



**Even with over  
100,000 miles,  
this super-  
charged ex-cop  
car is nowhere  
near retirement.**

BY DON GREEN

Photos by the author

**O**kay, students, settle down and pay attention. Today we're going to discuss the phenomenon of "more bang for your buck," the process of getting the most out of your performance dollar, and we have a dandy test case for you!

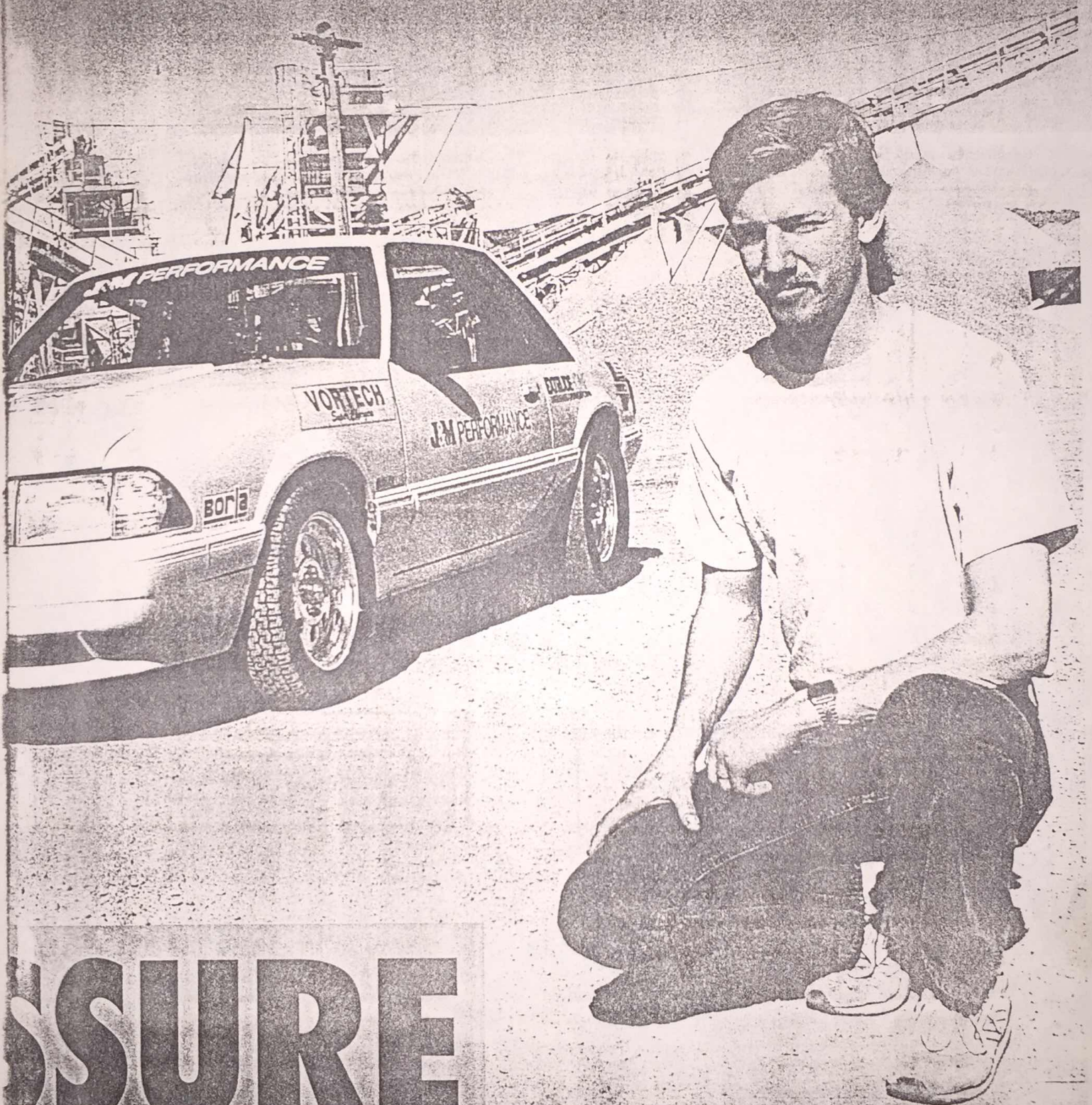
How about an '89 Mustang with 104,000 miles on it, a 302 engine that has never had the heads off, is street legal and California smog legal, and goes 11.60s at nearly 120 mph through the mufflers (and that's without nitrous). It also cost less than 10 grand to build. Sounds sort of unbelievable, huh?

Happily it's true. This month's



# POLICE PRES





# SSURE

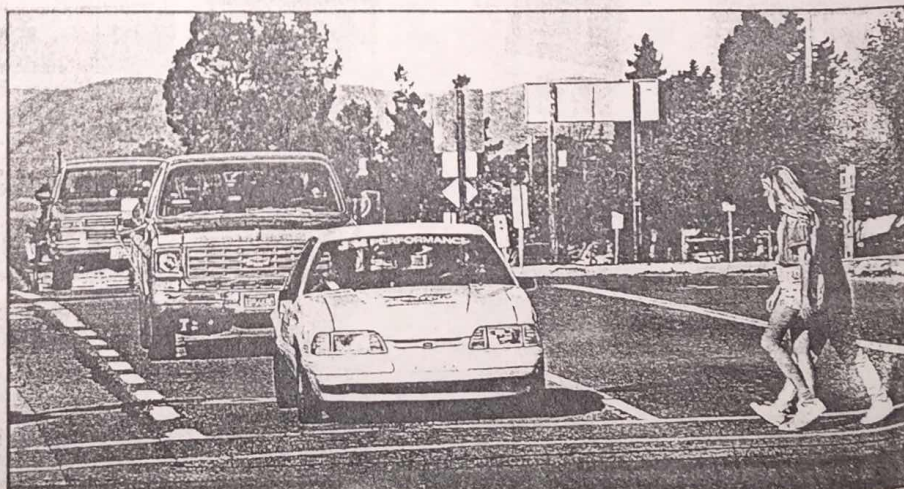
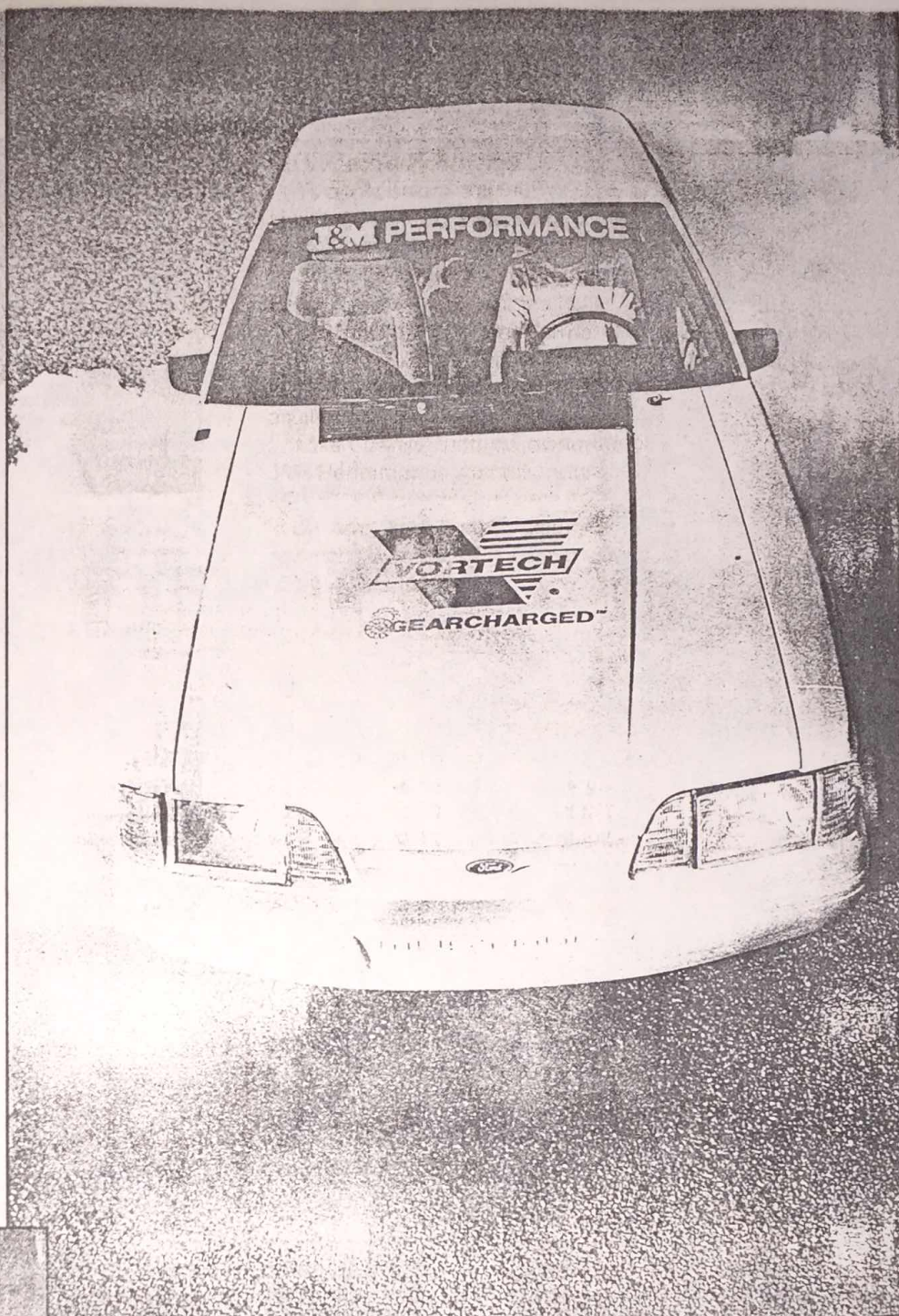


cover is the "mule," the test vehicle for J&M Performance of Santa Maria, Calif., and one of J&M's specialties is the Vortech supercharger.

To approximate the well-broken-in Mustang that a customer might approach them with, the J&M guys bought an ex-California Highway Patrol car at auction. (Actually, they've now bought three former CHP cars, since the cars turned out to be such good deals. But that's another story).

Mike Cunningham, co-owner of J&M Performance, got this now-yellow '89 Stang for just over \$5000 at auction. Like all ex-CHP cars, this one was taken out of service at about 85,000 miles, and, as a tribute to the good maintenance the cars received, the only service the car required when J&M got it was a rebuilding of the clutch pack in the limited slip rear axle.

Contrary to what many people believe, police Mustangs do not have special engines, nor are they loaded with special parts unavailable to the public. The engines are the standard 302s from the Mustang GT. All three of A&M's ex-CHP Mustangs have manual 5-speed transmissions, the normal Borg-Warner T-5 used in any civilian Mustang. Likewise, all the springs, sway bars and brakes (disc front, drum rear) are standard GT pieces. Even the engine computer is stock Mustang GT (though the '89 CHP cars like this one used the 49-state computer rather than the





California-only unit). In fact, the only special police part on the cars, once the radios and emergency lights are removed, is the specially calibrated 160-mph speedometer. In baseline testing, the ex-cop car went 14.70 at 94 mph with its stock 3.08 rear axle ratio.

The Mustang's conversion to shop test vehicle and product demonstrator is centered around the Vortech supercharger, or "gearcharger" as Vortech calls it. The Vortech is a relatively compact unit that resembles half a turbocharger (the compressor side), but is belt-driven like an air conditioning or power steering pump. It has an internal gearset that overdrives the turbine wheel at about a 4:1 ratio. Different-diameter drive pulleys offer a choice of 5, 8 or 11 pounds of boost. Because the supercharger's drive gears have straight-cut teeth, there is some gear whine, mainly at idle and low engine speeds, but overall the gearcharger is much quieter than most gear-driven camshafts.

Since Vortech has a kit specifically for the Mustang, installation is straightforward and relatively easy. The closest you come to fabricating anything is punching a hole in the side of the oil pan to return the pressurized engine oil that lubes the supercharger gears and bearings. Most people will be able to install a Vortech in one day, and certainly in one weekend.

A set of traditional long tube-style MAC headers replaced the stock exhaust manifolds to make the most of the extra air and fuel moved by the supercharger. The rest of the exhaust system is made up of a pair of 2 1/4-inch in/out catalytic converters and Borla mufflers with stock, full-length tailpipes.

To provide the extra fuel to mix with the extra air being pumped into the engine, a set of Motorsport 24-lb. injectors replaces the stock 19-lb. units, supplied by a J&M/Walbro 155-liter-per-hour fuel pump (the stock pump delivers just 88 lph). With the Vortech in its eight-pound boost configuration, a C&L 73mm mass air meter is used (a 55mm mass air unit is stock). And under boost, the fuel system is supplemented by a Cortech boost enrichment kit, a simple mechanical fuel

enrichment system that is part of the basic Vortech package. The car's computer remains absolutely stock.


Suspension changes made to the Mustang also are simple and inexpensive. J&M had front coil springs made to give the car the ride height and stiffness (or actually looseness) they wanted; the rear springs were left stock with Lakewood traction bars added. The shocks are also the stock pieces that came on the car, but with the two horizontal rear shocks of the quad-shock setup removed for extra rear tire clearance with eight-inch-wide slicks. Both the front and rear sway bars were removed to let the chassis work as much as possible on acceleration. J&M's own subframe connector kit was used to tie the front and rear suspensions together to create a stiffer chassis and help in weight transfer at the drags.

The very first time out with the supercharged stocker the car won the Fun Ford Weekend event at Bakerfield, Calif., turning a 12.21 at 111.89 mph. Not bad for a completely stock long-block engine with over 100,000 miles now on it.

But who can quit when things go so well. The guys removed the injector manifold (base and runners) and sent them to Extrude Hone in Paramount, Calif., for a high-tech porting job.

Extrude Hone has a process in which they force a thick, abrasive goo through such things as intake manifold passages, enlarging and polishing the passageways in a single process. At a cost of about \$500 for honing the two-piece injector manifold, the process certainly isn't cheap, but the claim is that the finished product is as good as the factory GT-40 intake for about \$150 less.

Told to expect about a 30-horsepower increase, the J&M guys switched to a Motorsport 65mm throttle body as recommended for a GT-40 intake and a set of 10-inch-wide Mickey Thompson slicks. Bingo. The car immediately went 11.69 at 118.89.

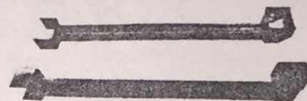
And this is from a car that, with its mild gearing, overdrive fifth gear and basically stock engine, you could drive to and from the track. Or to work. Or on vacation. Or over to see that snotty jerk with the red Camaro. 



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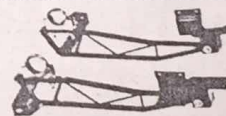
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