

A CARS COMPARISON TEST

FoMoCo's new engine option is capable of pulling a '61 Galaxie from 0 to 60 mph in 8.8 seconds

390-ENGINEED FORD IS MOST POTENT EVER

OF ALL THE domestic car producers, Ford Motor Company has come up with the only real horsepower increase among new engine options in the form of the 390 cu. in. V8 engine it lists among its 1961 lineup.

This husky beast, capable of pulling our 4,200 pound test Galaxie from 0 to 60 mph in 8.8 seconds with two testers aboard, is based on the 352 cu. in. V8 block. Bore and stroke have been increased to 4.05 inches and 3.78 inches, respectively, and other design provisions have been incorporated into the engine so that full advantage may be gained from the increases. While the stock 390, optional in most model Fords and available with either three-speed manual or Cruise-O-Matic transmissions, devel-

ops 300 horsepower at 4,600 rpm, a factory option soon to be available will bring these up to a whopping 375 horsepower at 6,000 rpm, or a shade under a horsepower-per-cubic inch! However, this option is not recommended for street use, as this high performance version will be fidgety at low rpm.

Among the new provisions found in this 390 cu. in. engine are shortened connecting rods that gain extra compression height for the pistons, a slipper skirt that replaces the full skirt of the 352, dished pistons that provide added combustion volume and use of a die cast timing case cover that is light and offers a more positive location for the front seat (hence less chance of leakage).

Better breathing has been built

by CARS TESTING STAFF



Above photo shows lean incurred during medium-speed right turn in 390-powered Galaxie. Culprits are shocks designed for pillow-soft ride. Optional heavy duty shocks are recommended. Plug, battery and oil dip sticks are easily accessible. Air conditioning apparatus would make a couple of plugs more difficult to reach.



into the 390 in the form of a closed system in which the source of flow energy is manifold vacuum. Blow-by gasses drawn through the intake manifold combine with the fuel mixture and are emitted through the exhaust system as combustion products. Because the flow rate in the manifold must be greater than the blow-by gas rate, a control valve restricts the emission flow at idle, preventing the mixture from becoming too lean, and allows sufficient flow at low manifold vacuum condition that avoids the reverse flow of blow-by gasses. The result of this system is that blow-by gasses, instead of being directed into the air, move from the crankcase into the combustion chambers where they are burned and exhausted as combustion products.

Chassis changes from last year are evident in our test Ford included softer rear springing, recalibrated shock absorbers, a new steering shaft coupling that provides for reduction in the transmission of vibration and more effective insulation of the body from the chassis through the use of butyl in the body mounts.

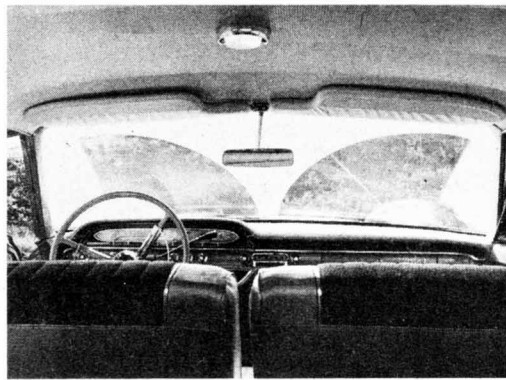
Brake linings on the '61 Ford are thicker than last year and pedal geometry has been revised. Brakes are also self-adjusting now, and the self-adjusting procedure takes place when they are applied while the car is in reverse. Steering gear ratio has been increased from 22-to-1 to 20-to-1 in the manual system for easier turning. The Cruise-O-Matic transmission with which our test car was equipped weighs 25 pounds less than

it did last year, and this new version of the transmission has vacuum throttle valve controls which replace the old mechanical linkage.

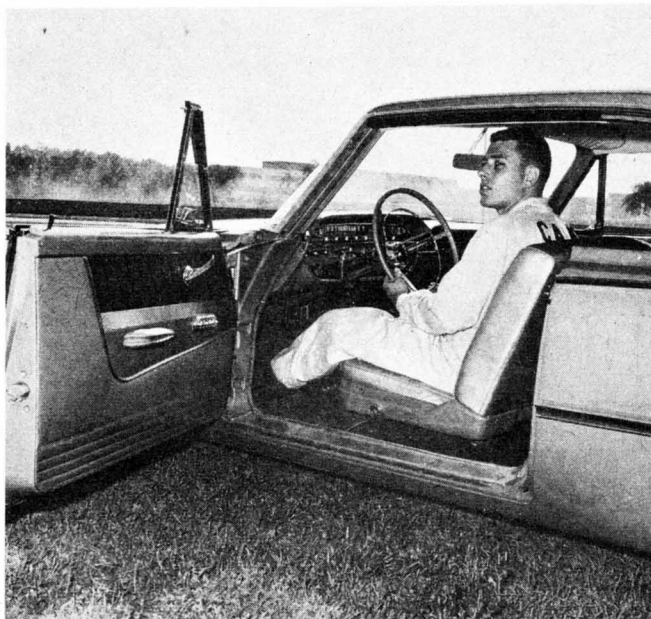
It didn't take us long to find out that this 390 engine turns any Ford into a goin' machine. Response at any speed was instantaneous, and pickup was something to behold, what with 427 ft/lbs. of torque at 2,800 rpm providing thrust. Preliminary driving at Ford's Dearborn, Mich., test track quickly showed that acceleration tests would result in lowest ET's with the transmission in D1 position (shifting manually from Low to D1 did not prove advantageous). D1 holds the engine in each of its three forward speeds longest with the throttle tromped-on, and upshifting occurred (*Continued on page 65*)



Ultra high-pressure wash at Ford Engineering showed test Galaxie was free from leaks, well-built.



Windshield wiper test shows that blades might be an inch or so longer to clean more of center and sides.



Leg room up front is adequate for most adults. Entire hood and fender area is visible for driver.

GENERAL SPECIFICATIONS 1961 FORD

DIMENSIONS

Over-all length	209.9 ins.
Over-all height, loaded	55.0 ins.
Over-all width	79.9 ins.
Wheelbase	119.0 ins.
Tread, front	61.0 ins.
Tread, rear	60.0 ins.
Front seat:	
Leg room (effective)	45.3 ins.
Head room (effective)	38.2 ins.
Shoulder room	59.9 ins.
Hip room	62.1 ins.
Rear seat:	
Leg room (effective)	43.3 ins.
Head room (effective)	37.6 ins.
Shoulder room	61.2 ins.
Hip room	63.5 ins.

ENGINE

Carburetion	4-Venturi
Compression ratio	9.6-to-1
Bore	4.05 ins.
Stroke	3.78 ins.
Displacement	390
Brake horsepower/rpm	300 @ 4,600 rpm
Torque: lbs. ft./rpm	427 @ 2,800 rpm
Crankcase capacity (less filter)	5 qts.
Taxable horsepower	52.5
Recommended fuel	Premium (98 octane)
Exhaust	Dual

family use, the answer must be *yes*. If you want a sports car, one that corners without perceptible lean, then the Hawk is not for you. But remember that the sports car will not give you a bump-absorbing ride or have space for a family.

With a fore and aft weight distribution, with two aboard, of 55 per cent on the front wheels and 45 on the rear, Hawk's balance longitudinally is in line with that of almost every other domestic car and a shade better than some. Thus, on a hard corner the skillful driver—and no other type has any business barrelling into a hairpin—can bring the Hawk through without ploughing. Sway, unless one loses rear end traction, is non-existent if a certain amount of common sense is used. Leaning over, however, is another matter; on this score the Hawk is about average. Occupants, even the driver, are not likely to be as aware of corner-heeling as are onlookers; yet it is not excessive by today's standards which demand a passenger car to also have a reasonably soft ride. The four-speed floor stick, which falls to hand easily and has a sports car feel, can be used to shift down handily for best roadability if fancy driving is one's forte. Powering through corners is one of this car's abilities and, thus, the car can be drifted slightly on long curves at speeds not generally safe in many sedans.

Body assembly is improved this year, the word having gone out from management that quality is to be a reality rather than saletalk. Thus, on bumpy roads where door rattles once disturbed Hawk owners, the new model is solid. But let's face it, frequently rattling doors betray nothing more than the owner's lack of attention to the proper adjustment of door latches. The back roads of the Studebaker proving grounds have some of the roughest test roads anywhere. Special roads include staggered and irregular bumps built into the black-top. Over these we went, back and forth, with the track closed to enable us to feel the car out under all conditions. The frame, like that of previous models, is a rigid one and the better crafting of the bodies substantiates management's claim that the '61 is more resistant to torsional stresses than ever before.

Roadability of a rather high order must be credited to the Hawk. Primarily a car for open spaces, this machine can pack hundreds of miles a day away with minimum driver fatigue. This it will do in flat or mountainous country and with fuel economy that is rare in V8 machinery in a car more than 200 inches long.

There is plenty of luggage space for the average family of five. Six aboard is not recommended, for the bench front seat is no more. What one gets for a moderate price is an unusual car with fine car features, rather ageless styling and an engine big enough to pack plenty of performance but without excessive fuel requirements. Nor is it so highly tuned that constant tinkering is required. Summed up briefly, the '61 Hawk must be driven to be properly appreciated.

FORD 390

(Continued from page 11)

from First to Second at 45 mph and from Second to Third at 72 mph. Downshifting to Low range when we tested for engine braking power got us into First, or Low, range at 18 mph and the big engine really slowed the car from there on!

The power steering and brakes with which our test vehicle was equipped performed very well. Although we experienced some fade after repeated panic stops from up to 60 mph, brake "grab" was never noticeable and the pedal pressure increase required as more and more stops were made was negligible. The power-assisted steering had excellent wheel return, as fine a return a swe have ever witnessed on any American, power-assisted car. Road reaction to bumps and washboard roads was negligible and the car tracked very well, although very bad road imperfections could be felt through the wheel. At higher speeds on curves, we evidenced some slight oversteer, but never enough to cause worry.

What we did find to be below par on high speed curves was the amount of lean allowed by the pillow-soft suspension. The standard equipment shocks, we felt, were responsible and should be replaced with the heavy duty units (offered as factory options) on any Ford ordered with the 390 engine.

Interior appointments on our test car reflected excellent quality control, although it is only fair to mention that this was a pre-production car, one of 20 to 30 being turned out daily at the time of this test (mid-September). All controls were easily accessible to the driver and seating front and rear were adequate for our over-six-foot tester, although jolting bumps found him barely touching the headliner when seated in the rear. The only rattles we encountered appeared on washboard roads, and even then were restricted to under the dash.

But the big story of the 390 Ford is its power. The best way to illustrate that is to simply list the standing start and passing times recorded. In-



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cidentally, all times were stopwatch-recorded after correcting for speedometer error that averaged about four mph under indicated speeds between 30 and 60 mph. The time quoted for each run is the result of four test runs, two in each direction, on a level ¼-mile test track straightway:

0-30	3.6 secs.
0-40	4.9 secs.
0-50	6.4 secs.
0-60	8.8 secs.
30-50	4.9 secs.
40-60	5.5 secs.
50-80	10.8 secs.

Top speed and ¼-mile acceleration figures were impossible to obtain because of the ¼-mile length of the straightway. As a matter of fact, the Dearborn test track is not designed for speeds above 100 and high speed testing is conducted elsewhere. But reliable reports that filtered through to CARS' testers in Detroit gave 118 mph as the top speed recorded by a completely stock, 390-equipped '61 Ford using the four-throat carburetor and dual exhaust system that are standard equipment with this engine option.

Since CARS reported earlier on the body styling of the 1961 Ford and on the power pack to be available optionally with the 390 (October, 1960), let's just say that this combination promises to be right up there with those hot Pontiacs at the strip and on the race course. Matter of fact, we've heard of drag strip test runs here and there in which 390's hit the traps ahead of the power kingpins among pre-'61 stockers!

CHEVROLET 348

(Continued from page 13)

has 2-3/16-inch intake valves and 1-3/16-inch exhausts. Transmission ratios in the hotter 348-equipped, manual-transmission cars are lower below direct drive than they were last year to keep them winding longer for increased peak torque (our test car reached its peak torque of 355 lbs/ft at 3,600 rpm).

The four-door Sport Sedan which served as our test car weighed 3,950 pounds ready to go, and all tests were conducted with our two testers, having a combined weight of 340 pounds, aboard. All readings were taken with a fifth wheel borrowed from Chevrolet Engineering at G.M.'s Milford, Michigan, proving grounds. However, some speedometer corrections taken out of curiosity showed the Chevy speedo to be unusually accurate, registering an indicated 30 mph at an actual 29.1 and being only 2.4 mph under its indicated 60. The car was equipped with both power-assisted

brakes and steering. In all tests which required shifting, it was accomplished at 55 mph (into Second), 75 mph (into Third) and 92 mph (into Fourth). The transmission was mated to a 3.08 rear end and its individual gear ratios were 2.20:1, 1.66:1, 1.31:1 and 1:1, First through Fourth respectively, and 2.26:1 in Reverse.

All acceleration tests were conducted on a ¼-mile straightaway and each time quoted represents an average of four runs, two in each direction, to minimize any possible incline in the road surface.

Our results were:

0-30	4.1 sec.
0-40	5.8 sec.
0-50	7.7 sec.
0-60	9.7 sec.
0-100	27.5 sec.
¼-mile	17.2 sec.
Speed at ¼	82.0 mph

Passing tests in the 40-60 and 50-80 mph ranges were conducted in both Third and Fourth gears. The times recorded were 5.4 secs. in Third and 7.2 secs. in Fourth from 40-60 mph and 8.7 secs. in Third and 11.1 secs. in Fourth from 50-80 mph.

Various braking tests conducted in conjunction with our acceleration tests produced some brake fade after four to six successive panic stops from 60 mph, but we never experienced any brake grab. And there was always enough pedal left to provide comparatively quick stopping. One problem encountered by our testers was that of clutch slippage during our acceleration runs. And after re-evaluating our driving impressions of this particular car, we both decided that we would rather drive it with an automatic transmission for normal everyday use. It was our opinion that the car's normally soft suspension precluded using the four-speed box as we had been able to in the '61 Corvette (CARS Jan. '61) and that the task of frequent shifting didn't result in sufficient performance increase to make it worthwhile.

Of course, the optional Police Cruise suspension offered by Chevy would surely remedy the suspension problem to a great extent. And only Powerglide is offered as an automatic transmission option with this 305 horsepower engine setup because of the AFB aluminum carburetor used in this version of the 348 cu. in. engine.

Our ride and handling characteristics testing was done in a 1961 Biscayne powered by Chevy's reliable six-cylinder engine mated to the standard equipment three-speed synchromesh transmission.

Again, our car was a pre-production model. Steering and braking were not power-assisted, but the pedal pressure required to stop the car from even high highway speeds was not excessive. The rack-and-pinion steering, requiring 3½ turns lock-to-lock, was responsive and had excellent return. Handling was judged very fine, with excellent tracking on bumpy roads. We did "lose" the rear wheels on a couple of tight curves taken at about 55 mph, but an instant's relaxation of the throttle foot was enough to remedy the situation. Again, as with most domestic cars, we would recommend the stiffer shock absorbers (if not the optionally available stiffer suspension) offered on special order by Chevrolet.

Interior finish and freedom from annoying rattles and rubber squeaking were judged excellent. Entry and exit front and back were easily accomplished, thanks to the virtual extinction of that old nemesis, the dog-leg, and our over-six-foot tester found that he had four inches of headroom when seated in the rear, plus ample rear seat leg and knee room with the front seat as far back as it would go.

Wind noise was about nil at speeds up to 60 mph and barely noticeable at 70. Fresh air ventilation, with outside air coming directly into the car interior via vents built into the front wheel wells, kept its occupants comfortable even though the outside temperature was 90-plus and a hot sun was beating down.

The '61 Chevy's parallel-operating windshield wipers do an excellent job of cleaning almost the entire windshield area and sweep across the mid-line area untouched by wipers of the non-parallel type.

Trunk space has been increased by moving the gas tank forward a bit. This allows the trunk to accept deeper luggage or other objects to be stored because Chevy's engineers were able to lower the trunk floor.

Summing up, Chevy for '61 becomes an excellent performance car when powered by one of the higher-output versions of the 348 cu. in. V8 engine. Certainly one of the two special order engine options would at least make the car the equal in performance of hotter models of certain competitors. But then again, they have special order power options, too.

STROKER KITS

(Continued from page 27)

points. After the welding is completed, the shaft is rough-ground, and put back in the furnace. Re-heating it serves the dual purpose of relieving stress concentrations built