CAR and DRIVER

NOVEMBER 1968 / 60 CENTS

INSIDE GRAND PRIX RACING WITH THE EAGLE TEAM

COMPLETE SPECS FOR ALL 1969 CARS

NEW MACH 1-SUPER MUSTANG?

CAR and DRIVER ROAD TEST

428 Mustang Mach I

Outwardly a blend of dragster and Trans-Am sedan, the sum is far short of its parts.

It may just be that this time the stylists have done *too* good a job. Look at the Mustang Mach I and you expect miracles—drive it and they are not forthcoming. The *pieces* are there—most of them anyway—but the sum is far short of its parts.

Understand that we're not saying high speed is a new deal. Speed has been the thing with cars since the very first bucking, snorting horseless carriage appeared to change the ways of the world. If early, awkward devices were slow, at least the fenders were shaped like birds in flight and the radiator ornaments were windblown figurines. Who could forget the intuitively streamlined boat-tailed speedsters of the Twenties or the Chrysler Airflow of the Thirties or the GM fastbacks of the late Forties? Those were the happy, innocent days when a teardrop was the slipperiest thing going. Can you imagine telling Henry Ford that what the 999 really needed was a chopped off tail and a spoiler?

But now, in The Year of the Automobile 1969, your car can't even be clothed in semi-Edwardian fashion unless at least one end—and preferably both—has flaps. Enter the Mustang Mach I, fashionably spoiled at the rear and not lacking competition inspiration on any other part of its anatomy either.

Outwardly the Mach I is a blend of dragster and Trans-Am sedan. In a year when every manufacturer offers hood scoops, Ford outdoes them all with an AA/Fuel dragster-style bug-catcher sticking right out through a hole in the hood. Even more than that, it's only *partially* ersatz. The scoop is authentically shaped right down to the ribs that adorn its exterior, and since it really fastens to the top of the air cleaner, instead of the hood, it spends all of its waking hours vibrating back and forth with engine motion just like the real thing. That's just a start. The hood—which is almost entirely flat black—is held down in front by locking pins in the true NASCAR/road-racer tradition and so the retainer pins don't disappear into the hands of the first sticky fingered collector to come along, they've been secured to the car with plastic-covered steel cables.

Let no one hint that Dearborn stylists are revisionists when they assault the mirror problem, either. The outside rear-view mirrors are housed in body-colored fairings to cheat the wind. Scoops are always good things to have, even if they aren't functional, and that's justification enough for the mock air gobblers on the rear fenders just below the C-pillars.

From its pinned hood to its tape-striped spoiler, the Mach I is the 1969 edition of what Ford Motor Company stylists think you want in a specialty car. It still *looks* like a Mustang but it's the toughest one yet.

Since the basic Mustang shape has been a howling success in the market, you can't blame Ford for sticking with a winner. But

(continued)

It may just be that this time the stylists have done too good a job. Look at the Mustang Mach I and you expect miracles—drive it and they are not forthcoming.

you can blame it for excess. Since the long hood/short deck styling theme has been rewarding, more of the same should be even better, right? So for '69 the Mustang grew 3.8 inches—all ahead of the front wheels. Believe us, that is the last thing the Mustang needed. The test car with its 428 Cobra Jet engine has 2140 of its 3607 lbs. balanced on the front wheels and that's with a full gas tank. *Fifty nine point three* per cent of its weight on the front wheels. Double grim. Any rear-wheel-drive car would be hamstrung with that kind of weight distribution and the Mustang is no exception. It can't begin to put its power to the ground for acceleration. And, when it comes to handling, the most charitable thing to say is that the Mustang is all thumbs. Well, fetlocks anyway. We expect a lot from a package as bold as the Mach I—but it doesn't come through.

The big 428 Cobra Jet needs very little introduction to performance enthusiasts. However, shoehorning it into the engine room is a task with a difficulty-quotient exceeded only by changing the spark plugs once it's there. Conservatively rated at 335 hp at 5200 rpm it's the same prime mover that pushes NHRA super stock Mustangs through the quarter in the mid-11s with speeds in the 120-mph range. The 10.6 to 1 compression ratio combined with free-breathing cylinder heads, and an intake manifold topped by a 735 cubic-feet-per-minute Holley 4-bbl. carburetor, all allow the Cobra Jet to turn out an admirable quantity of energy in spite of its fairly long 3.98 inch stroke.

Torque is its most important product and torque is available on instant notice without having to climb high into the rpm scale. The standard dual exhaust system, which ends in two pairs of chrome tipped pipes under the rear bumper, allows the Cobra Jet to rumble in a fashion that puts its competition to shame. It's so loud at full throttle that we wonder how it will fare with the law in some of the more picayunish states like California and Pennsylvania.

With all of this—and a 3.91 axle ratio to boot—the Mach I was pretty well prepared for the acceleration part of the test. That is to say it was all ready except for its built-in lack of traction. Even the F70 Goodyear Polyglas tires failed to help much and quarter-mile times suffered accordingly. Our best efforts resulted in a 14.3-second run at 100 mph but most runs were clustered around 14.4 seconds. Now this isn't slow—let there be no misunderstanding about that—but the potential of the big Cobra Jet doesn't really show up when you have to part-throttle most of the way through low gear. In this case the automatic transmission is clearly the most advantageous setup because it allows the driver better control of wheelspin. Even so, anyone wanting to get the most out of his Cobra Jet should think of big sticky tires as a necessity.

The dragstrip was also the place to find out whether the hood scoop had as much effect on acceleration as it did on appearance. Its operation is very simple. Whenever manifold vacuum drops below a predetermined value a trap door in the bottom of the scoop opens and lets cooler air into the air cleaner. By simply taping the scoop opening shut we were prepared to see how the Cobra Jet would run without its snorkle. Ford can be justifiably proud. It works. With the scoop closed off quarter mile times were nearly 0.2 seconds and 2 mph slower. In fact, you can even feel a little surge in the acceleration as the trap door opens—an eager lurch forward we had originally attributed to the opening of the secondaries in the carburetor.

While we're talking about good parts, the C-6 automatic transmission that Ford couples up with the Cobra Jet deserves mention. The test car made its full-throttle automatic upshifts at 5600 rpm with enough vigor to break the tires loose for at least a car length. Although buzzing the tires in the nose-heavy Mustang really isn't that difficult, the positive shifts are very much in keeping with the character of the car. Best of all, manual upshifts weren't complicated by an annoying lag in shift time frequently found on automatics.

Still, no matter how well the transmission performs, it can do nothing to help the Mustang's biggest shortcoming—handling. The beak-heavy machine just won't corner with any dignity at all. Does it understeer? Yes sir, yes sir, three bags full. It's just not possible to pick a fine line through a corner at high lateral acceleration rates. The front tires howl and smoke and absolutely refuse to go in the direction they're pointed. In really hard cornering situations, steering wheel corrections of a quarter turn have virtually no effect on the direction of travel. The Mustang wants to be thrown into a corner and helped through with lots of power and lots of steering wheel angle. Hardly a tidy way to go about things not to mention that in this already crowded world it takes up a lot of space.

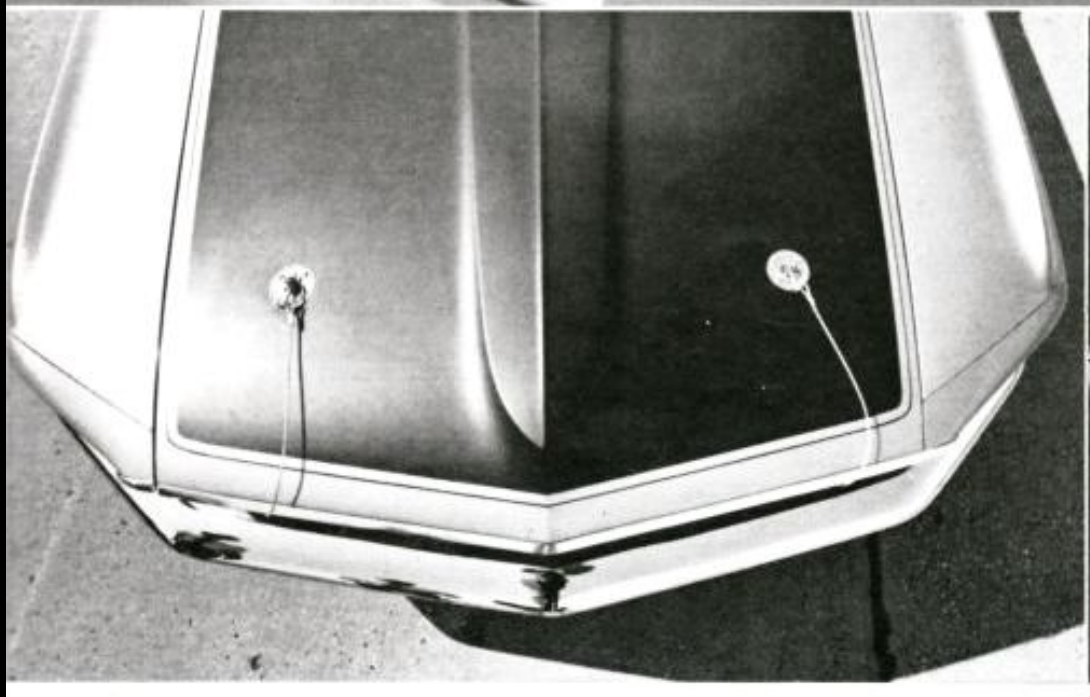
A "competition handling" suspension, which is standard equipment with the Cobra Jet engine, includes higher rate front and rear springs, stiffer anti-sway bar, high control shock absorbers and bias/belted tires on 6.0-inch wide wheels. The ride is "competition" enough, but too much of the roll stiffness is supplied by the front suspension for what we think is reasonable handling. We also noticed that the rear suspension wasn't too happy when subjected to sudden inputs—like a manual downshift that you might make to gain engine braking. The rear axle takes several awkward steps before it settles back down to earth to do its intended job. The manual transmission models have a unique shock absorber location which mounts the left rear shock absorber behind the axle to minimize the hop tendency. If it works as well as Ford claims we don't think the automatic transmission cars should be deprived of its benefit.

Since weight distribution seems to be the cause of our dissatisfaction in the Mustang's performance, it's only fair to admit that in addition to the huge Cobra Jet engine the test car was equipped with power steering and power disc brakes. Still, the disc brakes are available only with power assist and with an engine as heavy as the 428 we're not prepared to sacrifice power steering so we think the equipment list is quite reasonable. Another weight-adding device that should be mentioned is the engine oil cooler mounted forward of the radiator, which is standard with axle ratios numerically higher than 3.50 to 1. We made no attempt to compensate for weight distribution by adjusting tire inflation—all testing was done with the factory recommended 28 psi all around. There is no doubt that an extra 5 psi in the front tires would do wonders—but for those really interested in handling we'd suggest the smaller 351 cubic inch V-8.

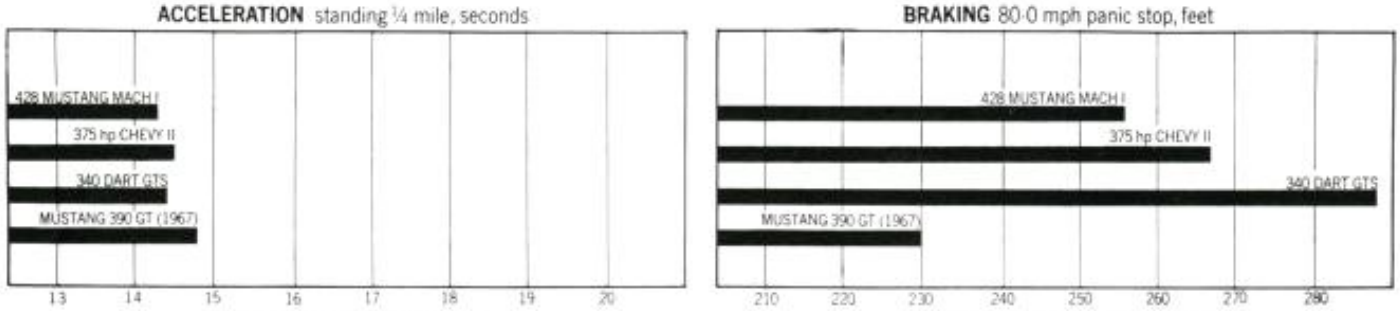
The Mach I uses the same single-piston caliper disc brakes as the last Mustang we tested (March, 1968) although the stopping distances were longer this time. The best maximum-effort stop from 80 mph required 256 feet (0.83G) compared to 230 feet for the 1968 model. The stops were made in a straight line, but, as before, fade was noticeable on the third stop. Also as before, the Mustang's particularly good pedal feel is conducive to controlled stops.

Although many of the Mustang's mechanical parts are carried over from past models, the body is all new and the 2+2 fastback has even more visual strength than

(Text continued on page 88; Specifications overleaf)



PHOTOGRAPHY: BOB BENYAS/BLACK STAR



MUSTANG MACH I

Manufacturer: Ford Division
Ford Motor Company
Rotunda Drive
Dearborn, Michigan

Vehicle type: Front-engine, rear-wheel-drive, 4-passenger coupe

Price as tested: N.A.
(Prices for the 1969 models had not been released by the manufacturers at press time)

Options on test car: 428 cu in engine, 3-speed automatic transmission, 3.91 limited-slip differential, visibility group power steering, power brakes (disc front), AM radio, tinted glass, front bumper guards

ENGINE

Type: V-8, water-cooled, cast iron block and heads, 5 main bearings
Bore x stroke 4.13 x 3.98 in, 104.9 x 101.1 mm
Displacement 428 cu in, 7002 cc
Compression ratio 10.6 to one
Carburetion 1 x 4 bbl Holley
Valve gear Pushrod operated overhead valves, hydraulic lifters
Power (SAE) 335 bhp @ 5200 rpm
Torque (SAE) 440 lbs/ft @ 3400 rpm
Specific power output 0.78 bhp/cu in, 47.8 bhp/liter

DRIVE TRAIN

Transmission 3-speed automatic
Max. torque converter ratio 2.02 to one
Final drive ratio 3.91 to one

Gear	Ratio	Mph/1000 rpm	Max. test speed
I	2.46	7.8	44 mph (5600 rpm)
II	1.46	13.2	74 mph (5600 rpm)
III	1.00	19.2	115 mph (6000 rpm)

DIMENSIONS AND CAPACITIES

Wheelbase 108.0 in
Track F: 58.5 in, R: 58.5 in
Length 187.4 in
Width 71.3 in
Height 51.2 in
Ground clearance 6.1 in
Curb weight 3607 lbs
Weight distribution, F/R 59.3/40.7%
Battery capacity 12 volts, 80 amp/hr
Alternator capacity 440 watts
Fuel capacity 20.0 gal
Oil capacity 5.0 qts
Water capacity 20.0 qts

SUSPENSION

F: Ind., upper wishbones, single lower arms with drag struts, coil springs, anti-sway bar
R: Rigid axle, semi-elliptic leaf springs

STEERING

Type Recirculating ball, power assist
Turns lock-to-lock 3.8
Turning circle curb-to-curb 37.4 ft

BRAKES

F: 11.3-in vented disc, power assist
R: 10.0 x 1.75-in cast iron drum, power assist

WHEELS AND TIRES

Wheel size 14 x 6.0-in
Wheel type Styled, stamped steel, 5 bolt
Tire make and size Goodyear F70-14
Tire type Polyglas, tubeless
Test inflation pressures F: 28 psi, R: 28 psi
Tire load rating 1280 lbs per tire @ 24 psi

PERFORMANCE

Zero to	Seconds
30 mph	2.1
40 mph	3.0
50 mph	4.4
60 mph	5.7
70 mph	7.2
80 mph	9.5
90 mph	10.8
100 mph	14.3

Standing ¼-mile 14.3 sec @ 100 mph
Top speed (est.) 115 mph
80-0 mph 256 ft (0.83 G)
Fuel mileage NA
Cruising range NA