

EXCLUSIVE CUTAWAY: *CORVETTE SUPER SPORTS*

SPORTS CARS

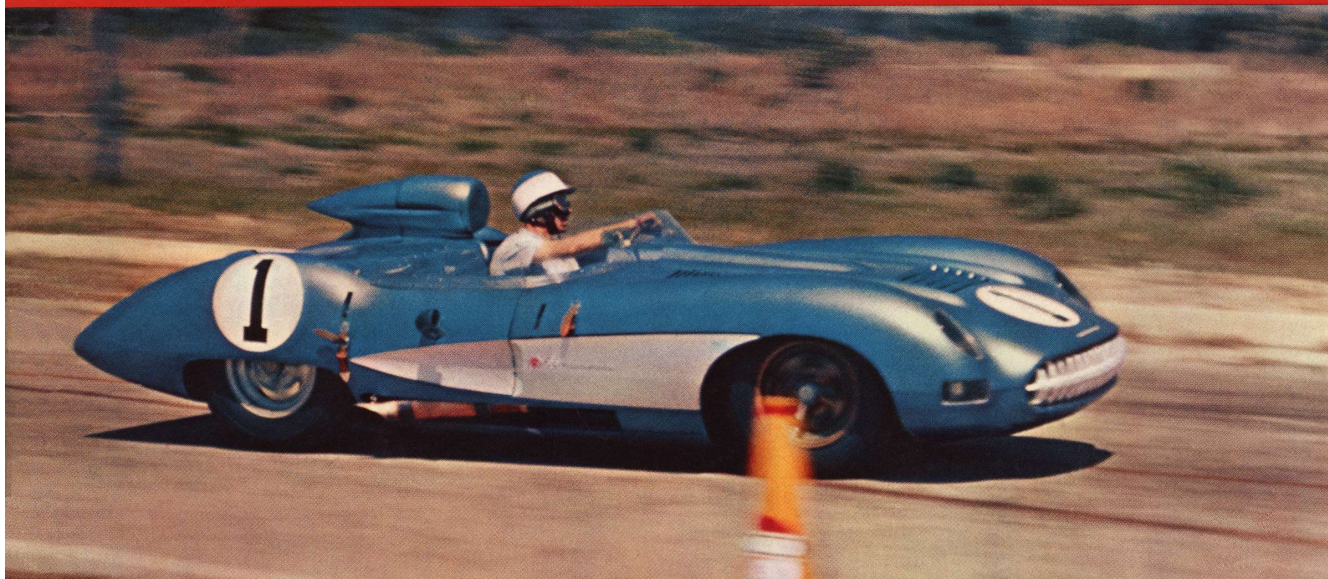
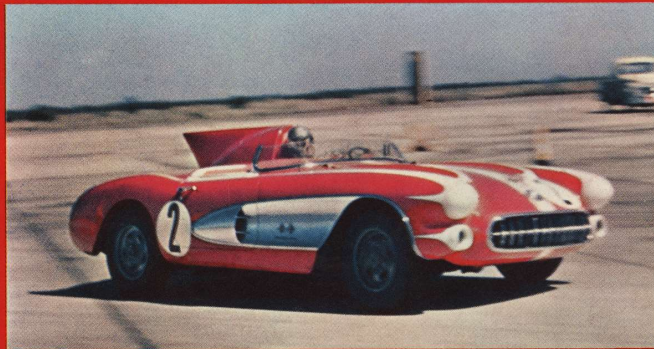
ILLUSTRATED

AUGUST 1957

35¢

**PORTAGO
PORTRAIT**

BY KEN W. PURDY



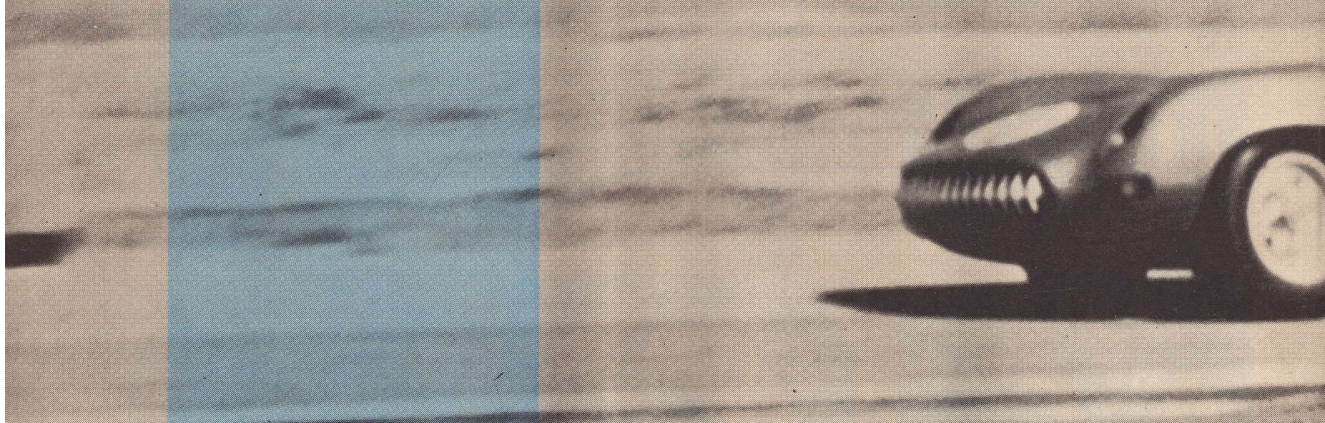
3 ROAD TESTS:

- **PLYMOUTH'S FURY**
- **LANCIA SPYDER**
- **MORRIS 1000**

SCI Technical Report:

By KARL LUDVIGSEN, SCI Tech Editor

CORVETTE SS



REMEMBER the fable of Tantalus? This unfortunate gent was doomed to stand in the midst of a sea with clear, cool water right up to his neck and boughs laden with succulent fruits hovering over his head. When he bent down to drink the sea rushed temptingly away, and the boughs always swung just beyond his reach. This sounds like a rough life, but it's Paradise compared to what GM's been doing to you and me — and to everybody that feels that American cars should be well represented in international racing.

Take a look at the machine laid out on the center spread. It's not a four-alarm advance over all existing equipment, but it is basically a good car. Given more than half a chance and some intensive track testing it could compete on level terms with the world's best—Sebring practice proved that. In view of this highly publicized fact it must have been extremely disappointing to many to hear that it wasn't to go to Le Mans. Perhaps most disappointing to knowledgeable Europeans who felt that Sebring was just a trial outing and expected a full team and all-out effort for the 24-Hours. We won't try to estimate the effect a "no-show" could have on American prestige abroad.

Of course, we can now sit back and see what it was actually all about. We can see that the men who built the Corvette SS were intensely sincere about the job, both as it was specifically outlined to them and as they hoped it might develop. The fine detail design and clean fabrication tell us this, as does their desire to see it compete seriously abroad. We can also see that the management of GM and Chevrolet had only one thing in mind all the time: to bask in all the publicity and excitement that they knew such a sensational Sebring entry would shine down upon them, and then to forget about it except possibly for some minor events in this country. Also, naturally, to "show the world that GM could really clean up if they wanted to."

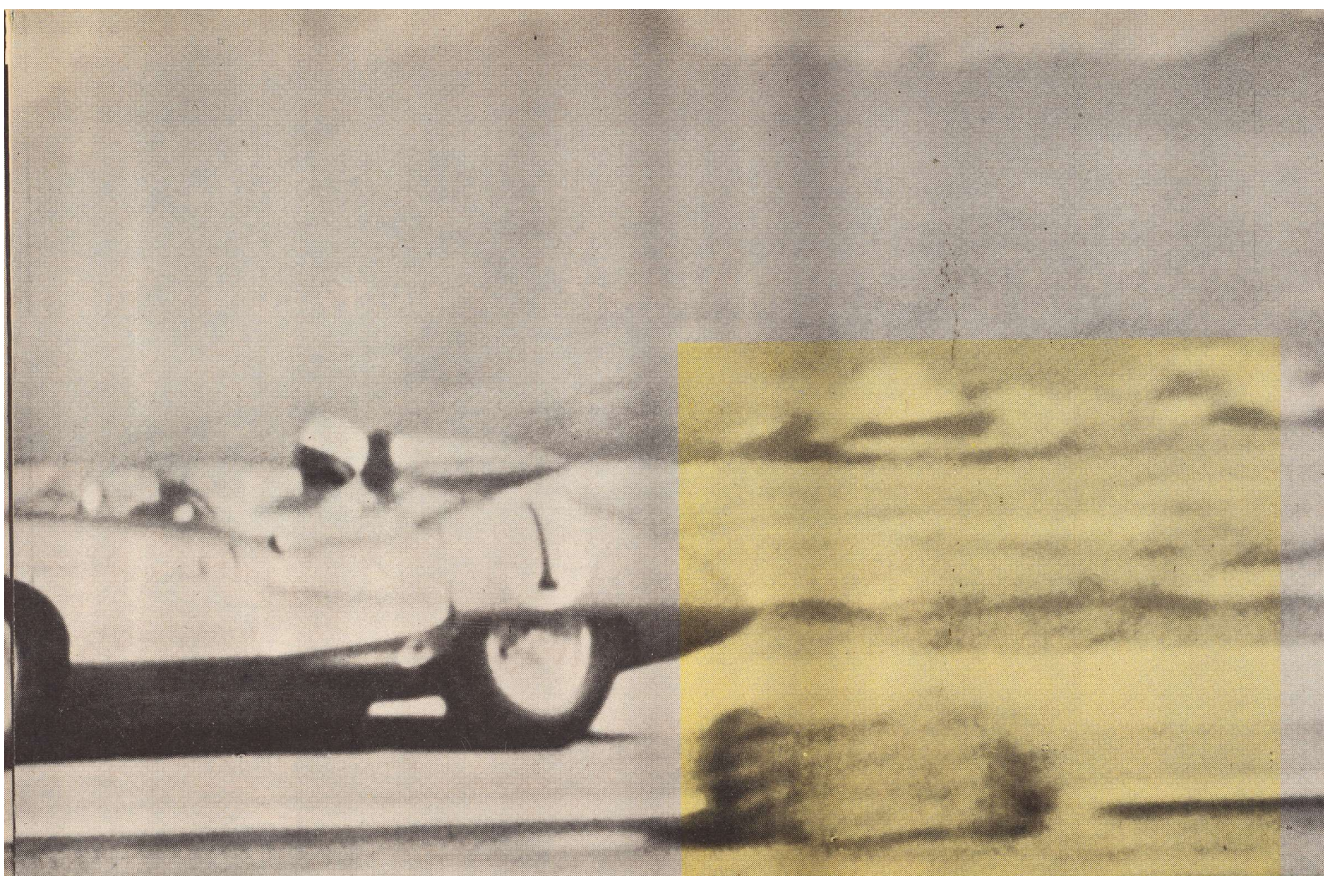
They warned us that this was all. When the SS was an-

nounced Chevy General Manager Ed Cole "emphasized that it is a research project to study advanced engineering characteristics in the field of performance, handling, braking and *other* safety features". The word we italicized is Chevy's loophole in case another Congressional committee shouts "Speedmonger!" This was all they did and do intend, but they led many people on for too long, even poor Zora Duntov, who will probably take some of the public blame for the defection. Even Briggs Cunningham, who was scheduled to run the SS at Le Mans, wasn't told "no" until a month and a half after Sebring. And mostly they led on the rest of us who'd like to see these cars go out and DO something.

How did the car get built in the first place? A couple of top-level minds happened to click and the whole thing was shoved through as a triple-priority crash program with Sebring as a definite deadline. Now there's no more deadline—no place to go. The next may be the SCCA Nationals, or perhaps Bonneville. Money is available, but authorization to use it is being withheld until Chevrolet does better in this little sales tussle with Ford. Some may say that race wins by the SS would boost Chevy sales, but we don't think so. Production Corvettes might get a little more play but hardly enough to pay for the racing operation.

No, GM had every justification for handling the SS this way. We can only wish that there had been less pomp and a little more circumstance at Sebring, if that remains the only major appearance of the SS. We can also hope that the work of Duntov and his crew will be invested in future production Corvettes, since the present four-year-old chassis may be pushed hard by the new Mercedes 300SL Roadster and the Jaguar XK150. In any case the SS gives us a window through which we can see what Chevy Engineering has up its sleeve.

With only five months to design a raceable car, the SS project was definitely a rush job for GM. As a result, Duntov had to rely heavily on components which had been thor-



oughly tested before, and could only lighten them if possible and fit a new framework around them. Fortunately a lot of miscellaneous information had been compiled from experimentation and racing with stock Corvettes and the special SR2 versions.

For one thing, they knew pretty well what the 283-inch V8 could and could not do. When the displacement was boosted from 265 there were some misgivings about the crankshaft, but undercutting the fillet radius at the journals has kept this glued together at 7000 and up. A weak point did show up at the wrist pin bosses in the piston, which distorted at high revs—notably in the badly overrevved SR2 at Nassau—and came apart. A little more meat around the boss cured that. Development on the SR2 for Daytona also led to the 40 inch tuned exhaust length that was incorporated in the SS. Racing during the winter helped to shake down the Rochester fuel injection system and determine its limitations.

Pressure of SCCA "Production" racing had forced the development of a four-speed gearbox, which with the use of an aluminum alloy case was just right for the SS. The iron case box, by the way, was available as of May first for \$189 extra, or about the markup asked for the automatic transmission. Sounds encouraging.

The rush program for Sebring in 1956 turned up the sintered metallic and ceramic brake lining that's been used on most racing Corvettes with considerable success. They're fine if you don't mind replacing the drums fairly frequently and *warming up* the brakes before using them hard. A type of drum finning was also devised that appeared to give good results.

With these for a start Duntov had to build a light, compact car with handling of a very high order. Since time was short the 300SL frame was elected as a good pattern to follow, and the placement of the main SS chassis tubes resembles the SL very closely—NOT the D-Type Jaguar, as the rumors have run for so long. When the major members were set

smaller tubes could be added for the particular requirements of this engine and suspension and to add stiffness where stress tests showed it to be needed. Big cross tubes connect the abutments for the front and rear coil springs, the rear mounts being nicely curved and drilled towers. Where parts like the brake servo cylinders are attached the frame tubes are square, to ease mounting, but otherwise they're round and about an inch in diameter. Particularly reminiscent of the Mercedes are the pyramided tubes at the cowl and the truss structure under the doors.

Front suspension resembles that of Chevy passenger cars in that the non-parallel wishbones are welded up of steel pressings, but the whole assembly is scaled down. Ball joints are fitted at the outer ends, and the wishbone frame pivots are rubber bushed. With more time metal-to-metal bushings might be installed for more precise control. A small-diameter anti-roll bar crosses the chassis under the suspension and is connected to the bottom wishbones by short links.

Nobody interested in fast cars will be shaken by de Dion rear suspension, but it is a novelty for Detroit machinery (except for notable show cars like the Le Sabre, Firebird I, the La Salles and Pontiac's Club de Mer, only two of which ran). Though the rear end looks confused, the curved one-piece de Dion tube is fabricated and located very neatly indeed. There are four tubular trailing arms, two of which are rubber-bushed to the frame just forward of each rear wheel. The upper arms angle slightly outward and are ball-jointed to the tops of the hubs. The lower arms however converge to the center of the axle tube and are fixed to the underside of the tube by ball joints at that point. A rigid yet light three-point location resulted, the frame mounting of differential and brakes relieving the tube and arms of drive and braking torque reactions.

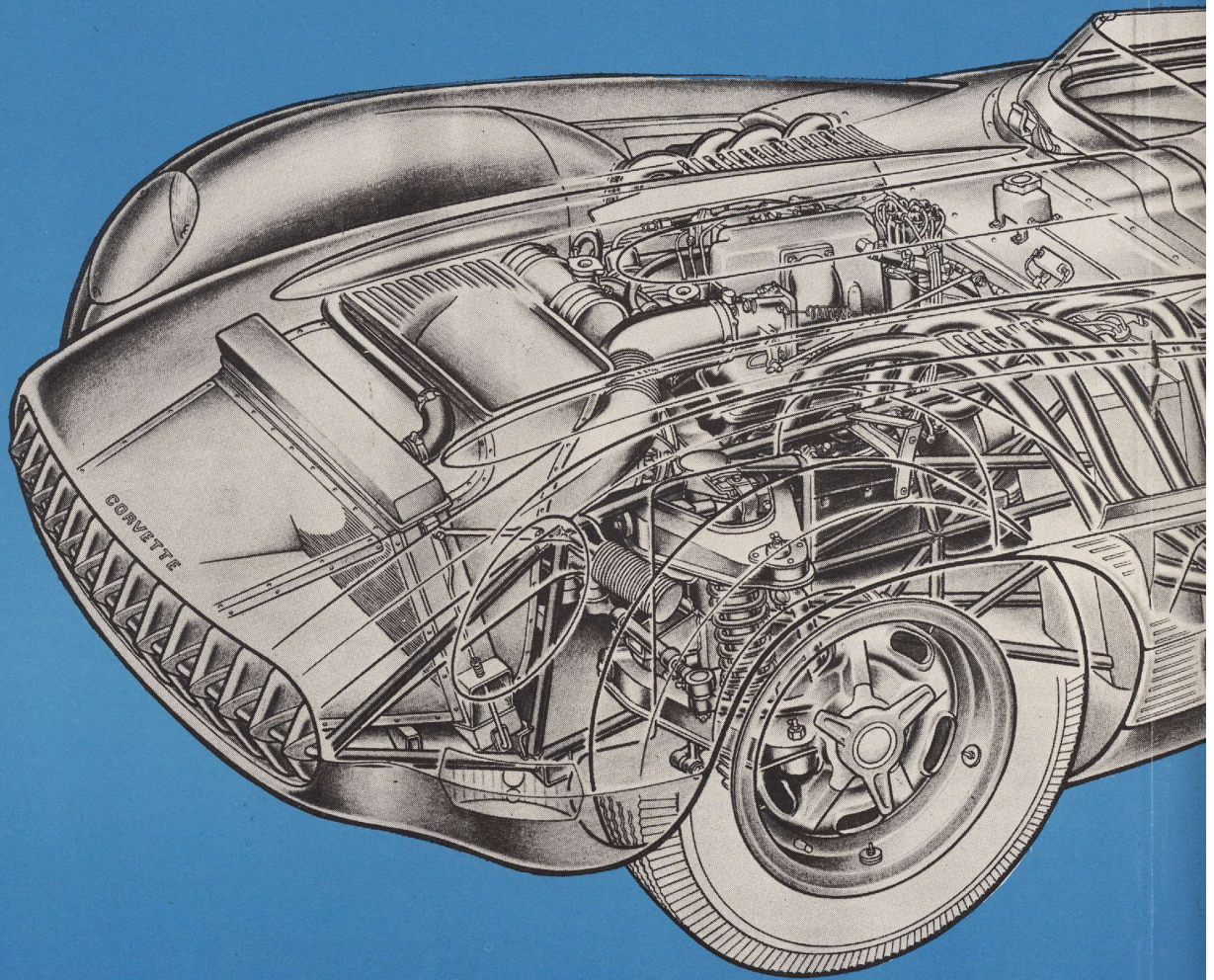
The arrangement of the bottom trailing arms was one of the few brand-new features of the SS, but it's worth remembering that this was the source of one of the failures that

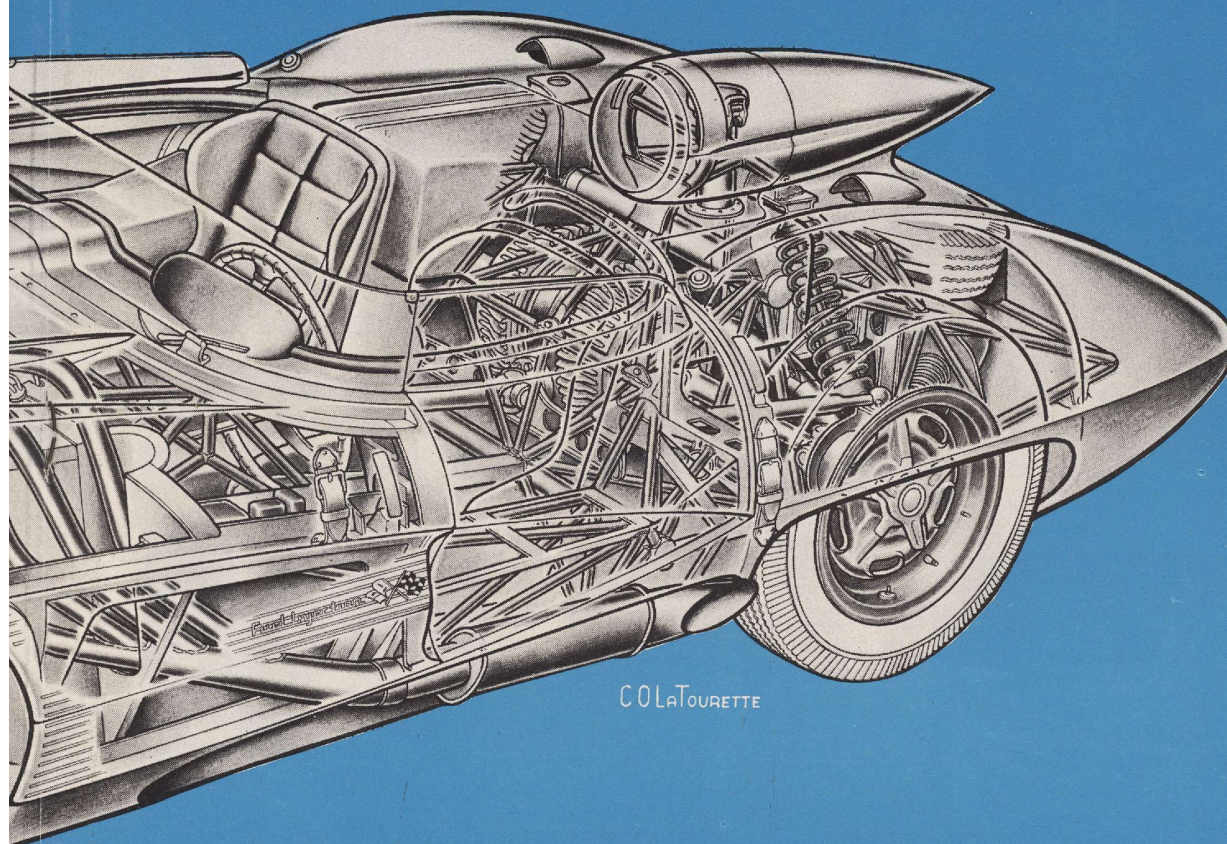
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SPORTS CARS ILLUSTRATED

CORVETTE SS — too little time, too many cooks, but . . .





COLA TOURETTE

TEST CAR: CORVETTE SS

SPECIFICATIONS

POWER UNIT:

Type	V-8
Valve Arrangement	Overhead in-line, pushrods.
Bore & Stroke (Engl. & Met.)	3 $\frac{1}{2}$ " x 3" (98.4 x 76.2 mm)
Stroke/Bore Ratio	0.774/1
Displacement (Engl. & Met.)	283 cu. in. (4640 cc)
Compression Ratio	9/1 (11/1 optional)
Carburetion by	Rochester constant-flow fuel injection
Max. bhp @ rpm	310 @ 6000
Max. Torque @ rpm	295 @ 4400
Camshaft: Chain-driven "Dantov", 0.398" lift, solid tappets	
Valves:	
Opens	35° BTDC Intake 76° BBDC Exhaust
Closes	72° ABDC Intake 31° ATDC Exhaust
Diameter	1.85" Intake 1.625" Exhaust

DRIVE TRAIN:

Transmission ratios	
I	1.87
II	1.54
III	1.22
IV	1.00
Reverse	1.87
Final drive ratio	3.87/1 with Halibrand quick change, Positraction differential.

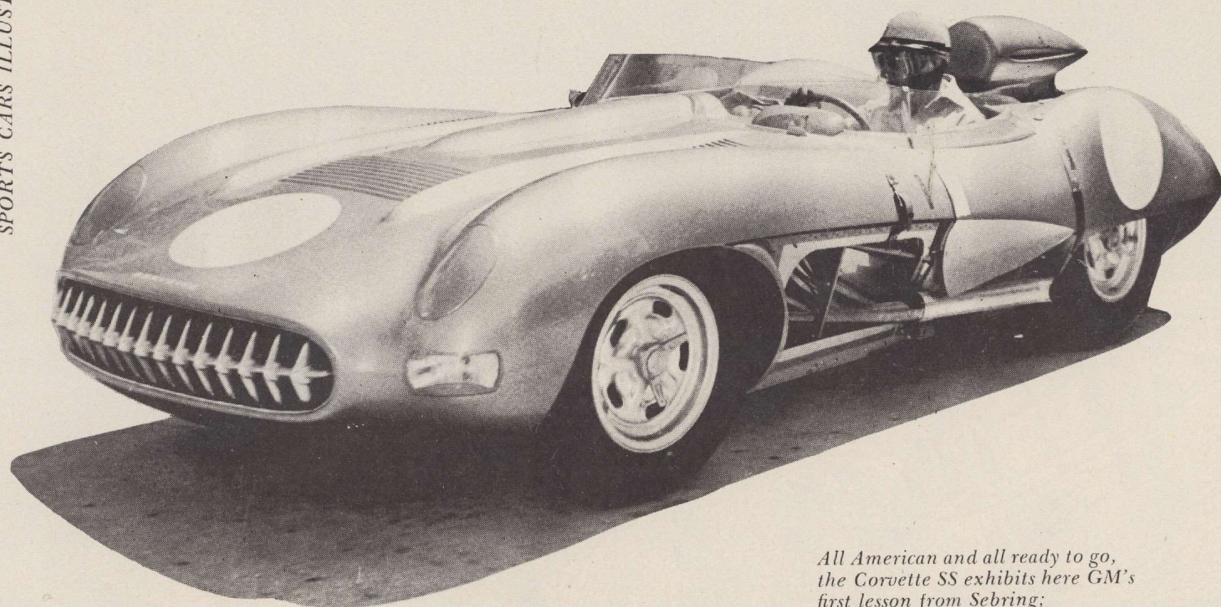
CHASSIS:

Overall length	168"
Wheelbase	92"
Front Tread	51 $\frac{1}{2}$ "
Rear Tread	51 $\frac{1}{2}$ "
Weight, dry	1850 lbs.
Suspension, front	Non-parallel wishbones, coil springs, anti-roll bar, de Dion, coil springs, four radius rods.
Suspension, rear	Non-parallel wishbones, coil springs, anti-roll bar, de Dion, coil springs, four radius rods.
Shock absorbers	tubular, in unit with coil springs.
Steering type	Saginaw recirculating ball, three piece track rod.
Steering ratio	12/1
Brake system	One master cylinder, two separate servo systems.
Brake mechanism	Chrysler Center-plane 2LS with 12" x 2 $\frac{1}{2}$ " drums and Cera-metallic linings.
Wheel	cast magnesium with knock-off hubs.
Tire size	6.50/6.70 x 15 front, 7.10/7.60 x 15 rear.
Fuel capacity	43 U.S. gallons.

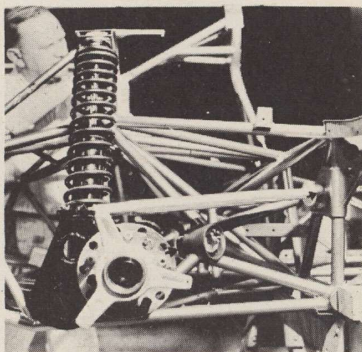
RATING FACTORS:

Bhp per cu. in.	1.096
Bhp per sq. in. piston area	3.30
Torque (lb-ft) per cu. in.	1.04
Pounds per bhp—test car	6.6
Piston speed @ max bhp	3000 fpm

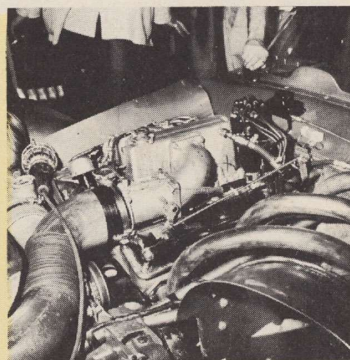
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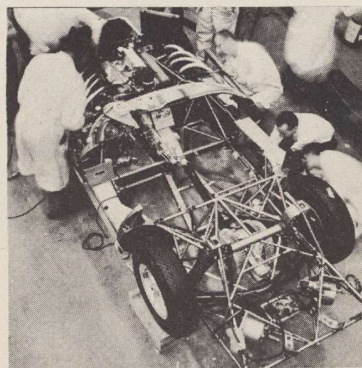
All American and all ready to go, the Corvette SS exhibits here GM's first lesson from Sebring; cool feet are better than hot styling!



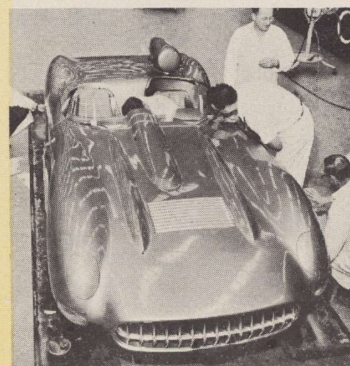
There are rubber bushes which eventually caused GM to retire the SS in early hours of race.



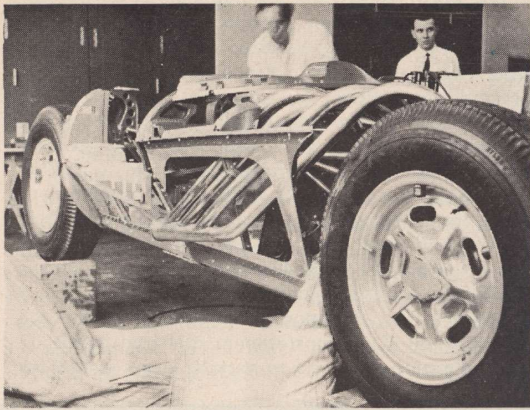
Forward facing air metering valve leads cool air from Fiberglas duct to plenum chamber of injector.



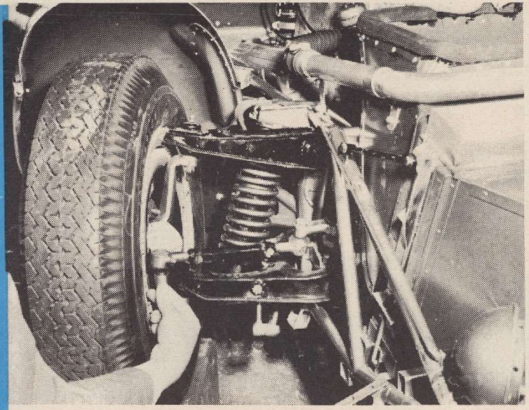
Everybody hustles to finish Chevrolet's activated dream car in time for debut at the Florida Grand Prix.



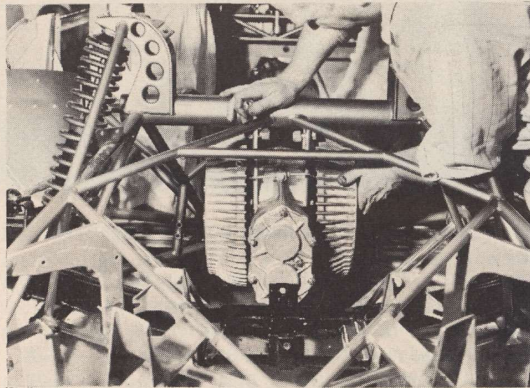
Details of finish are attended to with concern that might embarrass some Concours d'Elegance entrants.



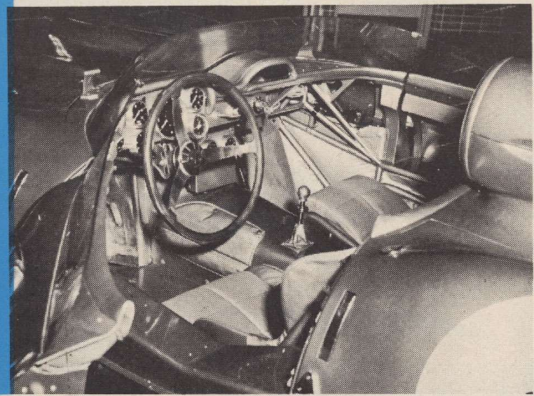
Forty inch tuned exhaust headers arch high over frame tubes, then down and aft. Rear ones got cockpit too hot so they'll be moved forward.



Radically finned aluminum muff on the cast iron drum acts as an impeller because it's so closely shrouded by the rim of the magnesium wheel.

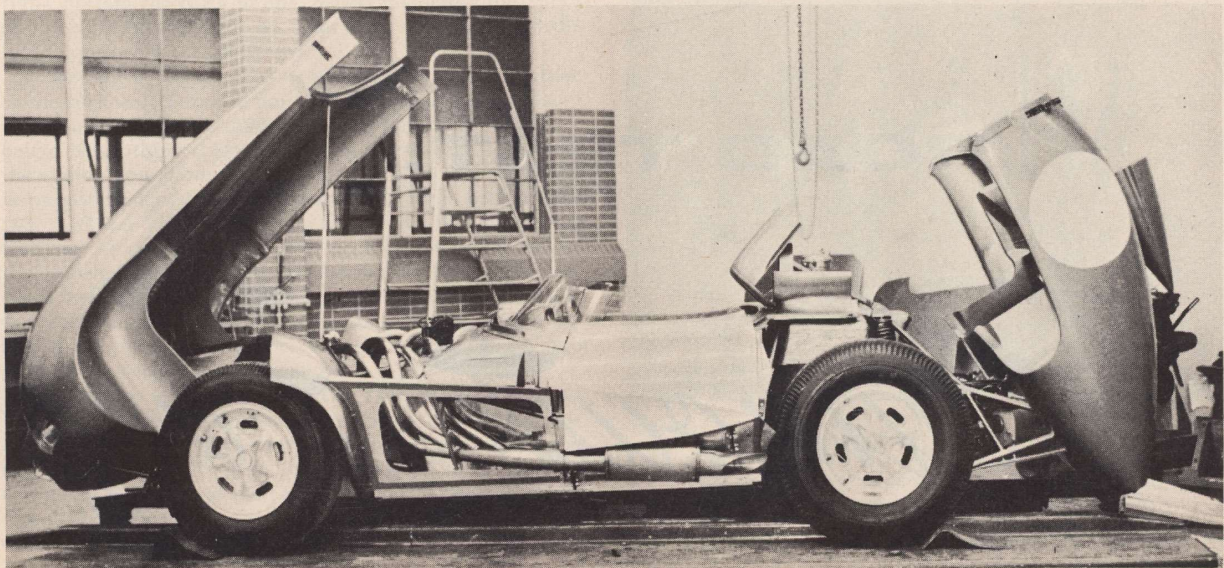


De Dion layout on SS includes inboard mounted Chrysler Center plane brakes, and Halibrand quick change rear. Brake linings were cerametallic



Styling department gave Corvette interior a typical dream car look. Exhaust heat, cleverly channeled into driver's compartment made cockpit unbearable.

Hinged body sections afford excellent accessibility to all components of car. The latest in production design, it is typical of such cars as D-Jags and Loti. Specials have been using similar plan for years, although not as well executed.



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