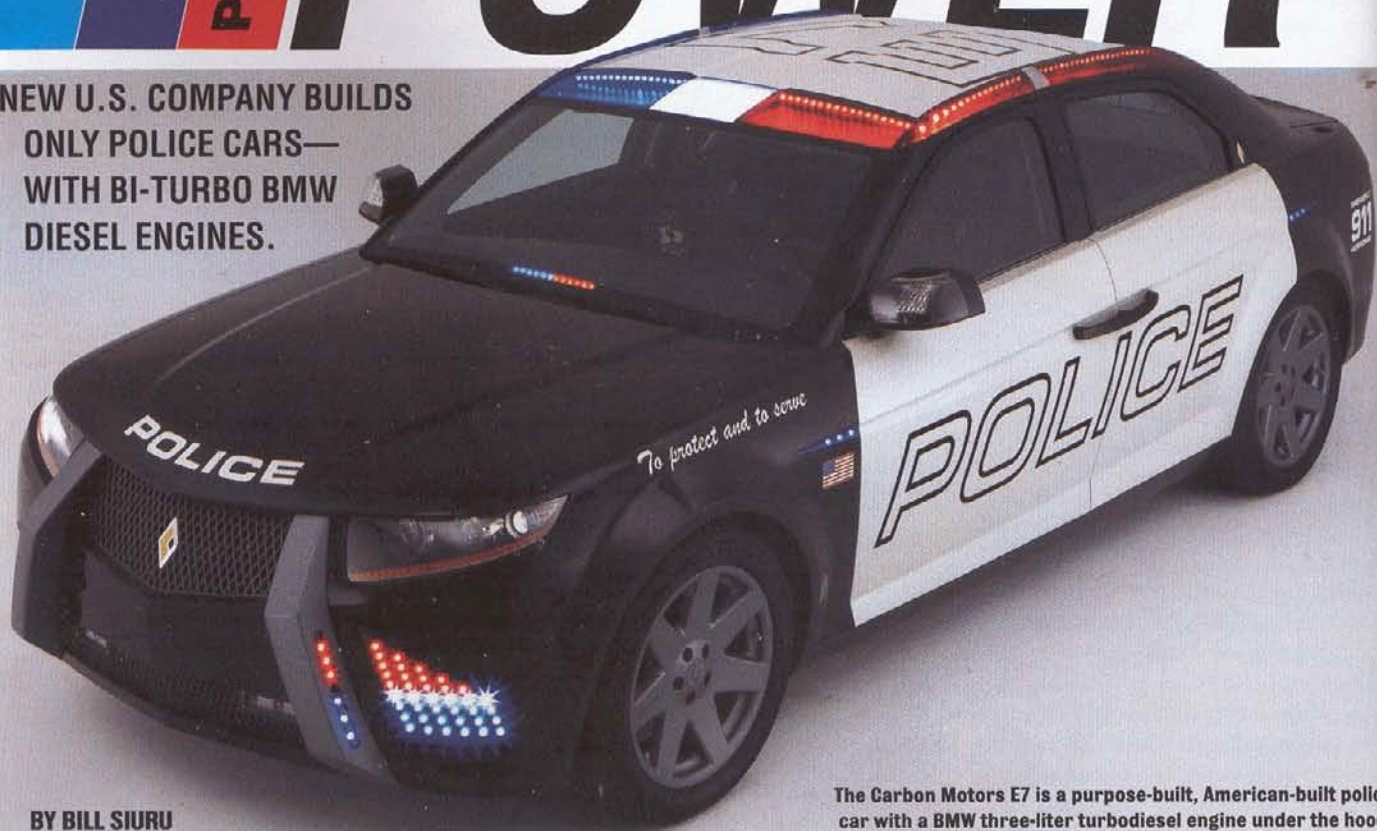


POLICE **POWER**

A NEW U.S. COMPANY BUILDS ONLY POLICE CARS— WITH BI-TURBO BMW DIESEL ENGINES.



BY BILL SIURU

The Carbon Motors E7 is a purpose-built, American-built police car with a BMW three-liter turbodiesel engine under the hood.

Ever since police started using cars at the very beginning of the 20th Century, cop cars usually have been mainstream vehicles upfitted with “police packages.” Upgrades include beefed-up chassis, suspensions, electric systems, and brakes for much more demanding police duty. Police cars were often powered by more potent engines that were not available to civilians, but needed for pursuing speeders and bad guys.

A new company, Carbon Motors Corp., is the first to seriously develop a vehicle specifically for the law-enforcement community—and BMW is a big part of the story. While law-enforcement agencies give priority to “Buy American,” there was no North American-built, state-of-the-art clean-diesel engine suitable for severe law-enforcement duty. The purpose-built E7, also called the Machine, will be powered by a BMW powertrain, the 3.0-liter in-line bi-turbo diesel M57 engine used in the BMW X5 xDrive35d and 335d. In addition to the engine, BMW will supply the engine’s cooling and exhaust systems, as well as the multi-speed automatic transmission.



Designed from scratch for law-enforcement duty means police electronics and other gear can be neatly integrated in the E7.

Rear-hinged doors on the E7 will help when loading in the bad guys.



was sold in the U.S. as the excellent-performing Pontiac G8, making it easier for the Caprice PPV to meet U.S. environmental and safety standards. This same platform is also used in the Camaro.

Like the G8, power will come from a six-liter V8 rated at 355 horsepower and featuring Active Fuel Management. With this variable-displacement technology, half of the cylinders are shut down under light load to conserve fuel.

Ford's new Police Interceptor sedan will be manufactured at Ford's Chicago assembly plant. GM will probably import the platform for the Caprice PPV from Australia, but it could be built in the Oshawa, Ontario, plant where the Camaro, sharing the Zeta platform with the Commodore, is built.

It will be interesting to see if the law-enforcement market can support four competitors offering police vehicles: Carbon Motors, Chevrolet, Dodge, and Ford. At about 60,000 to 75,000 units annually, plus use by other emergency services and exports, law-enforcement vehicles make up less than half of one percent of the U.S. automotive market. ♦



Fortunately for GM, it still builds muscular V8s "down under." The Caprice PPV is a close relative of the now-defunct Pontiac G8.



The "office" of the Chevrolet Caprice PPV differs little from its civilian counterpart.

GENERAL MOTORS CORP.

WALKIN' THE WALK, TALKIN' THE TALK, DRIVIN' THE COP CAR

In the four years I owned my 1989 Chevrolet Caprice patrol car, I learned a lot of things—about the car and about other people. The first surprise was how well it worked; even with 260,000 miles on it, it used little oil and was still quite fast. Out in the country, the handling was neutral, with little body roll and excellent brakes. On the highway, it was quiet and solid. Some years ago I took the State Police high-speed driving school, and the car reminded me how surprised I'd been by the Caprice's composure back then.

My \$800 car was also cheap and easy to maintain. A brake job at my local taxi-repair shop was \$221, including front rotors and calipers; a new heater fan was \$35 and took about ten minutes to install. The hoses were green "lifetime" silicone and supposedly lasted forever.

Oddly, it was never considered my car at the repair shop. It had been bought from the Portland Police Department as a retirement gift for a fondly regarded Broadway Cab dispatcher, who was planning to do medical deliveries with it before she sold it to me. Whenever I collected it from the shop, the tag always read "Dottie's Car."

A \$495 repaint in white brought it back to service appearance, except that the model had been out of use for a few years. Still, as it sat in my driveway, facing outwards with the push bar, spotlight, and antennas, it was doing its bit for the neighborhood. Anybody coming to our

suburban hill had to pass my place. Did a retired cop live there? Who wants to find out? I never worried about my car being stolen.

There were a few surprises, however. A few of my friends of both sexes hated it with surprising vehemence and didn't want to ride in it. It was as if I'd announced I'd just picked up weekend work with the Gestapo. The first time I filled it up was an eye-opener, too, with its 30-gallon tank. As I recall, it got about 15 mpg around town and 20 on the highway.

I found that most drivers gave me a little extra room—the profile of any police car somehow sticks in the mind—but then, about 20% of them shouldn't be out there at all. They'd drift across in front of me without signaling, talking on their cell phones or

applying makeup. If I honked, they'd get flustered, which was just about as dangerous.

Eventually I sold it because a friend who is a public defender wanted it. I asked him if it would upset his clientele, and he laughed. "They'll never notice," he said. "I'll ask them where they were the day before, when they were supposed to meet me, and they'll say, 'I was at the courthouse looking for you,' and I tell them, 'No, those are the other guys.'"

I guess the other reason I sold it was because I felt I'd had it long enough. There's a point when driving a police car becomes kind of creepy. And even if you aren't a wannabe, do you want to be taken for one? What's next: black T-shirts, a buzz cut, an NYPD baseball cap, and a Doberman named Satan?—*Paul Duchene*



PAUL DUCHENE

Carbon Motors recently gave BMW an order for over 240,000 engines. It optimistically plans an annual production volume of around 10,000 to 80,000 E7s when production gets rolling.

This is not the first time BMW has supplied a diesel to an American automobile manufacturer. BMW supplied the 2.4-liter six-cylinder turbodiesel from the BMW 524td for the Lincoln Continental and Continental Mark VII in 1984 and 1985. Only a few hundred Lincolns were fitted with the M21 turbodiesel. As most of us know, compared to some contemporary diesels—read GM—the M21 was an excellent engine, it just wasn't marketed seriously by Ford.

Besides offering an award-winning engine, BMW's powertrain is already EPA-certified, eliminating the need for expensive testing, a major hurdle for a small-volume automobile manufacturer. The BMW M57TU2D30 that meets U.S. emissions requirements makes 265 horsepower and 425 pound-feet of torque. While Carbon Motors has not released detailed performance specifications for the E7, it has said that a bi-turbo diesel engine in the E7 with 420 pound-feet of torque would give a 155-mph top speed and a 0-to-60 mph acceleration time of 6.5 seconds.

According to Carbon Motors, the E7's clean diesel will deliver a 30% to 40% improvement in fuel economy and a corresponding decrease in CO₂ emissions compared to engines used in current police vehicles. While this diesel-powered E7 will be more fuel-efficient, it could also be more expensive to buy than current police cruisers. Reduced fuel consumption should partially compensate for the higher investment cost. Also, the E7 is designed for a 275,000-mile lifetime, meaning a longer amortization period. Typically, police cars are retired when they rack up from 60,000 to 100,000 miles; then they are auctioned off, with a large number going on to a new, long life as taxicabs.

While Carbon Motors has not announced the price, the target is a price equivalent to what law-enforcement agencies are now paying for a vehicle plus its aftermarket equipment. Upfitting a standard vehicle into a fully equipped police car can be as much, or even more, than the MSRP of the vehicle itself.

The E7 was designed with inputs from the Carbon Council, an online advisory group comprised of retired and active-duty law-enforcement and government personnel. The E7 uses an aluminum space frame with 75-mph rear-impact crash capability. The front doors and dash panel feature ballistic protection. Other crash-avoidance technology includes stability control and anti-lock brakes. There are integrated push

bumpers and integrated shotgun mounts. The rear-hinged "coach" rear doors make it easier to load and unload bad guys into the hoseable rear compartment. The officer can continually monitor rear-seat occupants via video and audio surveillance equipment.

Designed from scratch means law-enforcement-specific equipment can be seamlessly integrated into the vehicle, not added after the car is already assembled. The cockpit, which looks much like a modern fighter cockpit, features a fifteen-inch touch-screen computer and a head-up display above the standard instrument cluster. Other electronics include a weapons-of-mass-destruction threat detector, 360-degree exterior surveillance capability, forward-looking infrared system (FLIR), and an automatic license-plate recognition system.

Carbon Motors is both the original-equipment manufacturer and retailer. There will be no dealers, since cars will be distributed directly from the factory. Carbon Motors will build the E7 in Connersville, Indiana, and is already hiring. Cars will be built to customer order and only after an order has been placed. So far, some 350 law-enforcement agencies in 48 states have reserved over 13,000 production slots for E7s.

The Carbon Motors' E7 will have some stiff competition from new police cars from both Ford and Chevrolet, as well as the Dodge Charger Police. Both Ford and General Motors have announced that they will be offering all-new, purpose-built police vehicles in 2011. On duty since

2005, the Charger Police, powered by a 5.7-liter V8 engine, has proved to be a capable and popular patrol and pursuit car.

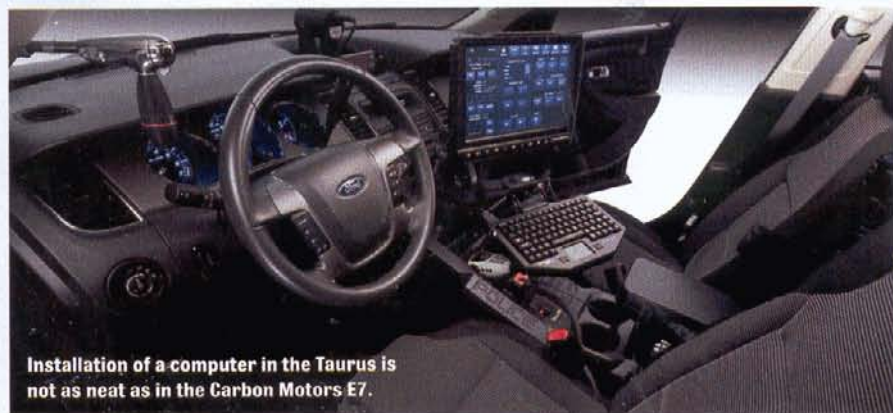
The Ford Crown Victoria Police Interceptor has been the most popular police car ever since Chevrolet stopped building its full-size Caprice 9C1 police car in 1996. Cops and law-enforcement agencies love full-size, V8-powered, rear-wheel-drive cruisers. Full-size means more comfort for cops on their eight-hour (or more) shifts surrounded by a plethora of gear; a big trunk for even more gear; and room to carry a couple of perps to jail. Front-wheel drive often requires more expensive repairs after hitting curbs at high speeds, a frequent occurrence.

When Ford ceases production of the Ford Crown Victoria Police Interceptor in 2011, it will be seamlessly replaced by a highly ruggedized version of its new Taurus sedan. Two versions of Ford's 3.5-liter V6 engine will be available; one delivers 263 horsepower and is 25% more efficient than the 4.6-liter SOHC V8 now used in the current CVPI. A hotter, 3.5-liter EcoBoost V6 twin-turbocharged engine with direct-injection delivers 365 horsepower. Rather than RWD, all-wheel-drive will be available. According to Ford, the V6's performance is equal to or better than V8s while using less fuel.

General Motors will offer a Chevrolet Caprice PPV (Police Patrol Vehicle) with RWD and a potent V8, and in 2012, a V6 as well. In reality, the Caprice PPV is the Australian Holden Statesman, substantially revised for U.S. police-car work. A shorter version of this car, the Holden Commodore,



A sight most of us would prefer not see in our rear-view mirror: a Ford Taurus police car.



Installation of a computer in the Taurus is not as neat as in the Carbon Motors E7.

FORD MOTOR COMPANY