

Sophisticated 390-inch V-8, new body shell, and manually shiftable automatic put the '66 Fairlane into a class it's never seen before

BIG-INCH FAIRLANE ROAD TEST

by John Ethridge
Technical Editor

IN THE DAYS of the British Empire, when anyone undertook to embarrass or harass Britannia, it was known as *twisting the lion's tail*. Today, there's another game played in the automotive jungle called *twisting the tiger's tail*. The way it's done is to shut down the GTO with a car in its class.

Now stalking the striped feline and certain to evoke some roars of anguish is the new 1966 Fairlane GT/A. It should be a top contender in the B/SA or C/SA (depending on whose rules apply) formal competition classes as well.

We'll start our examination of this tiger-teaser by taking a look under the hood. Ford has upgraded their standard 390-cubic-inch engine for 1966 and has expanded its availability in various lines. New heads and intake manifold begin the list of numerous changes that make the engine more powerful but at the same time about 5% more economical on fuel. Reciprocating weight has been reduced through use of lighter pistons and pins to improve durability at high revs. A new oil pan and baffling system

keep oil away from the hotter parts of the engine, lowering the temperature of the oil to the bearings and increasing bearing life.

The new heads and intake manifold got some weighty consideration that was incorporated into the design. In designing an induction system, there's one rule that says... "the smaller the passageway, the sharper the pressure peaks and the greater the ram effect." But there's another rule that says... "the smaller the passageway, the greater the friction between the walls and the incoming charge, which dampens out ram effect and restricts flow."

Ford engineers put all factors governing the size of the intake passages into a mathematical expression and gave it to a computer with instructions to find the cross-over point between the two conflicting rules. In other words, find the ideal-size passage that gives maximum volumetric efficiency — one that, if you made it larger, you'd lose because of decrease in ram effect. Or if you made it smaller, you'd lose because of

the increased friction and the restriction.

The answer turned out to be somewhat smaller than induction passages previously used on the "390" manifold. There wasn't any question that cleaner, more streamlined passages improve flow, so this was done in the new manifold in addition to the decrease in size.

A new camshaft, with higher lift and increased overlap plus new valve springs and a less restrictive air cleaner, completes the engine modifications.

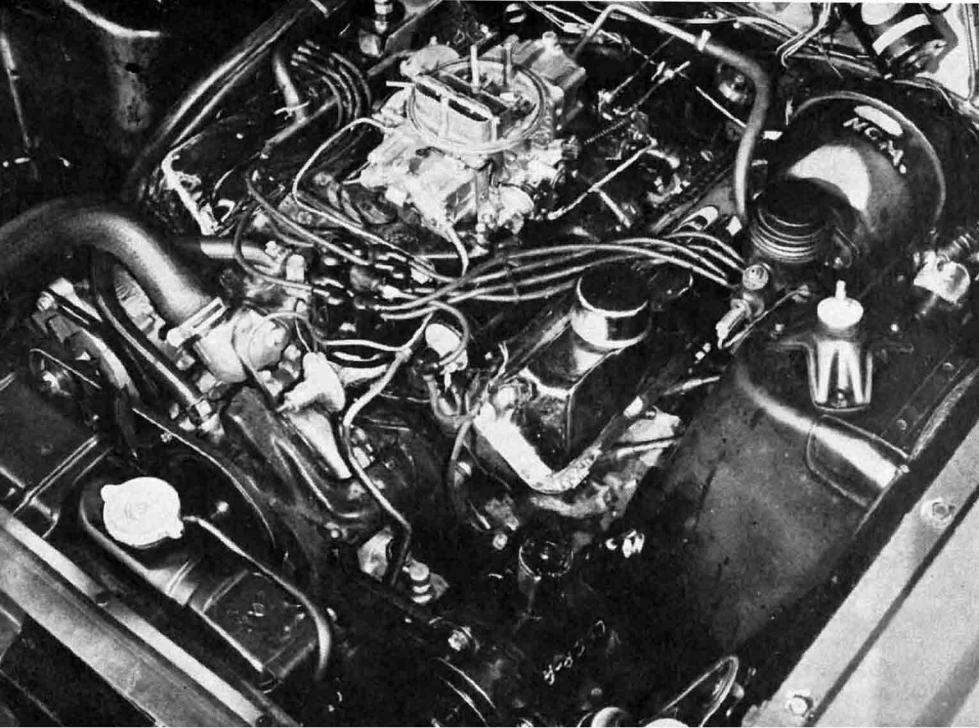
The foregoing changes apply to all 1966 "390" engines. For the Fairlane GT (manual transmission) and GT/A (automatic transmission), they've gone one stage further in tuning. A cam with different valve timing along with a larger Holley carburetor has moved torque "hump" higher up on the rpm band and increased the output to 335 hp. This combination in our test GT/A (which was well broken in) proved to be an extremely willing one, with plenty of torque even as low as 1500 rpm — the revs we found to work best for

(BELOW) Test GT/A was mechanically complete, but trim and insignia were not correct.



Tachometer perched on dash comes from Rotunda Division, has Cobra emblem, must be purchased separately. Labels below instruments give instructions to the testers.





Chrome dress-up kit, consisting of valve covers and air cleaner (not shown) plus huge Holley carb, mark this engine as a special one for the GT and GT/A Fairlanes.



1966 FAIRLANE G.T.A. SERIES-SHIFT PATTERN

AUTOMATIC AND MANUAL SHIFT PATTERN : SELECTOR PATTERN-P-R-N-D-2-1

P	PARK
R	REVERSE
N	NEUTRAL
D	FIRST GEAR START FULL AUTOMATIC UP-SHIFT
2	SECOND GEAR (MANUAL)
1	LOW GEAR (MANUAL)

T-handle selector lever leans toward the driver's side, since it's intended to be put to good use. With this transmission, you get the pleasure of shifting when you want to.



Tire-searing starts in either first or second gear are possible with extra power available. Torque-converter drive allows easy control of wheelspin for fast starts.

starting our timed acceleration runs.

There's a crop of bright young engineers coming into positions of increasing responsibility at Ford. Among these are some who've ceased to marvel at the mere fact that automatic transmissions will change gears without moving a lever or using a clutch. They appreciate the improvements in smoothness and reliability that have come about. But they feel (along with many car buyers) that there's still something to be desired in the way of driver control. They decided to do something about it when they put an automatic in the GT/A. They set forth the philosophy of the new transmission as follows:

"The automatic gearbox is more than just a mechanism which automatically selects the gear ratios according to conditions of speed and load. An overriding control [lets] the driver [use] his own judgment in picking gear ratios, and thus benefits from the pleasure to be derived from driving the car. No automatic mechanism has the power of anticipation, but the driver can see ahead and has the means for overriding the automatic mechanism."

With the selector in D position, the transmission shifts like a normal automatic. It starts in 1st and upshifts through 2nd to 3rd gear. Downshifting's also conventionally automatic — it depends on speed and load. For manual shifting, moving the selector to either 2 or 1 will (when at a standstill or moving slowly) shift into 2nd or 1st respectively and stay there. In this way, starts can be made from either gear.

When driving at any speed, shifting from D to 2 will immediately engage and hold 2nd gear and, from higher speeds, act as a very effective aid to braking. Downshifting to 1 from D will immediately change to 2nd but won't engage 1st until road speed has fallen to about 20 mph. This is controlled by a governor to prevent locking the rear wheels or over-revving the engine.

It will downshift to 1st, though, if speed is much below 50 mph and the throttle is opened — very handy for accelerating out of slow turns. You can upshift through the gears without lifting your foot off the throttle. There's little delay in shifts after you move the selector — probably no more than when making a well executed shift with a synchro box.

Ford points out that this transmission nearly duplicates the range of gear ratios offered in its optional 4-speed transmission. The automatic offers 2.4, 1.46, and 1.00 ratios, while the 4-speed has 2.52, 1.92, 1.36, and 1.00. With the torque converter's multiplication factor of 2.0, the spread's even greater than the 4-speed's — 4.8 starting from rest in 1st — which, in part, accounts for the

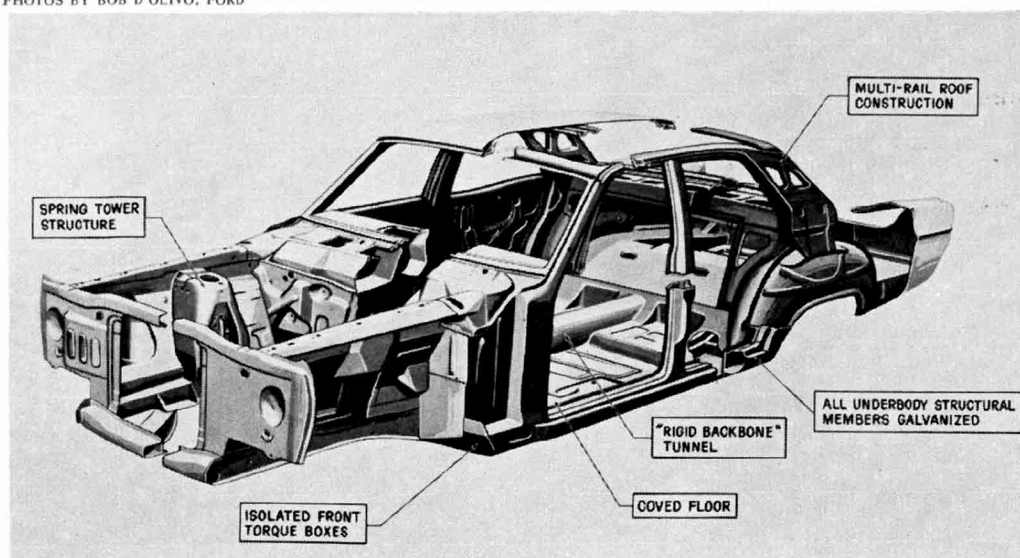


FRONT END LIFTS IN TRUE QUARTER-MILER STYLE AS WE GET OFF ON A NEAR-15-SECOND RUN. REAR WHEELS HAVE SETTLED DOWN FOR PUSH.



We approach final marker in 90s, but free-revving "390" isn't wound out until over 130 mph.

PHOTOS BY BOB D'OLIVO, FORD



As part of Ford's anti-NVH (noise, vibration, harshness) program, torque boxes are isolated.



Ford's Jake Jurgenson, manager of product information (left), discusses GT/A with author after performance runs. Camshaft configuration was finalized just before the test.

magnificent accelerating ability of the GT/A.

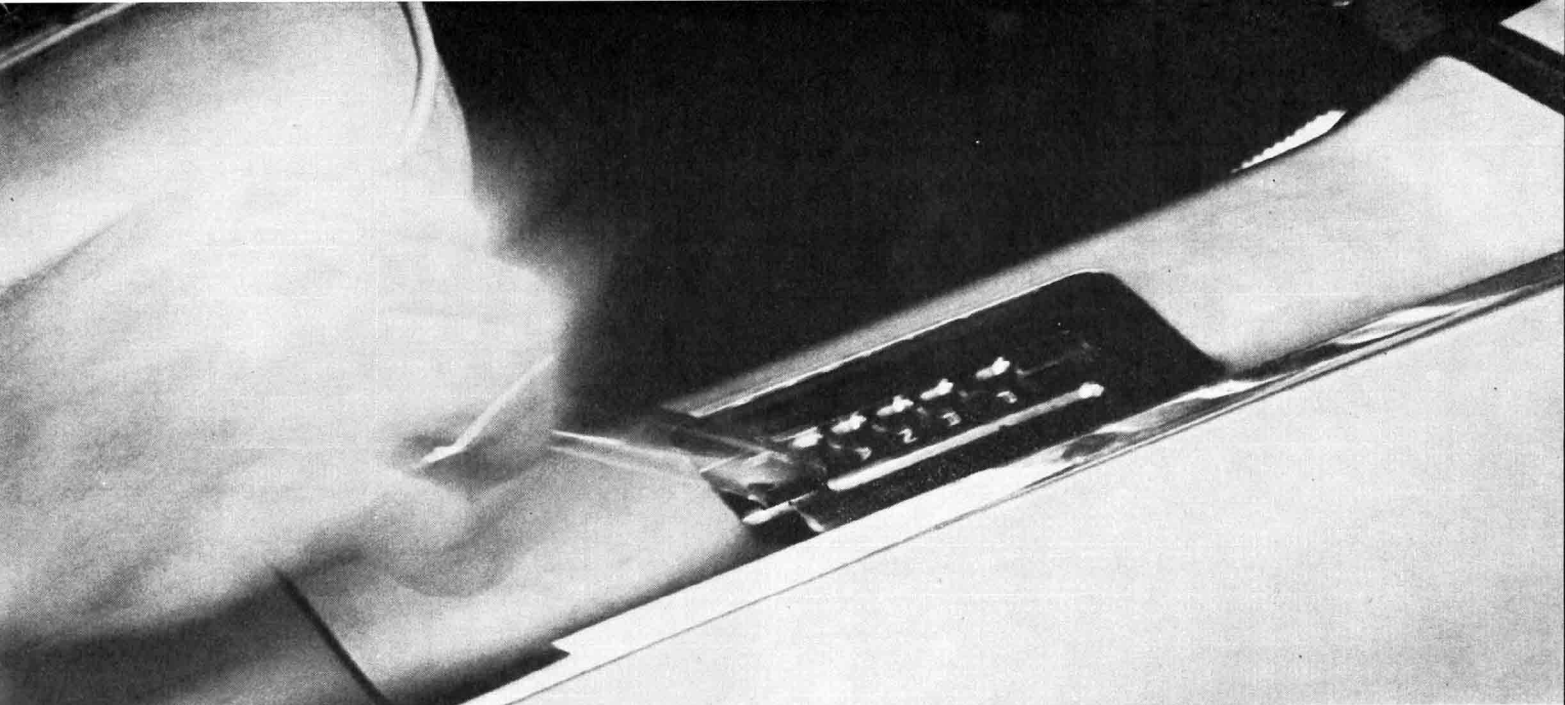
We feel this new transmission's bound to become popular. It took some getting used to to get its full potential, simply because there's been nothing quite like it before. Howard Freers, executive engineer for Fairlane, thinks many who'd normally go for 4-on-the-floor will choose this automatic. He's probably right. It's much more than just a compromise between a manual and an automatic. It has many virtues of its own, as even dyed-in-the-wool advocates of manual/clutch transmissions will have to admit. For those who still aren't convinced, there's a 3- and a 4-speed — both all-synchro and console-mounted — to choose from.

We've dwelled at length on engine and transmissions, so now let's see what else you get in the GT package. Bucket seats and console shift are standard on both the hardtop and convertible and for all transmissions. You get what Ford calls their "high series sound package," which consists of 120 pounds of insulating and deadening material. It helps make the car more civilized.

Nylon 7.75 x 14 tires on 6-inch rims are standard, as is stiffer suspension. Wheel rates are 109 pounds/inch front and 132 pounds/inch rear, compared to figures of 75 and 82 pounds/inch for the 500-XL hardtop. A larger .85-inch-diameter (.65 on 500-XL) anti-roll bar completes the suspension part of the package. A low-restriction air cleaner, viscous drive fan, and an engine dress-up kit are also standard. Add all the above to special trim, stripes, and em-



GT OR GT/A PACKAGE COMES IN CONVERTIBLE BODY STYLE AS WELL AS 2-DOOR HARDTOP. INSIGNIA AND TRIM ARE CORRECT IN THIS PHOTO.



blems, and you have a Fairlane GT or GT/A.

Driving the GT/A, both on acceleration runs and around Ford's Dearborn ride and handling course, was an absolute blast. Holding with the brake, bringing the revs up to 1500, releasing, and stabbing it produced slingshot-like acceleration every time. The car had enough extra beans to break the wheels away if we used more revs. In fact, we feel that bolting a good set of slicks on—nothing else—would drop the better part of a second off quarter-mile ETs. There was enough power available to keep the rear wheels smoking nearly the entire length of the rather tight handling course.

The stiff suspension, wide rims, and larger tires really did their stuff here, making great sport out of what would be unbearable in an ordinary car. Once, when bombing through a tight turn, we threw a power-steering belt. On most cars in similar situations, this would mean an instant trip to the tules. Surprisingly, though, the increase in steering effort was only moderate, which speaks well for the Fairlane's steering geometry.

Our braking tests were performed after the brakes had gotten thoroughly hot (turning around after acceleration runs), then allowed to cool a short time. Stopping distances were unusually short for a drum-braked car of this weight. Well bedded-in brakes and the extra bite of the big tires on wider rims probably explain this.

The GT-series Fairlanes, we feel, will likely make an impression on the automotive world in other ways besides top-notch performance. Choosing options carefully, you can carve out a very competitive price. Then there's the new automatic, which definitely belongs in the better-mousetrap category. /MT

1966 FAIRLANE GT/A

2-door, 5-passenger hardtop

OPTIONS ON TEST CAR: Radio, Rotunda tachometer, plus many items standard with GT or GT/A package—see text

BASE PRICE: NA

PRICE AS TESTED: NA

ODOMETER READING AT START OF TEST: 6383 miles

RECOMMENDED ENGINE RED LINE: 5600 rpm

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph	2.7 secs.
0-45 mph	4.3
0-60 mph	6.8

PASSING TIMES AND DISTANCES

40-60 mph	2.8 secs., 205 ft.
50-70 mph	3.8 secs., 334 ft.
Standing start 1/4-mile	15.2 secs. and 92 mph.
Speeds in gears @ shift points.	
1st	50 mph @ 5200 rpm
2nd	85 mph @ 5200 rpm
3rd	125 mph @ 5100 rpm (observed)
Speedometer Error on Test Car	
Car's speedometer reading	30 45 50 60 71 81
Weston electric speedometer	30 45 50 60 70 80
Observed mph per 1000 rpm in top gear	24 mph
Stopping Distances — from 30 mph,	32.5 ft.; from 60 mph, 139.5 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine

Ohv V-8
Bore: 4.00 ins.
Stroke: 3.78 ins.
Displacement: 390 cu. ins.
Compression ratio: 10.5:1
Horsepower: 335 @ 4800 rpm
Horsepower per cubic inch: 0.86
Torque: 427 lbs.-ft. @ 3200 rpm
Carburetion: 1 4-bbl
Ignition: 12-volt coil

Gearbox

Manually controlled 3-speed automatic; console shift

Driveshaft

1-piece, open tube

Differential

Hypoid, semi-floating, straddle-mounted pinion
Standard ratio: 3.25:1

Suspension

Front: Single lower arm with ball joints, coil springs, tubular shocks, and anti-roll bar
Rear: Hotchkiss drive with asymmetrical semi-elliptic leaf springs and tubular shocks

Steering

Recirculating ball and nut, with power assist
Turning diameter: 41.4 ft.
Turns lock to lock: 3.5

Wheels and Tires

14 x 6.0 J 5-lug, steel disc wheels
7.75 x 14 2-ply nylon whitewall tires

Brakes

Hydraulic, duo-servo, with integral power assist
Front: 10-in. dia. x 2.5 ins. wide
Rear: 10-in. dia. x 2.5 ins. wide
Effective lining area: 164.2 sq. ins.
Swept drum area: 314 sq. ins.

Body and Frame

Unitized construction, with isolated torque boxes
Wheelbase: 116.0 ins.
Track: front, 58.0 ins.; rear, 58.0 ins.
Overall length: 197.0 ins.
Overall width: 74.1 ins.
Overall height: 54.3 ins.
Curb weight: 3510 lbs.