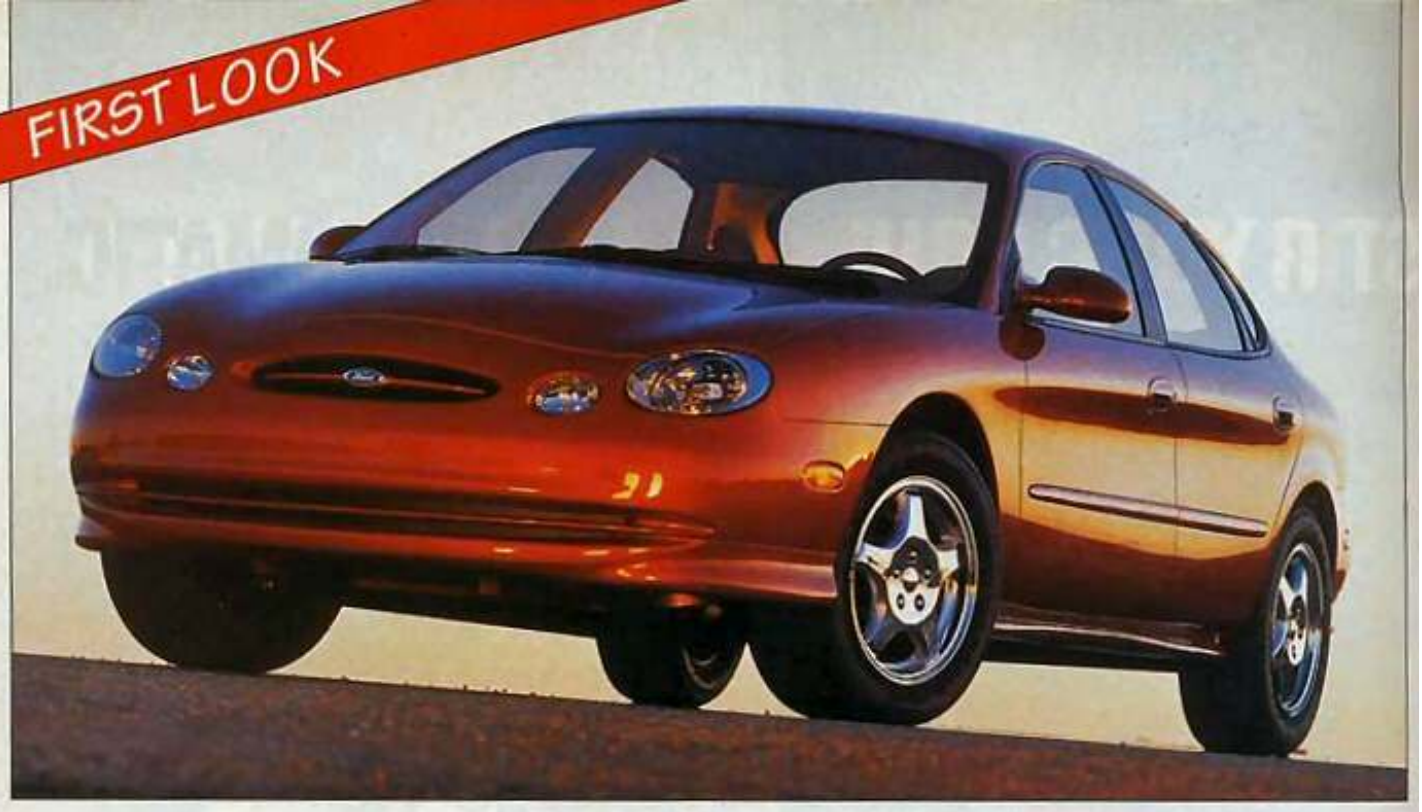
FIRST LOOK



EXCLUSIVE! by Daniel Charles Ross

'96½ FORD TAURUS SHO

WE EXPOSE THE NEXT-GENERATION HIGH-PERFORMANCE V-8 SEDAN

When the all-new '96 Ford Taurus debuted at the Detroit Auto Show in January, show-goers were suitably impressed. Completely different from its predecessor and its competition, the new Taurus' style, engineering, and impact couldn't be denied. But Ford only dropped one shoe. Where was the high-performance, super-high-output Taurus SHO?

Leave it to us to supply the other SHOe. Here's your first look inside the all-new and exciting Taurus SHO complete with a detailed technical readout. It's still a front-engine/front-drive automobile with a transverse-mounted engine, but when it goes on sale about a year from now, virtually everything else will be new.

The SHO's fresh gameplan is as exciting as its revolutionary shape; the car is powered by an all-new engine. Yamaha Motor Corporation of Japan is the designer and supplier of the 3.0-liter DOHC six provided for the current five-speed stick SHO, and also supplies the 3.2-liter DOHC six presently installed in models equipped with Ford's four-speed automatic tranny. Yamaha will continue its important role, but with greater Ford collaboration than ever: The new engine is based on the successful Duratec 2.5-liter V-6 built in Ford's Cleveland Engine Plant #2.

The Taurus SHO's new heart is not only larger, but boasts two more cylinders. It's a 60-degree V-8 displacing 3.4 liters, with chain-driven dual overhead cams and four valves per cylinder (that's 32 total, for those of us who can't balance our checkbooks) utilizing aluminum bucket tappets. Interestingly, a crank-driven, counter-rotating balance shaft nestles in the vee between cylinder banks to cancel vibrations caused by the engine's offset crankpins (the crank-driven power-steering pump is placed there as well).

This jeweler's eight-cylinder shares several characteristics with the modular 2.5-liter V-6, including the overhead-cam and valve arrangement, the 82.4-millimeter bore, the 79.5-millimeter stroke, the bore spacing, and the 10:1 compression ratio. Reverse-flow cooling (such as pioneered by the Corvette LT1) sends coolant to the cylinder heads, then to the block, then back to the radiator. This engine will be the first Ford powerplant to use a high-voltage coil-on-plug distributorless ignition system and the highly sophisticated EEC-V (electronic engine control) module. An Aisin 80-millimeter throttle body feeds air to eight cast-aluminum intake runners—half the number of the previous-generation engine. An electric intake manifold runner control opens secondary port throttles above 4000 rpm to gain additional breathing capability and maximize both low-end torque and high-rpm horsepower.

Contrary to initial missives from the rumor mill, the new eight-cylinder won't be assembled in Cleveland. Aluminum engine blocks and cylinder heads will be cast at Ford's Windsor, Ontario, plant using a patented Cosworth process. Powdered-metal connecting rods also will be manufactured there. The raw castings will travel to Japan for machining and final assembly, then return for a starring role in the SHO. The engines utilize a rear-mounted water pump powered by a rear-end accessory drive driven from the left side of the forward-bank intake cam. The front-end accessory drive powers the alternator, air-conditioning compressor, and power-steering pump via a single serpentine belt with automatic tensioner and three idler pulleys.

The air conditioner now uses a scroll-type compressor for durability in sustained high-rpm operations.

Despite the addition of two cylinders, the new engine's power numbers are in the same ballpark as those produced by current SHO engines. The 3.2-liter in our recently retired SHOmatic long-term test car produced 220 horsepower at 6200 rpm and 215 pound-feet of torque at 4800 rpm; the V-8 will provide 225 horsepower at 6200 rpm and 225 pound-feet of torque at 4800 rpm. Our long-termer recorded a 0-60 time of 7.5 seconds and a quarter-mile run of 15.4 seconds at 88.9 mph—decent numbers we expect will be similar to those of the 500-pound heavier '96 SHO. However, the added smoothness of the V-8 should improve noise/vibration/harshness levels and overall driveability.

In a major break from current SHO thinking, Ford won't offer a manual transaxle in the '96 model. Instead, the current AX4S four-speed automatic will be replaced with the AX4N auto-shifter used in the current 3.0-liter Taurus (complete with the same first through fourth gear ratios), but with a change in final-drive ratio from 2.33:1 to 3.77:1. Struts for the SHO will feature a "semiactive" Fichtel & Sachs system, augmented by ZF rack-and-pinion power steering. While non-SHO Tauruses and Mercury Sables will be shod with General Tire rubber, the SHO will ride on Goodyear Eagle 225/60VR16 tires.

Externally, the new SHO differs only subtly from the '96 Taurus. In engineer jargon, the Taurus is a "bottom-breather" (it takes in air from underneath the front fascia), and the SHO's below-bumper intakes are slightly modified for the high-performance car's extra cooling needs. A small stylistic alteration, a horizontal rib, is added to the oval center opening. The primary exterior cue that this is the next-generation hi-po Taurus is the embossed, body-color S-H-O on the left rear fascia.

Inside, power-operated performance bucket seats should provide ferocious grip in the turns courtesy of the adjustable upper-body bolsters. The steering wheel will be thicker than that installed in base cars, and other noticeable differences will include a speedometer with a more impressive upper register.

The '96 Taurus SHO is clearly a fully refined and exceptional car—now, apparently remade for a more sophisticated role in a European tradition. From all appearances, it should be a world-class high-performance automobile, one we're eager test against the best the world has to offer. MT

Body type: 4-door, 5-passenger
Drivetrain: Front engine, front drive
Curb weight, lb: 3750 (est.)
Wheelbase, in./mm: 108.5/2756
Engine: 3.4-liter V-8 DOHC, 4 valves/cylinder
Horsepower, hp @ rpm: 225 @ 6200
Torque, lb-ft @ rpm: 225 @ 4800
Transmission: 4-speed auto.
Brakes: Discs/discs, ABS
Est. base price: $28,600

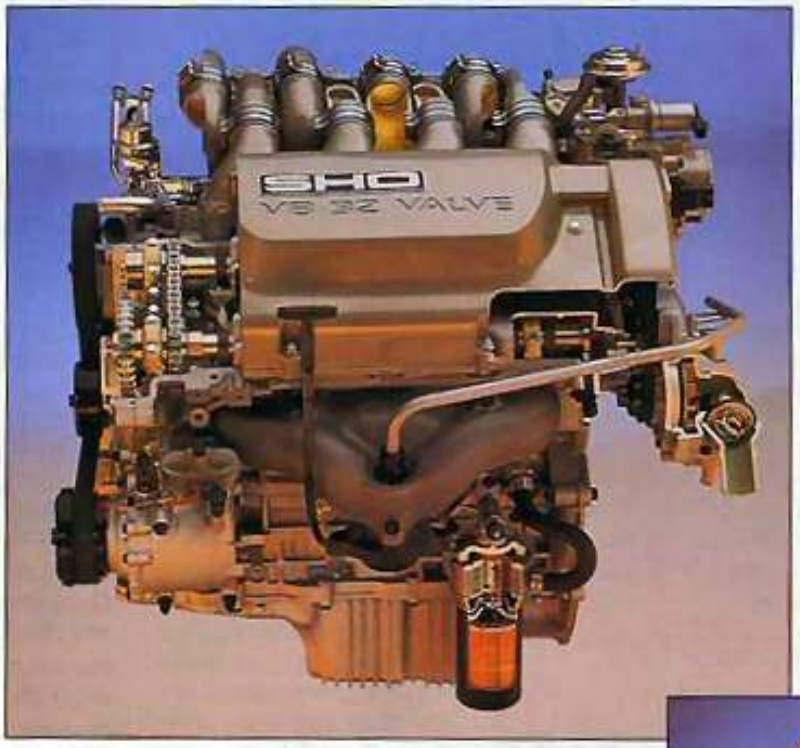
JIM DUNNE/POPULAR MECHANICS

With a few cosmetic differences, the all-new SHOpiece has the same basic exterior shape as its equally elegant regular-production brother. The futuristic interior sets a standard for ergonomics, clustering all of the climate and entertainment controls in a single center pod. Under the hood is an all-new 3.4-liter DOHC V-8 producing about the same output as today's six.

Taurus SHO Engine Close Up

Ford offered the first close look at the all-new '96 Taurus SHO 3.4-liter DOHC 32-valve V-8 when the engine was shown on a stand at the New York Auto Show.

As reported in our May issue, the SHO V-8 is a close relative of the 2.5-liter Duratec V-6 found in the Contour/Mystique. The all-aluminum block for the SHO engine will be cast using a Cosworth process at Ford's Windsor, Ontario, casting plant, and then will be shipped to Yamaha in Japan for final machining and assembly. The completed engines will then be shipped to Ford's Atlanta assembly plant for installation into the Taurus. This continues Ford's SHO-production partnership with Yamaha, dating back to the debut of the current V-6-powered SHO in 1988.



Sharing its 82.4-millimeter bore and 79.5-millimeter stroke with the Duratec V-6, the four camshafts on the SHO engine are driven by a silent primary chain and two secondary chains. A counter-rotating balance shaft in the block ensures smooth operation for the inherently unstable 60-degree V-8 layout. Individually cast aluminum intake runners are tied to an electric Intake Manifold Runner Control (IMRC), which opens a secondary port for better respiration at engine speeds above 3500 rpm. To maintain the compact design, many engine accessories, including the power-steering pump, nest between the cylinder banks and are driven by a single serpentine belt. Unique to the SHO engine is Ford's first use of reverse-flow cooling, which sends cool water to the heads and then to the block. It's also the first Ford engine to use coil-on-plug ignition.

Though the final ratings aren't in, Ford predicts the SHO engine will knock out between 225 and 230 horsepower at 6000 rpm, and 225 pound-feet of torque at 4800 rpm. And like many modern engines, it should go 100,000 miles between tuneups.

One of the most fascinating aspects of this all-new engine is its appearance on nearly the 65th anniversary of the first Ford V-8. Like the SHO engine, that first 70-horsepower "flathead" was a 60-degree V-8 and displaced only 3.6 liters.

RUMOR MILL

Flying out of the Pentastar corporation are rumors that the **Chrysler Atlantic Coupe** show car, which premiered at the North American International Auto Show in Detroit, **is headed for production**. The logic goes this way: What the Viper did for Dodge's image, the Atlantic can do for the Chrysler division's. Supposedly, preliminary investigation of its production feasibility gives the car a clean bill of health.

Along the same lines of the Atlantic's possible production, is word that the **Eagle Jazz may also appear in dealer showrooms**. This would give each Chrysler division, except Jeep, a "halo" image car of its own; Dodge has the Viper, Plymouth will have the upcoming Prowler street rod, Chrysler may have the Atlantic, and Eagle would tout the Jazz.

While many Dodge officials would like to produce the **Avenger R/T**, also shown at the Detroit show, it **probably won't appear until at least 1997**. Although the Avenger's current Mitsubishi-built 2.5-liter V-6 is capable of producing the R/T's 200 horsepower, Chrysler would rather spend its money developing a high-performance version of its own planned 2.7-liter V-6.

A supercharged version of the upcoming 4.6-liter/300-horsepower DOHC 32-valve V-8-powered **'96 SVT Cobra is running around Ford**. With reportedly over 330 horsepower on tap (we estimate much more), this car could devastate the Z28's current position as performance king of the ponycar world. Best of all, word is that the supercharged Cobra is likely to make production.

Those **V-12 Toyota Supras** that, in last month's issue, we reported were running around the country, **may be test beds for a new superfast Lexus**. Supposedly, Toyota wants Lexus not only to produce fine cars, but to be perceived as building the finest cars in the world, period. The V-12 sport coupe could be a world-beater if it goes into production, but it's hard to see the business sense behind such a vehicle considering the current dollar/yen exchange rates.