



CAR LIFE ROAD TEST

VOLVO SEDAN is American compact size, has handling comparable to American enthusiast car, but more maneuverability. Understeer is prevalent, but becomes more neutral as limit is reached.

FIAT 124 SPORT COUPE is a sports car with plenty of space for four adults. Sporting heritage invariably provoked drivers to drive eight-tenths. Understeer and lean were seldom apparent to driver.





THREE SPORTING IMPORTS

The Fiat 124, BMW 2002 and Volvo 164 are small, and they're fun to drive. Are you paying attention, Detroit?

COMPARISON TESTING AGAIN. But before the alert reader quickly points out that these three cars are not really comparable, let us point out that we are comparing them to *domestics*. Detroit has decided (again) that it is time to build small cars and here are three the automakers ought to take a look at. Each has evolved from a different segment of the auto-

motive spectrum. The Volvo is an example of a large (for imports) sedan that combines good interior room with compact external dimensions. The Fiat Sport Coupe is a sports car expanded for the family man—sort of a European Ponycar. The BMW represents a sedan with sporting character. None of the three can be classified as an economy car, but all are small

cars, with good performance, adequate room and are a joy to drive. Except for the late Corvair, Detroit's erstwhile compacts never seemed to combine all of these qualities.

Take the Volvo 164 for example. Here is a car that roughly corresponds to the average U.S. compact, with a 106-in. wheelbase, 6-cyl. engine, five-passenger accommodation and large

BMW 2002 is a sedan body with sophisticated sports car chassis. Independent rear suspension, good power make this the fastest lapper of the three on any given road course.

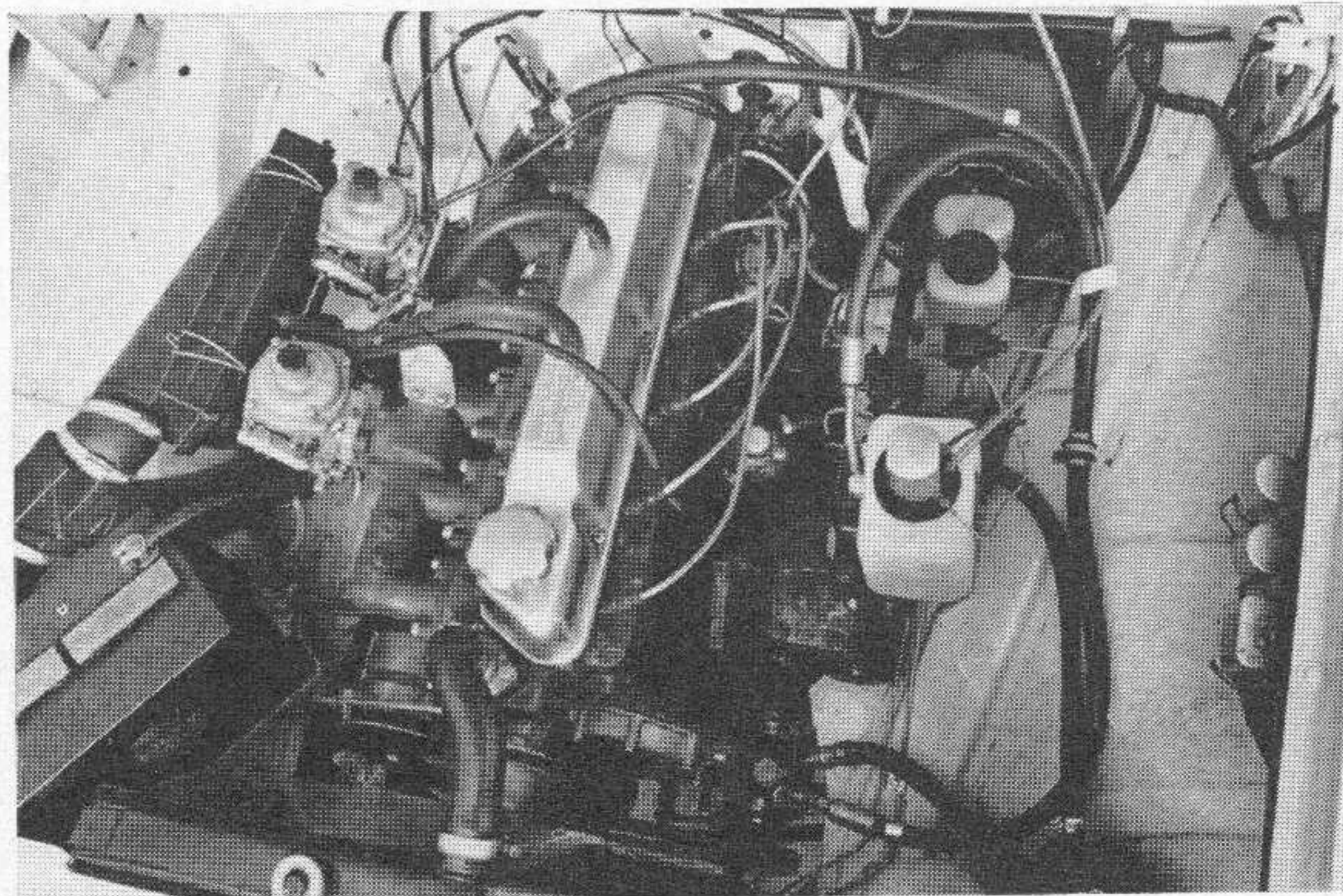




FOUR-WHEEL disc brakes actually improved after CAR LIFE's strenuous fade test.

THREE IMPORTS

continued



PHOTOS BY SCOTT MALCOLM

NEW VOLVO 6-cyl. is essentially the old four with two cylinders added. The 182-cid engine gives sparkling performance to 2800-lb. car.

trunk. Usable space is as good as any American car, yet it weighs only 2800 lb. And because it is light, performance is good. The engine is relatively small, 182 cid, yet it will run rings around any of our standard compacts—in a straight line. Its 17-sec. quarter-mile puts it right up there with the V-8 family cars. Volvo's secret, other than its light weight, is a new 6-cyl. engine. Essentially one and a half B20 4-cyl. engines, it is completely conventional in design, with overhead valves and short stroke. It gets good power because Volvo believes in letting an engine breathe. Dual carbs and free flowing exhaust are part of the standard package, allowing the engine a good top end. Because the engine is slightly peaky (for a family sedan) a four-speed gearbox is standard. This has a beautiful ratio spread and nice synchros, but one of the largest gear levers in

1969 VOLVO 164 FOUR-DOOR SEDAN



DIMENSIONS

Wheelbase, in.....	106.3
Track, f/r, in.....	53.1/53.1
Overall length, in.....	185.6
width.....	68.3
height.....	56.7
Front seat hip room, in.....	21 x 2
shoulder room.....	54
head room.....	37.4
pedal-seatback, max.....	43
Rear seat hip room, in.....	55
shoulder room.....	55
leg room.....	37
head room.....	35
Door opening width, in.....	31
Trunk liftover height, in.....	36

PRICES

List, FOB factory.....	\$4160
Equipped as tested.....	\$4340
Options included: AM/FM radio.	

CAPACITIES

No. of passengers.....	4+1
Luggage space, cu. ft.....	23.2
Fuel tank, gal.....	15.5
Crankcase, qt.....	6.3
Transmission/dif., pt.....	n.a.
Radiator coolant, qt.....	13

CHASSIS/SUSPENSION

Frame type: Unit steel.	
Front suspension type: Independent by s.l.a., coil springs, antiroll bar.	
ride rate at wheel, lb./in.....	n.a.
antiroll bar dia., in.....	n.a.
Rear suspension type: Live axle with trailing arms and track bar, coil springs.	
ride rate at wheel, lb./in.	n.a.
Steering system: Power assisted cam and roller.	
overall ratio.....	15.7:1
turns, lock to lock.....	3.7
turning circle, ft. curb-curb....	31.5
Curb weight, lb.....	2860
Test weight.....	3170
Distribution (driver),	
% f/r.....	53.6/46.4

BRAKES

Type: Power assisted discs front and rear.	
Front rotor, dia., in.....	10.7
Rear rotor, dia.....	11.6
total swept area, sq. in.....	433
Power assist	
line psi at 100 lb. pedal.....	n.a.

WHEELS/TIRES

Wheel rim size.....	15 x 4.5
optional size.....	none
bolt no./circle dia. in.....	5/4
Tires: Goodyear Power Cushion.	
size.....	6.85-15

ENGINE

Type, no. of cyl.....	IL-6
Bore x stroke, in.....	3.50 x 3.15
Displacement, cu. in.....	182.0
Compression ratio.....	9.2:1
Fuel required.....	premium
Rated bhp @ rpm.....	145 @ 5500
equivalent mph.....	107
Rated torque @ rpm.....	163 @ 3300
equivalent mph.....	64
Carburetion: Zenith-Stromberg CDSE 2x1.	
throttle dia.....	1.75
Valve train: Overhead rocker arms, pushrods, mechanical lifters.	
cam timing	
deg., int./exh.....	n.a.
durat.on, int./exh.....	n.a.
Exhaust system: Single, reverse-flow muffler.	
pipe dia., exh./tail.....	1.5/1.5
Normal oil press. @ rpm.....	n.a.
Electrical supply, V./amp.....	12/35
Battery, plates/amp. hr.....	37/60

DRIVE TRAIN

Clutch type: Single dry disc plate.	
dia., in.....	9.0
Transmission type: Four-speed manual, fully synchronized.	
Gear ratio 4th (1.00:1) overall..	3.73:1
3rd (1.34:1).....	4.90:1
2nd (1.97:1).....	7.35:1
1st (3.14:1).....	11.70:1
Shift lever location: Floor.	
Differential type: Hypoid.	
axle ratio.....	3.73:1

the industry. An automatic transmission is optional and will probably be popular in this country.

When the going gets curvey, the Volvo really gets into its element. Handling was good, comparable to an optionized Swinger or Chevy Nova. It has the predominant understeer characteristic of a long wheelbase, front engine sedan, but this decreases as the car approaches the limit. For any hairy mountain work, it is for all intents and purposes a neutral handling car, yet safely understeering enough for your wife to drive.

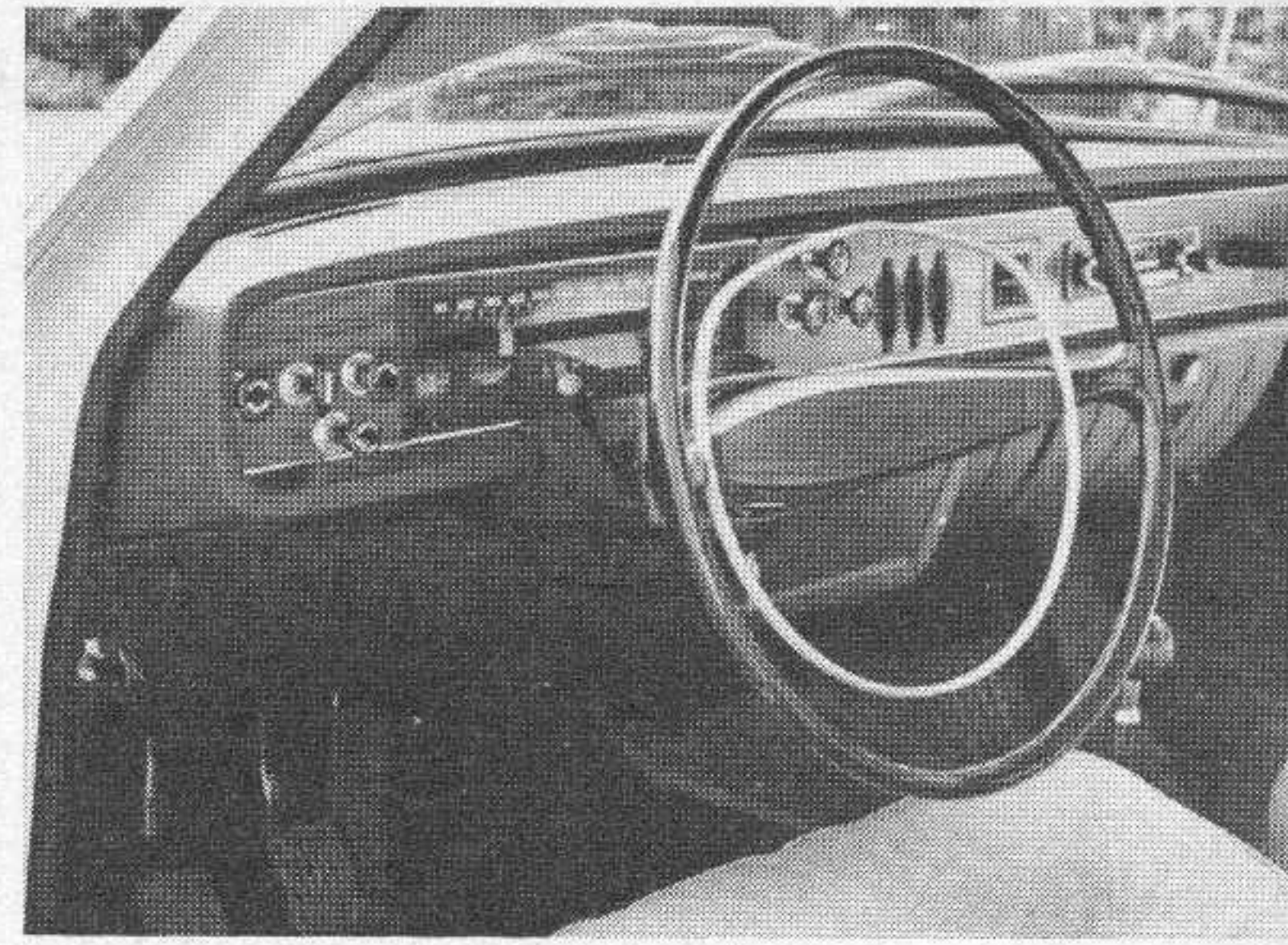
Brakes—four-wheel disc—are good, could have been better with better tires. They actually faded up, increasing in effectiveness to 27 ft./sec./sec. after eight panic stops from 80. Power steering, rare on any import, is like a few of the better ones we've tested the past year. First time behind the wheel, the driver doesn't notice that it has power. When he does, he notices that it combines just the right amount of boost with a comparatively quick (15:1) steering ratio.

Volvo combines the best features of both performance and utility, something Detroit says it wants, but seldom pulls off in a compact.

Compared to the Fiat 124 Sport

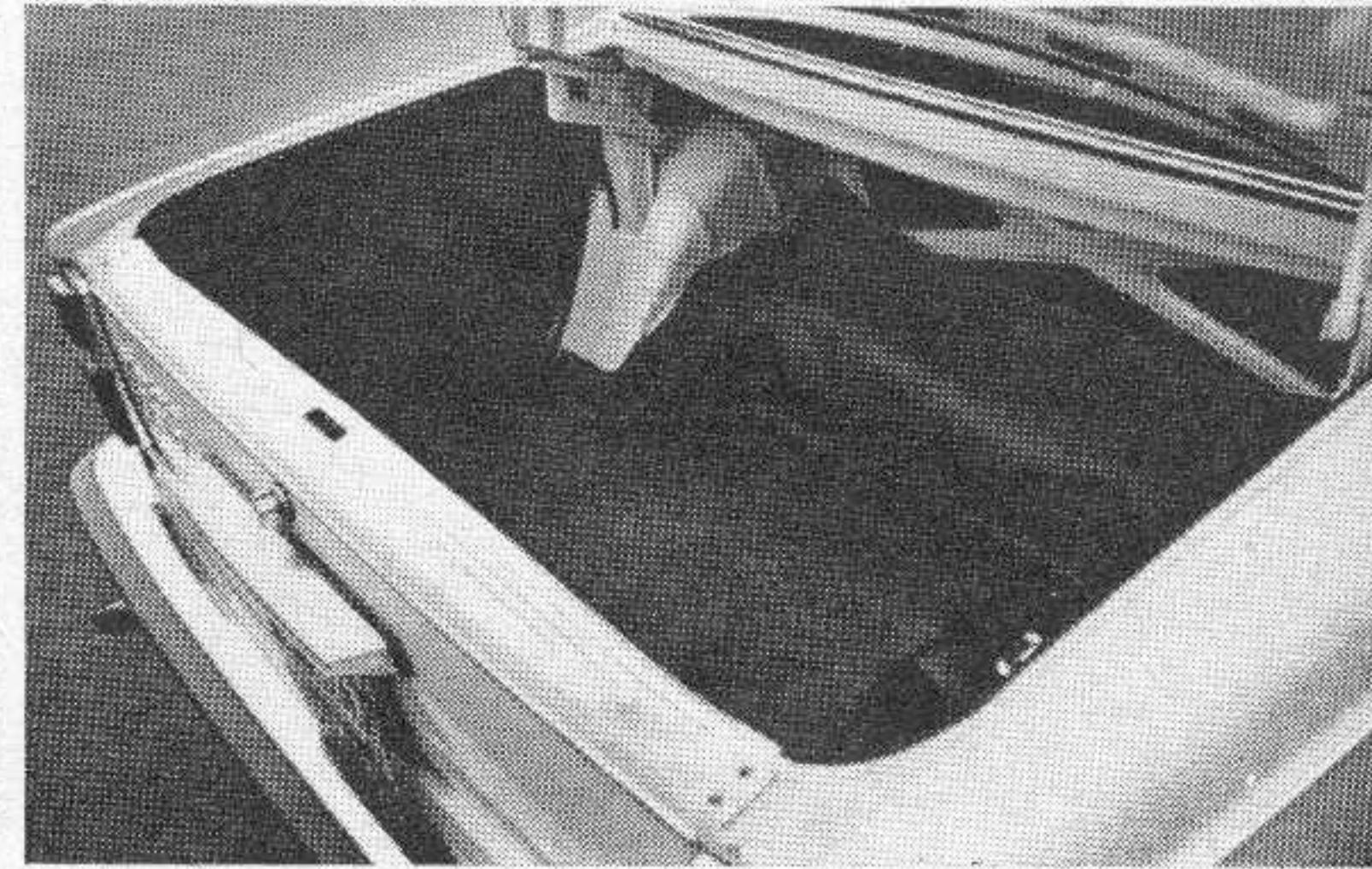
Coupe, the Volvo was dull. It's hard to really categorize the Fiat. It is a stretched version of the 124 sports car, but passenger space is as good as any small sedan. It's a small car, very light, with a small engine, yet its performance is surprising. It cannot really be called a four-passenger sedan because it is very low and rakish, having definite sports car lines. Probably it can best be called an Italian Ponycar. But most of all, it's Italian.

Which means it does everything with emotion. The engine, all 89 cubic inches of it, will rev its little heart out, just to go fast. Its five-speed gearbox is there to help it out, and give the driver an opportunity to display his driving prowess. The steering is quick, handling is sporting, and the four-wheel disc brakes do what is expected (31 ft./sec./sec.). Driving to the corner drugstore isn't a chore, it's fun. No matter how uninclined a driver might feel, before too many miles the car has lured him into enjoying himself; revving to the 6900-rpm red line, making snap shifts, heel and toe downshifting, leaving the braking to the last minute, taking corners near the limit, etc. Many a time, after an extremely hard day, we would stumble into the car wanting

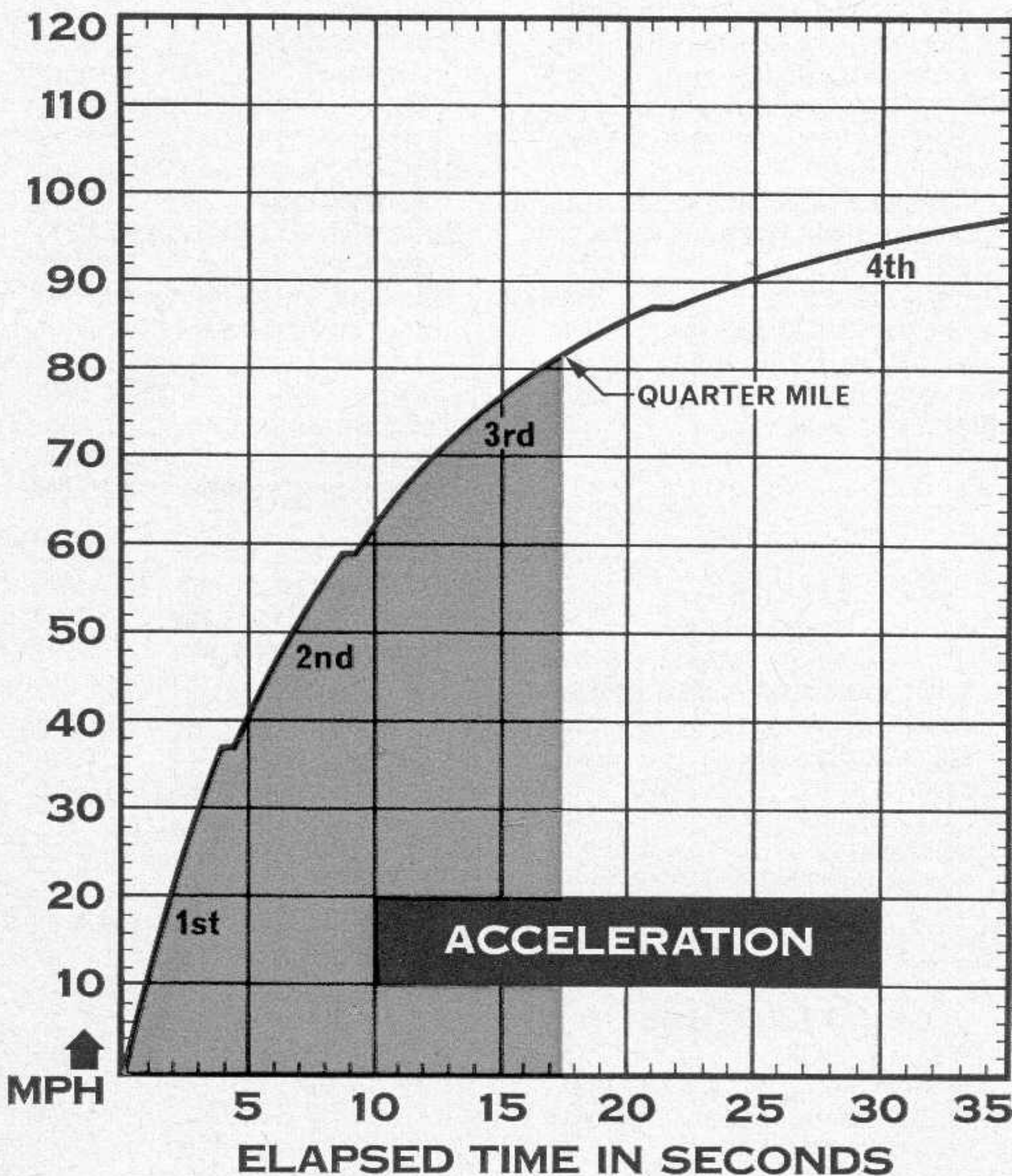


LUXURIOUS Volvo interior had domestic-like dash, excellent finish throughout.

CAVERNOUS trunk competes with anything from Detroit, but has high liftover.



CAR LIFE ROAD TEST



CALCULATED DATA

Lb./bhp (test weight)	21.9
Cu. ft./ton mile	102.5
Mph/1000 rpm (high gear)	19.4
Engine revs/mile (60 mph)	3085
Piston travel, ft./mile	1620
CAR LIFE wear index	50

SPEEDOMETER ERROR

Indicated	Actual
30 mph	33.2
40 mph	43.1
50 mph	53.0
60 mph	62.8
70 mph	72.6
80 mph	82.3
90 mph	92.0

MAINTENANCE

Engine oil, miles	6000
oil filter, miles	6000
Chassis lubrication, miles	6000
Antismog servicing, type/miles	clean PCV/12,000
Air cleaner, miles	24,000
Spark plugs: Bosch W175-T35.	
gap, (in.)	0.030
Basic timing, deg./rpm. 10BTDC/700	
max. cent. adv., deg./rpm.	n.a.
max. vac. adv., deg./in. Hg.	n.a.
Ignition point gap, in.	0.010
cam dwell angle, deg.	40
arm tension, oz.	20
Tappet clearance, int./exh.	0.020
Fuel pressure at idle, psi	3
Radiator cap relief press., psi	10

PERFORMANCE

Top speed (5600), mph	109
Test shift points (rpm) @ mph	
3rd to 4th (6000)	80
2nd to 3rd (6000)	54
1st to 2nd (6000)	34

ACCELERATION

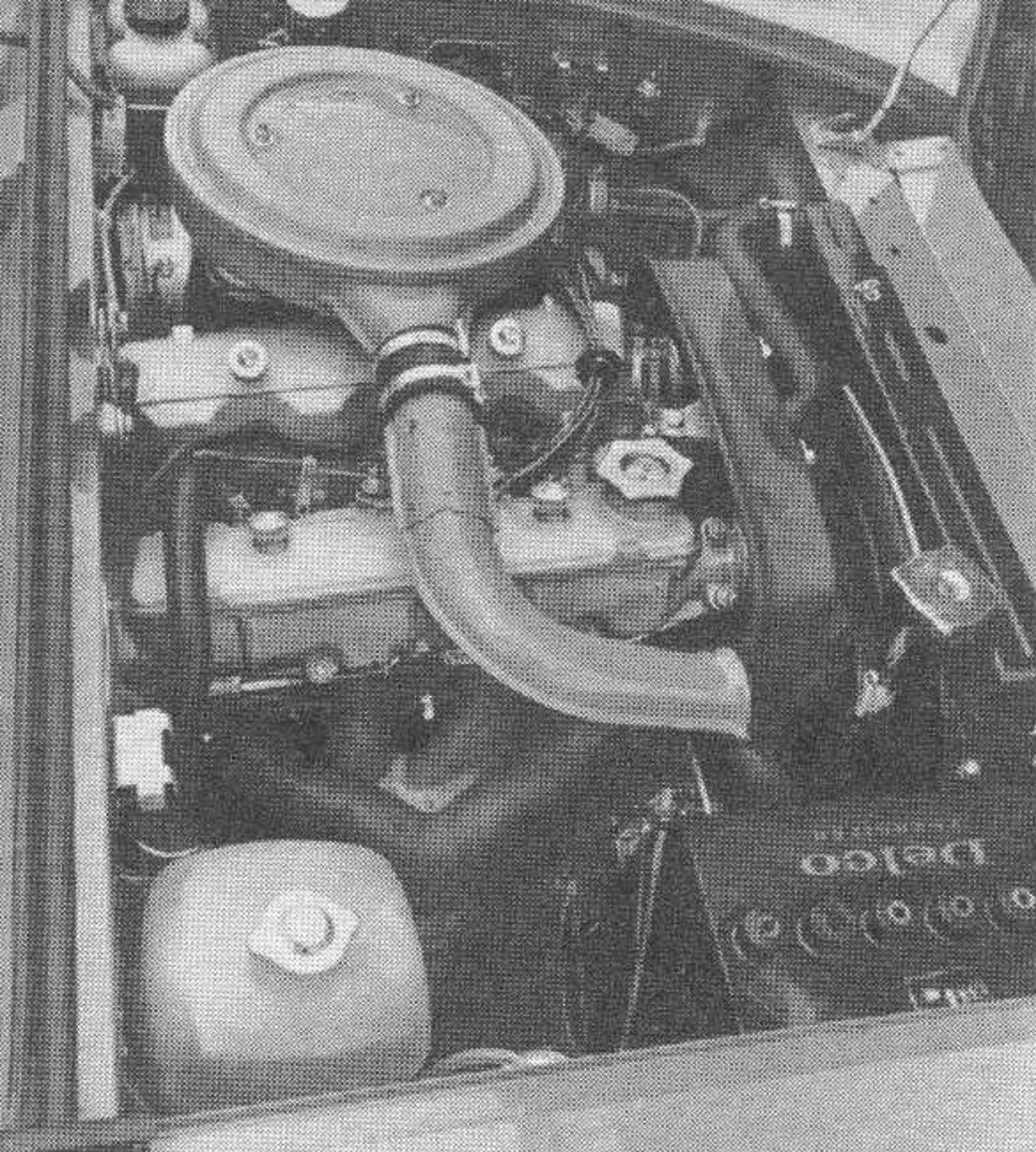
0-30 mph, sec.	3.6
0-40 mph	5.0
0-50 mph	6.8
0-60 mph	9.6
0-70 mph	12.5
0-80 mph	16.6
0-90 mph	24.5
0-100 mph	38.9
Standing 1/4-mile, sec.	17.63
speed at end, mph	82
Passing, 30-70 mph, sec.	8.9

BRAKING

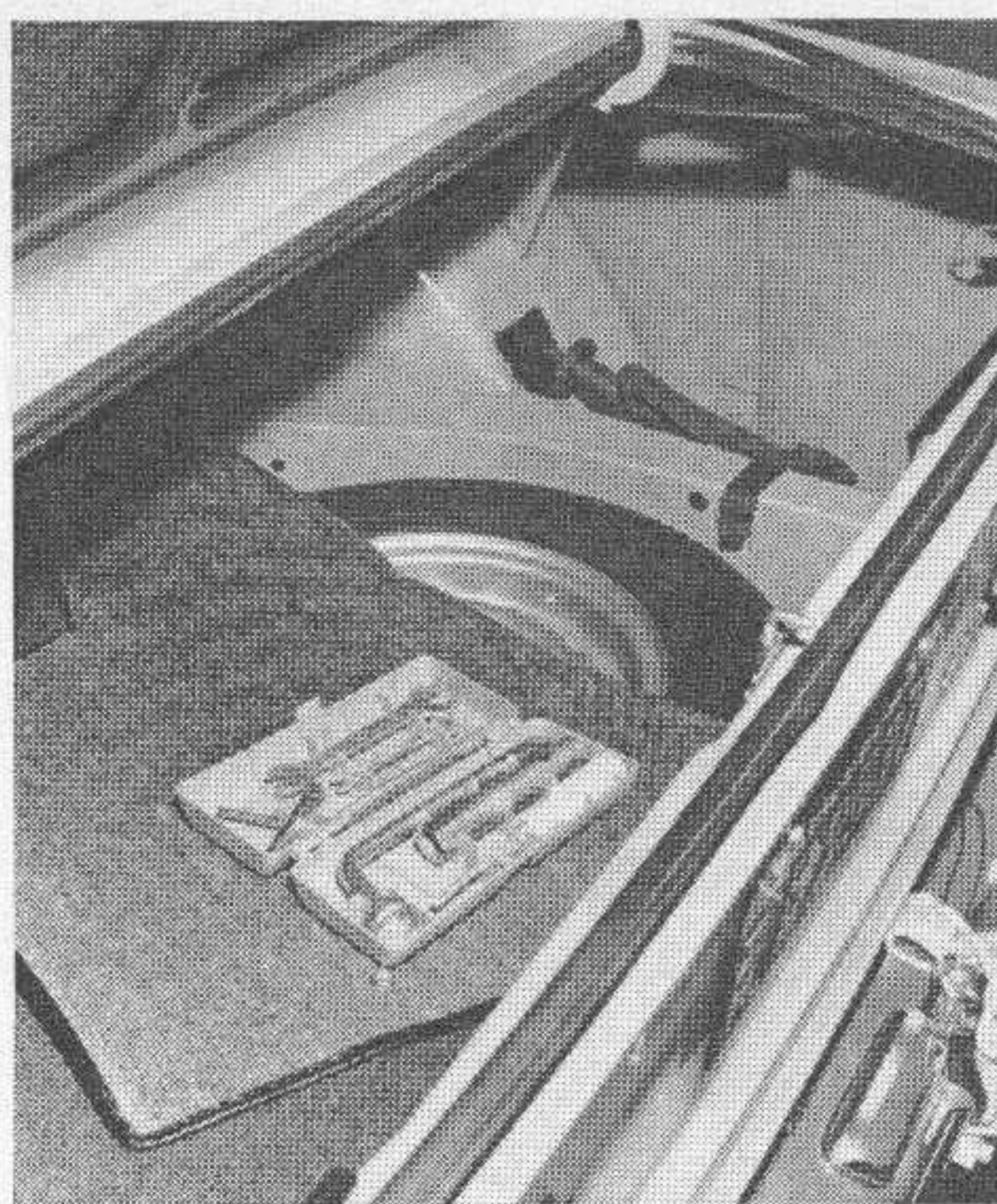
Max. deceleration rate from 80 mph	
ft./sec./sec.	27
No. of stops from 80 mph (60-sec. intervals) before 20% loss in deceleration rate.	8 stops—no loss
Control loss? None.	
Overall brake performance.	very good

FUEL CONSUMPTION

Test conditions, mpg	14.3
Normal cond., mpg	16-18
Cruising range, miles	250-280



BELT driven twin cam four is rpm crazy, produced 96 bhp at 6500.



SURPRISINGLY roomy trunk is as good as any Ponycar (luggage for two).

THREE IMPORTS

continued

only to get home and have that first martini. We always wound up driving eight-tenths, getting home sooner than we wanted and no longer thirsty.

It's hard to say just what it was that made the Fiat such a wicked little temptress. It was probably the combination of the high-winding engine, five speeds to play with and the handling. The handling stood out. When we got the car it wasn't yet fully

FIAT cockpit proved extremely comfortable, even for long trips.



FOUR-WHEEL DISC brakes gave a good peak deceleration rate (31 ft./sec./sec.), but stopping distance from 80 mph was high and they faded quickly.



1969 FIAT

124 COUPE



DIMENSIONS

Wheelbase, in.....	95.3
Track, f/r, in.....	53.0/51.8
Overall length, in.....	162.0
width.....	65.8
height.....	52.8
Front seat hip room, in.....	21 x 2
shoulder room.....	54
head room.....	40
pedal-seatback, max.....	41
Rear seat hip room, in.....	54.5
shoulder room.....	55
leg room.....	37
head room.....	37
Door opening width, in.....	41
Trunk liftover height, in.....	32

PRICES

List, FOB factory.....	\$2981
Equipped as tested.....	\$3150
Options included: Five-speed trans., AM radio.	

CAPACITIES

No. of passengers.....	4
Luggage space, cu. ft.....	9.6
Fuel tank, gal.....	11.8
Crankcase, qt.....	4
Transmission, pt.....	3
Radiator coolant, qt.....	8

CHASSIS/SUSPENSION

Frame type: Unit body frame.	
Front suspension type: Independent by s.l.a., coil springs, antiroll bar.	
ride rate at wheel, lb./in.....	n.a.
antiroll bar dia., in.....	n.a.
Rear suspension type: Live axle, trailing arms, track rod, coil springs, antiroll bar.	
ride rate at wheel, lb./in.....	n.a.
Steering system: Worm and Roller.	
overall ratio.....	16.4:1
turns, lock to lock.....	2.75
turning circle, ft. curb-curb.....	36.1
Curb weight, lb.....	2130
Test weight.....	2530
Distribution (driver),	
% f/r.....	54.3/45.7

BRAKES

Type: Disc front and rear with vacuum assist, suspension actuated proportioning valve.	
Front rotor, dia., in.....	8.9
Rear rotor, dia.....	8.9
total swept area, sq. in.....	297
Power assist	
line psi at 100 lb. pedal.....	n.a.

WHEELS/TIRES

Wheel rim size.....	13 x 5K
optional size.....	none
bolt no./circle dia. in.....	4/4
Tires: Pirelli Cinturato radials.	
size.....	165-13

ENGINE

Type, no. of cyl.....	1L-4 dohc
Bore x stroke, in.....	3.15 x 2.81
Displacement, cu. in.....	87.8
Compression ratio.....	8.9:1
Fuel required.....	premium
Rated bhp @ rpm.....	96 @ 6500
equivalent mph.....	116
Rated torque @ rpm.....	82.5 @ 5000
equivalent mph.....	89
Carburetion: 1x2 Weber 34 DCF 2V.	
throttle dia., pri./sec.....	0.95/1.02
Valve train: Two-belt driven overhead cams, bucket tappets.	
cam timing	
deg., int./exh.....	26-66/66-26
duration, int./exh.....	272/272
Exhaust system: Dual cast headers, dual head pipes, single muffler and resonator.	
pipe dia., exh./tail.....	1.1/1.1
Normal oil press. @ rpm.....	40 @ 3000
Electrical supply, V./amp.....	12/53
Battery, plates/amp. hr.....	37/48

DRIVE TRAIN

Clutch type: Single dry disc plate.	
dia., in.....	7.9
Transmission type: Five-speed manual, fully synchronized.	
Gear ratio 5th (0.913:1) overall.....	3.74:1
4th (1.00:1).....	4 10:1
3rd (1.41:1).....	5.88:1
2nd (2.18:1).....	8.95:1
1st (3.80:1).....	15.53:1
Shift lever location: Floor.	
Differential type: Hypoid.	
axle ratio.....	4.10:1

broken in. One staff member was going on a weekend jaunt, so he was elected to put on the miles. The day before, he had driven one of the 510 Datsun sedans with the very good independent rear suspension. After 200 miles in the Fiat he was convinced that it, too, must have had independent rear suspension. Peering under the car to see what kind, he discovered that the rear axle was live, and well located: four trailing radius rods, a track bar, an anti-roll bar and coil springs.

There is much to be said for independent rear suspension, but there's also much to be said for well executed live axles. Springing was very soft as sporting imports go, with very little harshness. Body roll while cornering on the limit wasn't very apparent to the driver, but subsequent pictures showed a substantial amount. It was a basically understeering car, and, having little torque, throttle oversteer could not be provoked. It did have a very strange trailing throttle oversteer characteristic in right-hand turns when pitched into the corners right on the limit. We suspect it was the result of a small jacking effect caused by the track bar. It wasn't dangerous, however, being completely control-

lable and since it happens so near the limit of adhesion, it is doubtful that many drivers will ever discover it.

The Fiat was the most underpowered of the group, although there was little feeling of having to row it around town with the gearbox. Fifth gear is actually an overdrive, to be used for open road cruising, but only offers a 9% rpm drop from fourth, which hardly changes the engine note. We were bothered by the low power in passing at highway speeds. Acceleration from 50 or 60 mph in any gear left a lot to be desired. If in fifth at the time of initiating the pass, a shift to fourth would not be enough. By the time the driver finds third in the notchy shift gate, his chance may have passed.

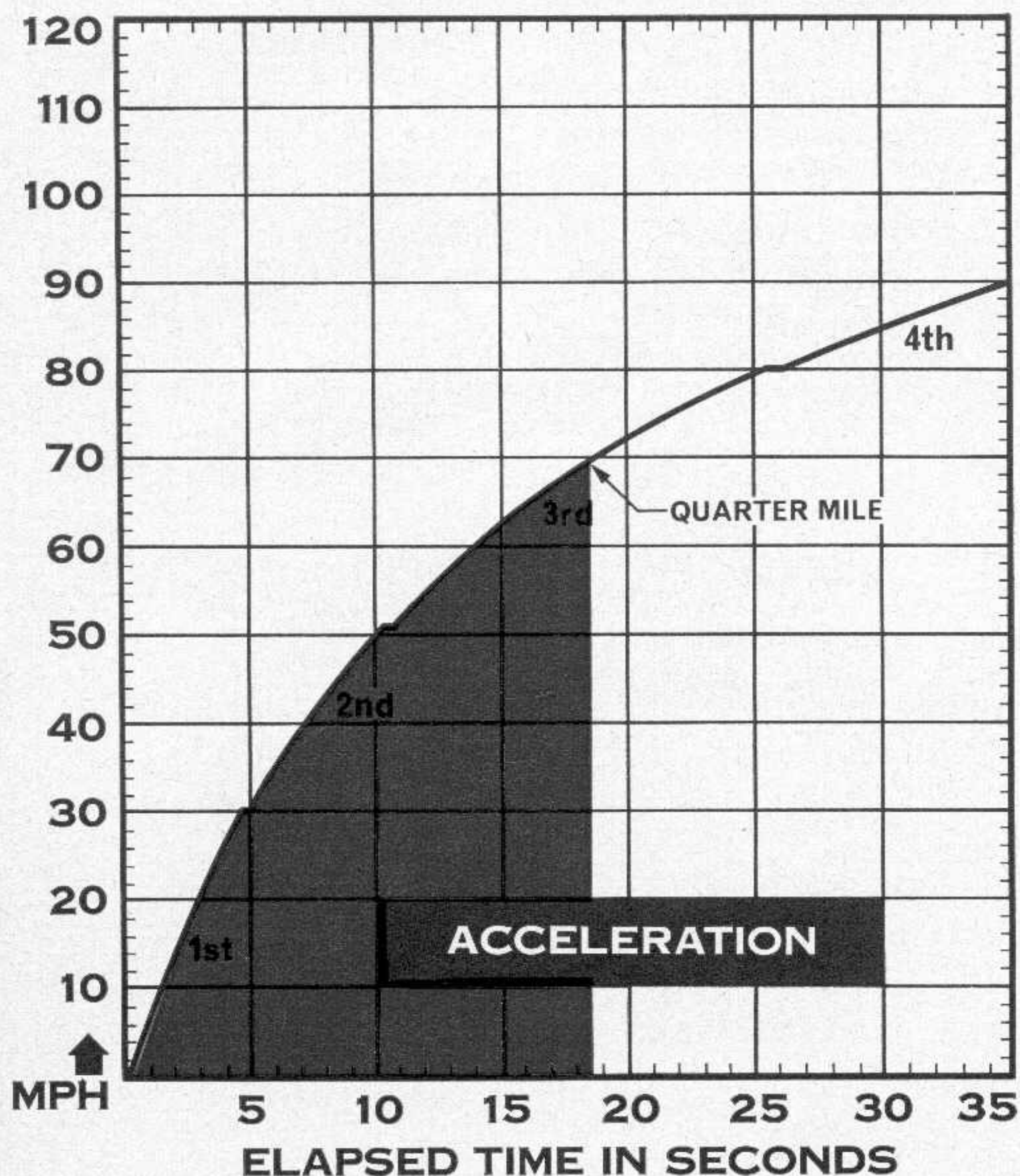
The engine itself is a delightful little 4-cyl. with double overhead camshafts driven by a toothed belt (similar to the Pontiac ohc six), putting out 96 bhp from its 89 cubic inches. It is incredibly revvy, sounding very comfortable even when buzzing along hours on end at 4500. It did have a strange vibration/noise between 3000 and 5000 rpm that had the effect of making the driver nervous enough to keep his revs above 5000, where things smoothed out and sounded

normal. Engine noise was not objectionable at the high rpm, due partly to the fan clutch, partly to the belt cam drive.

Just as the Fiat displayed its Italian breeding, the BMW 2002 seemed to have a characteristic German personality. Efficient, precise, functional, tight, sturdy. The 2002 is a sedan in the purest sense, being relatively boxy with lots of interior room, much of it vertical. However, the sedan aura stops at the functional aspect, and sports breeding takes over. The 2002 is actually the 1600 sedan hot rodded with the larger 121-cid engine slipped in. Suspension system is a well engineered MacPherson strut in front, and semi-trailing arm independent rear. A smooth shifting, fully synchronized four-speed adds the finishing touches to the sporting image.

Most noteworthy item about the car is the engine, a very modern 4-cyl. with chain driven single overhead cam. It pulls smoothly and strongly up to and right past its 6300-rpm red line, sounding happy whether it's being lugged or revved mercilessly. There is a reason it sounds relaxed. It was designed for European driving, which is usually flat out all day. The BMW is built to take that kind of use,

CAR LIFE ROAD TEST



CALCULATED DATA

Lb./bhp (test weight).....	26.4
Cu. ft./ton mile.....	67.7
Mph/1000 rpm (high gear).....	17.8
Engine revs/mile (60 mph).....	3375
Piston travel, ft./mile.....	1580
CAR LIFE wear index.....	53.3

SPEEDOMETER ERROR

Indicated	Actual
30 mph.....	29.4
40 mph.....	39.2
50 mph.....	49.4
60 mph.....	59.9
70 mph.....	69.1
80 mph.....	77.9
90 mph.....	85.5

MAINTENANCE

Engine oil, miles/days.....	6000
oil filter, miles/days.....	6000
Chassis lubrication, miles.....	12,000
Antismog servicing, type/miles.....	clean PCV system/12,000
Air cleaner, miles.....	clean/3000, replace/6000
Spark plugs: Champion N6Y.	
gap, (in.).....	0.022
Basic timing, deg./rpm.....	10/1000
max. cent. adv., deg./rpm.....	24/n.a.
max. vac. adv., deg./in. Hg.....	n.a.
Ignition point gap, in.....	0.018
cam dwell angle, deg.....	n.a.
arm tension, oz.....	n.a.
Tappet clearance,	
int./exh.....	0.018/0.020
Fuel pressure at idle, psi.....	3
Radiator cap relief press., psi.....	14

PERFORMANCE

Top speed (6400), mph.....	104 (4th)
(5800).....	103 (5th)
Test shift points (rpm) @ mph	
4th to 5th (6400).....	104
3rd to 4th (6900).....	80
2nd to 3rd (6900).....	51
1st to 2nd (6900).....	30

ACCELERATION

0-30 mph, sec.....	4.7
0-40 mph.....	7.0
0-50 mph.....	10.0
0-60 mph.....	14.2
0-70 mph.....	18.7
0-80 mph.....	25.5
0-90 mph.....	34.9
0-100 mph.....	55.0
Standing 1/4-mile, sec.....	18.6
speed at end, mph.....	69.8
Passing, 30-70 mph, sec.....	14.0

BRAKING

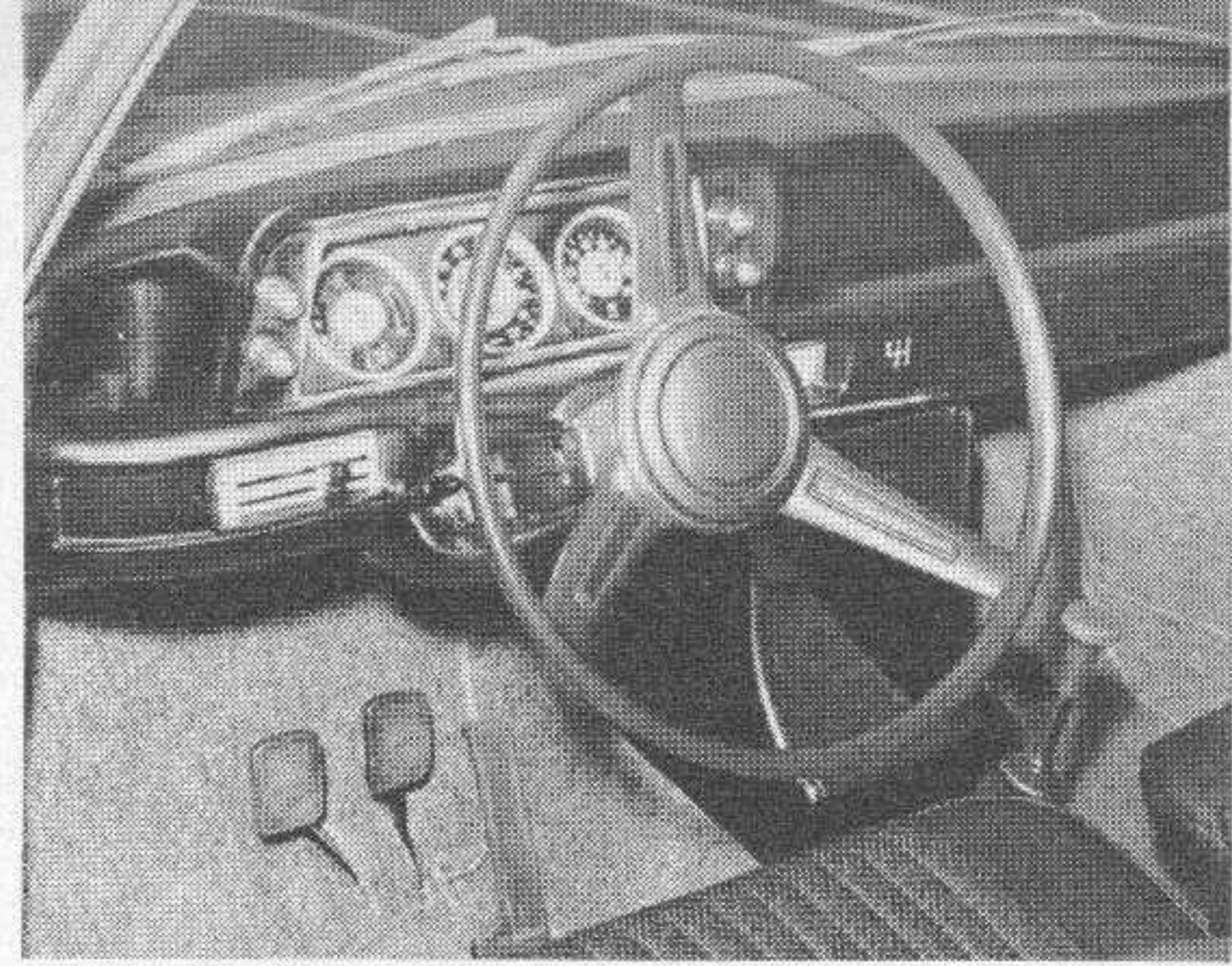
Max. deceleration rate and stopping distance from 80 mph	
ft./sec./sec.....	31/325 ft.
No. of stops from 80 mph (60-sec. intervals) before 20% loss in deceleration rate.....	6
Control loss? None.	
Overall brake performance.....	very good

FUEL CONSUMPTION

Test conditions, mpg.....	20.4
Normal cond., mpg.....	22-26
Cruising range, miles.....	270-320



BMW has high C.G. and body lean characteristic of European sedans.



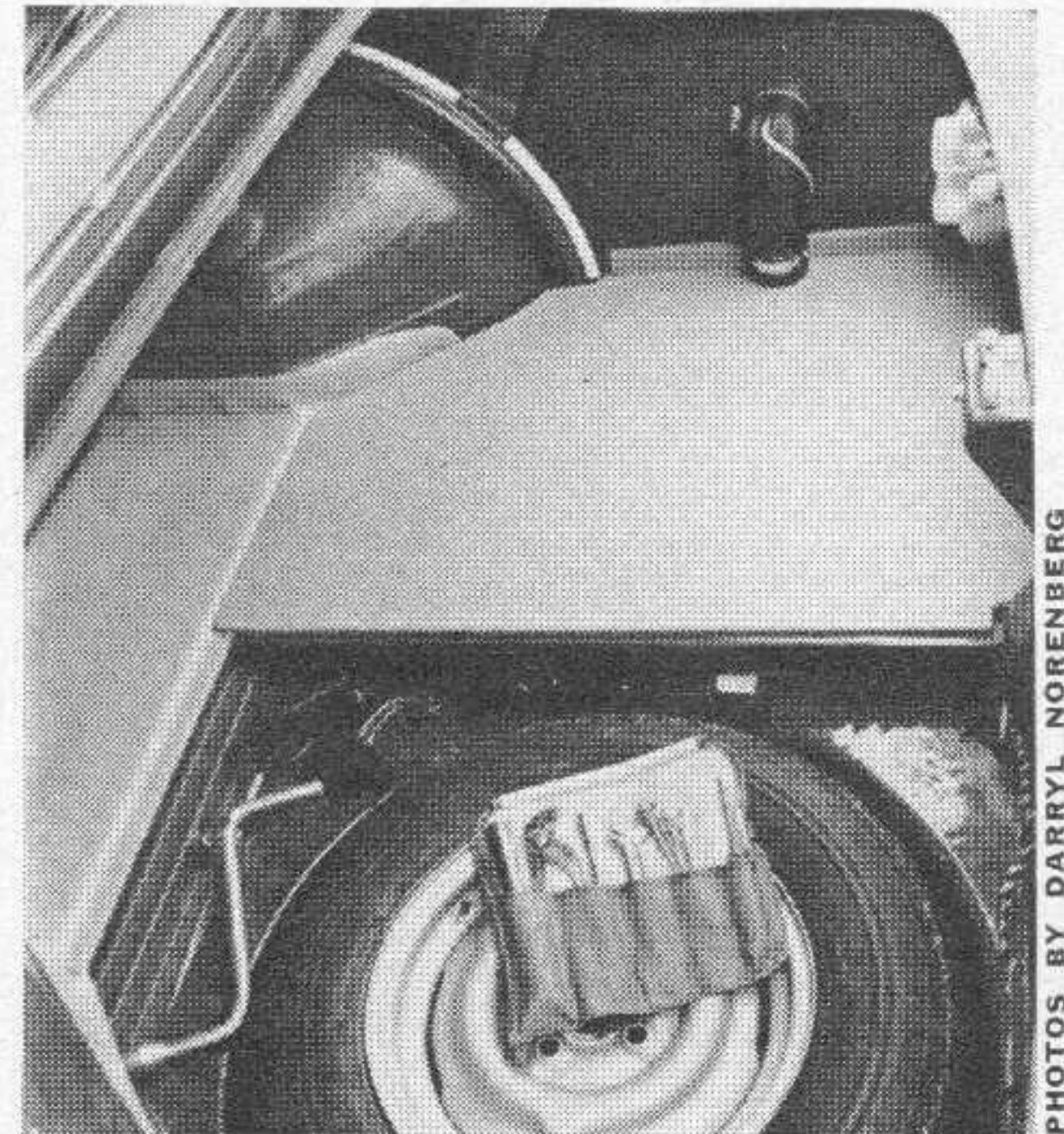
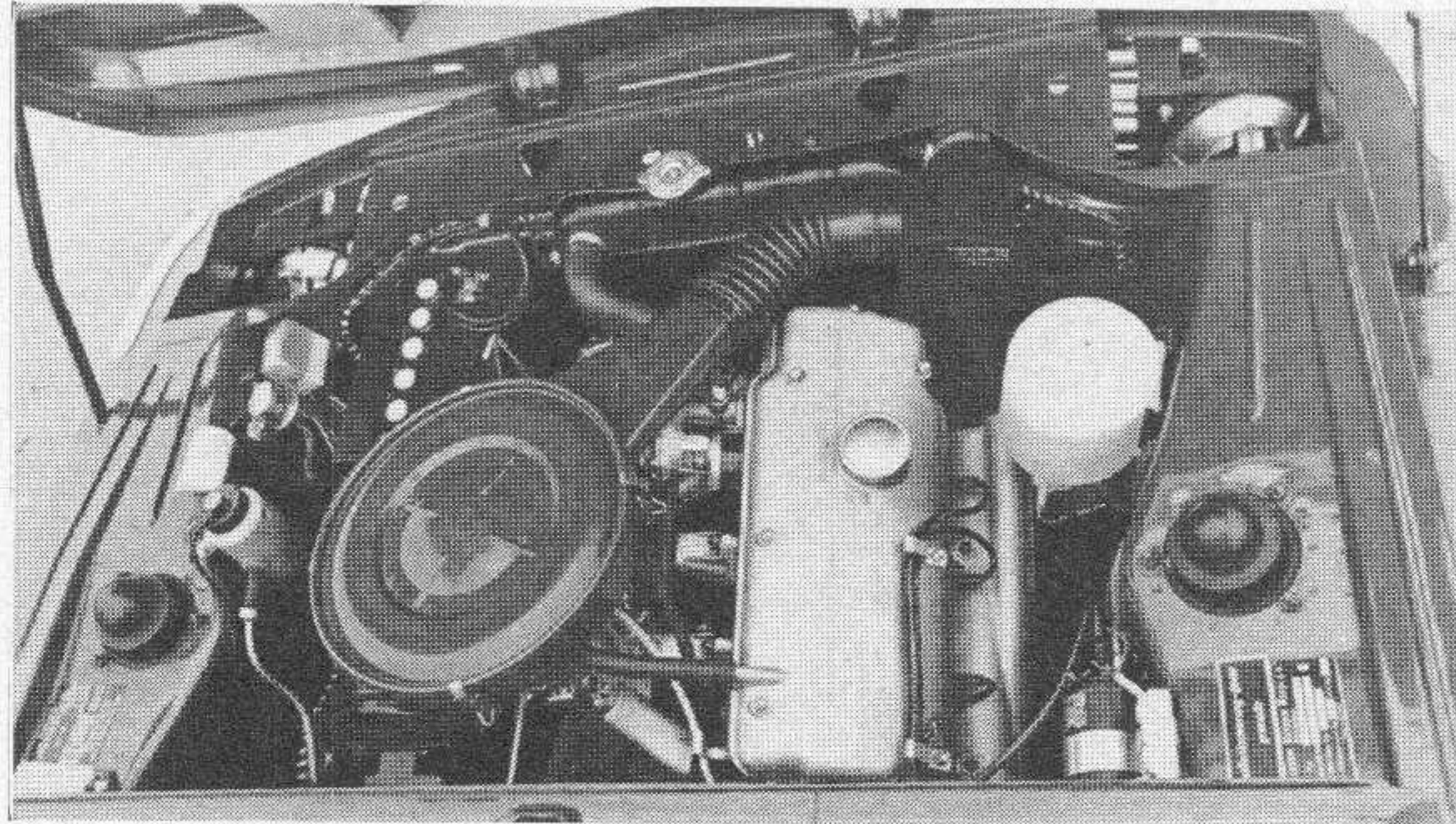
GOOD position for wheel and shifter, but BMW seats lacked side support.

SPARE tire stowage beneath flat trunk floor, like tool kit, is a good feature.

THREE IMPORTS

continued

EXCELLENT sohc engine is smooth, powerful, revvy, and very sturdy, for flat-out Continental driving.



PHOTOS BY DARRYL NORENBURG

1969 BMW

2002 TWO-DOOR SEDAN



DIMENSIONS

Wheelbase, in.....	98.4
Track, f/r, in.....	52.4/52.4
Overall length, in.....	166.5
width.....	62.6
height.....	54.0
Front seat hip room, in.....	2 x 24
shoulder room.....	51
head room.....	40
pedal-seatback, max.....	43
Rear seat hip room, in.....	50
shoulder room.....	50
leg room.....	32
head room.....	38
Door opening width, in.....	40
Trunk liftover height, in.....	32

PRICES

List, FOB factory.....	\$3053
Equipped as tested.....	\$3400
Options included: Anti-roll bars, radial tires, power brakes, reclining seats, tachometer.	

CAPACITIES

No. of passengers.....	4+1
Luggage space, cu. ft.....	15.9
Fuel tank, gal.....	12.1
Crankcase, qt.....	4.2
Transmission/dif., pt.....	2.1/1.9
Radiator coolant, qt.....	7.4

CHASSIS/SUSPENSION

Frame type: Unit steel.	
Front suspension type: Independent, MacPherson struts, lower A-arms, coil springs.	
ride rate at wheel, lb./in.....	n.a.
antiroll bar dia., in.....	n.a.
Rear suspension type: Independent, semi-trailing arms, coil springs, anti-roll bar.	
ride rate at wheel, lb./in.....	n.a.
Steering system: Worm and roller.	
overall ratio.....	17.6:1
turns, lock to lock.....	3.5
turning circle, ft. curb-curb.....	34.1
Curb weight, lb.....	2220
Test weight.....	2550
Distribution (driver)	
% f/r.....	53.6/46.4

BRAKES

Type: Disc front/drum rear with power assist.	
Front rotor, dia., in.....	9.4
Rear drum, dia.....	7.9
total swept area, sq. in.....	243
Power assist	
line psi at 100 lb. pedal.....	n.a.

WHEELS/TIRES

Wheel rim size.....	13 x 4.5J
optional size.....	none
bolt no./circle dia. in.....	4/4
Tires: Michelin XAS Radial.	
size.....	165SR-13

ENGINE

Type, no. of cyl.....	IL-4
Bore x stroke, in.....	3.50 x 3.15
Displacement, cu. in.....	121.5
Compression ratio.....	8.5:1
Fuel required.....	premium
Rated bhp @ rpm.....	113 @ 5800
equivalent mph.....	105
Rated torque @ rpm.....	116 @ 3000
equivalent mph.....	54
Carburetion: Solex 40 PDSI.	
throttle dia., pri./sec.....	n.a.
Valve train: Single overhead cam, rocker arms.	
cam timing	
deg., int./exh.....	5-52/52-4
duration, int./exh.....	237/236
Exhaust system: Single reverse-flow muffler.	
pipe dia., exh./tail.....	1.5/1.5
Normal oil press. @ rpm.....	n.a.
Electrical supply, V./amp.....	12/35
Battery, plates/amp. hr.....	37/44

DRIVE TRAIN

Clutch type: Hydraulically operated single dry disc.	
dia., in.....	7.9
Transmission type: Four-speed manual with Porsche-type synchromesh.	
Gear ratio 4th (1.00:1) overall.....	3.64:1
3rd (1.34:1).....	4.91:1
2nd (2.05:1).....	7.46:1
1st (3.84:1).....	13.97:1
Shift lever location: Floor.	
Differential type: Hypoid bevel.	
axle ratio.....	3.64:1

and do it for 100,000 miles. Of the three cars, this seemed the least fussy about which gear it was in. It could be lugged, although most drivers responded to its performance image and automatically kept the revs up. Acceleration was comparable to the Volvo, and easily up to any American driving situation. Passing maneuvers never presented a problem, as fourth usually had enough torque to accomplish them, or, if things did get dicey, third gear and the high rev capability were always there.

Handling was not as good as we had thought it would be. Not that it was bad—we just were expecting a lot more than we had any right to. The independent rear suspension is a joy on rough roads, giving what seems like infinite compliancy. Like the Fiat, the BMW seemed to bring out the sporting driver in a person, inducing him to corner at higher speeds than he normally might in a lesser car. It's another case of the car instilling confidence in the driver, letting him know he can drive it safely out there, making driving to work an outlet instead of a chore. Understeer was the predominate characteristic, though right at the limit, the inside rear wheel would lift off, and the car would switch quickly over to a oversteer.

Curiously, the BMW had the best brakes of the three, yet it was the only one that didn't have four-wheel discs. The rear drums exhibited the usual early lock-up tendency common on disc/drum combinations. Our eight stops from 80 fade test failed to decrease the rate or increase the stopping distance.

A good descriptive label for the BMW is a sedan body on a sports car chassis and drive train. It proves one more time that utility need not be synonymous with dullness.

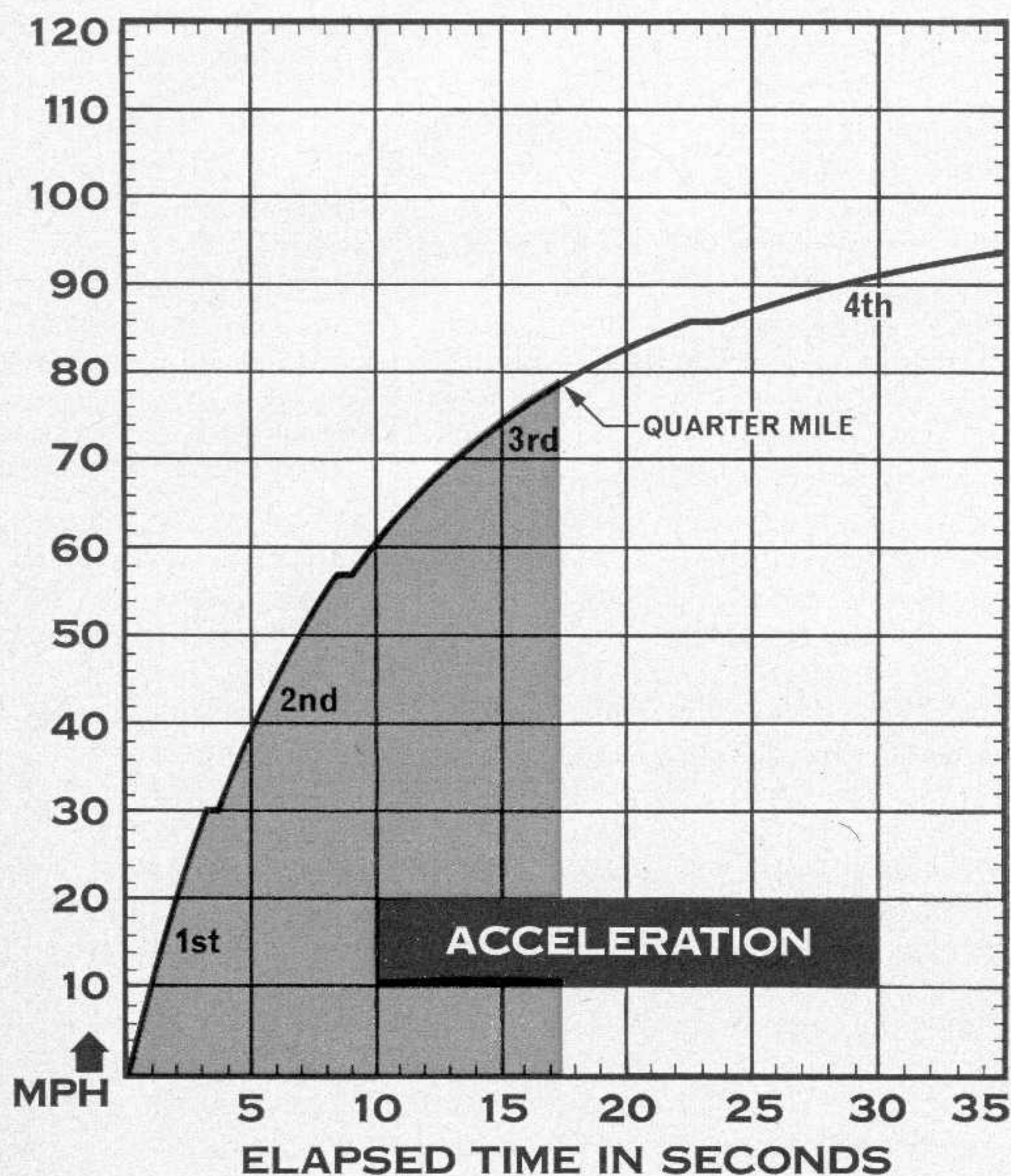
Don't get us wrong. These cars are not without their faults. Several things were annoying. The dash controls were very inconsistent, not just because of the different European standards, but their placement, operation, and even reliability were sometimes questionable. The BMW had rather uncomfortable seats (very poor buckets—you're not alone Detroit) with poor pedal, steering wheel and shift lever relationship. The Volvo's inside door handles were difficult to operate and if the Fiat's seat adjustment had crushed the engineering editor's finger one more time. . . .

Where they all fell down was in the ventilation system and the seat belt arrangement. At first we couldn't figure out why they all had interior vents

and front quarter windows. Now we know. The vent systems are not adequate, and have to be supplemented with the window vents. The seat belt/shoulder strap arrangement was also inferior to what is available on most domestic cars. Even the Volvo system, which is credited with the introduction of the diagonal strap, had a confusing and difficult buckle-up sequence. The result is that people seldom bother with them at all. With a simpler system, they at least use the seat belt.

But the biggest thing of all, about all of them, is the price. They are all expensive for what the buyer gets. For any of these prices, a corresponding American car is available that offers at least as much, sometimes more performance, convenience, and luxury. It's just that you get it in a larger size car, that almost by definition is less "fun to drive." It just seems that the American auto industry, for the moment at least, cannot scale down the enthusiast cars to a more economical size. These three cars prove that it can be done and we think, if Detroit wanted to really try, they could make cars that had performance, economy, and still be exciting to drive. And do a better job for the price. Are you listening Detroit? ■

CAR LIFE ROAD TEST



CALCULATED DATA

Lb./bhp (test weight)	22.6
Cu. ft./ton mile	90.5
Mph/1000 rpm (high gear)	18.3
Engine revs/mile (60 mph)	3280
Piston travel, ft./mile	1722
CAR LIFE wear index	56.5

PERFORMANCE

Top speed (5700), mph	104
Test shift points (rpm) @ mph	
3rd to 4th (6400)	86
2nd to 3rd (6400)	57
1st to 2nd (6400)	30

SPEEDOMETER ERROR

Indicated	Actual
30 mph	28.4
40 mph	38.1
50 mph	47.7
60 mph	56.8
70 mph	65.4
80 mph	74.2
90 mph	83.0

ACCELERATION

0-30 mph, sec.	3.8
0-40 mph	5.3
0-50 mph	7.1
0-60 mph	10.0
0-70 mph	13.5
0-80 mph	18.2
0-90 mph	28.0
0-100 mph	49.0
Standing 1/4-mile, sec.	17.4
speed at end, mph	78.9
Passing, 30-70 mph, sec.	9.7

MAINTENANCE

Engine oil, miles/days	8000
oil filter, miles/days	8000
Chassis lubrication, miles	8000
Antismog servicing, type/miles	none
Air cleaner, miles	8000
Spark plugs: Champion N9Y	
gap, (in.)	0.024
Basic timing, deg./rpm	align timing marks/2000
max. cent. adv., deg./rpm	37/2400
max. vac. adv., deg./in. Hg.	10/n.a.
Ignition point gap, in.	0.016
cam dwell angle, deg.	60
arm tension, oz.	n.a.
Tappet clearance, int./exh.	0.008/0.008
Fuel pressure at idle, psi	3
Radiator cap relief press., psi	14

BRAKING

Max. deceleration rate and stopping distance from 80 mph	
ft./sec./sec./	29 ft./sec./sec., 287 ft.
No. of stops from 80 mph (60-sec. intervals) before 20% loss in deceleration rate	8 stops, no loss
Control loss?	Slight.
Overall brake performance	excellent

FUEL CONSUMPTION

Test conditions, mpg	17.4
Normal cond., mpg	22-27
Cruising range, miles	265-325