

**THE POLICE
HOW-TO
GUIDES**

**HOW TO USE
POLICE VEHICLE TESTS**

by Paul Clinton
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HOW YOU USE POLICE VEHICLE TESTS

“We use the knowledge we gain at the test site to help us make educated, informed decisions on vehicles we’re going to purchase”



Ron Derderian's research toward choosing a new patrol car for Beverly Hills (Calif.) Police officers began with the police vehicle testing by the Michigan State Police and the Los Angeles County Sheriff's Department.

Derderian, a special projects officer, says the first step in making the selection of the department's new car was to attend the LASD's annual testing. Visiting the test site was invaluable, Derderian says. "We use the knowledge we gain at the test site as a guide to help us make educated, informed decisions on what sort of vehicles we're going to purchase," he explains.

Further east, Sgt. Larry Poleski, the Grand Rapids (Mich.) Police Department's fleet manager, attended the Michigan State Police's evaluation of pursuit-rated vehicles. Like Derdarian, Poleski views the tests and subsequent report as a starting point for selecting a new patrol car.

"The state police emphasize a lot of performance-driven aspects for their vehicles," Poleski says. "State troopers are looking at acceleration for highway driving. We look at a lot of different things."

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Both Poleski and Derderian are preparing recommendations to higher-level commanders about the car the department should purchase—picking from a list that includes the Chevrolet Caprice PPV, Dodge Charger Police Pursuit, Ford Police Interceptor Sedan, and Ford Police Interceptor Utility.

Each of these officers must consider a wide-ranging list of criteria such as acquisition cost, performance features, ergonomic aspects, officer safety features, geographic considerations, and fuel cost estimates. The annual tests give their departments, and many others, a performance baseline for benchmarking the vehicles.

MSP vs. LASD

The agencies that test new model-year, pursuit-rated vehicles offer complementary evaluations and differing methodologies that give them equal weight among vehicle purchasers.

Each September, the MSP's Precision Driving Unit kicks off the vehicle evaluation season by testing sedans, SUVs, and motorcycles for acceleration, top speed, braking, ergonomics, and high-speed handling. The trials usually run for five days at the Chrysler Proving Grounds in Chelsea and the Grattan Raceway in Belding. The raceway is just 25 miles northeast of Grand Rapids.

A month later, LASD deputies and Los Angeles Police Department officers test acceleration, braking, and high-speed handling on an interior track at the Auto Club Speedway in Fontana. A city pursuit course is also set up at the Los Angeles County Fairgrounds in Pomona.

Both agencies have been testing police vehicles since 1974. The LASD took over from the LAPD, which began testing police vehicles in 1956.

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The Michigan testing report includes a section that helps agencies choose a patrol vehicle

The Michigan and Southern California tests use a slightly different protocol. In Michigan, four troopers drive each car eight laps to measure acceleration and top speed. The cars are allowed a "cooling off" period between drivers. Later, the vehicles undergo braking tests that measure a progressive stopping distance from 60 mph.

In Southern California, four police drivers also take the cars out for laps of eight. However, drivers must switch in less than five minutes, which keeps the cars running hot for 32 laps. After this "heat soak," the vehicles are then immediately taken for brake testing. As a result, rotors have been known to catch fire at these punishing tests. These tests also include a panic stop test, where drivers mash the brakes from 60 mph to a dead stop.

The LASD report also includes fuel economy ratings that provide a more realistic estimate for a duty cycle than the retail estimates from the Environmental Protection Agency. Four deputies drive the vehicles 100 miles each on a city course that includes hilly terrain, flatlands, and traffic gridlock.

The Michigan testing report includes a section that helps agencies choose a patrol vehicle. The LASD report offers subjective comments from officers about driving the vehicles.

And the agencies use different technologies to capture their measurements. In Michigan, optical sensors attached to the vehicles pick up speed times, while in Southern California a GPS tracker box acquires data from inside the car.

Looking for Balance

Test results from the new crop of patrol cars have validated the automakers' efforts to deliver a post-Crown Vic-era car that provides officers with plenty of punch, high-speed capability, electronic stabilization, torque management; and with cockpits designed for officers. At this point, the initial shouts for more Ford Crown Vics have fallen to a low murmur.

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“We don’t need a vehicle to reach speeds over 100 mph, we’re more concerned with braking and handling”

With plenty of quality choices, agencies are weighing all the options before choosing their new patrol cars.

"It's like shooting, where we look for speed and accuracy," says Officer James McCarthy of the Gardena (Calif.) Police Department. "We're looking for the perfect balance."

On Oct. 18, McCarthy attended Ford's ride-and-drive event at the LASD testing, and got behind the wheel of a pair of all-wheel-drive Ford Police Interceptor sedans—the 3.7-liter V-6 and the 3.5-liter V-6 twin turbo. He came away impressed.

Attending the testing often kicks off an agency's selection process, but agencies also have to pick cars that will perform best in their jurisdiction.

With a population of 35,000 spread over 5.5 square miles Beverly Hills remains an affluent tight-knit community with 125 sworn officers and 60 vehicles. Fifty patrol officers drive 30 marked units.

Because much of Beverly Hills features hills, mountains, and narrow roads, the department's officers need a V-8 powered rear-wheel-drive car for quick response from the southern flatlands into the hills, Derderian says. The highest posted speed limit is 35 mph.

"We don't need a vehicle to reach speeds of over 100 mph," Derderian says. "We're more concerned with braking and handling."

Derderian has introduced Chevy's V-8 Caprice into the Beverly Hills PD fleet of Ford CVPIs and Dodge Chargers. Detectives have begun evaluating the car and, assuming there are no serious problems, Derderian will begin purchasing more for patrol officers.

While top speed and acceleration are important performance factors, agencies have begun looking closer at more practical features such as winter weather handling and whether police equipment can be repurposed from the retiring Crown Vics.

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In Grand Rapids, Poleski has given serious consideration to Ford's new vehicles because they offer an all-wheel-drive powertrain ideally suited to driving in icy or snowy conditions. The 2014 Dodge Charger Pursuit will also offer an all-wheel-drive option.

"That's one of the considerations in Michigan, because we get hit with some heavy weather here," he says. "We have had to rent Hummers to do patrol duties."

About 190,000 people live in Grand Rapids, which is overseen by 290 sworn officers. About 60 vehicles make up the marked enforcement vehicles.

Poleski says his trip to the MSP vehicle testing gave him important insights into the practical aspects of the vehicles so he could make a better informed choice that meets the needs of Grand Rapids patrol officers and fits into the agency's budget.

"We do look at the performance," Poleski says. "We have other considerations too such as visibility and ergonomics. We have a lot of equipment that goes into the cars. We're getting more equipment in our vehicles, and the cars are getting smaller." Much of the equipment should transfer over once the agency purchases new trunk racks. The partitions will have to be replaced regardless of the vehicle chosen.

Local Factors

Local dealerships can play an important role in the vehicle choices of smaller agencies because they can provide a test vehicle and maintenance support. Police Chief Patrick Callahan, who serves the small town of Hector, Minn., purchased a Chevy Caprice after evaluating it at a local dealership.

"For the most part, it might come down to what works best maintenance wise," Callahan says. "We have a Chevy dealer in town. We don't have staff to maintain these vehicles so we need to rely on a dealership."

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"It's not just speed, it's the space in the car, the utilization of the trunk, and the installation of the equipment"

Callahan says he does read the testing reports as well.

Neal Umberger, the Lexington (Ky.) Police Department's police fleet liaison, attended the Michigan testing in 2011. The agency is now evaluating three Ford Police Interceptor test vehicles.

"It's not just speed, it's the space in the car, the utilization of the trunk, and the installation of the equipment," he says. "All of those factors go into choosing a vehicle. [The testing has] some influence on us, but it has a lot more to do with our budget."

Motorcycle Evaluation

Police motorcycle testing in Michigan and Southern California also draws the attention of motor units as an important benchmark for new bikes.

At the end of the day, agencies purchasing motorcycles often weigh maintenance cost as their top purchase factor, says Sgt. Brad Blakely, an Orange County (Calif.) Sheriff's Department motor officer for 13 years.

"With law enforcement, we're looking at clutches," Blakely says. "It costs \$1,600-\$2,000 to replace a BMW clutch. With the Honda, the price of a clutch is \$600-\$800. On the Kawasaki, it was supposed to be even cheaper because of the way the engine was designed. The biggest thing we look at is the overall cost of the bike."

Asking for officer feedback can be perilous because motor officers offer subjective, personal opinions about the cycles. Acceleration rate can become a zero-sum game, because of the hazards of pursuing speed violators at high speeds on two wheels.

"The faster you go, the greater the chance is of getting hurt or killed," Blakely says. "Everybody's got to evaluate the situation they're in and ask, 'Do I need to back out and get an airship or patrol unit to take over?'"