

peugeot504.info

MAZDA ROTARY PICKUP, CLASSIC COBRA 427 TESTS
Comparison Test: All The Compact Station Wagons

ROAD & TRACK

JULY 1974

UK 35p

SWEDEN KR.8.35 INKL.MOMS

ONE DOLLAR

Radial Tires: Do They Give Better Mileage?
TWO WAYS TO BECOME AN EXPERT DRIVER



VW 412
Volvo 145
Mazda RX-4
Toyota Mark II
AMC Sportabout
Peugeot 504

SIX COMPACT STATION WAGONS

Four with their own strong features, two without compelling attractions

IN THE OCTOBER 1973 issue of R&T we reported on a dozen of the smallest station wagons for sale in the U.S. and concluded that comparison test with a promise to review the next-larger class of wagons in a future issue. This is the promised review, covering the same comprehensive set of tests, measurements and analyses.

There aren't nearly as many wagons in this larger class—which we'll call "compact" since they're not really small but are generally efficient in their use of space for functional purpose. We found six station wagons, five imported and one American-made, to fit in this category. One model, the VW Dasher, would have been difficult to classify as it's very small on the outside, outstandingly large on the inside and very expensive; but VW solved this problem for us by simply not having one yet. So we took the larger, rear-engine VW 412 instead (in its last year on this market) along with the American Motors Hornet Sportabout, Mazda RX-4, Peugeot 504, Toyota Mk II and Volvo 145.

Many Americans would still call these wagons small; as a class they're far smaller than the typical big domestic wagon and closer to the smallest wagons in both size and weight. Here are their average dimensions and weight, contrasted to the averages for the earlier test group and the big ones:

	Small Wagons	Compacts	Large
Wheelbase, in.....	95.....	104.....	120
Length	166.....	187.....	220
Width	63.....	67.....	78
Height.....	55.....	57.....	57
Curb weight, lb.....	2300.....	3000.....	4500

As a group, however, these wagons are not short on passenger and cargo space—and they get far better fuel economy than the big wagons, a critically important consideration in these times.

The added wheelbase and overall length of the compacts compared to their more diminutive brethren makes for considerably improved people comfort, especially in the rear. All the small wagons seat four, but in them the two front passengers fare much better in terms of leg and head room than those relegated to the rear. Of the six compact wagons here, only the Sportabout and Volvo 145 are listed as full 5-seaters, but each of the others will accept an additional rear passenger without severely compromising the comfort of the other two. And in a pinch the Hornet's unique split-bench front seat even allows a third person to squeeze up front, making it a really full 6-seater.

As a class, compact wagons make economic sense from several standpoints. They offer a logical alternative to the car buyer who requires more comfort and baggage- or parcel-carrying potential than a small wagon but is not willing to put up with the sheer bulk and gas-guzzling appetite of the typical huge American wagon. Compact wagons also appeal to those car buyers who still value handling and maneuverability above the total environmental isolation most big American wagons



provide. Finally, though the smallest station wagons are best viewed as economical utility cars for general family use and hauling light loads in urban and suburban use, we'd have no serious reservations to driving any of these compact wagons on long trips. They are all suited to this type of use (though some more so than others) and are less fatiguing to drive, even fully loaded, than the buslike vehicles you can buy from U.S. carmakers.

American station wagons are all of conventional design—front engine, rear drive, live rear axle, and disc-drum brakes—and the compacts follow this pattern far more closely than their smaller cousins. In this group only the VW 412, with its rear engine and independent rear suspension, and the Peugeot 504 and Volvo 145 with disc brakes all around depart from the domestic norm. But where V-8s are the rule in the U.S., there are three fours, a six and one Wankel powering five compact imports.

The spread of list prices is around \$2500—part of it real and part artificial. The Sportabout is by far the least expensive but is also the most austere in stock trim. Figure on spending \$550 to equip this car with the standard features found on most of the imports—radial tires, tinted glass, heated rear window, day-night mirror, adjustable seatbacks—plus the essential power steering. The Peugeot and the Volvo cost nearly \$1000 more than their import competition, but size and chassis sophistication contribute most to this price disparity. The Volvo and Peugeot have 10-22 cu ft more luggage volume than the lower-



PHOTOS BY JOE RUSZ

priced imports and rate as the most comfortable for long-distance driving. Compare the standard and optional features shown in Fig. 2 and the subjective and objective results for each wagon carefully before deciding which one best fills your needs.

The Test

THE TESTING procedure was identical to that employed in our previous wagon test. Each of the wagons went into daily service for two weeks to give us several hundred miles of subjective evaluation. Then all the wagons were assembled at Orange County International Raceway in southern California for objective performance and noise tests. We measured acceleration and braking twice: first in our normal manner with driver, passenger and test equipment and then with the wagon loaded to its maximum carrying capacity and tire pressures adjusted accordingly. Again for matters of expediency, quarter-mile times and speeds were obtained from the timing lights at the Raceway rather than from our stopwatches, distance counter and calibrated speedometer, so you should add 0.3-0.4 sec when comparing these cars to those tested in our usual manner. The objective and subjective results for each wagon are contained in Fig. 3 and the descriptions following.

American Motors Sportabout

BIG ON the outside but small on the inside characterizes the Sportabout. It's typically American—long, low, wide, styl-

ish, heavy and fast—and has by far the smallest usable cargo area, smaller in fact than the rear compartments of some of the small wagons we tested. It's really not a station wagon in the usual sense; note the tailgate liftover height—about 10 in. more than all the wagons except the rear-engine VW 412. We assume that for reasons of structural rigidity AMC was unable to design the Sportabout with the usual swingup tailgate. So in a sense the Sportabout is much akin to a hatchback but without the sloping rear deck that characterizes that breed.

Apart from its typically American dimensions the Hornet proved a favorite with the R&T staff; at least it's a reasonably sized car, one of the most efficient designs available from an American manufacturer. Price is also a Sportabout strong point. As we said earlier, it needs several hundred dollars worth of options to bring it to the equipped level of the imports, but even then it's a bargain in 5-passenger utility transportation. If you can do without some of the optional amenities we consider important it's a bigger bargain still.

The Hornet Sportabout is far and away the fastest car tested, for an obvious reason: a 360 cu-in. (5.9-liter) V-8 engine. The 360 2-barrel is the largest engine offered in the Sportabout; standard is a 232-cu-in. inline 6-cylinder and a larger 258 six is available for \$69, a 304 V-8 for \$138 and that big 360 for \$180. Cargo weight has an insignificant effect on the Sportabout's performance: it blasted through our 0-60 mph acceleration runs only 0.2 sec slower when loaded to capacity (925 lb) than it did in its lightly loaded condition. And most buyers ➤

peugeot504.info

in number and intensity from the RX-2 and RX-3, however) and, something new for Mazdas, reluctance to start and some stumbling when cold. But as with other Mazdas the rotary's strong points—response, smoothness and power—far outweigh the weaknesses. The RX-4 was one of only two wagons equipped with a 4-speed manual transmission. It fits the Mazda's spirited performance perfectly but we wouldn't hesitate recommending Mazda's excellent 3-speed automatic to anyone who desires the luxury.

In a test of the RX-4 coupe last April we found the chassis of this latest Mazda quite an improvement over previous offerings, and there's little lost in the transformation into a wagon.

Normal cornering attitude is close to neutral and cornering roll is well controlled. Oddly, it *understeers* when loaded but backing off the throttle brings the tail out slightly. With only the driver and several hundred pounds of weight over the rear wheels there's some rear overshoot during lane changes but it's mild and easily controlled. Fat BR70-13 radials are standard and not only do they give the car a fair amount of cornering power but they impart steering response and feel that we're unaccustomed to experiencing with Japanese recirculating-ball steering. The brakes, however, produced disappointing results compared to the incredibly short and sure stops of the RX-4 coupe, a car that weighs 300 lb less than the wagon. With the RX-4

FIG. 1. GENERAL SPECIFICATIONS

	American Motors Sportabout 5-door	Mazda RX-4 5-door	Peugeot 504 5-door	Toyota Mk II 5-door	Volvo 145 5-door	Volkswagen 412 3-door
List Price, factory or POE	\$2949	\$4295	\$5380	\$4434	\$5210	\$4200
Layout, engine/driven wheels	f/r	f/r	f/r	f/r	f/r	r/r
Engine:						
Type	ohv V-8	rotary	ohv inline 4	sohc inline 6	ohv inline 4	ohv flat 4
Displacement, cc/cu in.	5896/360	1308/80.0	1971/120	2563/156	1986/121	1795/110
Bhp @ rpm, net	175 @ 4000	110 @ 6000	82 @ 5200	122 @ 5200	109 @ 6000	72 @ 4800
Torque @ rpm, lb-ft	285 @ 2400	117 @ 3500	105 @ 3000	141 @ 3600	115 @ 3500	91 @ 3000
Transmission (test car)	3-sp auto	4-sp manual	3-sp auto	3-sp auto	4-sp manual	3-sp auto
Final drive ratio	3.15:1	3.90:1	4.11:1	3.91:1	4.10:1	3.90:1
Brake system	disc/drum	disc/drum	disc/disc	disc/drum	disc/disc	disc/drum
Suspension, f/r	ind/live	ind/live	ind/live	ind/live	ind/live	ind/ind
Tires	Goodyear DR78-14	Goodrich BR70-13	Michelin ZX 185SR-14	Bridgestone 6.45-14	Goodyear 175SR-15	Michelin ZX 165SR-15
Accommodation:						
Seating capacity, f/r	2/3	2/2	2/2	2/2	2/3	2/2
Seat width, f/r	2 x 24.0/29.0	2 x 21.5/48.0	2 x 23.0/51.0	2 x 22.0/49.0	2 x 22.5/51.5	2 x 21.0/49.5
Head room, f/r	35.0/34.0	37.5/37.5	37.0/36.0	37.5/36.5	37.0/36.0	37.5/36.5
Seatback adjustment, deg	50	60	70	50	80	30
Carrying capacity, lb (mfr)	925	850	1410	800	1115	1100
Luggage volume:						
Rear seat up, cu ft	24	31	48	31	45	28
Rear seat folded down, cu ft	49	59	74	57	74	64*
Curb weight, lb	3550	2920	3195	2935	3020	2565
Wheelbase, in.	108.0	99.0	113.0	101.8	103.0	98.4
Length, in.	186.9	184.0	194.0	182.9	188.0	183.7
Width, in.	71.0	65.0	65.0	64.0	67.1	65.9
Height, in.	52.2	56.0	60.0	56.7	57.1	58.1

*includes 9 cu ft from front trunk



Sportabout has lockable compartment under its cargo floor and a Space Saver spare tire.



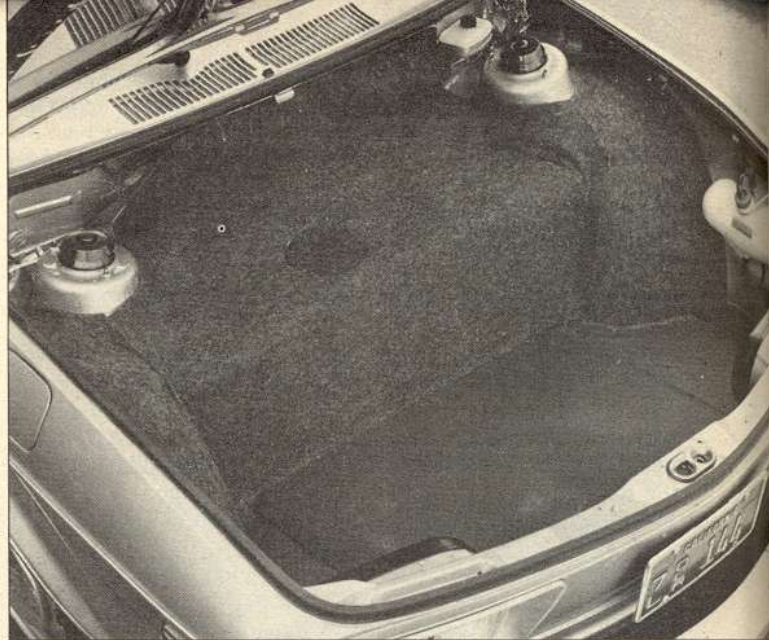
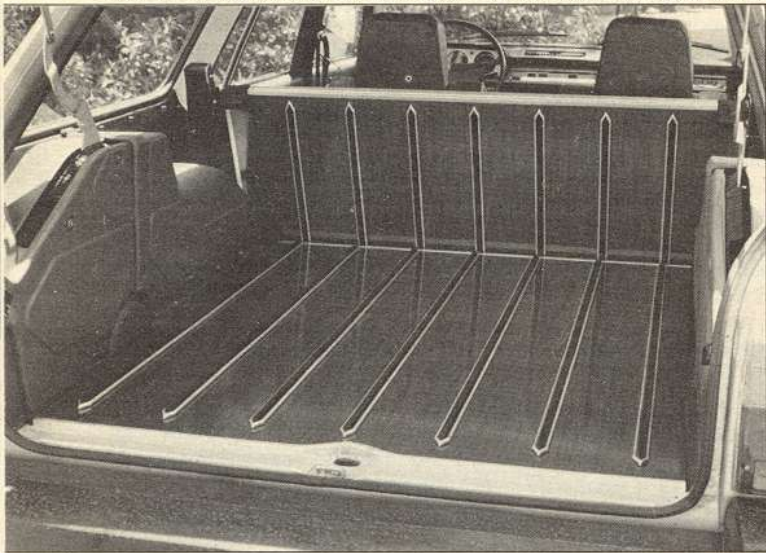
FIG. 2. STANDARD AND OPTIONAL FEATURES

	AM Sportabout	Mazda RX-4	Peugeot 504	Toyota Mk II	Volvo 145	VW 412
Vacuum-assisted brakes	\$80 ¹	S	S	S	S	no
Power steering	\$110	no	no	S	see below ²	no
Automatic choke	S	semiauto	no	S	S	S
Automatic transmission	\$252	\$270	\$275	\$260	\$315	S
Air conditioning	\$400	\$395	\$425	\$410	\$423	\$363
Radial tires	\$166	S	S	D	S	S
Tinted glass	\$40	S	S	S	S	\$70
Heated rear window	\$46	S	S	S	S	S
Flow-through ventilation	no	S	no	S	S	S
Luggage rack	\$62	\$67	\$40	\$55	\$70	\$51
Locking glove box	S	S	S	S	S	S
Day-night mirror	see below ³	S	S	no	S	S
Trip odometer	no	S	S	S	S	S
Adjustable seatbacks	\$109	S	S	S	S	S
Tachometer	no	S	no	no	\$42	no
Door pockets	\$7	no	no	no	S	S
AM radio	\$67	\$69	\$46	S ⁴	\$88	\$35
Rear ashtray(s)	1	1	1	2	2	2
Rear armrests	S	S	S	S	S	S
Assist grips	no	2	no	1	3	2 straps
Carpeting	S	S	S	S	S	S
Trunk light	no	S	S	S	\$4	no

Legend: S—standard equipment, D—dealer option, Price—cost of factory option; ¹includes front disc brakes and vacuum assist; ²not available with manual trans, standard with automatic; ³available only with expensive (\$60) visibility group; ⁴AM/FM multiplex.

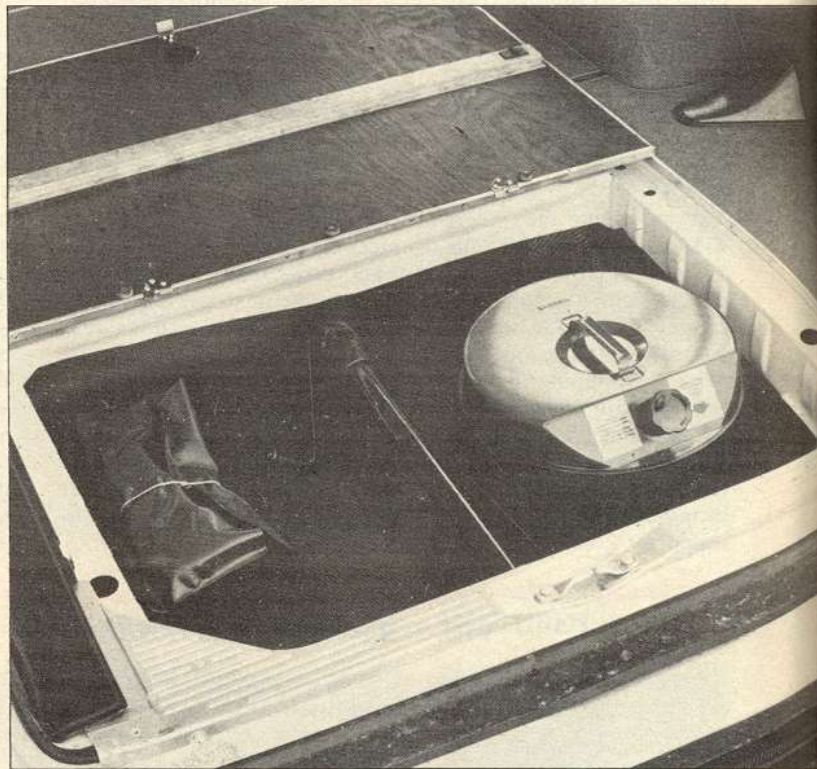
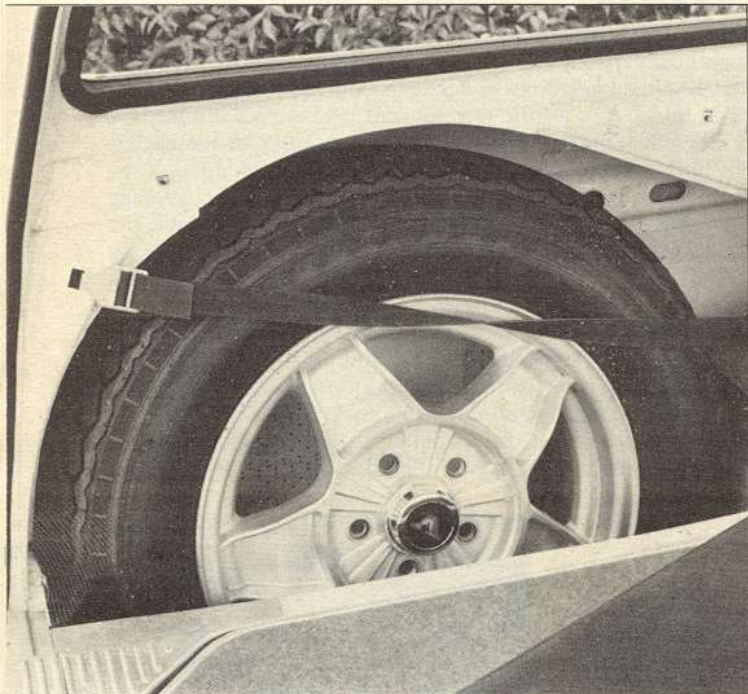
peugeot504.info

Peugeot ties with Volvo for largest cargo area. Its simulated-wood rear floor is protected from abrasion by the parallel rubber strips.



VW's front trunk helps compensate for its small rear cargo area.

Volvo spare tire is in a well at the rear of the cargo compartment. Tools, jack and an optional auxiliary gasoline tank (shown here in the central underfloor storage space) all store in the tire well too.



outdated look to it. Chrome across the dash and the flat glass covering the instruments reflect glare at the driver. The steering wheel is huge but reduces the effort required from the non-assisted steering and is totally in keeping with the somewhat lumbering nature of the rest of the car. Every driver complained about the actuation and position of the floor-mounted T-handle shifter: to shift into a gear the front of the handle has to be squeezed. Not only is this an awkward motion with Peugeot's design, but invariably the knuckles of the right hand smash into the radio pushbuttons when shifting into the park position. The vent system is also behind the current state of the art. There are levers under the dash that bring in a small amount of air, but most of the air comes through a center dash-top vent, parts of which are pulled up to control the air direction. But it's not possible to direct all the air toward one side or the other, which can be a critical matter on a hot, sunny day.

The Peugeot's cargo area was the only one not carpeted. Instead, the entire floor is covered with simulated wood with

rubber protection strips running lengthwise. This treatment drew mixed reactions. There's no carpet to tear or soil but the plastic wood does scratch if one is not careful. The rear seat was one of the easier designs to fold flat: pull up on either side lever, pivot the seat cushion against the backs of the front seats and lay the backrest down. This design does have one drawback: it requires 5-6 hands to hold all the seatbelt straps out from under the cushion when returning the seat to its normal position. Peugeot, like the Japanese wagons, stores the spare tire outside and underneath the car.

We hope we haven't conveyed the impression that we disliked the Peugeot. Far from it. We do have serious reservations about its lack of power and it's not as much at home in traffic as the smaller, more nimble wagons, but once at speed it ranks with the Volvo as the best long-distance cruiser. And if you are willing to put up with only slightly less performance for a 7-8 mpg increase in fuel economy, a diesel version will be available shortly.

Toyota Mk II

AS EXPECTED, the Mk II was well put together with lots of attention to detail and numerous standard features such as reclining front seatbacks, heated rear window, power steering, AM/FM multiplex radio and little convenience features like a cargo-area light that comes on when the tailgate is lifted. Its character is simple and decidedly non-sporting; it has indifferent handling and steering but then it's not built for entertainment, just for good transportation. Compared to the RX-4, a car it competes against directly, and the other wagons in this test it does seem to fall short of our expectations of typical Toyota value.

Dimensionally the Mk II and the RX-4 are so close they could have come out of the same mold. In price the Mazda holds a \$139 edge but Toyota fans can quote the Mk II's standard power steering and AM/FM radio as offsetting factors. True in theory but not in practice: we rate the Mazda steering better-than-average without power assist and the Toyota design has only one advantage—less free play on center than the usual Toyota offering. And it has the typical Toyota drawback: too many turns lock-to-lock plus a distinct lack of road feel and self-centering. The radio, too, is below average with only marginally acceptable tone and reception.

In performance and handling the Mazda wins easily, the rotary engine far outdistancing the Mk II's noisy, low-revving six. Until recently handling has not been a Toyota strong suit. The Celica GT and Corona SR have helped dispel a stodgy Toyota image, but the 3-year-old Mk II has none of the chassis sophistication of these other Toyota models. The Mk II understeers severely on its bias tires; it's the only wagon not available with radials as standard or a factory option. We recommend switching to radials at the earliest opportunity as the stock tires are harsh, transmit a lot of road noise and squeal for mercy at the mere hint of a corner. This is not a car that likes to be driven hard at any time. The tires are very soft feeling, have little bite and respond very slowly to steering inputs; as a result the Toyota had one of the worst cases of rear overshoot during a transient lane change. When cornered hard the tail can be brought out slightly but then the front end scrubs off speed, the inside rear wheel starts to lift and the body rolls under. Very dramatic-looking—but slow and safe.

The only chassis area in which the Toyota enjoys an advantage over the Mazda is braking. The Toyota tied with the Peugeot for the shortest stops when loaded and exhibited the smallest increase in braking distance loaded vs unloaded (1 ft). We experienced no control problems; the pedal had a good progressive feel and was easy to modulate.

This was the first Toyota we've driven with the new Borg-Warner bandless 3-speed automatic and it's a far superior transmission to the previous sluggish Borg-Warner clutch-band design. It really livens up the Mk II's mid-range performance, although in our test car the transmission was a mite too eager to downshift from 2nd to 1st during normal part-throttle acceleration. And to its credit the Mk II is one of only three compact wagons—the Mazda and the Sportabout are the others—we consider to have acceptable performance with an automatic.

Inside there's an exceptionally effective vent system and, on our test car, neatly integrated air conditioning. Our only complaints and minor ones at that are the lack of a day-night mirror and the minimal instrumentation.

The Mk II's carrying capacity, 800 lb, is lowest in the group and its cargo space is also below average, but about equal to the Mazda's. There's a seatback release on either side of the rear seat and the cushion moves straight forward a few inches as the seatback is folded down to allow for a flatter floor area. The spare tire is located outside and underneath the car.

Overall we found the Mk II wagon a disappointment. In the transition from a sedan to a wagon it has picked up some resonance in the body cavity, so it's also one of the noisiest

of the wagons. Not the solid car we have come to expect from Toyota. What's more, in all ways except for its more peppy 6-cylinder engine it's less of a car than the new Corona.

Volvo 145

OUR 145 test car came from Volvo's parts department and as a result was a rolling billboard for Volvo accessories: tachometer, small-diameter padded GT steering wheel, alloy wheels and an auxiliary gas tank were just a few of the non-standard items. But underneath it was the traditional, comfortable, strong-as-a-tank car we expect from Volvo. Like the Peugeot, the 145's a roomy, expensive, relatively underpowered wagon. It shares top honors with the 504 for largest cargo space and just beats out the VW 412 (by 15 lb) for highest load carrying capacity after the Peugeot.

The 4-cyl engine is a weak link in the overall Volvo design. We can't fault the drivability—the fuel-injected engine starts on demand hot or cold and runs without stalling or stumbling and there's no lean surge to mar its light-throttle performance—but it can't cope with the weight it has to lug around. With a normal load the 145 needed 16.3 sec to reach 60 mph, 3.5 sec longer than the 150-lb-lighter 142GL we tested last April. The only difference between the two models other than weight is the final drive ratio—4.30 for the GL with overdrive vs 4.10 for the wagon—and the wagon can be ordered with overdrive to make up some of this time difference. With a full load on board 0-60 acceleration takes a real tumble, increasing to 20.6 sec. Our car had the 4-speed manual gearbox so we'd advise anyone interested in the automatic version to try it first; it may be downright unacceptable.

R&T and our readers have questioned Volvo's reluctance to put the 6-cyl engine of the 164 into the wagon. Volvo's reasoning is that a 165 wagon would be heavier than the 164 sedan and therefore in a different weight class as far as emissions certification is concerned. This would mean retuning the engine, an expensive procedure Volvo prefers not to tackle in view of what it considers the potential market for such a car. Too bad; we think it would make a nice combination. But it would be very expensive.

The 145 is the other car in this group with 4-wheel disc brakes, and here they performed as expected: no fade. However, they were prone to premature front lockup, which resulted in the longest stopping distances.

More than one of the 145 drivers complained about its vague, heavy steering. Here there's good and bad news. The good news is that power steering is available; the bad news is it's offered only with the automatic transmission.

The 145 wagon handles slightly different from the typical final-oversteering Volvo sedan. It's more neutral than we expected; understeer loaded or unloaded is its normal cornering attitude but if you go into a corner hard, crank in lock and back off the throttle suddenly you can get the tail to come out. Combining the above maneuvers with a hard stab on the brake pedal causes the tail to hang out in a more dramatic fashion, but this is not normal driving technique. All Volvos, sedans as well as wagons, roll a lot and abrupt lane changes result in considerable rear overshoot and protesting front tires. Definitely not a confidence-building feeling. It might be a wise idea—and this is true of all the wagons, not just the Volvo—to practice such maneuvers on a wide-open area just so you won't be surprised in a real-life emergency situation. The Volvo sedan and wagon are much alike in ride: there's better-than-average wheel travel from the firm suspension and we rate the ride second only to the Peugeot's for comfort.

The roomy, comfortable interior, offering excellent ventilation and multi-adjustment seats, makes the 145 an enjoyable car for long trips. A nasty drivetrain vibration intrudes when the engine is revved high but at cruising speeds all is smooth and relatively quiet. Part of the credit for the low interior noise level goes to the ventless windows introduced this year; they really reduce wind noise to a low level.

Volvo's rear seat folds like the Peugeot's but is not as simple →

to actuate as the 504's one-lever system. In the Volvo the drill goes like this: release a little lever under either side of the cushion, rotate the cushion up against the back of the front seats, release the seatback by a lever on either side and fold flat. Caution: the rear ashtrays must be closed before replacing the seat cushion in its normal position. The spare tire stands up in a well at the rear and we can attest to its easy access, as we encountered a flat tire while we had the car. On the opposite side there's another hidden compartment. We suggest stowing only soft, light objects here, however, as the washer bottle for the rear window sits at the bottom of this well. Still another under-floor storage compartment is located between these other two enclosures. For additional people-carrying capacity a rear-facing third seat that folds flat into this storage space when not needed can be ordered to turn the 145 into a 7-seat wagon.

The 145 is an expensive wagon, but it holds as much as many wagons three feet longer and costing just as much. If you can accept the snail-like performance (compensated for by good fuel economy) it's an excellent choice for anyone needing a compact wagon.

Volkswagen 412

THE VW 412 was not one of our favorites. A rear engine might offer advantages in some models but not in a wagon. Here it results in a high liftover height, a short floor-to-ceiling dimension and a very small rear cargo space. There's additional luggage space up front, true, but it's an odd shape and not conducive to holding the large bulky objects most people expect a station wagon to hold. It's also a 3-door design—the only one in this comparison—which makes entry and exit from the rear seat more difficult and cargo harder to remove or stow. All the 5-door wagons also have roll-down rear side windows; the VW's fixed side glass provides no ventilation at all to back-seat occupants. It's no surprise, then, that the 412 will be phased out next year and replaced by the more modern 5-door Dasher wagon.

The VW is old in other ways. The vent system has been redesigned, but when air conditioning is fitted (our car had it) the flow of outside air is reduced to a minimum. Instrumentation, too, is in the old VW mold: minimal with only a speedometer, odometer and fuel gauge. Front seats are unusual in that the seat moves back and forth on a curved track and there is a separate rocking adjustment that tilts the whole seat rather than just the backrest. No one who drove the 412 especially cared for this design.

The 412 wagon is available only with the larger-displacement but less powerful 1.8 liter 4-cylinder engine (a 1.7-liter engine with four more horsepower and a 4-speed manual gearbox is available in the sedan) and automatic transmission. This is a fully automatic 3-speed as opposed to the Beetle's semi-automatic design, but with only 72 bhp to play around with acceleration is on the leisurely side. Despite large amounts of insulation the engine is noisy as it runs up to its surprisingly high 5200-rpm shift points; at freeway speeds it's audible but not obtrusive. With fuel injection, however, this engine does enjoy some cold starting, warmup and tractability advantages compared to many carburetor engines we test these days.

With a normal load the handling is reasonably pleasant. There's considerable body roll but the usual oversteer of rear-engine cars is well restrained. Loaded to capacity, the 412 understeers when driven at moderate speeds; go faster or tighten the turning radius and the tail comes out, predictably but fairly quickly. It's important to remember the front trunk when loading the VW: stuffing 1100 lb in the rear is definitely not the way to achieve balanced handling. In a lane-change maneuver the 412 develops some rear overshoot, but less than the Volvo and Peugeot. The radial tires bite well and the 412's behavior in these transient situations is surprisingly subdued.

The ride is as expected from a rear-engine car: over gentle undulations there's a tendency to longitudinal pitch and the rear end is given to bottoming on dips. All this should not

obscure the fact that under a variety of conditions the 412 rides fairly well and over rough roads its staunch, rattlefree body structure is a definite plus.

Driving the 412 wagon requires strength, as both steering and braking efforts are high. We encountered no fade with the 412's disc-drum brakes but a $\frac{1}{2}$ g stop required an excessive 65 lb of pedal force. Because of the high effort the VW brakes are difficult to lock and the 412 stopped in the shortest distances unloaded; put in 1100 lb, however, and stopping distances are just average.

VWs are known for their efficient design, so it's no surprise that the spare tire—lying flat in a recess in the front trunk and covered by a vinyl-trimmed board—serves a dual function. It's connected to the windshield washer and air inside the (overinflated) tire provides the pressure that actuates the system. A check valve prevents the tire pressure from falling below 29 psi so the spare is always fully inflated in case of a flat; if it drops below 29 the washer quits. Rear-seat unlatching is convenient, requiring just one hand on a center latch. The seatback then lies flat on the cushion.

Conclusion

IF NEITHER sheer volume or sheer power—the strong points of big American wagons with optional V-8s—is of major concern, then one of these compact wagons should fit your needs. With the smaller wagons it was difficult picking an outright winner; although distinct in character all the small wagons were reasonably close. This is not the case with the compacts. If you need the power advantages of a big V-8 for pulling a boat or trailer and are not especially concerned with large carrying capacity or fuel economy, the choice is clear: the Sportabout. It's reasonably priced to begin with, which allows a buyer to tailor the car to his or her individual needs. And it's the only compact that offers a trailer-tow package or optional engines, important considerations if you plan to pull heavy loads.

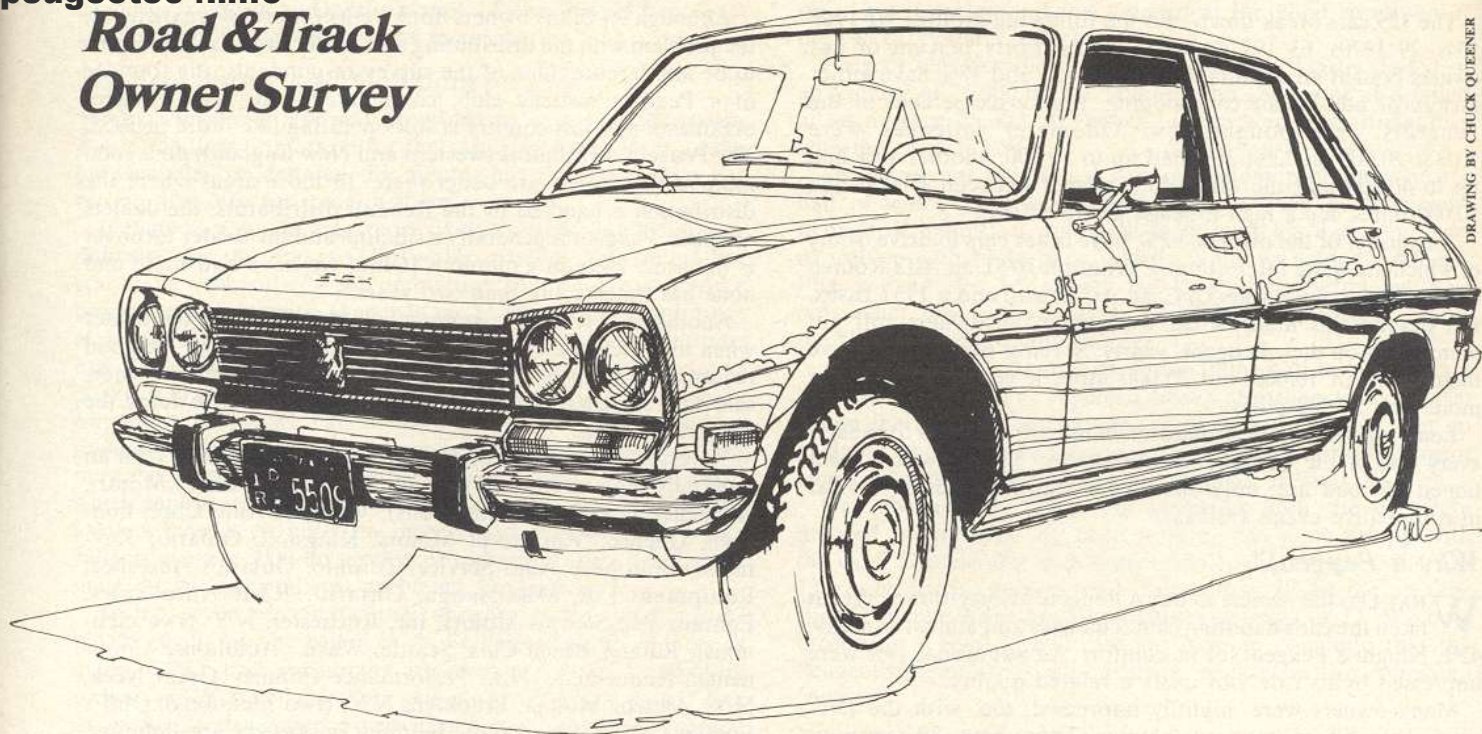
For all-around fun it's the Mazda: excellent performance from the rotary engine, good ride and handling, a comfortable and well planned interior, adequate cargo space and reasonable price. Fuel economy, as with the Sportabout, is mediocre.

For long trips and hauling heavy loads we'd choose the Peugeot or Volvo. Both are decidedly underpowered in daily use but exceptionally comfortable cars on the freeway. And despite their size and sluggish performance they are still much more maneuverable in traffic than any of the large American wagons.

The two remaining cars in the group seem to have no really strong qualities; in the Toyota line there's the smaller, less expensive Corona that seems a better value in its class than the Mk II in its, and the VW 412 is notable only for its best-in-class fuel economy even with automatic transmission. Since the new Dasher wagon will beat it in this respect too, it seems to us the 412 has little to commend it.



Road & Track Owner Survey



DRAWING BY CHUCK QUEENER

PEUGEOT 504

Good car, inadequate dealer coverage

THE PEUGEOT 504, introduced in France in 1968 and brought to our country a year later, has always maintained a low sales profile in our market. This isn't a reflection on the car, for Peugeot builds a sensible and technically interesting machine. Instead, it's an indication that Peugeot has never tried to build up much sales volume, though the company has been selling cars here for a long time.

The 504 is typically French, although not as "eccentric" as certain Renaults and Citroëns. It's a tall, upright, rather boxy sedan with lots of interior room but compact exterior dimensions. Pininfarina designed its body, which is straightforward and pleasant except for its chamfered rear deck.

The powertrain is traditional: a front-mounted 4-cylinder pushrod engine drives the rear wheels through either a ZF 3-speed automatic or a 4-speed manual transmission. From 1969 through 1971 the manual transmission used a column shift lever, which was replaced in 1972 by a console-mounted lever.

The other major change in the powertrain came in 1971 when the 504's engine was bored out from 84 to 88 mm, raising piston displacement from 1796 to 1971 cc and power from 74 to 84 bhp (by the currently used SAE Net method). The real bonus of the larger engine was better highway passing performance; later emission modifications have brought power back down to 82 bhp.

Otherwise, the 504 has remained its same charming self from the time of its introduction. The March 1970 issue of R&T contained our first road test of the 504. In it we raved about the Peugeot's overall body design (though we thought the rear end odd) and we appreciated the numerous standard features like 4-wheel disc brakes, independent front and rear suspension, sliding steel sunroof and Michelin XAS radial tires.

In terms of performance, we found the 504 relaxed at cruising speed, but getting there was another matter. Neither the 1796- nor the 1971-cc engines provide strong acceleration and the little engine must be worked hard most of the time. In handling, however, the 504 earned an excellent review. There's a lot of body roll but the Michelin tires provide good cornering power.

And the French know how to tune a suspension to radial tires to produce an outstanding ride (though the 504 isn't as refined as the old 404). In a 4-car comparison test in the November 1972 issue, we found the Peugeot's ride better than its competitors—Audi, Saab and Volvo. "Never mind the road surface with the Peugeot: just keep going, as fast as you like," we said.

With this excellent ride, fully adjustable seats and generous front and rear passenger room, the 504 is an uncommonly comfortable car. These qualities certainly made the Peugeot a good buy at a west-coast list price of \$3295 in 1970; but like that of most cars in recent times the Peugeot's price has escalated considerably: it's \$4830 in 1974.

Our relationship with the Peugeot 504 over the years, then, has been a pleasurable one. And during this time (and the days of the 404) we've heard repeatedly of legendary durability. Now, with a survey of 129 Peugeot 504 owners, we at last have more than hearsay to work with. The reason it has taken so long is that there are relatively few Peugeot owners out there in readerland.

Peugeots don't appeal to young people as a rule: fully 75% of the owners in our survey are 25 to 49 years of age, the majority falling in the 35-to-49 category. Fifteen percent are 50 to 64, only 8% are under 24 and the remaining 2% are over 65.

As might be expected from a mature group of owners, many are professionals. As with so many rationally designed imported cars, we have a high proportion of engineers (15%), along with six teachers, five professors, four doctors, three lawyers, three librarians, two architects and two ministers. There are also seven students, five housewives, two realtors, a factory worker, an investor, a silversmith, a hardwood-toy manufacturer, an 18-year-old "family automotive advisor" and a VW mechanic.

New England and the east coast are home for 36% of the owners, followed by the west coast with 27%, the midwest with 14% and the south with 6%. Seventeen percent of the owners are Canadian, the highest percentage north of the border in any of our surveys.

peugeot504.info

The 129 cars break down into the following groups: six 1969 504s, 29 1970s, 63 1971s and 31 1972s. Forty percent of our owners bought an automatic transmission and 18% have either factory or add-on air conditioning. Eighty-six percent of the Peugeots were bought new. Odometer mileages were 10,000-20,000 on 22%; 36% had up to 30,000, another 19% had up to 40,000 and the other 23% ranged between 40,000 and 90,000 miles. It's a high-mileage group of cars.

A majority of the owners, 62%, have other cars to drive, some of which are quite interesting: a Triumph 2000, an Alfa Romeo Giulia Spider, a Porsche 356C, an AC Bristol and a 1931 Essex. But despite this multiple-car ownership the owners still put many miles on their Peugeots yearly. Seventy-two percent drive them between 10,000 and 25,000 miles a year and 9% drive more than 25,000 miles.

Long trips and daily, around-town use are the tasks for nearly every one of the Peugeots in our survey. Three owners mentioned off-road use; only one owner mentioned using his car in competitive events (rallies).

Why a Peugeot?

WHAT LED the owners to buy a Peugeot? Forty-three percent liked the car's handling characteristics and almost as many, 42%, bought a Peugeot for its comfort. An additional 19% were impressed by its ride, obviously a related quality.

Many owners were mightily impressed, too, with the Peugeot's long list of standard features. There were 89 mentions of such standard features as Michelin tires, independent suspension, sunroof, disc brakes, rack-and-pinion steering and reclining seats.

Size was important to many of the owners; 29% sought the benefits of a roomy car with compact exterior dimensions. Six percent needed a large trunk and 16% liked the Peugeot's styling. And of course fuel economy was an important consideration: 17% named this reason for choosing a 504.

Two other factors given as reasons for purchase turn up in this survey more frequently than usual. The Peugeot obviously enjoys a good reputation: 26% put stock in its reputation for dependability and durability. Marque loyalty was also higher than usual—9% had previously owned a Peugeot and had returned for another—although we are amazed at the generally low level of marque loyalty for all the makes we survey.

Finally, there were a few mentions of the Peugeot's low noise level, its low price (at the time of purchase) and the fact that it's a "different" or "uncommon" car.

Service and Maintenance

AN UNUSUALLY low portion of owners say they drive "hard," 38% compared to our survey series average of 55%. There seems to be a confusion of terms here. The good handling of the 504 invites the driver to use it but the anemic performance of the engine doesn't. Citing the engine, one of the 56% of owners saying they drive "moderately" said, "How can you drive this car hard?" Yet many of those classifying themselves as hard drivers feel that to keep up with the rest of traffic they have to flog their Peugeots. Whatever the case, only 6% said they drive "very hard."

The Peugeot owners are conservative not only in their driving style but in their cars' maintenance too. Only 5% flatly refuse to follow the manufacturer's recommended service schedule. Ninety-five percent follow it either precisely or mostly and 19% change the oil and filter more often than the prescribed 3000-mi interval.

The owners are quite opinionated about their dealers. Comments ran from "My dealer doesn't know #\$\$% from Shinola about the car!" to "I'm treated like the boss's son." We had a higher-than-normal proportion of owners rating their dealers "excellent"—30% compared to a survey average of 25%. Twenty-two percent rated their dealers "poor," about average for our surveys. Twenty-eight percent of the dealers were thought of as "good" and 15% as "fair," there being 5% who had no opinion.

Although 9% of the owners think Peugeot service is expensive, the problem with the distributing and dealer organization seems to be indifference. One of the survey respondents, the founder of a Peugeot owner's club, commented that "The Peugeot organization in this country is still operating like it did in 1958. The Peugeot distributors (western and New England) do a good job and the dealers are better there. In those areas where the distribution is handled by the Renault distributors, the dealers are poor. Peugeot is generally a sideline and the dealer turnover is fantastic. Here in Columbus [Ohio] we have had three and none has lasted more than two years."

Another owner tersely commented, "I gave up on the dealer when his mechanic asked me how to open the hood." A good reason, it seems to us. After similar experiences 5% of the owners said they switched to an independent mechanic or to doing the work themselves.

Nevertheless, many dealers were listed as excellent, with an especially high number in Canada. They are: Gemini Motors, Kitchener, Ontario (two mentions); Verchere Auto Care, Longevil, Quebec; Van Herpt Motors, Kingston, Ontario; Raymond's European Auto Service, Toronto, Ontario; Autosport Equipment Ltd, Mississauga, Ontario; R&R Auto Sales, Ephrata, Pa.; Stewart Motors, Inc, Rochester, N.Y. (two mentions); Rainier Beach Cars, Seattle, Wash.; Autohouse Continental, Runnemede, N.J.; Performance Imports, Great Neck, N.Y.; Meteor Motors, Brooklyn, N.Y. (two mentions); Olaf's Foreign Cars, Portland, Ore.; Belmont Imported Cars, Belmont, Calif.; Guilford Motors, Guilford, Conn.; Gulf Import Autos, Houston, Tex. (two mentions); and Transatlantic Motors, Stamford, Conn.

Best Features

THEY BOUGHT their Peugeots for handling, comfort, size, ride, standard features, reputation, styling and fuel economy, but we wanted to find out what winsome qualities a Peugeot has after it's been driven more than 10,000 miles. In this context the owners still like the handling, comfort, ride and standard features (mentioned by 35%, 28%, 15% and 15%). Fuel economy is another "best feature," listed by 17%, with the owners reporting an average 24 mpg for all-around driving. Peugeot's reputation for dependability must have some validity, for 16% of the owners listed this characteristic. Several respondents like the style and the child-proof doorlocks, and three owners think the 504 is a "poor man's Mercedes." We seem to recall some Peugeot radio ads taking that line.

There are critiques from the owners like these: "My Peugeot is the ideal type of car for general use today; a very comfortable sedan for four adults with excellent handling, ride and brakes, and good fuel economy. If only the company had a decent service and sales organization, Peugeot could be great."

"The Peugeot has superb handling for a car of this configuration. Suspension travel and tuning is excellent for rough roads. It's like a heavy Porsche 912," said another.

Worst Features

NO SURPRISE here: "underpowered," "lacks acceleration" and other similar remarks were made by the largest group (27%) as the 504's worst feature. And this group includes owners of 504s with the larger engine too, not just the 1.8-liter. Next came excessive brake wear and squeal, 14%, and hard or slow steering bothered 9%. Rattles and excessive wind noise at high speeds each earned 5% disapproval ratings. And, of course, the dealer-service organization was considered a worst feature, by 6%.

One respondent, apparently a free-thinking young bachelor, said that his Peugeot's only bad feature is the image it implies. "Most female types consider it an 'old man's' automobile, completely out of phase for a bachelor. However, one cannot discount the full-reclining seats, which serve well as a temporary bed in an emergency or a moment of passion, or the sunroof for those clear but cool, star-studded evenings. And I know of no other car at its price that even comes close to the stopping,

handling, comfort and performance of the 504. When I get a little older, I'll probably fit its image better."

Problem Areas and Component Life

ELEVEN PERCENT reported no problems with their Peugeots, a middling proportion for the surveys. Seven other makes have equaled or bettered this figure—but the proportion has run up over 30% for some of them.

If there is a single area most likely to give the 504 owner difficulty, it's the brakes. Thirty-nine percent had premature rear brake wear and 47% had premature front wear. Front brake linings needed attention at an average 15,000 mi and rear linings at 18,000 mi; we would consider 24,000 mi normal for most cars. Other brake problems included squeal, unevenness and parking brakes that wouldn't hold. Seven percent, mostly owners of 1971 504s, had to have the brake master cylinder replaced. There have been improvements to the 504's brakes in recent years, though: an improved composition of brake pad which minimizes squeal and wear has been used since 1972. Dealers have been urged to inspect and lubricate the brake calipers at every 3000-mi service; proper lubrication helps eliminate the sticking and rust problems, Peugeot says.

Twenty-seven percent had their speedometer either fail completely or do, as one called it, "a St Vitus dance." Nearly as many (22%) had carburetor problems, primarily afflicting owners of 1971 Peugeots. As one owner explained it: "The car suddenly developed a very rough idle. The dealer noted that this occurrence was not uncommon in 504s. The fault lay in small particles becoming lodged in the fuel intake jet for low speeds and idle. This jet is simply screwed into the side of the carburetor and can be removed with a screwdriver. At each such occurrence I correct the ailment myself by just blowing the particle out of the jet's orifice."

Some owners suggested installing a fuel filter. Peugeot, however, says contamination in the carburetor is a result of dirty air filters, not dirt in the fuel line. The manufacturer says there are already three filters in the fuel system and that changing the air filter at regular intervals will solve this annoying contamination problem.

The only serious powertrain trouble was an unusual one indeed. It seems that in certain 1970 and 1971 504s, oversize valve springs were installed at the factory and caused excessive wear of the camshaft lobes. Twelve percent of the owners reported this problem at an average of 19,000 mi, most owners also reporting that the repair was covered by warranty. Other than this problem, there was not a single report of rod, piston or valve trouble. One owner had the cylinder head off at 70,000

mi to get it ported and was amazed at the good condition of the valves, cylinder and rings.

Peugeot electrics didn't fare as well. The starter failed at an average of 25,000 mi for 11% and the alternator also failed at an average 25,000 mi for 6%. There were also difficulties with the clock for 5%.

Seven percent mentioned cooling-system problems, nearly half of which were water-pump failures. Five percent complained of upholstery and dash tears, and 6% had some sort of trouble with body parts, mostly windows and door locks. Five percent also had clutch master-cylinder problems. The only other problem was again peculiar to 1971 504s; 5% of the 1971s had fuel-pump failures.

And now for the good news. Some items had to be replaced less often than could be expected. Shock absorbers lasted 37,000 mi on the average, and the Michelin tires do in fact live up to claims: they survived an average 42,500 miles for the Peugeot owners. Sparkplug life was about average, at 9500 mi.

One owner said, "The only problems with the car were induced by my wife. By itself nothing has gone wrong with the car." Despite this man's experience, the Peugeot 504 has 13 trouble areas experienced by more than 5% of the owners, slightly higher than our overall survey average of 12. We hate to destroy a good legend, but we have to conclude that the Peugeot's reliability is only average, at least in the American context.

Buy Another?

THE REAL test in these surveys, of course, is the question, "Would you buy another of the same make?" Seventy-nine percent of the Peugeot owners say they would, 8% are undecided and 13% definitely will not. These figures are about average for our surveys.

Some owners said they never buy the same make twice, and two owners said they would really rather have a BMW Bavaria (a much more expensive car). Two owners said they wouldn't buy another because the Peugeot's price is too high now; one said he wouldn't because the car is underpowered and one said he'd had too many problems with it.

But the real issue that seems to divide the yeas and nays is not the dependability or characteristics of the car, but the dealer/service organization—more owners gave this as a reason for not buying another Peugeot than any other. As we said in our survey of Opel 1900s, "we'd like to see the cars sold here with some enthusiasm and serviced more competently." If Peugeot followed this advice, we believe the 504 would be a sure winner on this market.

SUMMARY: PEUGEOT 504

New or Used?

Bought New..... 86%
Bought Used 14%

Annual Mileage

5000-10,000 19%
10,000-15,000.. 42%
15,000-25,000.. 30%
Over 25,000 9%

How Peugeot Owners Feel About Peugeot Service

Rated "excellent"... 30%
Rated "good" 28%
Rated "fair" 15%
Rated "poor" 22%
Don't use dealer.. 5%

Driving Habits

Drivers who say they drive "moderately"... 56%
Drivers who say they drive "hard" 38%
Drivers who say they drive "very hard"..... 6%

Problem Areas Mentioned by more than 10% of the owners:

Brakes Camshaft
Carburetor Starter
Speedometer

Mentioned by 5-10% of the owners:

Alternator Clock
Body Parts Clutch Master Cylinder
Brake Master Cylinder Fuel Pump
Cooling System Upholstery Tears

Would They Buy Another?

Yes 79%
No..... 13%
Undecided 8%

Five Best Features

Handling
Comfort
Ride
Fuel Economy
Standard Features

Five Worst Features

Lack of Power
Brake Wear
Heavy Steering
Service Organization
Rattles