

Test Report:

PICTURE a bright red 1960 Chevrolet Impala four-door with all the comforts of home—and yet with acceleration and handling not too far behind a standard Corvette. That's a thumbnail sketch of Phil Chisholm's "police" Chevy. This Alma, Michigan, Chevy enthusiast wasn't satisfied with the normal bread-and-butter options. He knew there was more available if you were willing to search it out and wait for a special order to come through from the factory. Result: By spending a couple hours with the '60 Chevrolet spec tables and parts book he nailed down an option combination that looks awfully hard to beat for the man who wants performance and handling in a plush package with automatic transmission. (And, to boot, it falls in a favorable class at the drag strip!)

First off, the most potent '60 Chevrolet

CHEVY'S HOT POLICE SPECIAL

BY ROGER HUNTINGTON

passenger car engine available with an automatic transmission is the 305-hp police version on the big 348-cubic inch block, which is *only* available in a package with a beefed-up Powerglide (can't be ordered with stick shift). With this high-torque engine Phil felt safe in going to a 3.55-to-1 Positraction rear end as the best compromise for street and highway—since he drives about 30,000 miles a year. (The 283-cubic-inch block would've wanted a 3.70 or 4.11 rear end.) Phil definitely wanted the Impala body styling, but the heavy-duty police chassis kit can only be ordered on Biscayne and Bel Air sedans and Brookwood four-door wagons. (This consists of stiffer springs and shocks, hard suspension bushings, heavy-duty steering knuckles and wheel hubs, heavy-duty roller wheel bearings, sintered metallic brake linings and 15-inch wheels. Not available with o.d., Positraction or wheel discs. Order, LPO 1108; price, \$49.50. So Phil settled for the heavy-duty springs and shocks, which can be ordered separately, factory installed.

Result: A big car that accelerates like crazy, corners and handles like a thoroughbred—and yet is easy to look at, easy to ride in, and just makes pretty satisfying all-around transporta-

Surprisingly low-priced options turn the Impala into a tiger



tion. And these options didn't cost a fortune. The 305-hp engine (RPO 576) lists at \$161.40 over the standard V-8; the heavy-duty Powerglide goes for \$199.10 (same as standard P-G); the Positraction runs \$43.05; stiff front springs (LPO 1011), \$1.10; stiff rears (RPO 593), \$2.70; and the heavy-duty shocks (LPO 1030) can be ordered at no extra charge.

Incidentally, some of you may be wondering how this police engine differs from the 320- and 335-hp racing versions of the 348 block. Actually the 305 is pretty much a standard 250-hp 348 with a few major "hop-up" additions. These would include a big-port intake manifold carrying a Carter four-barrel carburetor with huge venturis (you can throw a silver dollar through the rear venturis!), high-compression 11-to-1 pistons, and mechanical lifters with a "Duntov" cam grind with lobes re-indexed and less overlap for better low-end torque. The racing engines have special header-type exhaust manifolds, aluminum bearings, dual-point distributors, light valves and dampered springs, as well as the additional carburetion, compression and cam timing.

The 305 makes a more suitable street engine. The low-end punch is better with the retarded cam, detonation and pre-

PHOTOS BY VAN NOYMAN

MOTOR LIFE TEST DATA



Test Car	<p>1960 CHEVROLET</p> <p>TEST CAR: Chevrolet Impala, with police options BODY TYPE: four-door hardtop BASE PRICE: \$2769</p>
	<p>OVERALL LENGTH: 210.8 inches OVERALL WIDTH: 80.8 inches OVERALL HEIGHT: 54.0 inches WHEELBASE: 119 inches TREAD, FRONT/REAR: 60.3 and 59.3 inches TEST WEIGHT: 4220 lbs. WEIGHT DISTRIBUTION: 52 per cent on front STEERING: 6.5 turns lock-to-lock (mechanical) TURNING CIRCLE: 40.8 ft. curb-to-curb GROUND CLEARANCE: 6 inches</p>
Maneuverability Factors	
Interior Room	<p>SEATING CAPACITY: six FRONT SEAT— HEADROOM: 37.9 inches WIDTH: 65.3 inches LEGROOM: 44.2 inches TRUNK CAPACITY: 30 cubic feet</p>
Engine & Drive Train	<p>TYPE: ohv V-8 DISPLACEMENT: 348 cubic inches BORE & STROKE: 4.125 x 3.25 inches COMPRESSION RATIO: 11.0 to 1 CARBURETION: single Carter four-barrel HORSEPOWER: 305 @ 5600 rpm TORQUE: 350 lb.-ft. @ 3600 rpm TRANSMISSION: Powerglide two-speed torque converter (modified) REAR AXLE RATIO: 3.55</p>
Performance	<p>GAS MILEAGE: 13-15 miles per gallon ACCELERATION: 0-30 mph in 3.6 seconds, 0-45 mph in 5.8 seconds, 0-60 mph in 8.4 seconds. Standing-start 1/4 mile, 16.9 seconds, speed at 1/4 mile, 86 mph SPEEDOMETER ERROR: Indicated 30, 45 and 60 mph are actual 29.7, 44.5 and 58.7 mph respectively POWER-WEIGHT RATIO: 13.8 lbs. per horsepower HORSEPOWER PER CUBIC INCH: .88</p>

ignition problems aren't quite so rough with the slightly lower compression ratio (11-to-1 instead of 11.25), and gas mileage is considerably better with vacuum advance on the ignition. Even at that, though, Phil's overall mileage—with most of the driving on the highway—is generally 13-14 mpg, and seldom exceeds 15. (Of course he doesn't baby it either.)

But back to testing . . . Acceleration performance was very satisfactory—really “neck-snapping,” in fact. When you tromp it from a standing start the car jumps off the line with a sudden surge of low-end torque—but with a minimum of nose-lifting, due to the anti-squat linkage in the rear suspension. Actually, though, you have to apply the brakes and rev the engine up around 2,000 rpm to get a static torque on the rear wheels to really get off the line. We used this technique to get our 0-30 mph time of 3.6 secs. A normal full-throttle start in Drive would take about half a second longer. But between 30 and 60 mph, when that terrific mid-range torque takes over, you really scream. It takes only 4.8 secs. to get from 30 to 60, giving an overall 0-60 time of 8.4. I've always thought the sensation of acceleration was greatly affected by other senses like sound and sight. This police Chev scores high here. Just to see that front end heel over several degrees to the right from engine torque reaction does something to you!

The standing-start quarter-mile c.t. of 16.9 secs. and terminal speed of 86 mph are excellent for a road machine these days, though maybe not impressive for an A/Stock job on the drag strip. A set of 4.56-to-1 rear end gears would do wonders here. You'd not only get that vital 0-30 mph down around 3 seconds flat, but your rpm at the finish line come up in the neighborhood of 5,000 to give better acceleration over the last section of the course.

Top speed? Academic question these days . . . but the car should be good for an easy 120-125 mph as she stands. It would certainly take something awfully special to outrun a police car with this engine!

The acceleration figures we got were achieved with a test gross weight of 4590 lbs. The curb weight of 4220 was a bit of a surprise. This is no stripped model by any means; but Chevys are certainly not light cars anymore either. It should also be mentioned that the car was tested in absolutely *factory* tune—that is, the ignition advance, point dwell, carb adjustments, etc. were as recommended by the factory. This is the performance you could expect from a showroom car in proper tune. And, of course, the figures could be bettered who knows how much for the drag strip with legal stock class options—like 4.56-to-1 rear end gears, reworked spark advance curve, exhaust headers, removing the air cleaner, etc. These changes might whack over a second off the 0-60 time and quarter-mile c.t. Since this car falls right in the top of the A/Stock class it should be a pretty good bet for the strip.

It was necessary to hold the Powerglide in Low Range with the hand control to get optimum acceleration figures. This heavy-duty police version is supposed to up-shift from low to direct (with full throttle) at 3400 rpm, instead of the standard 4700-rpm shift point. Phil's wouldn't shift above 4900, despite several hours work with every possible linkage adjustment.

In addition to the regular stop-watch tests I ran a complete check with a Bowmonk accelerometer to determine the true horsepower curve. We came up with a peak power output at the flywheel of 255 hp at 4800 rpm. Compare this with the advertised 305 hp at 5600. This engine wouldn't hit 5600, at least not comfortably. The valves started to float at 3400—and at 5600 the accelerometer needle was dropping so fast it was impossible to catch a reliable reading. I figure the true engine output in this range, with the valves partially floating, was somewhere between 150 and 175 hp. But it wasn't valve float that caused the power to peak early. Even at 5200 rpm the hp was down to 240. Apparently Chevrolet is overrating the peak rpm of this modified Duntov cam combination.

On the other hand, mid-speed torque was excellent. Our figure



DECEIVING stock appearance of the test Chevy does not begin to tell the story of its hot performance capabilities. Driver Huntington found it a real neck-snapper in the acceleration department.

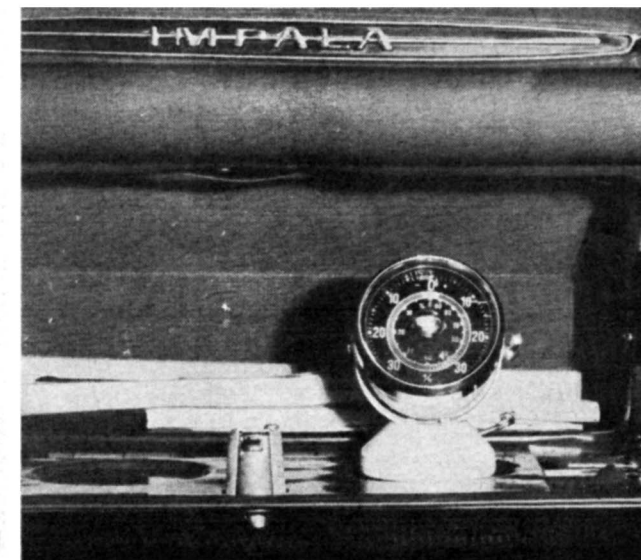
of 340 lbs.-feet at 3200 rpm compares very well with the advertised 350 lbs.-ft at 3600. Generally we find the true torque as far below the advertised figure, percentage-wise, as the true horsepower. But this engine certainly packed a wallop in the medium rpm range. It was especially useful when “kicking down” to pass a slower car on a two-lane highway. You squirt around them like a Corvette.

And, speaking of Corvette, the general “roadability” of Phil's police Impala isn't bad at all. He had been running a complete police chassis on his '59 Chev; but didn't feel the heavy-duty bearings, bushings, hubs, etc. were important enough to his purposes to warrant the cost of installing the stuff himself. (This would be much higher than the factory-installed optional cost because he'd have to buy the parts retail and dispose of the standard parts. Whenever possible *order the equipment you want when you order the car.*) Also the sintered metallic brake linings, though there is absolutely no fade with them even under very rough conditions—they *do* require quite heavy pedal pressures, and there is some unevenness when cold. Phil finds the standard linings adequate for normal street and highway use. (We did, however, notice considerable brake fade during the stop-and-go phase of the performance testing.)

The heavy-duty springs and shocks seem to improve handling as compared with the standard parts. Body roll angle in a given turn is significantly reduced, which—in turn—reduces the camber tilt of the front wheels and gives them a better bite. (Two or three degrees can make a difference here.) The stiffer shocks are most noticeable in rough going; they keep the wheels on the ground better, and help prevent the violent “bottoming” that can throw a car all over the road. Also a car that is driven much on real rough roads will completely wear out a set of soft shocks in a short time. All this hurts the ride to some extent, but probably not as much as you think. I can heartily recommend a moderate increase in spring and shock stiffness on most cars, especially shock stiffness.

So that's the 1960 police Impala. Smooth, quiet, plushy, push-button features when you want them . . . but a tiger when you tromp the pedal or swing the corners. ●

HOPPED-UP engine of the Special includes big-port intake manifold with a Carter four-barrel carburetor that has huge venturis, high-compression pistons, mechanical lifters, Duntov cam grind.



ACCELEROMETER was used during the test period to determine true horsepower curve. The little instrument came up with findings that did not always jibe with the reported potential of the car.

