EKTACHROME BY BILL MOTTA

CAR LIFE
ROAD TEST

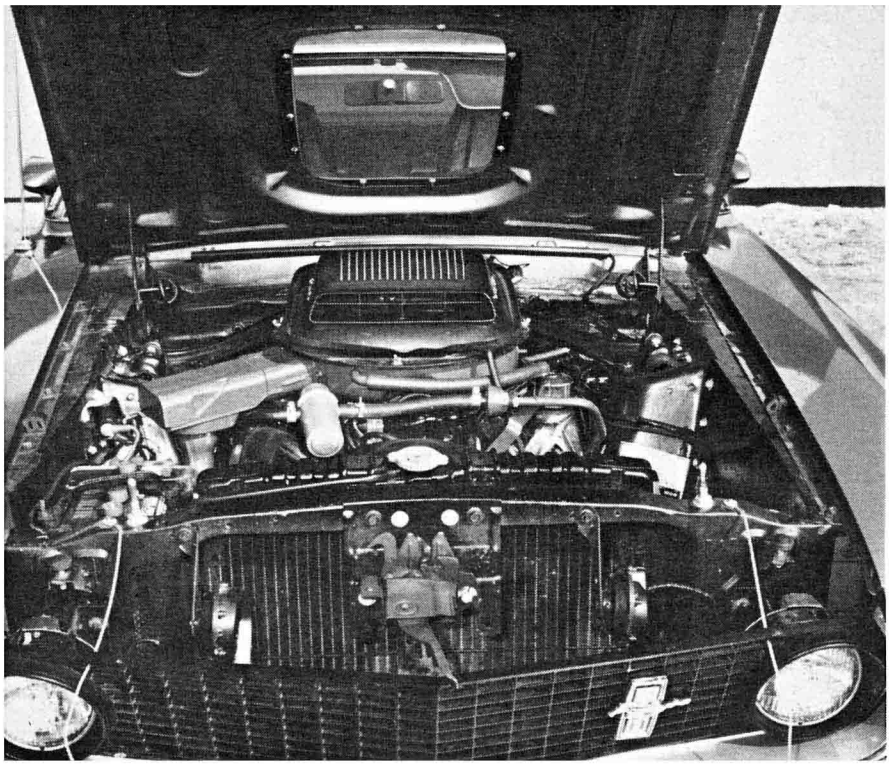
Mustangs can be great.
All it takes is a big engine,
big tires and careful planning.

428 MACH 1

BEST MUSTANG YET AND QUICKEST EVER.

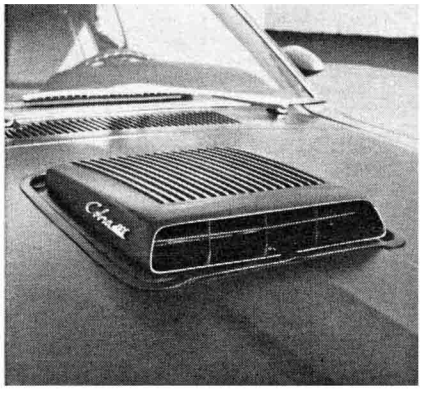
428 MACH 1

continued



PHOTOS BY GORDON CHITTENDEN

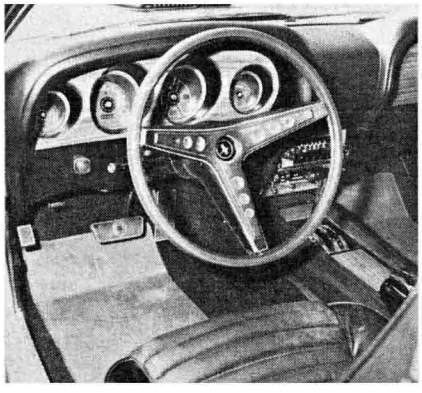
MASSIVE AIR cleaner is a fitting crown for the massive 428-cid V-8. The tube coming out of the cleaner at left feeds warm air until the throttle is opened.



SCOOP comes through the hood, and shakes wildly when the engine idles.

PINS keep the hood closed, and nylon-covered cables keep the pins in place.

INTERIOR had comfortable seats, logical controls, and adequate vision.



LUGGAGE won't fit in trunk. Half the space belongs to the spare.

ARE YOU READY for the first great Mustang? One with performance to match its looks, handling to send imported-car fans home mumbling to themselves, and an interior as elegant, and liveable, as a gentlemen's club?

It's here. The Mustang Mach 1, equipped for the enthusiast, is:

- The quickest standard passenger car through the quarter-mile we've ever tested (sports cars and hot rods excluded).
- A superb road car, stable at speed, tenacious on corners, with surplus power and brakes for any road situation.
- Pleasant just being driven around. The potential is barely tapped on a trip to the store, but the driver doesn't suffer reminders of the price he paid for qualities he isn't using.

The question of readiness by Mustang fans for a great car is rhetorical. Mustang has always been a good car—brisk, sporty, a sales success and a setter of trends. Greatness has been within reach, but somehow never captured.

Enter the Mach 1, this year's performance Mustang. The designers have gone to considerable trouble to make their intentions known. The Mach 1 comes as a fastback only, with hood scoop standard, matte-black hood paint, NASCAR hold-down pins, brake scoops, styled steel wheels, fat tires, streamlined mirrors, stripes along the sides; everything, in short, except a decal proclaiming the Mach 1's readiness to coat the opposition with rubber dust.

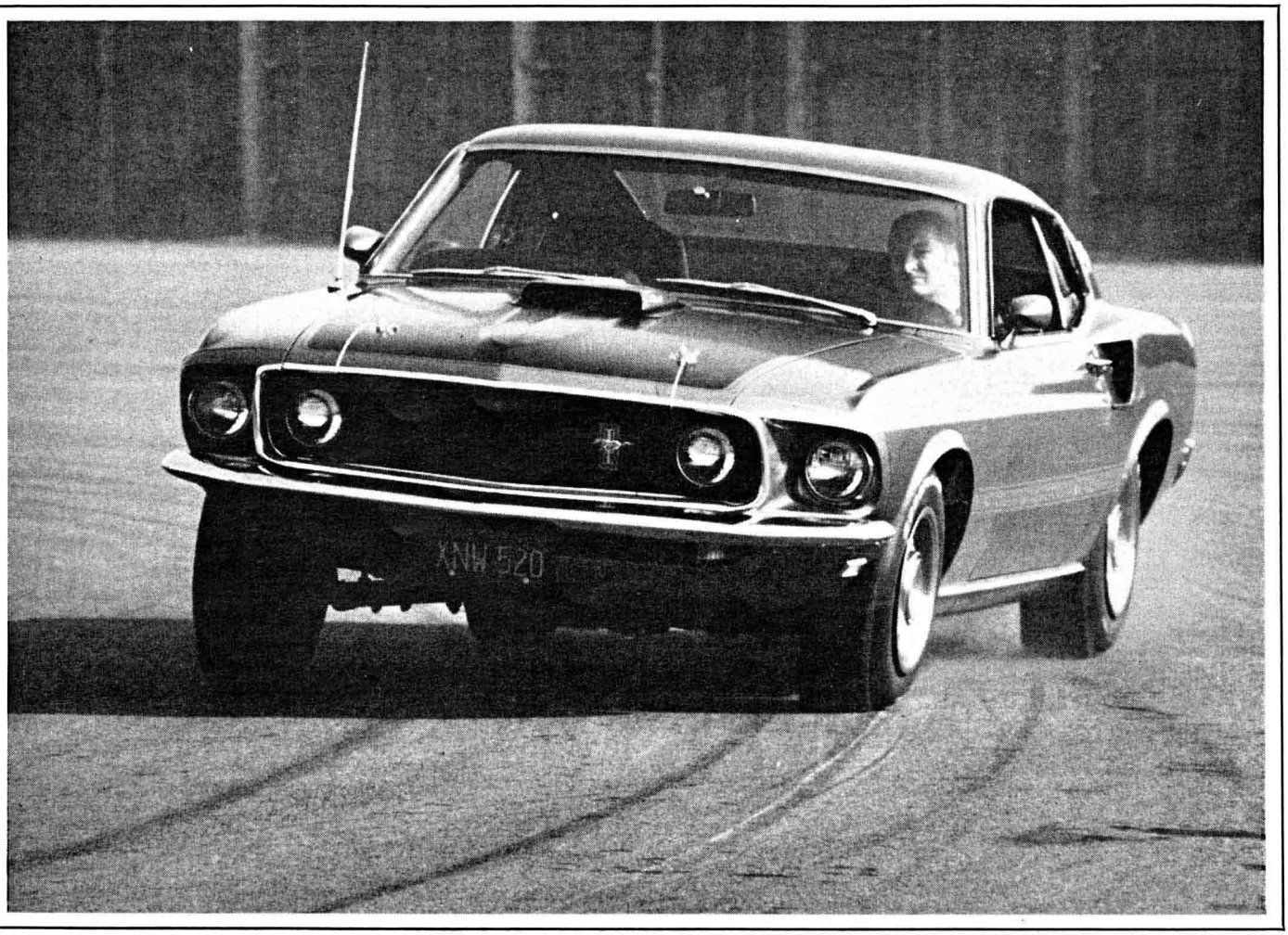
With the Mach 1's basic engine, the 351-cid V-8, this warlike appearance is just brag, not fact. With the optional 428 Cobra Jet, it's fact.

The Mach 1 delivered its first notice of superiority at the dragstrip. The testers made the first run with a start from idle. The transmission was in drive all the way. An elapsed time of 14.04, at 102 mph. Cries of surprise and delight. Previous holder of the CAR LIFE passenger car record was a Plymouth Hemi, with a 14-sec. e.t. that came only after some practice.

Next, the Mach 1 was held at the line with brakes and full power. It only proved we were right when we tested the 1968 Shelby GT-500KR; too much power lit the tires and raised the e.t. to 14.47.

Now the testers know how to make the Mach 1 work. An easy start, shifting by hand at 5400 rpm, and the Mach 1 holds the record—13.9 at 103. Then a 13.87. Another driver, and a 13.86, best of the day. A third staffer tries his hand, and turns 13.96 at 103.

Thumbing through the CAR LIFE files turned up one car, a 427 Corvette, with a lower elapsed time. That's a sports car, not directly comparable with passenger cars. As tested, with two men, test gear and a full tank, all belts tight, air cleaner attached, tire pressure normal, the Mach



1 is the quickest four-place production car ever tested by CAR LIFE.

Cool air was a factor. First, the test car had the optional "Shaker" air cleaner jutting through a hole in the hood. At wide-open throttle, a valve opens, and lets in cool outside air. Second, the outside air was cool. The acceleration runs were made late in the day, after sunset. The outside air temperature was 15 or 20° lower than it was at mid-day, when we usually run tests.

Factory help, of the kind testers sometimes get without knowing about it, wasn't a factor. Before the trip to the test track, the Mach 1 suffered a blocked gas tank vent. The car was taken to a nearby Ford agency. The agency has a diagnostic center. CAR LIFE is interested in service problems, and ran the Mach 1 through, for research. The test car checked out as completely stock, so much so that the ignition points were dirty, and the diagnosticians suggested a tune-up.

(We tried to get a maximum road horsepower reading, also something of continuing interest to the staff. It didn't work. The Mach 1 kept climbing off the rollers when the needle went past 200.)

The Mach 1, then, goes like the hammers in a straight line. That's easy. The factory need only stuff a big engine into a little car. The result is a car that goes like it's shot from guns. It usually corners like a cannonball, too. Ford's 428 is a big, heavy engine. The Mustang is relatively light, and the 428 sits right between the front wheels.

Constant readers are surely braced, at this point, for the standard lecture about too much weight too far forward, with its attendant, dreaded understeer.

Relax. The lecture doesn't apply to the Mach 1. The greatness shows up best on a winding, mountain road. By choosing the optimum combination of suspension geometry, shock absorber valving and spring rates, Ford engineers have exempted the Mach 1 from the laws of momentum and inertia, up to unspeakable speeds.

With optional Goodyear Polyglas tires, the Mach 1 is a superb car for seven-tenths driving, a compliment that may need some explanation.

The tenths system, devised by English rallyists, uses a rating of one, or ten-tenths, as the absolute maximum speed that a given car can be driven on a given track or highway. Cale Yarborough and Richard Petty dueling at Daytona, using every horse in the engine, every inch of the track, and all their skill and nerve, are driving at ten-tenths. Little old ladies, of whatever gender and chronological age, never get past two-tenths. An enthusiast on his way to work drives at five-tenths, setting a good pace, but not extending the car.

With the car singing its song, the road and weather clear, the driver who likes to drive runs at seven-tenths, putting the engine, brakes and suspension to work. Nothing reckless: The car stays on its side of the road, the tires stay firmly on the pavement.

The Mach 1 thrives on it, and so does the driver. With just enough steering lock to give the front tires a grip, and enough power to squat the back wheels down on the road, the Mach 1 growls through turns, eating up bumps in the road and camber changes, while the big engine catapults it from turn to turn, and the big brakes haul it down to cornering speed, time after time.

At eight-tenths, though, Nature takes back the reins. On Orange County Raceway's road course, at racing speeds, using all the road and all the power, the Mach 1 was, well, both hands full. At the ragged edge, the Mach 1 displayed strong understeer. Once the front end was wrenched loose, it stayed loose. More power put the back end out, but the car still moved toward the outside of the track. At speed, the Mach 1 wasn't responsive. Comparing inside the ▶

428 MACH 1

continued

Ford family, the Mustang Grandé tested in the February CAR LIFE, with less tire and less power to make mistakes with, proved easier to control under extreme testing conditions and speeds.

As a qualifier to that qualification, the tenths system is based on the car's capability. Seven-tenths in the Mach 1 corresponds to about nine-tenths in the Grandé, ten-tenths in the Cobra, eleven-tenths in the Fairlane, and . . . the Thunderbird? Better you don't ask. We don't want to think about it.

Ford is causing us to raise our braking standards. The Mach 1 is the fifth 1969 Ford product CAR LIFE has tested. All five—performance Mach 1, luxury Mustang Grandé, more so Thunderbird, budget Supercar Cobra and family Fairlane, have front discs and power boosters. All five achieved that elusive balance of normal stops with little effort, and all-out stops with a forceful foot still able to limit effort just short of locked wheels.

As a matter of policy, Ford equips all its test cars, and all cars for company use, with the optional discs. On the market, the buyer who orders power brakes gets the front discs, too. Good idea, Ford, and may you hasten the day when discs are standard equipment for all your cars, not just the ones in which your family may travel.

The test Mach 1 had optional high-backed bucket seats, with lateral support, for once, and headrests built in, not pods socketed into last year's seat. Good seats. It probably doesn't qualify as a better idea. The assumption must be that all the manufacturers have been trying for years to build seats that hold and fit people. Ford does a better job, then, with an old idea.

The driver has a good seat, in the horsey sense of a comfortable fit and an immediate feeling of confidence and command. With the seat pushed back for the straight-arm driving position favored by international racers and their legion of imitators, the pedals and controls are still within reach. The fastback body, with pinched waist and sloping rear window, is a two-plus-two, the two in back being either small or cramped. The Mach 1 falls a shade short of our definition of a Grand Touring car, on grounds that the trunk is too small for a weekend's worth of luggage. Front vision is acceptable. The driver can see the instruments, most of the road, the gyrating hood scoop and the boggled spectators who see the hood scoop. Rear vision is restricted slightly. There is a blind spot to the right rear, and the Mach 1 must be driven in traffic with the blind spot in mind.

The automatic transmission accompanying the 428 engine was in character with it. Shifts under full power came instantly, with force sufficient to spin the tires for a few feet. In traffic, shifts are still firm, but not harsh. The driver will notice it, but the passenger won't. One minor complaint was the reluctance of the transmission to shift down at less

1969 MUSTANG MACH 1

FORD TWO-DOOR FASTBACK

DIMENSIONS

Wheelbase, in.	108
Track, f/r, in.	59/59
Overall length, in.	187
width	71.8
height	50.3
Front seat hip room, in.	2 x 23
shoulder room	56
head room	56
pedal-seatback, max.	41
Rear seat hip room, in.	40
shoulder room	55
leg room	30
head room	36
Door opening width, in.	42
Trunk liftover height, in.	33

PRICES

List, FOB factory	$3122
Equipped as tested	$4139

Options included: 335-bhp V-8, $357; Cruise-O-Matic transmission, $222; Traction-Lok diff., $64; power steering, $95; power disc brakes, $65; AM/FM stereo radio, $181.

CAPACITIES

No. of passengers	4
Luggage space, cu. ft.	5
Fuel tank, gal.	20
Crankcase, qt.	4
Transmission/dif., pt.	26/5
Radiator coolant, qt.	20

CHASSIS/SUSPENSION

Frame type: Unitized.

Front suspension type: Independent by s.l.a., drag strut, ball joints, coil springs, telescopic shock absorbers.

ride rate at wheel, lb./in.	123
antiroll bar dia., in.	0.95

Rear suspension type: Hotchkiss live axle, semi-elliptical rear springs, telescopic shock absorbers.

ride rate at wheel, lb./in.	140

Steering system: Linkage assist, recirculating ball gear, parallelogram linkage behind front wheels.

overall ratio	20.3
turns, lock to lock	4
turning circle, ft. curb-curb	38
Curb weight, lb.	3420
Test weight	3715
distribution (driver)	
% f/r	58.3/41.7

BRAKES

Type: Assisted disc front/drum rear.

Front rotor, dia. x width, in.	11.3 x 2.2
Rear drum, dia. x width	10 x 2.5
total swept area, sq. in.	232

Power assist: Integral.

line psi at 100 lb. pedal	795

WHEELS/TIRES

Wheel rim size	14 x 6JJ
optional size	14 x 6JJ styled
bolt no./circle dia. in.	5/4.5

Tires: Goodyear Polyglas.

size	F70-14
normal inflation, psi f/r	28/28

ENGINE

Type, no. of cyl.	V-8
Bore x stroke, in.	4.13 x 3.98
Displacement, cu. in.	428
Compression ratio	10.2:1
Fuel required	premium
Rated bhp @ rpm	335 @ 5200
equivalent mph	101
Rated torque @ rpm	440 @ 3400
equivalent mph	66

Carburetion: Holley 1x4.

throttle dia., pri./sec.	1.68/1.68

Valve train: Hydraulic lifters, pushrods and overhead rocker arms.

cam timing	
deg., int./exh.	18-72/82-28
duration, int./exh.	270/290

Exhaust system: Dual, reverse-flow mufflers.

pipe dia., exh./tail	2.25/2.25
Normal oil press. @ rpm	40-60 @ 2000
Electrical supply, V./amp.	12/55
Battery, plates/amp. hr.	78/80

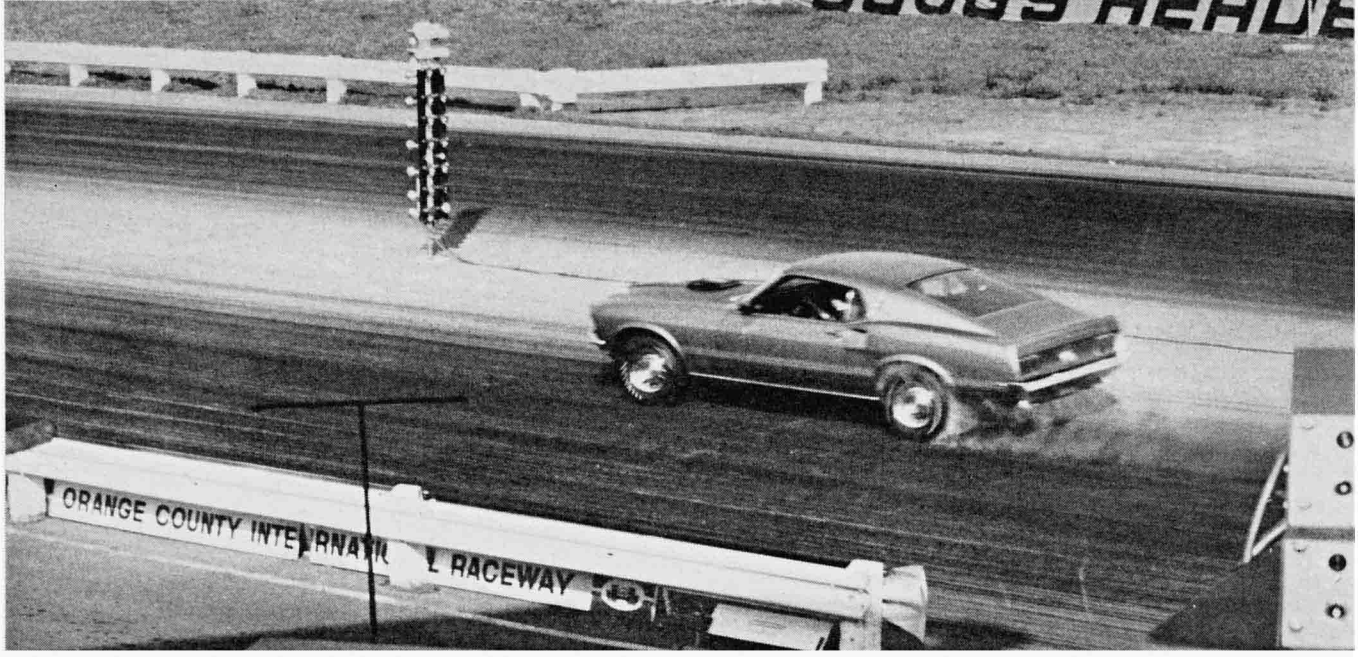
DRIVE TRAIN

Transmission type: Three-speed automatic with torque converter.

Gear ratio 3rd (1.00:1) overall	3.50:1
2nd (1.46:1)	5.11:1
1st (2.46:1)	8.62:1
1st x t.c. stall (2.05:1)	17.68:1

Shift lever location: Floor.

Differential type: Hypoid, limited slip.	
axle ratio	3.50:1



CHARGING OFF the line with tires smoking, Mach 1 looks as fast as it is, the quickest stock passenger car Car Life has tested.

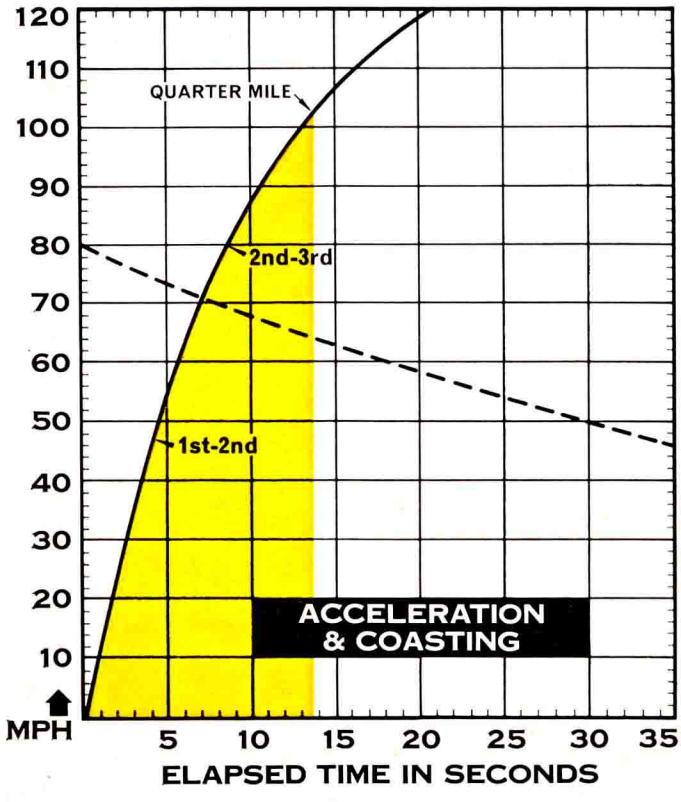
than full power, a trait that sometimes delivered more acceleration than the driver could use.

The 3.90:1 rear axle in the test car was in character, too. Uphill gears shave those vital fractions off the time it takes to cover the quarter-mile, or pass slower cars on the highway. The Mach 1 shares extra insulation with the Grandé, and engine noise wasn't objectionable on the highway. The gearing takes its toll in mileage, and engine life. Buyer's choice.

The Mach 1's cornering ability is largely due to the front shock absorbers. We say this because we know: Several thousand hard test miles and the front shocks surrendered, from exhaustion. They died an honorable death, but buyers should be prepared for it.

Greatness makes its own demands. An enthusiast will find the Mach 1 a rewarding car, provided he knows its limitations, and gives it the care and attention the Mach 1 deserves. ■

CAR LIFE ROAD TEST



CALCULATED DATA

Lb./bhp (test weight)	11.1
Cu. ft./ton mile	207
Mph/1000 rpm (high gear)	19.35
Engine revs/mile (60 mph)	3100
Piston travel, ft./mile	2580
CAR LIFE wear index	63.7
Frontal area, sq. ft.	20

SPEEDOMETER ERROR

Indicated	Actual
30 mph	37.8
40 mph	47.2
50 mph	56.8
60 mph	66.2
70 mph	75.7
80 mph	85.2
90 mph	95.0

MAINTENANCE

Engine oil, miles/days	6000/180
oil filter, miles/days	6000/180
Chassis lubrication, miles	36,000
Antismog servicing, type/miles	clean PCV valve/6000; engine tune-up/12,000
Air cleaner, miles	replace/24,000
Spark plugs: Autolite COAF.	
gap, (in.)	0.032-0.036
Basic timing, deg./rpm	TDC/700
max. cent. adv., deg./rpm	22-27/4000
max. vac. adv., deg./in. Hg	17-22/17
Ignition point gap, in.	0.014-0.020
cam dwell angle, deg.	26-31
arm tension, oz.	17-21
Tappet clearance, int./exh.	0/0
Fuel pressure at idle, psi	4.5-5.5
Radiator cap relief press., psi	12-15

PERFORMANCE

Top speed (6000), mph	121
Test shift points (rpm) @ mph	
2nd to 3rd (6000)	80
1st to 2nd (6000)	47

ACCELERATION

0-30 mph, sec.	2.6
0-40 mph	3.4
0-50 mph	4.4
0-60 mph	5.5
0-70 mph	6.9
0-80 mph	8.4
0-90 mph	10.3
0-100 mph	12.8
Standing ¼-mile, sec.	13.90
speed at end, mph	103.32
Passing, 30-70 mph, sec.	4.3

BRAKING

Max. deceleration rate from 80 mph ft./sec./sec.	29
No. of stops from 80 mph (60-sec. intervals) before 20% loss in deceleration rate	7
Control loss? Slight.	
Overall brake performance very good	

FUEL CONSUMPTION

Test conditions, mpg	8.1
Normal cond., mpg	9-12
Cruising range, miles	180-240