exceed 10 U.S. gallons. Fuel cells shall be separated from the engine compartment by the firewall and located to the rear of the front wheel centerline.

- 8.10 The use of the following non-standard VW parts is permitted.
- a. Fasteners (nuts, bolts, screws, etc.)
 - b. Wiring
 - c. Gaskets and seals
 - d. Brake and fuel lines
 - e. Spark plugs
 - f. Piston rings
 - g. Wheel bearings

- h. Rod and main bearings of the same type
- i. Fan belt
- j. Brake shoes, pads and linings
- k. Valve (std. valve head diameter must be maintained)
- l. Valve guides
- m. Valve seats
- n. Springs
- o. Battery
- p. Coil
- q. Fuel pump
- r. Oil pump(s)
- s. Ignition point set
- t. Oil and lubricants.