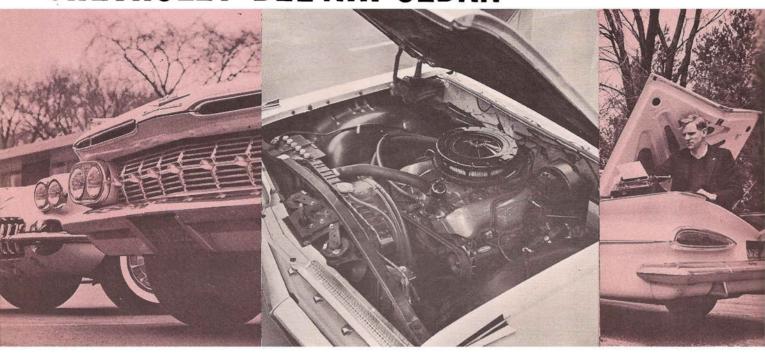
# ROAD TEST:

# CHEVROLET BEL AIR SEDAN



▶Bad reputations die hard. To SCI readers that of the American car is no exception. We have praised, perhaps too fulsomely at times, its leaps ahead in handling and braking only to be bombarded by readers who insist that Detroit is inhabited solely by advocates of the Devil. Perserverence pays off, they say, so with some hesitancy here we go again.

To our domestic readers at least, the Chevrolet needs no introduction as it accounts for 25% of the domestic market. However, the particular car we tested is stock only in the sense that it carried factory parts. It is not one which you are likely to see on the dealer's showroom floor. Some day maybe, but not this year. More likely you'll see it parked outside, for it was essentially a police car minus the red lights and siren. A four-passenger sedan set-up for hard, fast driving, one that must carry heavy equipment, yet accelerate rapidly enough to nab speeders and handle and brake well enough to chase sports cars-and catch them.

This is not the time or place to discuss the morals of current traffic law enforcement practices, but last time we were Corvette-testing out Detroit way, we casually mentioned that high speed highway driving was taking on some of the aspects of a nightmare, what with radar devices and factory-prepared "pursuit cars." I mean, a fellow hasn't got a chance anymore.

In reply Zora Arkus-Duntov smiled and suggested we pay him a return visit when time permitted, as there were certain options available to all that we owed it to ourselves and our readers to investigate. Okay, we shrugged, so you have hot en-

gines that make the barge go faster than Dick Tracy's. Duntov just smiled and the talk drifted on to other subjects. No, you can't road test the Corvette SS. Etc.

One day the call came in. A 348 near Mound and Twelve Mile. Looked a bit out of the ordinary. We went to investigate. "Hello, Mr. Duntov, we're from Sports

Cars Illustrated."

"Yes, I've been expecting you."

"All we want are the facts, Mr. Duntov."
We went to look the victim over.

Outside. White. Bel Air two-door. Distinguishing marks? Crossed flag motif on hood above nameplate. Same as Impala. Otherwise stock. Inside. Same thing, just one clue. Someone swiped column shift. Replaced with floor shift. White knob on top. Bent to clear seat cushion in full forward position.

Careful questioning of the prime subject in this case, Zora Arkus-Duntov, led to the discovery that this lever was attached to a Corvette all-synchro four-speed gearbox. Sneaky.

Then we looked under the hood. Brutal. Chev's workhorse 348 cubic inch V-8 tethered there. Its rig included the Rochester four barrel carb, aluminum intake manifold, improved exhaust ditto, dual point distributor, double generator belts. Inside, a Duntov cam, 287° duration, 66° overlap. Listened carefully to its breathing. Convinced that compression ratio was neither 9.4 (dead stock) nor 11.25 (maximum hot). Questioned suspect. He confessed. He's trying a slightly lower CR for all around use. Not much lower though. Ten and a half to one. Gives about 310 hp at 5600 rpm.

We tried to move on but suspect was SPORTS CARS ILLUSTRATED/JULY

put 280 or 335. Synchro-only with the latter. Slightly different carbs and cam, too. Quad outputs range from 250 without special cam to 320 with. Latter is cut to 305 with automatic transmission (heavy duty Powerglide incidentally) because a different version of the Duntov cam is used.

reluctant to leave. There were other op-

tions available, too. Three twin choke

Rochesters with and without cams. Out-

So, how much extra over, say, the very stock 283 inch V-8? Answer: 145 pounds and, in this particular state of tune, \$172.20.

The four-speed gearbox we'd already noted, it was \$188.30 extra. Which is a lot if you can't stand gear changing. We can, so can our suspect.

Next we grilled him about the chassis. Was it really stock?

Sort of. It's called LPO 1108. LPO stands for limited production option which means that it has to be specially ordered. Regular options (RPO) are scheduled down the production line on the basis of estimated demand.

Stick to the facts, please. What's in LOP 1108?

It's LPO, if you don't mind. It's only \$44.15 extra and . . .

Please. What does LPO 1108 consist of? All right. Sintered metallic brakes, stiffer springs, larger shocks, heavy duty front and rear wheel bearings, stronger front suspension ball joints and, usually, 6.70 x 15 tires, although this car's got 8.00 x 14 white sidewall nylon tubeless. It's available with any engine, but the exact springs vary with the engine and transmission chosen.

With \$44.15 worth of chassis options, it handles.
With proper engine and gears, it makes sporty cars eat dust.

How much stiffer on this car?

About 30% at the front, 74% at the rear. The HD shocks have  $1\frac{1}{8}$ -inch pistons instead of one inch.

Very good. What about the brakes?

They're vacuum-assisted power brakes. The drums are finished a bit smoother than normally and the linings are sintered metallic pads. Why power? Two reasons. It reduces pedal travel which saves time in emergencies. It also reduces pedal pressure. The reason we make sintered linings so hard to get? Well, they work fine when they're hot, even better than when they're cold. Pedal pressure's sort of high. Old ladies forget to push. Don't stop. Looks bad for Chevrolet. Solution: save them for knowledgable types. Cops and Corvette-drivers, for instance. Even so, you have to fight to get them.

Worth it. Fight hard.
What about the steering?
Manual. Dead stock, too.
Tire pressures?

Use 22 to 24 psi for comfort, 35 for high-balling.

Anything else?

The 1½-inch lower roof line on the Impala requires lower seats, gives more of a Lotus-like slouched back seating position. Make sure you like it before you jump for the lower frontal area.

The grilling over, we released the suspect with a promise to return. Confiscated the Bel Air. Temporarily. Didn't want real cops on our tail.

Actually, our idea was not to find out how good this Pursuit Car was as a police car. Instead we were wondering if maybe this would possibly turn out to be a family man's four-seater Corvette. In road testing a car, perhaps the single most influential feature in molding our opinion, and at the same time the most difficult to describe, is its response. In simple words, does it do what you want it to when you tell it to?

From the designers point of view, this can be broken down into individual response characteristics, one for each control—the accelerator, the brake pedal, the clutch and the steering wheel. Each has its moments when it is more important than the others so perhaps we can look into them one at a time.

But first we'd better explain that our idea of good response characteristics does not just mean getting lots of action. Rather, that whatever happens as you use the controls should happen in a sensible (perhaps linear) relationship to either the movement of the control or the force or torque being exerted on it. After all, completely gutless cars can be quite exhilerating to drive while smoking, wheel-spinning monsters can be just plain dreadful for highway use. And vice versa.

For instance, while it may be inevitable on some racings cars that power is either all-on or all-off, this is not the stuff that pleasure motoring is made of. And that, incidentally, helps explain how some cars which never win races continue to be popular and well thought of . . they respond nicely to their controls.

This indicates the attitude with which we looked at Chevrolet's "police-equipped" Bel Air—not how useful it is for neighborhood jaunts or cross country journeys, nor how splendid it may be for the Sunday drags or catching speeders. Rather, how well does it respond to the driver's direc-

tions and therefore, how close it comes to be a contemporary American Sports Sedan.

To discuss accelerator response it is first necessary to bring up rear axle ratio. At 3.55 to one it is too low numerically to make rapid standing starts easily. Incidentally, on our first three starts, the Positraction limited slip differential failed to function. The right rear wheel lifted enough to peel off a hundred miles worth of rubber and on the third attempt, we got a spectacular smoke storm brewing in the fender well. Putting the photographer overboard to record this meteorological scene must have jiggled something for every subsequent start saw two mild streaks instead of one big one.

Oddly enough, there was no improvement in 0-60 time once the photographer-timer was back aboard. With both wheels biting, the 2.20 first gear and the 3.55 rear just didn't multiply revs enough and the 0-30 stretch was a painful, staggering march.

Life began somewhere near 40, in earnest, as a glance at the performance chart will show. Further improvements could be expected with the 3.70 gears. Though the 4.11 and 4.56 Corvette gears will also fit, they limit top speed (assuming that 6500 rpm can be reached—which Duntov insists can be done—only 900 past peak) to 124 and 111 mph instead of the 143 possible (but not achieved) with the 3.55's. The 3.70 would give 137 which seems fast enough.

So, what about this responsiveness? Answer: good considering the very high output of this engine (0.89 hp/cu in). However, at part throttle, there is a definite

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racket for a while after we had gotten all the pictures that we needed, then bugged quickly off to Scaglietti, the carrozzeria that does Ferrari's competition body-bashing. Again, here, the gent in charge (Scaglietti himself?) was exceedingly helpful, giving us the A 1 Baedeker of five or six of the graceful coupes . . . the latest one-gill model . . . three California roadsters, and a Super-America which was getting some super dents ironed out of it. Light, airy, and modern, this shop also destroyed misconceptions of the Italian body shop as a dark oubliette converted from a blacksmithery, many of the tools being retained and old Chianti bottles used as body formers. At that, Scaglietti's had kept the traditional tree stump, even though he was a bit put out when Eddie took a picture of it!

Again we got a late start the next day; Lambrusco is a pleasant wine, faintly fizzy and not at all strong, but it does seem to promote sleep. We luxuriated in and frosted tile bathroom of the Reale so long that we really couldn't go back to Milan without another whack at the lasagne mit green noodles, could we? Which of course meant that we discovered that the Spyder would do just on 100 mph (speedo) if pushed, continuing for mile after mile with no ill effects. None except those caused by the horn that is, which apparently lived under my seat and almost drove me coo coo.

Eddie decanted me at the Stazione Centrale with time to spare; after a discussion with a multilingual policeman who didn't want us to park in the taxi rank, we bade our goodbyes, and I strolled onto the train with a copy of the Sunday Times, three days old. Small bottle of Valpolicella, salami sandwich, and orange from the vendor with his little cart, coffee from the coffee bloke who wanders about with the percolator, and home to bed. Four hours on the blooming train. Ho hum.

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# Chevrolet Bel Air

(Continued from page 45)

at around 40 to 50 mph. To overcome or get by it, it seems necessary to get onto the secondary butterflies. Fortunately, additional throttle springs come into play so it is easy to feel your way along. It seemed that the linkage could be modified to advantage to provide greater travel between closed and full throttle to make things a little less sensitive. If this were done, the drawback would be that your right foot would have to swing through a greater angle and either one position or the other might turn out to be rather uncomfortable. After all, this human ankle only works comfortable through a limited number of degrees. Chevrolet has the problem of distributing three hundred horsepower evenly through them.

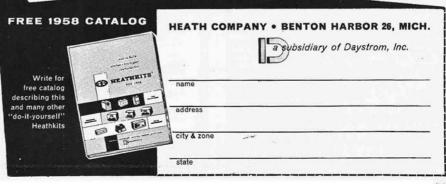
The clutch pedal was a very stiff one, quite in contrast to the power brakes and the rather light touch involved there. So stiff a clutch that one would shift to neutral for even short waits at a traffic light.

(Continued on page 80)



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### Chevrolet Bel Air

'Continued from page 79)

Just as well, why wear out the throw-out bearing?

We gave the brakes a really punishing test, making many, many stops from over sixty and accelerating immediately up again without a trace of fade. When we tired of this (we, not the brakes), we stopped to have a look at them. Smoke was curling out from the fenders. A careful looks showed us that it was only the black paint on the outside of the drums.

Tough.

For kicks, we then tried running from zero to one hundred to zero as quickly as possible. Two runs with this two-ton (nearly) machine gave these results: 0-100 in 21.9, 100-0 in 7.2 more seconds in one direction for a total of 29.1. In the other 20.7 plus 6.7 totaled 27.4 seconds. The better, second run works out to a declaration of ½ "g" but this includes the time spent getting off the one pedal and onto the other. Remember anyway, as long as brake fade is not a problem, which it wasn't, braking deceleration is limited only by the coefficient of friction available between the tires and the road.

After these runs were over, we drove along quite happily using the brakes in a normal manner. Suddenly we were disconcerted to find that the brakes were pulling very strongly to the right. When we returned the car it was suggested that we might have cracked a drum, but since this strange pulling had by then disappeared, we could only conclude that perhaps these brakes still aren't quite ready for the average customer-not that he'd ever use them as hard as we had. As a matter of fact, doing our SCI brake test of consecutive 0-60-0 runs, we became impressed with the fact that other than for testing purposes, no one would drive this car in such a manner, not even if he were racing it at Monaco or Vineland. It seems safe to conclude that Moraine and Chevrolet have brake fade as such licked, it only remains to make the metallic linings more livable for the average driver. From a cost angle, future economies are assured as volume goes up because production is already highly automatic. Besides, drum sizes could probably be reduced, saving weight (unsprung) as well as money.

Steering on the Bel Air leaves one thing to be desired: Quickness. Nearly six turns lock to lock with a wheel to wheel (steering to road) ratio of 28 to one is too much. Power steering reduces this to 5.2 and 24:1 which is still TOO MUCH. However, with nearly a ton on the front wheels, I suppose it's inevitable.

The car responds really splendidly to the wheel, though tearing through an essbend at sixty-plus required arms like pretzels. The big sedan heeled over like a Snipe in a squall but we got through as fast as anybody could want to. At more mannerly cornering speeds, the Bel Air exhibited surprisingly mild understeer with sensible but mild feel at the rim.

At very high speeds, namely at over 100 mph, the car felt a bit too light but as long as you didn't man-handle it, everything was alright. Flat out, the fat tires

SPORTS CARS ILLUSTRATED/JULY

Dept. S, 452 Fifth Ave., New York 18, N.Y

perhaps were the cause of a trace of yaw oscillation. The car would go straight down the road, but in so doing its nose would seem to point slightly left and right. This may be a misrepresentation, as phenomenon such as these need proper instruments to pin down accurately. Perhaps it was reacting to gentle gusts of wind from the side. Whatever it was, the steering was staying very light and the best course seemed to be to let the car have its head, just guilding lightly round whatever bends there were in the road.

Ride comfort was extremely good even with the 35 pounds of air we maintained for the entire test. We did make a preliminary run at 24 in order to compare with a stock-sprung Impala at the same pressure. Perhaps our bottoms aren't very sensitive, but on a fairly smooth concrete road, the difference was barely (?) detectable. When we ran the tires up to 35, the big 8.00's still soaked up the bumps with ease. Can't help but wonder how much you'd lose with the 6.70 x 15's in comfort and how much more stable it'd be at high speeds.

We were, all in all, very much impressed with this car. It would be a great thing for motoring in general if the \$44 chassis option could soon become standard equipment. But until the public as a whole is more interested in handling than in riding rough-shod over pebbles in the street, the competitive sales advantage will lay with the salesman whose demo gives the softest ride.

When we congratulated him for making a silk purse out of more or less generally available GM parts, Mr. Duntov suggested that the credit should go to Mr. Ed Cole, General Manager of Chevrolet Division. He is an exceptionally fine driver with a real appreciation of handling and steering subtleties. He enjoys driving the cars built in his factories and is interested in them as a driver, not merely as a division manager. Mr. Duntov feels that this unusual-for-America circumstance is a very good influence for Chevrolets in general and for Corvettes and such sedans as the one tested in particular.

Detroit's favorite defense for the many criticisms lately sent its way is that the public gets what the public wants. One reason that we're in business is that the public should be better informed about what it is about to buy. Secondly, Detroit is still open to the charge of building to the Lowest Common Denominator of the public taste. By their catering to individual emotional requirements such as prestige, the country enjoys a socially undesirable total, namely urban immobility and economic extravagance.

One of the more popular complaints about Detroit cars is that they have gotten progressively larger on the outside and smaller on the inside. In the big hurrah about the brilliant new concept of compact cars, most of the cheering is for the idea of making a car that's smaller on the outside. Relatively few people seem to be bothered by the fact that you can't get six adults easily and comfortably into contemporary American sedans.

The car's outside dimensions are huge, especially for what has shrunk to basically

a four-passenger car on the inside. You can get three abreast in a pinch, but whenever we carried three, there was never any hesitancy, the third man climbed in back. Incidentally, legroom is better there than in the front because of the deep wells in the floor.

It's so big that we were carried away by the apparently tight turning circle. But it turned out to be a huge 431/2 feet, wall to wall.

We noted that much fat could be trimmed from the current body shell without tightening the interior at all. There's about four inches excess between fan and radiator, and for that matter, the radiator could be moved back an inch or two. The trunk could be usefully shortened, vacationers could tow small utility trailers for two weeks out of the year instead of trying to park the Queen Mary for the other fifty. But the place for really trimming off waste fat would be along the sides of the car.

The raison d'etre of at least the fat on the sides is economic. All five GM lines use essentially the same body panels, that is, the interior stampings, the ones out of sight that have to fit correctly. It's as if a baker made five identical cakes but covered each one with a different frosting, full of swirls and blobs to make them look like five different cakes. Detroit calls it product identification. We call it camouflage.

Could be that GM might build a compact car without even trying.

(Continued on page 85)

# "I THINK I MISSED A TURN...DEAR"



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### Chevrolet Bel Air

(Continued from page 81)

# SPORTS CARS ILLUSTRATED ROAD TEST CHEVROLET BEL AIR 1611 SEDAN

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### PERFORMANCE

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Single one-way run — up wind	122 mph
ACCELERATION:	
From zero to	seconds
30 mph	4.0
40 mph	5.3
50 mph	6.8

TOP SPEED:

AO MEDIE															
50 mph												6.	8		
60 mph												8.	4		
70 mph											1	0.	5		
80 mph											1	2.	8		
90 mph											1	5.	6		
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FUEL CONSUMPTION: 11.8 mpg

### SPECIFICATIONS

### POWER UNIT:

W-348Water-cooled V-8
Valve Operation Pushrod ohy
Bore & Stroke 4.125 x 3.25 in
$(104.7 \times 82.5 \text{ mm})$
Stroke/Bore Ratio0.79/1
Displacement 348 cu in (5701 cc)
Compressed Ratio10.5/1 (usually 111/4)
Carburetion by One Rochester quad
Max. Power
(usually 320)
Max. Torque 347 lbs-ft @ 3600 rpm
( II 2FO)

Max. Torque	(usually 320) .347 lbs-ft @ 3600 rpm
•	(usually 358)
DRIVE TRAIN:	
Transmission ratios	
test car	optional ratio
I2.20	(2.47)
II	(1.53)
III1.31	(1.00)
IV1.00	
Final drive ratio3.55	(3.08, 3.36, 3.70)
Axle torque taken by up	per and lower control arm
CHASSIS:	
	tion rails and front and Open rear cross members
Wheelbase	.119 in
Tread, front and rear	. 60.3. 5.93 in
Front Suspension	.Independent, unequa wishbones, coil springs anti-roll bar. Spring rat @ wheel 129 lbs/in (90 stock)
	Rigid axle, upper and lower control arms, coi springs. Spring rate @ wheel 175 lbs/in (101 stock)
Shock absorbers	. Delco tubular
Steering type	. Saginaw semi-reversible recirculating ball
Steering wheel turns L to L	And the
Turning diameter,	. 9.0
curb to curb	40 8 ft
	. Moraine sintered metallic
Brake lining area (net)	
Tire size	



Zora Arkus-Duntov credits Ed Cole. Chevy's General Manager, with the progress made in handling. Why? Because he is interested in driving as well as making cars.

### GENERAL:

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Height	56 in
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