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CONSUMER REPORTS

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The Little Cars

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Chevrolet Vega

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THE LITTLE CARS

More and more single people, small families and even not-so-small families have discovered that a bigger car isn't necessarily a better car. It certainly isn't better in clogged traffic or in the great American game of find-the-parking-spot. Big cars cost more than small ones to buy, operate, repair—and often to insure.

A big car may even pollute the air more than a small one. Today's methods of testing emissions aren't accurate enough to prove that premise conclusively. But it makes sense: Assuming roughly equal efficiency for two car engines, the one that burns more gasoline would emit more pollutants.

Until last fall, the choice in very small cars, the class CU calls subcompacts, was limited largely to *Volkswagen, Toyota, Datsun* and other imports. The lone domestic model was American Motors' *Gremlin*—and it didn't particularly endear itself to CU's test drivers (see CONSUMER REPORTS, July 1970). Now two new domestic subcompacts have appeared: the *Chevrolet Vega* and the *Ford Pinto*.

How do those newcomers stack up against Beetle & Co.? To find out, CU tested a group of six subcompacts. Besides the *Vega* and the *Pinto*, we check-tested the "1970½" *Datsun PL510* that we had reported on in June 1970 (we made a few minor changes to update our car). We also bought a *Toyota Corona* and a *VW Super Beetle* (it has more luggage room than the unsuper Beetle, and a different front suspension). Finally, we bought another AMC *Gremlin*, since this year's standard engine is more powerful than last year's.

Less than $250 separates the *Pinto*, the least expensive car in this group, from the *Toyota*, the most expensive and also the most fully equipped. The domestic models also are close to the imports in size, although the *Vega* is longer than its competitors, and the *Pinto* and the *Gremlin* are wider. Front-seat accommodations are more generous in the domestic cars. All six cars in this group are billed as four-passenger sedans —but adults who sit in the back seats of any of these cars may take strong exception to that claim.

Before the *Vega* went on sale, a top Chevrolet executive boasted that the quality of construction of the new model would be higher than that of any other domestic car. Perhaps someday. Our *Vega* suffered from wavy, scarred sheet metal, sloppy paint, and a fairly large number of mechanical defects. So did the *Pinto*. As usual, our *VW* was assembled and finished exceptionally neatly, and the *Datsun* and the *Toyota* weren't far behind. The *Gremlin* was about average compared with the cars CU has tested recently.

Small-car safety

How safe are such small cars? That question comes up often, but meaningful answers are still in short supply. A preliminary report on a large-scale accident study by the State of New York concludes that the likelihood of severe injury or death increases as car weight goes down. Apparently,

Some changes in CU's tests

Since U.S. car manufacturers have designed most of their 1971 models to operate efficiently on the new unleaded or low-lead gasolines, CU now uses such gasolines whenever specified as usable by the manufacturer.

General Motors says it's O.K. to use the new unleaded fuels (such as *Shell of the Future, Amoco 91* and *Arco Clear*, among others) in its engines. Those fuels are rated at 91 octane by their manufacturers. Ford told CU that such fuels are acceptable for all *Ford* models except those for which premium-grade fuel is specified. American Motors recommends alternate tankfuls of leaded and unleaded fuel. All three of our domestic test cars for this month, along with our *VW Super Beetle*, ran satisfactorily on 91-octane fuel. Datsun recommends regular-grade fuel for the *PL510*; our test car ran on regular with only mild pinging. Toyota recommends premium for the *Corona*, but we successfully used regular in our test car.

CU also is reducing its maximum allowable brake-pedal effort from 200 to 150 pounds. The National Bureau of Standards has found that many drivers can't brake harder than 150 pounds. For that reason, CU will rate a car Not Acceptable if its brakes require more than 150 pounds of pedal effort during our brake tests. Starting this year, CU's auto testers are measuring brake-pedal effort with an electronic transducer designed by our Electronics Division instead of with a hydraulic gauge.

also, small sedans become involved in more one-car accidents and more rollovers than larger cars. However, those statistics are colored by the fact that a great proportion of the subcompacts in those studies were pre-1968 *Volkswagen* Beetles. Because of their design, those Beetles tend to spin out and roll over more easily than many other small cars.

Of course, other factors besides size and weight affect safety. For example, the occupant of a small car who is wearing both shoulder and lap belts may be better protected than an unbelted occupant of a larger car. Side barriers such as those built into the doors of the *Vega* also may help to offset a lack of weight. In the absence of more complete research data, CU's auto testers have no hesitation about riding in any of the cars in this test group. But if you do, you may want to purchase a heavier car just for your peace of mind.

Remember, too, that you may give up more than crash protection when you buy a subcompact. Comparing all cars on an absolute basis, as CU does, we may judge, for example, that a given subcompact rides quite well for its size and weight and still call its ride fair or worse. After all, it has to compete with cars that may weigh twice as much and cost three times as much as those in our current test group. It's much harder to design good ride into a small car than into a large one. One reason is that, because of lack of room, suspension travel in a small car tends to be shorter. You'll have to decide for yourself just how much space and comfort you're willing to sacrifice for low cost, greater maneuverability and easier parking.

DATSUN PL510

CU last reported on a *Datsun* in June 1970. We rated it then above the *VW* Beetle in overall quality. This year we rank the *Datsun* above the other subcompacts, including the *Super Beetle*.

We found the front bucket seats fair-to-good in comfort. But even average-sized drivers complained that leg room in front was a bit skimpy. In the four-door model the seat backs recline; in the two-door they don't.

In the two-door, an ingenious mechanism slides the seat cushion forward a few inches when you fold down the seat back; in spite of that, though, climbing in and out of the rear seat was awkward. And having expended the effort to get into the rear seat, you probably wouldn't be very happy there. Knee room was inadequate even for average-sized adults. We judged comfort there fair-to-poor.

The *Datsun* has a fault that we've often complained of and that a number of cars have eliminated: The lights and windshield wiper/washer switches are side by side and identically shaped. What's more, the wiper/washer switch is to the left of the light switch, contrary to the arrangement U.S. drivers are accustomed to. Turning off your lights on a misty night when you meant to turn off the wiper could be dangerous. Also, you have to work the heater blower switch mainly by feel; the markings are hard to read. Other controls are unlikely to cause confusion and they're within easy reach of the fully belted driver.

The heater and defroster put out plenty of heat. With earlier *Datsuns* we complained that you usually get either too much heat or not enough, that there's no comfortable middle setting for most conditions. That's still true. As to ventilation, the two face-level fresh-air ducts provided plenty of air in warm weather; but when open, they carried engine noise into the passenger compartment.

Forward visibility is fine, but the line of vision from the inside mirror isn't parallel to the ground, so that your view is cut off too close behind.

The *Datsun's* interior is generally smooth. Even the horn bar is padded. But the latches for the swinging rear windows on the two-door model are sharp and hostile when open. The three-point lap-and-shoulder belts, once adjusted to a specific person, are convenient and easy to fasten. But loosening the shoulder belt usually involves getting out of the car—a nuisance. Some drivers also complained that the shoulder belt rubbed lightly against their neck or left ear. In sum, the shoulder portion of the belt is unlikely to be used. The rear belts were adjusted so short that large passengers couldn't fasten them. We had to lift out the rear-seat cushion and unbolt the belt anchors to lengthen the belts.

The *Datsun's* fuel tank is in the trunk, behind the rear seat. In that location it's well protected against collision damage; but if it *should* puncture, fuel could leak

down into the cabin, posing a fire hazard.

For a very small car, the *Datsun* rode quite comfortably. We judged the ride fair under light load, fair-to-poor with a full load. The ride felt busy but not harsh; over large bumps the ride was well controlled. Noise was a problem. The four-cylinder engine buzzed and, during gentle acceleration at fairly high speeds, made a strange rattlesnake-like noise. The rear suspension clunked over sharp bumps. Road and wind noise was high.

With its manual steering, the *Datsun's* steering effort on the road was low-to-moderate; parking, though, required moderate effort. We judged normal handling to be good. Although the car was sensitive to crosswinds on the freeway, it maintained directional stability over choppy road surfaces better than any of these other cars except the *VW*. The *Datsun's* high-speed emergency handling also was good. Steering response in both normal and emergency driving was fairly quick and predictable.

The *Datsun* accelerated quickly. But it was too easy with the four-speed manual transmission to slip into the reverse gate instead of third gear. For those who prefer a three-speed automatic transmission, the *Datsun* has one for $170.

We judged the nonpower disc-front/drum-rear brakes good. They required moderate effort to use, faded only slightly and recovered from fade quickly.

Our *Datsun* proved to be assembled with better-than-average care. We uncovered only 16 minor problems. We couldn't turn on the heat because of a loose heater cable, and a defroster duct was disconnected. Defective locks and window regulators, body flaws and rattles and buzzes also required repairs. But all in all, not a bad showing.

The *PL510's* Frequency-of-Repair record has been better-than-average.

The Datsun's trunk, the roomiest in this group, has flat, smooth sides and floor

CHEVROLET VEGA

The *Chevrolet Vega* (and the *Toyota Corona* discussed next) follow close behind the *Datsun* in our Ratings order. However, the *Vega* has an entirely different personality. While the *Datsun* buzzed and boomed at parkway speeds, the *Vega* gobbled up the highway with less fuss. However, in city driving—the *Datsun's* forte—the *Vega* seemed listless and flat.

Our test *Vega* was a basic two-door sedan. A coupe is also available, but the manufacturer's published dimensions indicate that the sedan is roomier. The *Vega's* bucket front seats are of soft, full-foam construction rather than the more-usual metal springs covered by foam or cotton padding. We judged their comfort fair-to-good. Although the seats aren't contoured, they support the driver and front-seat passenger at the sides by allowing them to sink back into the foam. This type of seat can accommodate people of widely varying size; but the nonperforated vinyl upholstery tends to make occupants feel hot and sticky in the summer.

The driver sits low, with his legs stretched out fairly straight. The accelerator pedal felt too far forward in relation to the other pedals and the steering wheel—a complaint we have had with many recent *Chevrolet* models.

The *Vega's* rear seat isn't as roomy as the ads would have you believe. But two adults could ride there fairly painlessly for a short time. The front passenger's seat is fixed in a compromise position; it can't be adjusted. The rear passenger behind that seat has reasonable leg room; the front-seat passenger has adequate leg room, but the instrument panel crowds him. Though the rear seat is soft, the cushions are low, forcing passengers to sit with their knees high. The seat back is fairly erect, but we found the head room adequate.

For some reason that CU cannot comprehend, some of Chevrolet's 1971 models have the headlight switch inboard of the wiper/and washer switches contrary to the habit pattern built up by millions of drivers. Unlike the *Datsun's*, however, those two switches on the *Vega* are well differentiated, the headlight switch being round and the wiper and washer switches rectangular. But we found the headlight-dimmer switch too high on the toeboard and hard to reach. Except for the fact that some CU drivers found the side-view mirror too small, we have no other quarrel with the controls.

The *Vega* has unusual safety belts. Separate buckles secure the lap and shoulder straps; but the inboard shoulder-belt buckle is attached to the inboard lap belt. With that arrangement, the lap portion tended to stay over the hips of the wearer instead of riding up dangerously over the abdomen. At the same time, this simple setup tangled less than do completely separate belts. CU's drivers found the belts comfortable. With the belts secured, drivers could reach all controls.

Of all the cars in this test group, the *Vega* alone has side barriers built into the doors for crash protection. Along with the *Datsun*, the *Toyota* and the *Pinto*, the *Vega* has a padded steering-wheel hub.

The *Vega's* soft suspension insulated occupants from small bumps and road imperfections. But on rough roads the car leaped and bounced unpleasantly. We judged the lightly loaded ride fair-to-poor. With a full load, the ride deteriorated to poor. The suspension bottomed often and hard; even freeway expansion joints came through as hard kicks.

The *Vega* softly rolled onto its suspension bumpers when we cornered it moderately, but handling remained predictable on smooth road surfaces. In choppy corners the rear end hopped sideways, but the problem was far less severe than in the *Pinto* or the *Gremlin*. On the road the *Vega's* steering response felt fairly quick and predictable. We judged the *Vega's* normal handling fair-to-good.

In our emergency handling tests at the track, the *Vega* generally held the road well, although it jarred and rocked around bumpy corners. In hard right-hand turns the engine stumbled momentarily. However, the steering response felt quick and predictable at high speed. We judged the *Vega's* emergency handling good. Power steering is a $95 extra, but the *Vega* doesn't need it, CU feels. We judged the manual steering effort moderate during parking, low-to-moderate when under way.

Ground clearance was judged unsatisfactory. With no one in the car, a scant five inches separated the exhaust system from the road. With a full load, clearance dropped to 3.8 inches. During our pre-test driving, the engine oil pan (0.2 inches higher than the exhaust system) struck the road several times; that should never happen. Our pan was

dented, but not punctured. Good thing. A puncture could have resulted in a loss of engine oil and a ruined engine. This isn't the car of choice for rutted roads.

Still another clearance problem has come up with early *Vegas*—those built before the GM strike. Threaded studs extending below the rear shock absorbers don't clear the machinery in many automated car washes, according to a car-wash trade association.

The standard *Vega* has economy gearing that allows the engine to turn unusually slowly at highway speeds. That results in low engine noise while cruising and, theoretically, reduced engine wear. But the engine proved quite harsh and noisy when revved up in the lower gears, and the exhaust rapped loudly. With our standard three-speed manual transmission and rear-axle ratio (2.53:1), the *Vega* felt sluggish around town. On the open road and at the test track, however, the *Vega* performed adequately. Second gear was useful for passing up to 75 mph.

Gas mileage proved even better than advertised—and better, overall, than that of the other cars in this test group. On our 300-mile trip we recorded a commendable 28 miles per gallon of low-lead 91-octane fuel.

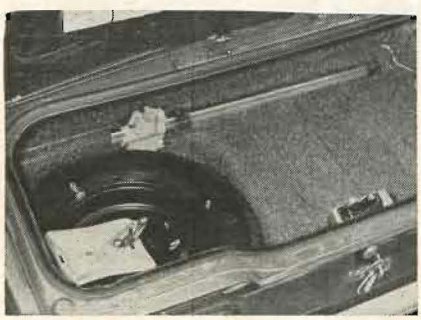
We judged the *Vega's* nonpower disc-front/drum-rear brakes fair-to-good. Although the brakes faded considerably during our repeated stops, pedal effort never approached our 150-pound maximum limit and the car never swerved. We recorded a stopping distance of 130 feet from 60 mph without locking any wheels—a feat matched by only one other CU test car, a 1969 *Simca 1204*.

Like the *Pinto* and the *Gremlin*, the *Vega* offers many options. A slightly more-powerful engine is available for $42. A four-speed manual transmission ($53) probably would make the car peppier around town and more flexible on the highway—especially since it comes with the higher (2.93:1) rear-axle ratio. A semiautomatic Torque Drive ($111) and a fully automatic Powerglide ($168) transmission also are available, but both are two-speed units; performance probably would suffer with either one. You can order many other options, including air-conditioning ($360).

As mentioned earlier, our *Vega's* workmanship was sloppy. The body showed many small dents, file marks, waves, paint runs and areas where paint was dull. Several structural welds were either incomplete or cracked. A defective weld in the fresh-air intake allowed water to leak onto the driver's floormat.

We also experienced mechanical failures, some serious. A faulty fuel-tank cap and dented filler neck caused the car to trail a stream of gasoline during acceleration or hard right turns. (A similar problem occurred in several 1971 GM cars that CU is testing for forthcoming reports. GM told us a vendor supplied improperly manufactured caps, and they are being corrected. But GM has announced no recall.) The engine knocked audibly on the prescribed 91-octane fuel, a possible cause being an engine distributor with excessive wobble in the shaft. To round things off, the shift lever came off, the windshield-washer hoses blew off the pump and drenched the driver's legs, and the steering wheel was almost a quarter turn off center.

No conventional glove compartment in the Vega. The only place to stow odds and ends is in the driver's door pocket



Would you put your luggage in here? The Vega's trunk bristles with sharp hardware that holds the jack and spare

The Vega's side-view mirror is skimpy compared to the Pinto's (hand-held)

TOYOTA CORONA

The *Toyota Corona*, available only as a four-door sedan, shares second place in our Ratings with the *Vega*. Both of these cars are very close to the top-rated *Datsun* in overall quality, in CU's opinion. The *Toyota* would have given the *Datsun* a good run for top honors in this group. It does quite well in acceleration, gas mileage and braking; and comfort isn't bad for a car of this size. But the *Toyota's* uncertain emergency high-speed handling knocked the car out of top contention.

The interior is hospitable for average-sized adults, but six-footers found the accelerator pedal too close; they had to drive with their foot and knee angled to the right. The contoured front bucket seats gave good support, and their velvet-like nylon trim looked and felt good. But the seats were a bit too firm; several CU drivers complained of a hard ridge at kidney level. Overall, we judged front seating comfort fair-to-good.

Rear-seat comfort was judged fair-to-poor, mainly because of lack of space. However, small adults and children might find the rear seat comfortable, and average-sized adults probably would find the seating tolerable for short trips. The wheel wells protrude far into the door openings, making it hard to climb in or out of the rear seat.

Although the *Toyota's* ride was comfortable for this group of cars, we judged it fair-to-poor on our absolute scale. Normally smooth roads produced frequent small, jerky motions; sharp ridges or bumps caused quick upward kicks. The ride didn't get much worse on really bad road surfaces. And even with a full load in the car, the ride remained fairly well controlled.

Although quieter than all the other cars in this group except the *Vega*, the *Toyota* still was fairly noisy. The major offenders were wind whistle, rear-axle whine and engine drone.

As we mentioned earlier, handling was the *Toyota's* major weakness. No serious problems showed up during normal driving; at low and moderate speeds the car responded fairly quickly and fairly predictably. We judged normal handling fair-to-good. But the *Toyota's* emergency handling was judged fair-to-poor. The car still responded fairly quickly, but it

was fairly unpredictable. If cornered fast, the *Toyota* tended to plow straight ahead regardless of how sharply the front wheels were turned; and at times the rear end unexpectedly lost traction. We judged steering effort moderate-to-high during parking and moderate while driving; power assist is not available.

With its comparatively large and powerful four-cylinder engine, the *Toyota* accelerated as well as the *Datsun*—that is to say, briskly. Like most four-cylinder engines CU has tested, the *Toyota's* buzzed and droned annoyingly at 60 mph or faster. The four-speed manual transmission generally shifted smoothly, although CU's drivers felt it was too easy to slide into the reverse-gear slot when making a quick downshift from fourth to third. The gear ratios, CU felt, are well-spaced. Third gear is usable up to about 70 mph during passing. An optional three-speed automatic lists at $155.

The *Corona* owner's manual lists no fuel requirements—surprising in view of the current concern with leaded fuels and octane numbers. The importer told us the car is supposed to use premium. Our test car pinged slightly on regular-grade fuel of 94 octane, but not enough to hurt the engine.

The *Corona's* disc-front/drum-rear brakes were good, in CU's judgment. With the standard-equipment power booster, braking was easy enough. Resistance to fade was good. The brakes didn't pull or grab.

All the *Toyota's* switches have similar round knobs, but their placement saves the day. The light switch is to the left of the steering wheel and the wiper/washer switch is to the right. The emergency-flasher switch is under the light switch; but confusing the two isn't likely to be dangerous, since the emergency flasher normally is used only when the car is stopped. A fully belted driver can reach all switches and controls.

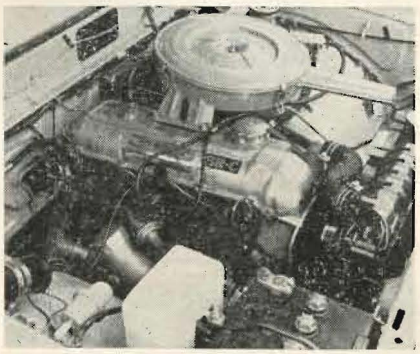
Driver vision generally is good; however, the rear-view mirror interferes slightly with forward visibility, and the wide rear-quarter panel cuts off much of the view to the right rear. The hard rear-window molding poses a threat to the heads of rear-seat passengers, but otherwise the *Toyota's* interior is reasonably smooth.

As in the *Datsun*, the three-point lap-and-shoulder belts in the *Toyota* are convenient to hook up, but adjusting the shoulder strap is so inconvenient as to discourage its use. Also, as in the *Datsun*, the shoulder belt in the *Toyota* tended to rub lightly on the neck or left ear of some drivers.

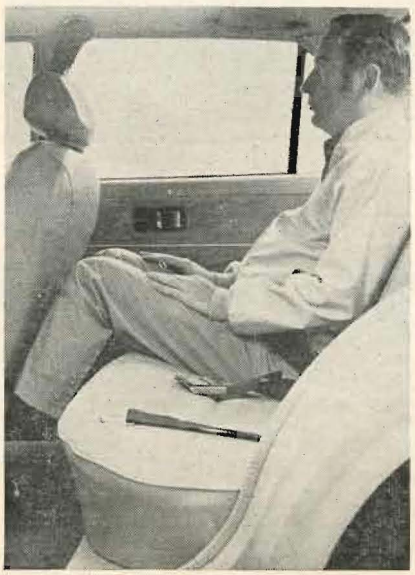
The top of the *Toyota's* gas tank also forms the trunk floor, an arrangement that CU considers less safe than a separate tank under the floor.

Our *Toyota* made a very good first impression; the finish inside and out was neat except for dull paint on the driver's door. But the under-the-skin problems detracted from the car's apparent good workmanship. Though we found only 20 defects, some were unpleasant. After a few hundred miles, the engine starter refused to disengage. At one point the oil-pressure warning light came on and stayed on. Luckily, it was only a defective sending unit. The car arrived with incorrect ignition timing, incorrect idle speed and idle mixture, a lean choke, optically distorted windshield and inside mirror, a rear axle that whined, and tires that were out of balance. But overall, our *Toyota's* workmanship was better than that of our domestic subcompacts.

The Frequency-of-Repair record for the *Corona* has been better-than-average.



All engine components that need regular service are easy to reach in the Toyota



Protruding wheel wells make it hard to climb into the Toyota's tight rear seat

FORD PINTO

Several notches down our Ratings scale, the *Ford Pinto* and the *VW Super Beetle*—both two-door sedans—are tied.

The *Pinto* is shorter, wider and lower than the *Vega*. Inside, the front compartment of the *Pinto* also is slightly wider than the *Vega's*, but the *Pinto's* rear shoulder room is 6.5 inches narrower. (The problem is the high rear-wheel housings, which intrude way up into the rear passenger compartment.)

The *Pinto's* front bucket seats are close to the floor and are contoured for side support. Unlike the *Vega's* front seats, the *Pinto's* are thinly padded. Front leg room is adequate for most adults even though the wheel wells encroach slightly on foot space. We judged front seating comfort fair.

Because of a high driveshaft tunnel, the rear seat is tightly contoured for two passengers. Rear knee room is adequate for adults only because the low seat cushions force passengers to sit on the point of their posterior with their knees high in the air. With the driver's seat pushed all the way back (as it's likely to be with many drivers), the left-rear passenger will probably be severely pressed for space. The front passenger's seat, which does not adjust fore-and-aft, allows the right-rear passenger only slightly more room. We judged the *Pinto's* rear-seat comfort poor.

The *Pinto's* suspension lets you feel the road—every bump, ridge and pebble. We experienced an unending series of short vertical snaps. On rough roads the *Pinto's* rear end dances sideways. We judged the ride under light load poor. Adding a full load reduced the rear-end skittering somewhat, but then the suspension bottomed over bumps. Still unpleasant—and still judged poor. Adding to all the bumps and grinds was a lively steering wheel that kicked and shook in the driver's hands as the car encountered road irregularities. *Pinto* drivers need shockproof watches.

Around town, the *Pinto* responded crisply to its steering, as a small car should. But on the highway, bumps tended to knock the *Pinto* off course—which is why we downgraded the car's normal handling to fair. On the smoother surface of our test track, the *Pinto* cor-

nered easily and predictably; we judged the high-speed emergency handling good. Steering effort was moderate during parking, low-to-moderate under way.

The *Pinto's* standard (98-cubic-inch) Four had to work hard. In spite of a rather high-ratio rear axle and a smooth-shifting four-speed transmission, acceleration was just adequate, in CU's judgment. What's more, that high axle ratio made the *Pinto* buzz and boom at freeway speeds. Gas mileage was several miles per gallon worse than the *Vega's*.

A three-speed automatic transmission is optional only with the larger (122-cubic-inch) engine. The combination costs $225. Or you can opt for just the larger engine for $50. The larger engine should provide a welcome increase in acceleration, but CU has no information about its gas mileage or noise level.

The *Pinto's* all-drum brakes proved to be directionally unstable when used very hard. We judged their performance fair. For $32 you can buy a non power disc-front/drum-rear brake system. CU hasn't tested it, but we believe it would probably be worthwhile.

The headlight and wiper/washer switches in the *Pinto* are identical in shape and sit side-by-side to the left of the steering wheel, where they are easy to confuse. The headlight-dimmer switch is awkwardly high on the toeboard.

Driver's vision forward is fine except for a serious blind spot formed by the inside mirror. The narrow and shallow rear window severely restricts vision to the rear. The *Pinto*, incidentally, is the first small Ford model in years to have a separate fuel tank under the trunk floor, a desirable feature.

The front three-point lap-and-shoulder belts are comfortable. But the belts, which lack retractors, tend to fall out the door and are clumsy to retrieve. The rear seat belts are hard to find and fasten.

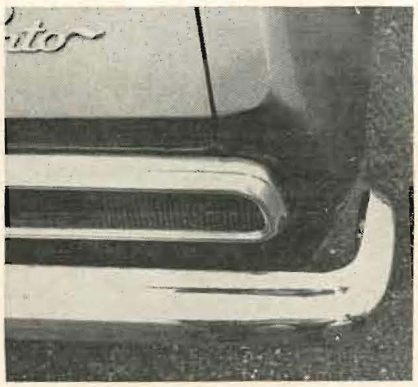
Quality of workmanship in our *Pinto* was shoddy, with numerous interior and exterior flaws. The carburetor needed extensive adjustment. All told, we counted 30 defects.

Ford has been using a tantalizing sales pitch in its *Pinto* advertising. A brochure describes the many do-it-yourself service and repair jobs that the owner can perform himself, thanks to the *Pinto's* simple mechanical design. The car even comes with a small key-shaped gadget that serves as a screwdriver, ruler, feeler gauge and spark-plug gapping tool.

Ford offers special tool kits and a do-it-yourself service manual. The beginner's kit costs $29, the master tool kit $45 and the manual $2. CU bought the kits and the manual and opened our *Pinto's* hood. Then the fun started.

The engine in our *Pinto* was tucked way back in the engine compartment and was partially obscured by the large battery. A large air cleaner makes the carburetor practically inaccessible—but the service manual urges leaving it in place for accurate carburetor adjustments. Lots of luck.

Checking the ignition timing is basic to any tuneup. We pored over the manual and the engine in vain for a clue as to which of the four timing marks to set opposite the pointer. We finally found the proper mark by feeling for top dead center through the number-one-cylinder spark-plug hole and then using our expensive electronic analyzer. Even then, when we pulled off and plugged the distributor vacuum line according to instructions, the engine raced too fast for us to set the timing. Since the manual was of no help, we called Ford's engineers and learned how to adjust the sensitive antismog deceleration valve attached to the right side of the carburetor. The engineers told us that as the engine breaks in, that valve probably would require adjustment to prevent the high idle speed we experienced. But that valve isn't even mentioned in the manual.



Unlike most small cars, the Pinto has space between its rear bumper and body metal; this helps prevent parking scars

Ford says it's easy to service, but the Pinto's engine sits low and far back; a large battery also gets in the way

VOLKSWAGEN SUPER BEETLE

The model that Volkswagen calls the *Super Beetle* feels little different from the many unsuper Beetles CU has tested. The interior of the 1971 *Super Beetle* is just as cramped as the interior of any other Beetle. Leg room may feel tight to tall drivers; also, elbow room was limited, and the close windshield and instrument panel made front-seat occupants feel claustrophobic. Head room, however, was adequate.

The front bucket seats were firm and high. The seat cushions offered little side support, but the seat backs helped hold the torso in place during cornering. The seat back reclines in three positions, but the latch was hard to reach and operate, especially while driving. We judged front-seat comfort fair.

Rear-seat comfort was poor, in our judgment. Knee room and head room were inadequate for adults. The rear bench seat was firm and upright, and the seat back was short. Access to the rear seat was difficult; the opening behind the folded front-seat back is so narrow that there's little foot space to step into.

The Super Beetle holds about twice as much luggage in front as an unsuper model. To open the front hood you first have to reach into the glove compartment, where the hood release is, then go around to the front and push the outside release catch. Not the most convenient arrangement. And if you decide to load your shopping onto the rear seat, you have to fold down the front-seat back and then stretch uncomfortably.

Our *VW's* heating and ventilation system is improved over last year's with the addition of a blower for face-level air. But windshield demisting is still not so effective as the hot-water-heat systems in many other small cars. Temperature control and distribution of heat also leave much to be desired.

As in earlier models, the center of the instrument panel has two vertical rows of round knobs, three in the left row, four in the right. At best, that arrangement makes for lots of fumbling. At worst, it could result in your turning off the headlights when you want to squirt the windshield.

Forward vision suffers somewhat because of the low inside mirror and the

rounded upper corners of the windshield. Wide rear-quarter panels restrict vision to the right rear, and the high seat backs (with integral head restraints) interfere with vision to the rear for the short driver.

The lap and shoulder portions of the seat belts adjust separately at the buckle, which snaps into a fixed socket on the floor tunnel. Adjustment isn't easy, and sometimes the lap belt tends to work loose. The belts are hard to reach on their storage hooks on the door pillars; but once adjusted and fastened, they feel comfortable and permit easy reach of all controls except the heater floor vents.

The top of the *VW's* forward-mounted fuel tank forms the floor of part of the trunk, and the overflow line runs unprotected through the trunk. Damage from luggage is unlikely, but a separate tank under the car would be safer.

Our *Super Beetle* rode better than have our earlier Beetles, thanks to a redesigned front suspension. But it was still among the worst-riding cars in this test group. With a light load, ride motions were quick and choppy on most road surfaces, and the car tended to rock quickly from side to side on uneven roads. We judged the ride fair-to-poor under light load.

The ride deteriorated when the car was loaded to capacity. Motions became larger and more uncomfortable. The car pitched and snapped even on average secondary roads. Rear-seat passengers fared the worst. We judged the loaded ride poor.

The *Super Beetle* was noisy. Most of the racket came from the rear-mounted engine. Road noise also was unpleasant, but there wasn't much wind noise.

The Super Beetle's trunk is much larger than the nonsuper VW's, thanks to a new front suspension and a bulge in the hood

Again thanks to its new front suspension, the *Super Beetle's* handling has improved over that of last year's Beetle. We judged the *Super Beetle's* steering and handling fair-to-good during normal driving. Steering response was quick and predictable. The car wasn't uncomfortably hard to steer during parking and normal driving. But the steering became quite heavy during hard turns. CU's drivers had a time of it trying to stay in their lane at high speeds when the car was buffetted by gusty crosswinds.

In emergency maneuvers, the *Super Beetle* eventually reached a point of instability. The car normally tends to turn a bit less sharply than you'd expect from the angle of the front wheels; engineers call that understeer. During hard cornering the *VW's* understeer sometimes became severe; the car tended to plow straight ahead, even with the wheels turned. On the other hand, the car sometimes switched to oversteer (with the rear end swinging wider than was intended). The oversteer, though disconcerting, could be controlled by turning the steering wheel briefly in the opposite direction. Response was quick but fairly unpredictable, earning the *VW* a judgment of fair-to-poor for its emergency handling.

Our *Super Beetle's* acceleration—or lack of it—had us puzzled for several weeks. Volkswagen claimed three extra horses for its 1971 model, but our test car felt pokier than last year's. Our dealer couldn't fix it; nor could we, using tuneup information available to us. Finally we learned from Volkswagen that the original timing instructions sent to the dealers were incorrect. We got our *Super Beetle* running right in time for our formal tests, but we wonder how many other incorrectly tuned *VW's* were delivered in the first few months of the 1971 model year.

The brakes were good, as in recent years, but they required relatively heavy pedal effort. They resisted fade very well. No instability.

CU has come to expect quality workmanship in *VW's*. Our 1971 *Super Beetle* didn't disappoint us. We discovered just 11 defects, most of them minor. Our car arrived with tires inflated dangerously high—40 to 42 pounds per square inch. One of the new face-level vents wouldn't open or close fully. The carburetor needed adjustment to keep the engine from stalling during warmup.

The *VW's* Frequency-of-Repair record has worsened slightly but is still better than average.

AMC GREMLIN

The *Gremlin* proved worse than the other cars in this test group in virtually every respect.

We judged the *Gremlin's* seating comfort fair in front and poor in the rear. The front bench seat gives no lateral support; it takes real effort to keep yourself from moving on the slippery vinyl seat and being forced away from the steering wheel on a twisting road, even with seat belts fastened.

The *Gremlin* was the only car in this test group whose head room was inadequate for tall occupants. The high seat-cushion puts tall and even average-sized drivers on intimate terms with the upper windshield frame, the headliner and the top of the window opening. Long-legged drivers complained of insufficient thigh clearance under the steering wheel when operating the clutch and brake pedals.

The rear seat is well-nigh uninhabitable for two adults; one adult sitting sideways may be able to endure a brief trip. The rear seat does have a folding back that provides a useful luggage platform. A swing-up rear window allows loading. When we folded the driver's seat forward in our test car, the seat top hit the horn button.

The *Gremlin's* major instrument-panel controls have lighted labels, an unusual and useful feature. However, the side-by-side headlight and windshield-wiper/washer knobs are almost identical (the wiper/washer knob has a small ear on its edge); it's possible to turn off the lights accidentally instead of actuating the washer.

The heater was difficult to modulate, mainly because it tended to delay its response. The vacuum-operated windshield wipers and manually operated washers worked adequately, but we would have preferred the electric versions ($21 extra).

The driver's view could be better. When the inside mirror is adjusted low (for best vision to the rear), it forms a forward blind spot large enough to hide a car approaching from a side street. The wide rear quarter panels result in a large blind area to the right rear.

We judged the three-point lap and shoulder belts convenient and easy to use. But unlike the belts in the other cars

tested for this report, the *Gremlin's* made the driver strain to crank the window or release the parking brake.

The *Gremlin's* occupants had to endure unusually large ride motions. In fact, the suspension seemed to magnify the bumps instead of absorbing them. Little harshness came through to the occupants, and the suspension rarely bottomed. But the car jumped and jiggled and rattled on broken pavement, giving a feeling of loose, shaky construction. With a full load, the ride motions smoothed out but the suspension bottomed frequently. And ground clearance shrank to less than that of the *Vega*—3.6 inches at the muffler. We judged the *Gremlin's* lightly-loaded ride fair-to-poor; its fully-loaded ride got a judgement of poor.

The *Gremlin* is by far the heaviest car in this test group—more than 650 pounds heavier than the *VW*. The extra weight demands a slower steering ratio. And that, in turn, results in clumsy handling. Even worse, most of the weight is on the front wheels, making for a severe traction problem. Slippery roads induce rear wheel-spin. Backing up an inclined gravel driveway is an exercise in earthmoving. We judged the *Gremlin's* normal handling fair; counting heavily against the car was its tendency to hop and skip sideways on rough surfaces.

Our high-speed emergency handling tests at the track produced more frustration. On fast right-hand turns the engine invariably died out. The *Gremlin* would coast through the turn popping, backfiring and making other impolite noises. AMC Sixes have been behaving similarly for several years. And that's no small fault: A loss of power in an emergency could be dangerous. In fast left-hand turns, which the engine could manage, the steering response was fairly slow, fairly predictable and very non-sporting. We judged the high-speed handling fair.

The *Gremlin's* engine, relatively large and heavy last year, is even larger this year. As compared to the small four-cylinder cars in this group, a car with a big Six should have been a smooth, quiet performer. Yet at 60 mph, the *Gremlin* was every bit as noisy as the imports or the *Pinto*. The source of the problem wasn't so much engine noise as road noise and wind noise.

The three-speed manual transmission on our *Gremlin* had a floor shift. First gear still isn't synchronized. That means agonizing crunches going into first gear, unless the car is almost fully stopped. The shift linkage felt notchy, but it worked. The clutch chattered severely, and the clutch-pedal travel was unusually long and stiff. The *Gremlin's* owner's manual specified alternate tanks of leaded and unleaded gas. Mileage was low for this group—about nine miles per gallon lower than the *Vega's*.

The *Gremlin's* front weight bias didn't help the braking. Preventing the rear wheels from locking took considerable skill; and allowing them to lock made our *Gremlin* directionally unstable. Our shortest stop from 60 mph was 180 feet, the longest in this test group. Brake fade was noticeable but not severe. Moderate stops induced brake chatter. We judged the *Gremlin's* brakes fair overall.

No disc-brake option is offered. Power assist is available, but CU recommends that you avoid it. Power assist would make it even more difficult to avoid locking the rear wheels prematurely. Among other options is a $200 automatic transmission and a $400 air-conditioner.

Our *Gremlin* suffered from 23 assembly defects and early failures. That's a few fewer than average, but some of the defects in our car were serious. The steering interlock jammed, locking the transmission in reverse. The exhaust system leaked, and the brakes pulled to the left. The clutch linkage squawked; the transmission gears whined and their synchronizers made a filing noise; the front suspension clunked; the front seat springs creaked; wind roared past the poorly fitted doors.

The rear window in our Gremlin opens for loading, but the liftover is quite high

Our Gremlin was supposed to have a glove compartment lid, but it came without one

The Gremlin's rear seat is large enough for children or for adult contortionists

Three winners, two runners-up and a loser

The *Datsun PL510* comes out on top of this group of subcompacts because it did more things better than any of its competitors. But we wouldn't call the *Datsun* a much better car than the *Chevrolet Vega* or the *Toyota Corona*. If you know of a *Chevrolet* or *Toyota* dealer with a good reputation for service, you might do well to pick the dealer rather than the car. *Datsun*, *Toyota* and *VW* have established an extensive dealer network in the U.S. Parts availability may still be a problem with the imports. The *Datsun PL510* comes as a two- or four-door sedan and as a station wagon; the *Chevrolet Vega* comes as a two-door sedan, as a coupe and as a station wagon; the *Toyota Corona* is available only as a four-door sedan.

In ride, handling, seating comfort, braking, acceleration and fuel economy, the *Datsun* was at or near the top of the group. The *Datsun's* major shortcomings were noisiness and

fussiness at freeway speeds. But those are shortcomings shared by most small cars.

The *Vega* and the *Toyota* were the quietest among a generally noisy group of cars. They also shared with the *Datsun* a comparatively smooth ride. The *Vega* performed well despite its economy gearing, and it handled reasonably well. Its brakes stopped the *Vega* straight and short every time. The *Toyota* accelerated well, but the manufacturer's specification of premium-grade fuel may increase its operating costs. Its vague feel and excessive plowing during high-speed cornering were the *Toyota's* major vices.

The *Ford Pinto* and the *VW Super Beetle*, in CU's judgment, are about equal in overall quality, but below the *Vega* and the *Toyota*. The *Pinto* and the *VW* differ greatly in character and feel. The *Pinto* is low, the *VW* high. The *Pinto* danced around too much on rough roads. Those same rough roads didn't ruffle the *VW*. But the *VW* was more sensitive to crosswinds and its high-speed emergency handling was queasy and uncertain, while the *Pinto's*, we felt, was quick and predictable. The *Pinto's* brakes were unstable and grabbed when hot; the *VW's*, though heavy, stopped the car straight and true. The *VW* was slightly noisier than the *Pinto*, and its acceleration, especially in passing situations, was worse. If you like the *Pinto*, you probably wouldn't like the *VW* and vice versa. *VW* has been the lowest-cost new car to own because of its high resale value and good Frequency-of-Repair record; but strong competition could change this picture.

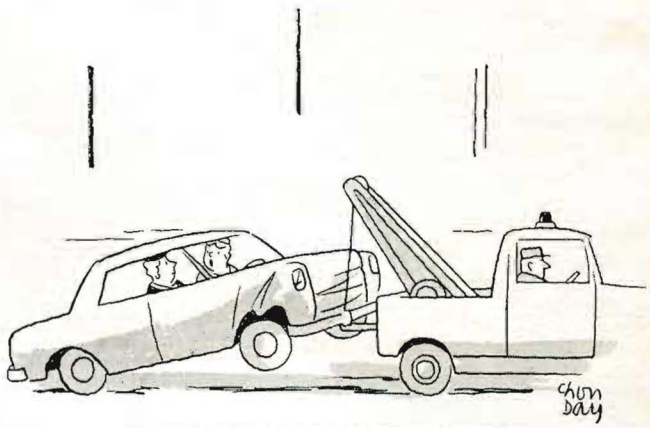
The AMC *Gremlin*, we feel, combines the worst in heavy and light cars. It's basically a compact car shorn of its rear. It doesn't feel nimble, as does the *Datsun* or the *Pinto*. Nor are the *Gremlin's* accommodations hospitable. The *Gremlin* excels only in straight-line acceleration—and that at the cost of fuel economy.

One problem with all three domestic cars is their low body styling, which makes entry and exit difficult. The *VW*, though taller, is hard to enter because of limited foot clearance. The *Datsun* and the *Toyota* are better in this respect and might be preferable for older people. Incidentally, four-door cars generally are easier to enter in tight quarters; the door, being shorter, can be opened wider.

For 1971 all U.S. cars, little cars included, have only a 12,000-mile or 12-month warranty. So do the *Datsun* and the *Toyota*. *VW* alone has a 24,000-mile or 24-month warranty and free 6000-mile diagnostic inspections.

Other small imports available in this country include the *Austin America*, the *Fiat 850* and *124*, the *Opel Kadett*, the *Renault 10*, the *Sima 1204*. CU has tested all those cars in recent years. We doubt that any of them would rank ahead of the better cars in this month's group.

In future months we plan to test the U.S. compacts—the AMC *Hornet*, the *Chevrolet Nova*, the *Dodge Dart*, the *Mercury Comet*. We will also report on the new-for-1971 *Datsun 1200*, the *Toyota Corolla*, the *Dodge Colt*, the *Plymouth Cricket* and the basic *Volkswagen* Beetle ($1780 not including dealer preparation).



"I can tell you right now what repairs will come to. About ninety dollars. We carry one hundred dollars deductible."

Facts and Figures Guide

MFR'S SUGGESTED RETAIL PRICE. Includes Federal tax and suggested dealer-preparation charge but not local taxes, freight and handling, or optional extras, except as noted. Import prices at East Coast port of entry.

DIMENSIONS. External and internal dimensions as measured by CU. Road clearance is distance from level road surface to lowest part of car likely to strike road. Rear fore-and-aft seating space is measured with the front-seat leg room set at 40 inches or at maximum, whichever is smaller. Turning circle is diameter of the path of the outermost tip of front bumper with wheels turned full left. Steering factor is number of turns of steering wheel for right-angle turn of 30-foot radius.

WEIGHT AND TIRES. Curb weight is weight of CU's test car full of gas, oil and water. Tire reserve capacity is number of pounds left in reserve over the rated capacity after car has been loaded to its maximum rated load with tires inflated to normal inflation pressures. A minus number indicates tires are overloaded; they should either be inflated to higher pressure or oversized tires should be used.

ENGINE AND PERFORMANCE. Engine data as furnished by manufacturers. Axle ratio as measured on CU's test car. 0-60-mph and ¼-mile runs are taken with engine idling at start and transmission gears selected for optimum performance; 45-65-mph passing test is with accelerator pedal floored and transmission shifting automatically or gears used to maximum advantage. Times are given to nearest 0.5 second.

FUEL ECONOMY. Range represents the extremes to be expected between short-range, stop-and-go and open-road trips at more constant speeds. The mileage observed on CU's 300-mile test trip is comparable among test cars in any one group, but, since weather conditions vary, should not be compared to mileage figures for another month's group. Miles per gallon to nearest gallon.

BRAKING. Minimum-distance stops are shortest distance (to nearest 10 feet) achieved in several attempts, with car stopping without locking any wheels, within a 12-foot lane. Actual distances apply only to CU's test conditions and road surface, but the relative ranking should remain the same. Fade test consists of 10 moderate stops repeated at ⅓-mile intervals. Difference in pedal effort between first and 10th stops represent degree of fade. Pedal effort is to nearest 5 pounds. Maximum acceptable brake pedal effort is 150 pounds.

FACTS AND FIGURES

	Datsun PL510	Chevrolet Vega 2300	Toyota Corona	Ford Pinto	Volkswagen Super-Beetle 117	AMC Gremlin
MFR'S SUGGESTED RETAIL PRICE						
for 2-door sedan with standard 4-speed manual transmission, except as noted, and with AM radio and other options as noted	$2105	$2152 [A]	$2261 [B]	$2015	$2139 [C]	$2100 [A]
DIMENSIONS						
WHEELBASE (inches)	96	97	96	94	96	97
OVERALL LENGTH (inches)	159	170	167	163	162	164
OVERALL WIDTH (inches)	62	66	62	70	61	71
ROAD CLEARANCE: no load (inches)	7.4	5	6.8	6.3	5.8	5.7
with maximum rated load (inches)	5	3.8	4.5	4.9	5.1	3.6
FRONT-SEAT SHOULDER ROOM (inches)	50	51.5	50	52.5	47	55
MAXIMUM FRONT-SEAT LEG ROOM (inches)	39	42.5	39	40.5	40	41
REAR-SEAT FORE-AND-AFT SEATING SPACE (inches)	25	26	25	26.5	22	23
LUGGAGE CAPACITY (2-suiters + weekend cases)	3+2	2+3	2+4	2+0	3+1	2+1
ADVERTISED FUEL TANK CAPACITY (gallons)	12	11	13	11	11	21
TURNING-CIRCLE DIAMETER (feet)	34	37	35	34	37	35
STEERING FACTOR: Manual	0.62	0.94	0.80-0.88 [D]	0.90	0.68	1.20
WEIGHT AND TIRES						
CURB WEIGHT (pounds)	2130	2264	2228	2046	1978	2634
PER CENT WEIGHT, front/rear	54/46	54/46	57/43	55/45	42/58	58/42
TIRE SIZE	5.60-13	A78-13	6.00-13	6.00-13	5.60-15	6.00-13
TIRE RESERVE CAPACITY AT MAXIMUM LOAD (pounds)						
Front tires	+144	+418	+179	+413	−129 [E]	+151
Rear tires	+46	+193	+148	+331	+16 [E]	+5
ENGINE AND PERFORMANCE						
DISPLACEMENT (cubic inches)	97	140	113	98	97	232
NO. OF CYLINDERS & FUEL REQ'D	4/R	4/R	4/ [F]	4/R	4/R	6/R
ADVERTISED HORSEPOWER	96	90	108	75	60	145
AXLE RATIO	3.90	2.53	3.70	3.55	3.67	2.73
ACCELERATION						
ON LEVEL ROAD 0-60 mph (seconds)	14.5	15.5	14	19	20	13
¼ mile from rest (seconds) & speed at end of ¼ mile (mph)	20/71	20.5/71	19.5/71	21.5/64	21.5/62	19.5/72
Passing: 45 to 65 mph (seconds)	9.5	9.5	9.5	13	17	8
FUEL ECONOMY						
RANGE OF GAS MILEAGE TO BE EXPECTED IN NORMAL USE (mpg)	20-31	18-35	18-30	18-30	17-29	12-24
TANK MILEAGE OBSERVED ON 300-MILE TEST TRIP (mpg)	27	28	25	25	[G]	19
BRAKING						
LEVEL BRAKING FROM 60 MPH: Minimum-distance controlled stop with no locked wheels (feet)	170	130	160	160	150	180
FADE TEST: Pedal effort for initial ½-g stop (pounds)	60	35	35	50	65	55
effort for 10th repeated stop (pounds)	70	75	50	70	70	90

[A] *Three-speed manual transmission (standard); not synchronized for 1st gear in the* Gremlin.
[B] *Four-door sedan.*
[C] *Sunroof model; price includes $35 for vinyl trim. Comparable model without sunroof,* 113, *$2049.*
[D] *Variable-ratio.*
[E] *At full-load inflation pressures the tire reserve capacity would be +80 front and +145 rear.*
[F] *No fuel specified in owner's manual;* Toyota *suggested premium to CU, but CU's car ran satisfactorily on regular.*
[G] *Timing was off during this test, so average mpg would not be reliable.*