

car

NEW

RIP OFF

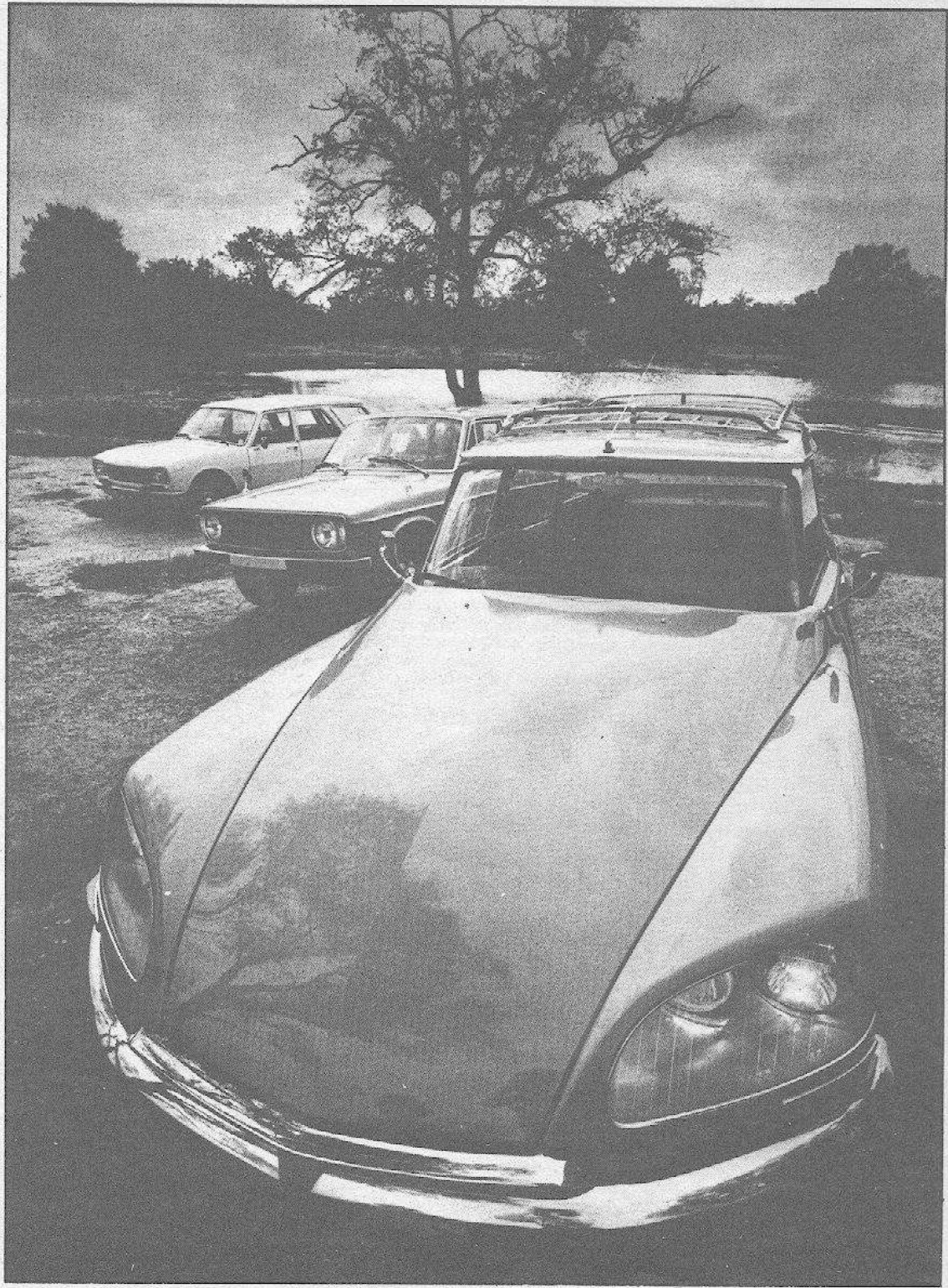
VOLVO
Just Pour on Water

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**Genuine
Swedish Steel**

**THE AUTOMOBILE AS
A DOMESTIC APPLIANCE**



Photography: Phil Sayer

GIANT TEST

Citroën Safari Volvo 745 Peugeot 504

peugeot504.info

AMONG OUR GREATEST AVERSIONS are those pretentious estate cars that are merely saloons with more rattles. The roads are full of them, of course, bounding their way along and trying to be very town-and-country with their thick carpets, polished wood and tweed-capped drivers contemplating their overdrafts. We have never really been able to see the sense or the morality in estate cars that take up more room on the road than saloon counterparts, yet carry no more people or goods in a normal configuration. With their rear seats folded down they do a bit better. Almost invariably their manufacturers take the easiest, cheapest and least satisfactory way around adjusting the suspension to cater for a greater weight-carrying potential by adding another leaf to the springs or throwing in a set of stiffer coils and to hell with comfort in the unladen situation.

Such vehicles are as unsatisfactory to use as they are unpleasant to drive. Many of them develop roll oversteer at the drop of clanger and bump steer from the back as their unforgiving—and unforgiveable—rear suspension takes charge. In the final crunch the vast majority of estate cars are merely styling variations on saloons, with compromised springing just in case someone may have the audacity to fold down the back seat to carry a big load.

It's a complaint that is more British than European, although the Germans appear to be avidly copying our mistakes. The French would never tolerate such carryings-on and nor would the Swedes, one assumes, for even the little Saab 95 accommodates more people than any other vehicle of comparable size.

The people who are applying common-sense to their motor-vehicle buying habits are, we're happy to say, tending to ignore the ostentatious nonsense and buy instead the likes of Peugeot, Citroen and Volvo which, as it happens, are the subject of this Giant Test.

Let it be said early on, though, that these are relatively costly estates, although comparable with the saloons with which they share components. Yet all three are sufficiently divorced from the saloons to be identifiable in their

own right. They have this in common, along with price tags around £2000, and the ability to carry up to seven people as an alternative to a big payload.

STYLING, ENGINEERING

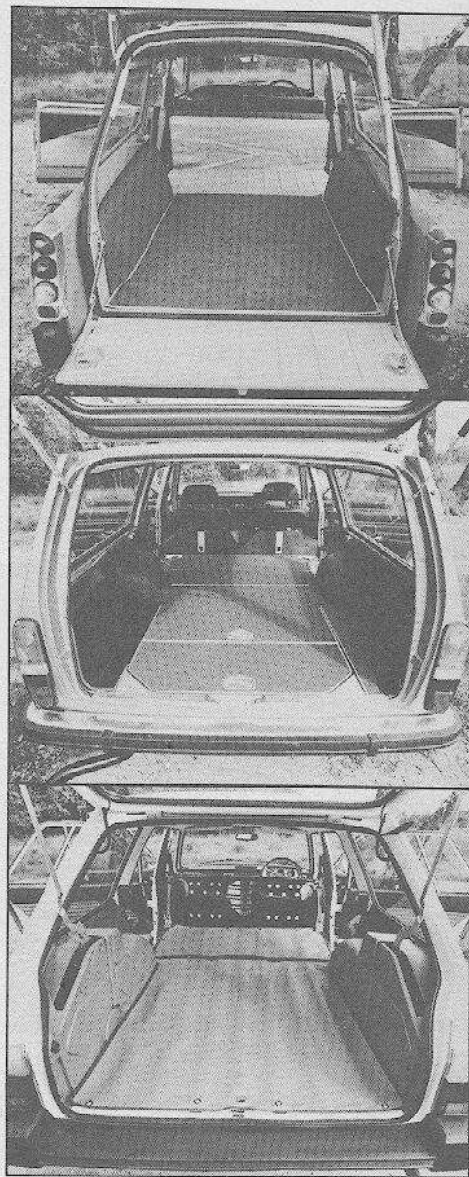
Naturally the Citroen Safari is the unconventional one. Both its styling and its engineering are unusual even by today's standards, which goes to show just how much in front they were in the early 'fifties when the current series emerged into an astonished world.

The aerodynamically excellent nose of the Citroen is something that people love or hate; we take the former view. The rear of the vehicle is nicely rounded and the roof rack is part of the standard equipment, blending satisfactorily into the general shape. The large glass area makes the Safari look nice and airy. One of the virtues of its unique oleo-pneumatic suspension system is that the rear of the vehicle sits at a more or less normal height regardless of the load.

Powered by a hemispherical combustion chambered four-cylinder engine, displacing 2.3litres now, the Citroen has the largest and equally most sophisticated power unit of the trio. And, of course, it drives through the front wheels which means that the lack of propellor shaft to the back axle allows a lower and flatter floor than can be provided in the others. The Citroen also has disc brakes all round and power steering operating off the same high-pressure hydraulic system. It is, in every respect, an unusual car that is far less of a compromise than any of the others; Citroen's engineering people have not given an inch in their attitude towards the car. What the public does not like they will simply have to get used to—or buy something else. Fortunately the public tends to get used to it.

Volvo makes no such demands on its customers. It is the most conventional of the trio and not at all unusual in its styling, which is basically a long box with wheels at more or less suitable points. There is conspicuous rear overhang which is the penalty of trying to become long on an existing (saloon) wheelbase. The fifth door's window is deep which takes away some of the upright appearance that dominates the

Three of Europe's biggest load carriers, the Citroen Safari (below), the Volvo 145 (centre) and the Peugeot 504 (bottom). There's little to choose between them for load capacity but if the extra seats are brought into use to turn them into seven seaters the picture changes



↑
BREAK!

rearmost aspects of the Citroen and the Peugeot.

Just as the Safari is relentlessly unconventional, the Volvo 145 is relentlessly conventional with not an original idea or thought having crossed its designers' collective brow. The old-fashioned, not very efficient, four cylinder, overhead valve engine displacing two-litres, if installed in a British, Italian, French or German vehicle of comparable price, would be laughed out of court. It now has fuel injection to overcome pollution problems and to provide reasonable power; the drive goes through a four-speed gearbox to a live axle suspended on coils and nominally controlled by radius arms. Brakes are disc all round.

The prospect of developing the 504 saloon into an estate car was something that left a large question mark hanging in the air until Peugeot solved the dilemma by abandoning independent rear suspension in favour of a very well designed live axle. It consists, basically, of an axle with a pair of coil springs in front and behind the axle on each side. Arms locate the axle and there is an anti-roll bar as well. With a wheelbase of 9ft 6in, the estate is longer in that dimension than the saloon by six inches. And at 15ft 9in overall, the 504 is a very substantial machine.

Its engine is a remarkably efficient two-litre developing 93 (DIN) horsepower at 5600rpm. Like the Citroen, it has pushrods which, through a crossover system, put the valves into the head in such a way as to form hemispherical combustion chambers. The drive goes through a four-speed gearbox.

Stylistically, the Peugeot looks like a wedge. Besides sitting fairly high on its suspension, the aft section of the body is kicked up to optimise the load area. The front, however, is basically a 504 saloon up to the centre pillar. Despite its obvious bulk, the 504 is good looking to the point that we prefer it to the others. If one is going to have an estate, why not have one that looks the part; the 504 certainly does. The Safari is not far behind it though, with the Volvo looking nondescript by comparison.

PERFORMANCE

Just how should an estate car perform? For £2000 one has the right to hope for quite a lot of it, whatever it is. Now in the case of this trio performance is a selling point but the end result is achieved in various ways. Take the Volvo as a starter. Against the stopwatch it can produce a reasonable result for the specification/performance column of any road test. "Wotllshedo, mate" answers must accurately talk of 100mph top speed at the same time neglecting to mention the shattering noise level and general intractability imposed by excessively high gearing. The latter has just been cured by dropping the ratio of

first, thereby introducing a substantial gap between it and second which peaks at around 60mph. The official story is that the modification was introduced out of consideration for those owners who tow boats and caravans, but the reality is that the high-g geared first was wrecking the clutch, particularly of city cars and those employed in strenuous work. This, the latest series, has a lower first and a more impressive 0 to 30mph acceleration time. However, this in itself introduces difficulties, for the Volvo is very reluctant to pull away in second from fast walking speeds which, in the previous box, meant dropping back to first. Now bottom gear is less easy to reach because of the lower ratio.

Nevertheless, the Volvo apparently does not object too much to being revved hard, for we have never come across an owner who has actually blown one asunder. It's just that the engine loathes being worked really hard; the 145 has reasonable performance but it's hard to get it comfortably. Cruising speed is about 70mph, for above that the noise level and the mechanical feel provide a real discouragement. In other words, the performance on paper looks better than it is in reality. The very high gearing seems to make it an easy performer, but it's not. Against it are poor tractability and excessive noise. For it? Well, an apparent ruggedness. Until pollution problems reared up in the face of all manufacturers, Volvo were relying heavily on high compression ratio engines to provide a good responsive feel in their engines, but with the dropping of the c/r to accept unleaded fuels the engines now feel about as crisp as a stale carrot. Other makes will follow and by then someone may have found out how to put the brio back under the bonnet. The 145 is caught in a web, really, for the engine will not satisfactorily drag around such high gearing, but to lower the final drive ratio, which is what is really required, would increase the already substantial thirst of the vehicle as well as effectively reducing its cruising speed. What's needed is a re-think of the mechanicals rather than a continuing series of rescue jobs.

Neither Peugeot nor Citroen have ever relied upon high compression engines and lots of carburettors to get performance. In its way the Citroen suffers from the Volvo malady of noise and harshness, but remains pretty much the same right through the rev range. Low down, accelerating away in first gear for instance, one immediately thinks that the Safari is cursed with a chaffcutter instead of an engine. Yet it never gets bad, even up to its maximum of around 110mph, for the gearing is sensible and the aerodynamics greatly reduce the amount of labour the engine has to put into maintaining a high speed. The

cruising rate can be 90 to 100mph if necessary. For the same reason the fuel consumption is reasonable.

Acceleration is not brilliant. Like the 145, the Safari is high-g geared overall and it won't do anything much in top below 40mph, although third has enough slogging power to haul away from 10 to 15mph if necessary. The engine has a strange, easy feeling about it as it rumbles and grumbles away up front, yet there is no real harshness to set your teeth on edge. We've done a lot of miles in Safaris over the last 12 months and they have always felt the same. Now the 2.3litre unit has even more slogging ability but it's no smoother than before.

The Peugeot is a different proposition again. It is by far the smoothest, most willing engine of the group and it revs hard and freely to give ample acceleration, a high cruising speed and little mechanical fuss. It's a potterer, too, being able to dabble along at 15mph in top without being fussy. Like the other two, its compression is modest at 8.35 to one. Top speed is slightly more than 100mph, but cruising can be anything up to that, the legal 70mph (whatever that is) being an absolute doddle.

For performance, the Peugeot has more of it in the right places than either of the other two and therefore gets our gong for the leader of the trio. It is, generally speaking, the superior performer, with the Citroen second and the Volvo an ailing last.

TUNING POTENTIAL

Having a fiddle with the Volvo is to court disaster. The Bosch electronic fuel injection is as sensitive as it is efficient, so to change anything within the engine is to risk the need to re-calibrate it, which just isn't on.

Nor do people do much with Citroens. A routine port-and-polish and a gentle raising of the compression by a reputable firm would help, of course, but there does not seem to be a grand plan to provide a lot more action to get it marching in a big way.

In our experience Peugeots respond well to tuning, although there don't seem to be firms actually specialising in them at the moment. As the injection version of the saloon proves, the 504 engine benefits from better breathing, so that is obviously the direction to take.

MAINTENANCE AND SPARES

None of the trio are lone rangers. There is a reasonable, at the least, dealer network around the country to cope with problems as they arise. Citroen have the most complex car, which requires the most specialised servicing as a result. The ordinary garageman attempting to delve into the workings of the Safari's hydraulic system would be like your friendly corner butcher attempting human-heart surgery. One engineer we know, upon first examining the innards of a Citroen, calmly pronounced that if

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it had but one more pipe it could reproduce itself. The message, then, is never, ever try DIY servicing (apart from oil changes and such) and never credit non-Citroen garages with having enough sense to be able to even raise the aluminium bonnet.

There's nothing complicated about the 504. It's a straightforward design that needs no special attention. The engine and the suspension are conventional enough, as is the gearbox.

HANDLING, STEERING AND BRAKES

The Citroen is something special; unique is probably a better expression. It is the only one of the three to have front-wheel-drive and this expresses itself in the general road behaviour. As you would expect, it understeers quite strongly on tight corners but remains neutral under most other circumstances. The actual grip on the road is very good indeed and this is enhanced by the feeling that it's holding on securely almost regardless of conditions. Perhaps the worst situation in which one can find the Safari is a downhill hairpin with a slippery surface; then you can get a terminal understeer which takes some sorting.

Nevertheless, we found that the handling was very good and the general stability excellent. The Safari is one of those vehicles in which the driver never really gets to worrying about corners; they are merely part of the road and no matter what kind of blunders are perpetrated, the Safari will get around somehow. There is a limit, of course, and when it is reached the driver has to work fast to sort it out. The speed at which the drama happens is proportional to the measure of daring that allowed such a situation to arise. The long wheelbase makes it hard to bring the tail around, so the limit tends to be an understeering one.

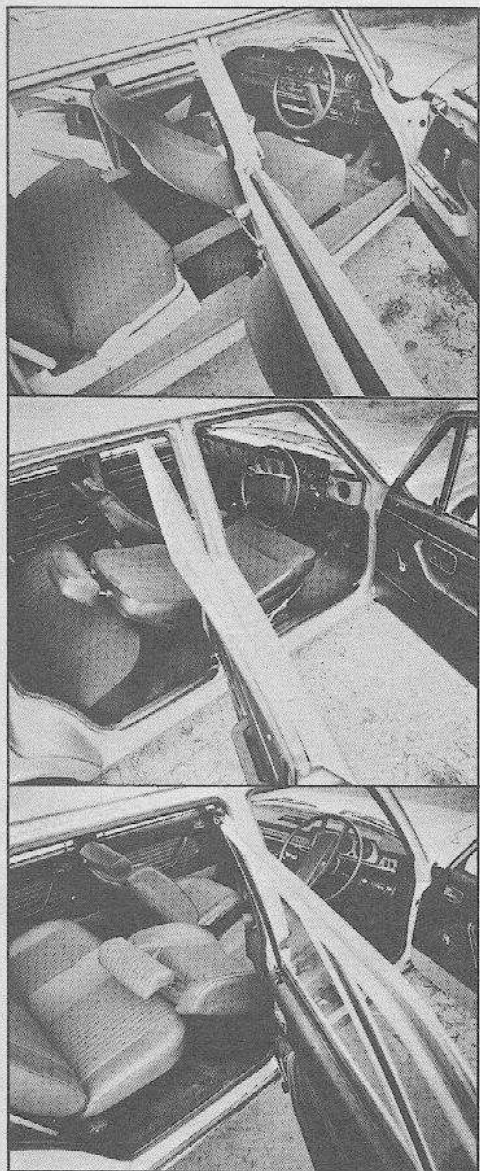
The steering is geared for fast work, though. It is power-assisted and feels strange at first—even twitchy—and certainly artificial. Inattention will allow the Safari to quickly wander off course, just as carelessness results in unscheduled diversions. It's all due, of course, to the tremendous responsiveness of the Citroen. Once the driver gets used to the idea that the vehicle will go instantly where it's pointed, the results are exceptional. It's one of these vehicles that one can literally will through a corner with almost no wheel movement. Swervability is outstanding, too, for not only does the Safari respond immediately but it also recovers and gets back to its own patch of road with no drama.

If the steering is strange, then the brakes are weird. There is no pedal as such, just a small button on the floor that needs no more than a caress to activate the high-pressure hydraulics. The danger is that in moments of

France's ship of the desert (below) is a versatile and not unhandsome load carrier but the Volvo (centre) looks very much like a hastily cobbled up version of the saloon. The Peugeot 504 looks ungainly and top heavy around the rear end



Passenger comfort is well looked after in all the cars, the Volvo (centre) having the most sumptuous interior, but the Peugeot (bottom) with its rubber matting and utilitarian look seems more suited to its task of a hardworking estate



imminent disaster the driver will apply normal-car techniques and stamp on the button. No better way to end up with fearful wheel lock, specially in the wet. Thus, the seemingly excessive sensitivity may deter potential Citroen Safari buyers before they ever have chance to savour the phenomenal capabilities of the beast. One needs to acquire a different technique to drive the Citroen, but those who have been converted tend to become bigotted to the point that they regard every other vehicle as being vastly inferior. Maybe they're right!

But nothing rings more of old world convention than the Volvo. It handles like something out of the '50s. It is an inherent understeerer with a suggestion of roll oversteer when the going gets really hard. Actual grip on the road is reasonable enough, but the handling does not encourage the driver to use what's available. The amount of body roll is intimidating when you are really trying and that much can again be said for the bump steer which flicks the 145 off line on unevenly surfaced corners. It's a sort of wallowy device that has few virtues in its handling. Even worse, the steering is limp and unresponsive. Not much happens when you give it a good twirl in the straight-ahead position and after the Citroen, for instance, it feels hopelessly low geared and heavy.

As we have said, there is nothing much wrong with the way the Volvo holds the road, although it is influenced by bump steer and roll. Not a driver's car by a long stretch of the imagination.

Like the Citroen, the Volvo has disc brakes all round and the conventional dual hydraulic system. The vehicle stops efficiently, although high pedal pressures are needed to get best results. Not a bad thing on slippery roads. Overall, though, the 145 is a thoroughly dreary car to drive. Its directional stability is good which has to be a tick in its favour, but the steering and handling don't belong to the 'seventies.

We are not against conventional design when it's done properly, but Volvo's pre-occupation with safety has apparently made them shelve any ideas they may have had about cars with dynamic virtues.

The Peugeot 504 rather makes the point about conventional designs. Stripped of the saloon's independent rear suspension, the dual purpose 504 manages to conduct itself extremely well. Just looking at the high-tailed estate one instantly visualises roll oversteer, then bump steer due to the live axle. Yet its handling and roadholding are close to faultless. There is very little body roll and no roll oversteer whatsoever; one could say that it handles more easily than the saloon which asks something of its driver when he hurries. The estate does not.

There is an initial feeling of understeer, probably due to the long wheelbase and the fact that the driver sits far forward. In reality this is not the case, for the 504 gives very close to a neutral handling right through the range. When it does finally let go, it's invariably the rear wheels that move first. They do so smoothly and tidily, unlike the 145 which in that condition feels precarious.

Bump steer, unheard of in the Safari, but prevalent in the 145, is not unknown in the Peugeot. However, if the tail jumps outwards once in 300 miles of hard driving on unclassified roads it's pretty rare, really. Despite the size, the 504 thrives on hard, fast driving, and so does its driver if he has any soul at all. The feel of the Peugeot inspires great confidence which is completely justified in view of its actual capabilities.

Steering is very responsive in the direct way that is lacking in the Citroen (because of its hydraulic setup) and inherent in the 145. But like the Volvo, which has had its steering geared down recently in an attempt to make it lighter, the Peugeot's is also too low geared. The worst manifestation of the gearing is on right angle suburban corners and hairpin bends, but otherwise its responsiveness is sufficiently good to mask the gearing.

Unlike the saloon which has four discs, the 504 estate has a disc/drum configuration which is not lacking. Pedal pressure is moderate and there is ample feel in the brakes to provide pleasantly progressive stopping. We could not detect any worthwhile evidence of fade when they were used hard.

For low speed motoring—around town for instance—the Citroen with its power steering is the most convenient. Yet its turning circle is poor, as is the Volvo's, which is coupled with heaviness. The 504, on the other hand, has the dual virtues of lightness and a good turning circle.

Selection of the best performer is a matter of judging between the Citroen and Peugeot. Taken a step further, it becomes a matter of deciding whether it's possible to live happily with the ways of the Citroen. It has such an injection of advanced thinking that it may be beyond some people to comprehend its meaning.

With the Peugeot there is a directness which we like, and for that reason tend to favour it over the Safari. But only just.

RIDE AND COMFORT

Citroen have an enviable reputation for comfort and ride qualities that has not deserted them in the Safari. The oleo-pneumatic suspension irons out most surfaces with a dreamlike ease that tends to make nonsense of more conventional systems. Yet in this country its true virtues are not really appreciated. One needs to be pounding around wildest France to understand

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the measure of Citroen's achievement. Ironically, the very thing with which the suspension cannot cope abounds in the UK—the dreaded humpback bridge. The Safari lands pretty roughly after any worthwhile encounter with a humpback, but that really is its only shortcoming. There is no pitch, little roll and always the ability to soak up rotten surfaces without the occupants being aware of what is passing just a few inches below their backsides.

Nor does it matter what kind of load is carried in the Safari. The suspension merely jacks itself up to maintain the standard height without even becoming slightly more lumpy in its operation. Of course, the Safari's suspension does all the usual Citroen things, such as sighing down when stationary, scrambling up again when it's time to go, plus having several suspension heights which can be useful for getting additional clearance over obstacles.

Volvo's 145 is handicapped by its thoroughly conventional suspension, but that is hardly an excuse for the poor ride on anything but the best motorway surfaces, and for the pitching that develops over the undulations that other vehicles ignore. Yet the ride is not specially harsh, just lumpy and unpleasant with no attributes as such, apart from the reputation for being virtually indestructible on bad roads. That was once enough to satisfy most people, but it certainly does not satisfy us right here and now in 1972. Robustness is nice, but other makers can achieve that *and* comfort at the same time. Volvo do not.

Almost as if to prove the point, the Peugeot combines strength with quite exceptional comfort provided by the even, well-balanced ride. The suspension is soft without feeling like the Renault 4's, yet very well controlled to alleviate problems of pitch or harshness. There is surprisingly little roll to upset the secure feeling that the 504 imparts to its occupants, while the four coil springs at the back take up the effects of big loads without the Peugeot dragging its backside on the bitumen or the quality of the ride being impaired. The Volvo takes substantial loads as well without the ride-height altering much, but this is due more to stiff springs than to cunning inherent in the design.

The sheer versatility of the Citroen guarantees its comfort under just about every known condition. Yet in everyday terms there's not much to pick between it and the 504.

There's plenty of division between all three, though, when it comes to interior comfort. The Volvo is well equipped and has excellent seats with adjustable lumbar support and headrests. It is also nicely trimmed, although the sound-proofing attempts have been unsuccessful, for the cabin is unpleasantly noisy

above 70mph. There's more of the saloon than dual purpose vehicle about the interior of the Volvo, so in a sense its versatility is slightly restricted by the high quality of the trim.

The same cannot be said for the Peugeot. It's nicely finished, but has rubber mats on the floors and no pretensions at all. Essentially practical, the 504 nevertheless has very good seats with headrests built-in.

Nor is the Citroen lacking in this respect. Its seats look more simple than the others but this does not detract from their comfort; they harmonise perfectly with the suspension behaviour. The Safari has carpeted floors but it is not as elaborate as the Volvo.

None of the three are quiet. The Volvo is the least pleasant because it is harsh at speed, whereas the Citroen combines wind noise with some engine roar. The Peugeot booms at times and manufactures wind noise around the external rear view mirrors.

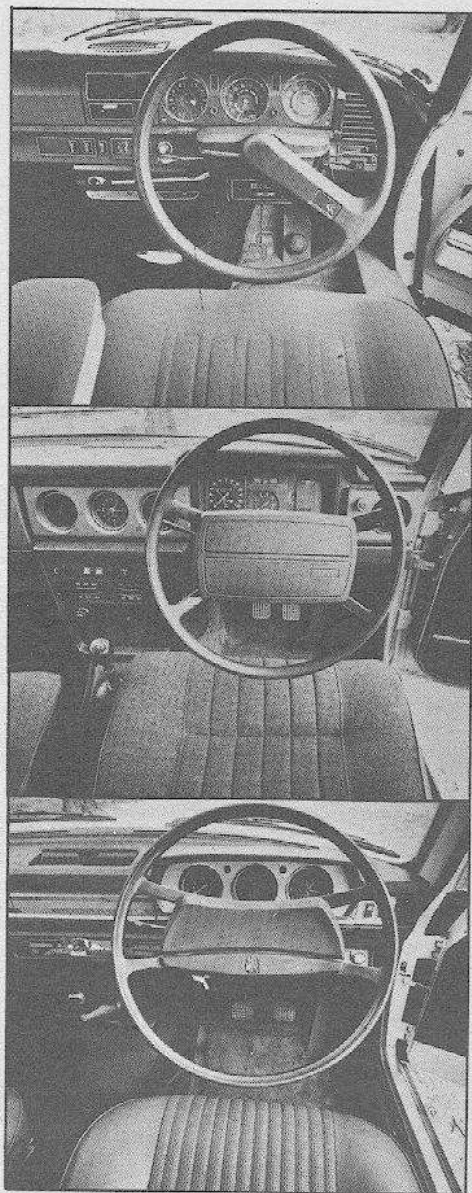
Accommodation is specially interesting. The Peugeot shows its hand straight away by having three rows of seats for seven people. The Safari's sixth and seventh passengers have side-facing jump seats in the back and they really are better for children than for adults. The Volvo solution is a small rear-facing bench on which two adults can perch quite comfortably. But the shortcoming that manifests itself in both the Volvo and the Safari is that with seven aboard there is no space for luggage. When the 504 has all seats taken, there is still substantial baggage room in the tail. Against this, rear seat legroom is not particularly generous, but the solution is more realistic than that found by either Citroen or Volvo. The sacrifice that Peugeot have had to make is that only the aft most seat folds down, so it cannot match the other two when it comes to taking long loads.

The Peugeot has the best solution for accommodation, comfort and ride. Not far behind it comes the Safari, with the 145 dragging again because its poor suspension lets down the obvious quality and comfort of the interior.

INSTRUMENTS AND CONTROLS

So important has the UK market become for Peugeot that they have made concessions to British tastes. For instance, all 504s have floor gearchanges whereas most of the French versions have it on the steering column. In the case of the estate it is a direct-acting lever that curls out of the transmission hump. Maybe not as gracious as a remote control linkage, but beautifully positive and dead accurate. One of our previous moans about the 504 was the placement of the handbrake in an out-of-the-way place under the dash; now it's between the seats. The dashboard is a tizzy affair, but it tells enough information to be useful. For some reason the horn

The Citroen's controls are as bizarre as ever but once owners get accustomed to them they won't go near another car. The Volvo (centre) is well up with the current American safety race, the steering wheel being massively padded. The Peugeot stays functional and uncluttered

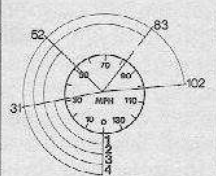
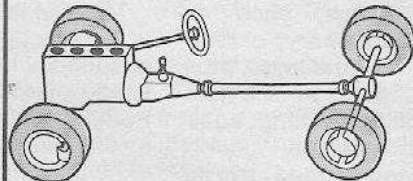
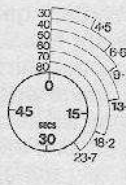
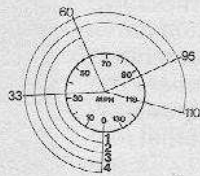
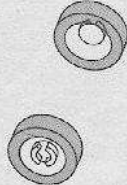
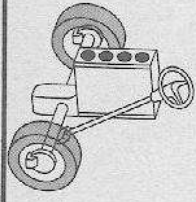
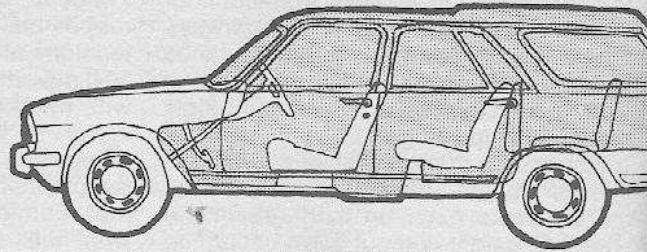
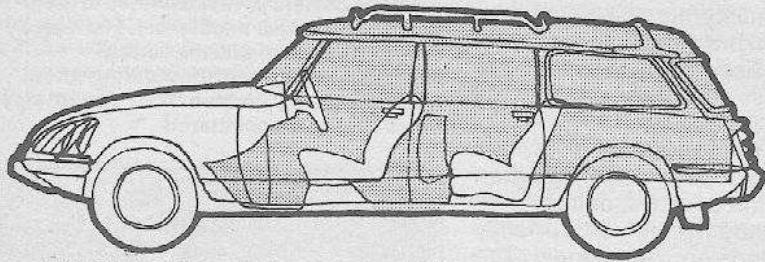


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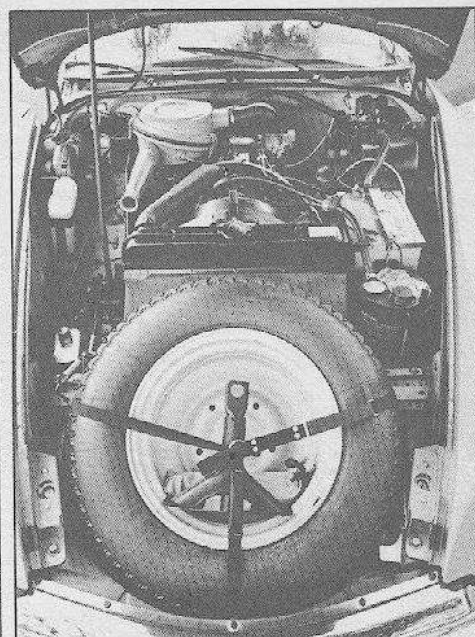
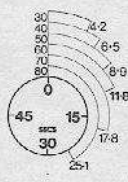
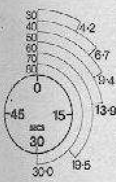
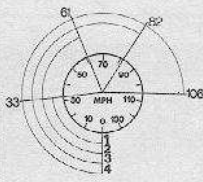
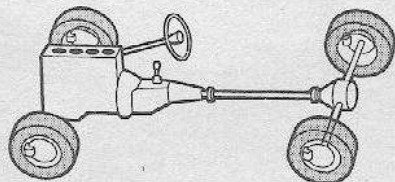
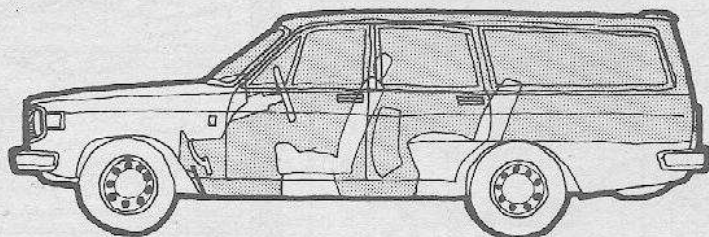
Citroën Safari

Peugeot 504



Engine	CITROËN SAFARI 21	VOLVO 145 ESTATE	PEUGEOT 504 FAMILY
Material (cylinder head)	ALUMINIUM	SPECIAL ALLOY CAST IRON	ALUMINIUM ALLOY
Material (block)	CAST IRON	SPECIAL ALLOY CAST IRON	CAST IRON - WET LINERS
Main bearings (number)	5	5	5
Valve gear layout	OVERHEAD PUSH ROD	OVERHEAD PUSH ROD	OVERHEAD PUSH ROD
Capacity (cc)	2175	1986	1971
Bore (mm)	90	88.91	88
Stroke (mm)	85.5	80	81
Compression ratio	9.75:1	8.7:1	8.35:1
Carburettors	WEBER TWIN CHOKE	STKOMBERG 175 CD-2SE	SOLEX 32.35 SEIEA 2 TWIN CHOKE
Power (gross/net bhp/rpm)	106 BHP DIN AT 5500 RPM	82 DIN AT 4700 RPM	93 DIN AT 6200 RPM
Torque (gross/net lb ft/rpm)	122 FT/LBS DIN AT 3500 RPM	116 DIN AT 2300 RPM	124.4 LBS IFT SAE AT 3000 RPM
Cooling system	WATER	SEALED WATER COOLING	WATER SELF DISENGAGING FAN
Transmission			
Gearbox	4 SPEED SYNCROMESH	4 SPEED SYNCROMESH	4 SPEED SYNCROMESH
Ratios: 1st 2nd 3rd 4th 5th	3.25 1.83 1.21 0.85	3.13 1.99 1.36 1	.281 .475 .732 1 (REDUCTION)
Final drive ratio	4.37:1	4.10:1 OR 4.30:1	.237
Mph per 1000 rpm in top gear	20.5		17.4
Clutch	8.75" DIA SINGLE PLATE	8.5" DIA SINGLE PLATE DIAPHRAGM	8.5" DIA SINGLE PLATE DIAPHRAGM
Chassis & Body			
Type and method of construction	MONO SHELL	INTEGRAL CONSTRUCTION	MONO SHELL
Lighting			
Headlamps	4 CIBIE OR MARCHALL	2	2 CIBIE OR MARCHALL
Battery	40 AMP HOUR 12 VOLT	30 AMP HOUR 12 VOLT	45 AMP HOUR 12 VOLT
Dimensions (in inches)			
Wheelbase	123	103	114
Front track	59	53.1	55
Rear track	51	53.1	53.5
Overall width	60.25	68.3	66.5
Overall length	196.5	182.7	188
Overall height	60.25	57	60
Ground clearance	5.7	8.3	6.5
Front headroom	35	37.4	36.75
Rear headroom	32	35	35.4
Front legroom (seat forward/back)	32 - 24.4	30 - 25.5	33.6 - 28.8
Front shoulder room	52	52	56.9
Rear shoulder room	50	51	56
Rear legroom (seat forward/back)	24.5 -	21.8 - 17	27.5 - 19.5
Luggage capacity (in cubic feet)	71 CUBIC FEET	67 CUBIC FEET	23 CUBIC FEET
Replenishment & Lubrication			
Engine sump capacity	8.1 PTS	6.6 PINTS	7 PINTS
Engine oil change interval	3000 MILES	6000 MILES	3000 MILES
Gearbox capacity	3.5 PINTS	1.36 PINTS	2.02 PINTS
Final drive capacity		2.3 PINTS	2.75 PINTS
Grease points	12		5
Lubrication intervals	3000 MILES	6000 MILES	3000 MILES
Wheels & Tyres			
Wheels	5.5J X15	5J X15	5J X14
Tyres	180 X 380 MICHELIN XAS	166SR 15.4-PR	185SR X355

Volvo 745



Price Structure

	CITROËN	VOLVO	PEUGEOT
Basic price	£ 1764	1567	1588
Purchase tax	361.06	328	332.39
Extras	67.66 27.93 24.65		195.75 30.21

	CITROËN	VOLVO	PEUGEOT
Price as tested	2252.80	1895	1920
Average delivery charge	8.50		35
Free services	1-600MILES	1-600	1-600

Service	CITROËN	VOLVO	PEUGEOT
Total cost of labour for 12,000 miles or one year		5 HOURS AT LOCAL RATES	14 HOURS AT LOCAL RATES

Guarantee	CITROËN	VOLVO	PEUGEOT
Length and conditions	6 MONTHS	12 MONTHS UNLIMITED	6 MONTHS UNLIMITED
Exceptions			FIRST OWNER ONLY

Spares prices

Engine on exchange	£ 170.00	NA	337.69
Gearbox on exchange	218.97	"	114.59
Differential on exchange		"	83.40
Clutch unit	31.55	"	9.70
Brake disc	8.55	"	5.33
Set of two brake pads	5.10	"	4.99
Set of drum linings for one wheel	5.50	"	2.95
Tyres (each)	12.30	"	
Fuel pump	840	"	4.27
Damper (front)	5.50	"	8.46
Exhaust system	33.44	"	15.22
Oil filter	.75	"	1.10
Dynamo/Alternator	25.00	"	20.16
Contact breaker set	.75	"	.70
Starter motor	94.38	"	1848
Speedometer	10.98	"	10.63
Front door (primer)	33.55	"	19.64
Bonnet (primer)	51.93	"	18.72
Front bumper	48.36	"	16.45
Windscreen	18.95	"	20.17

Maintenance

Time for removing/replacing engine/gearbox	15 HOURS	"	700 HOURS
Time for replacing clutch unit	12 HOURS	"	5.5 HOURS
Time for renewing brake pads/shoes	FRONT: 45 MINS	"	1 HOUR
Time for removing/replacing exhaust system	1 HOUR 30 MINS	"	2-2.5 HOURS

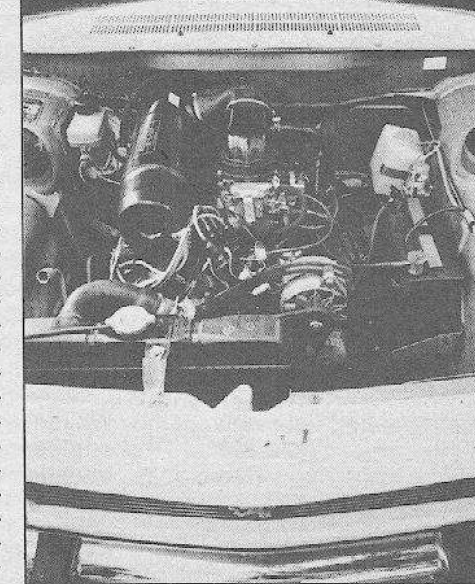
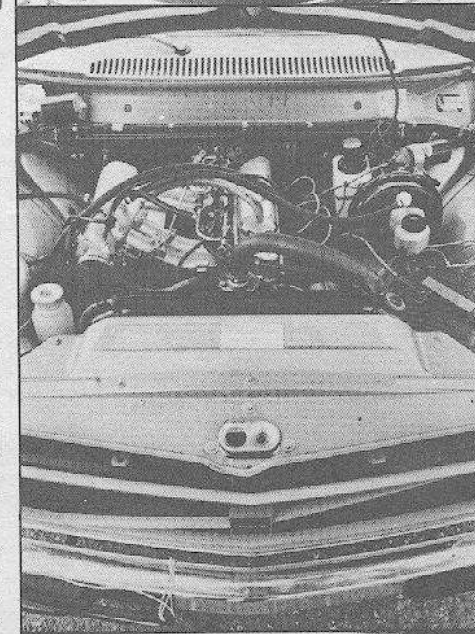
VOLVO SPARES PRICES CURRENTLY UNDER REVISION

Fuel consumption

	CITROËN	VOLVO	PEUGEOT
Overall (mpg)	24	25	25
Driven carefully	27	28	28
Star rating	4	4	4
Range (miles)	325		330
Tank capacity	14 GALS		13.2

Equipment

	CITROËN	VOLVO	PEUGEOT
Safety belts	YES	YES	YES
Tool kit	NO	YES	NO
Heater	YES	YES	YES
Rear window heater	EXTRA	YES	YES
Cigar lighter	YES	YES	YES
Map light	NO	EXTRA	NO
Fog lights	NO	EXTRA	NO
Spot lights	YES	EXTRA	NO
Clock	YES	YES	YES
Fresh air ventilation	YES	YES	YES
Hazard warning	NO	YES	NO
Sun visors	YES	YES	YES
Tachometer	YES	NO	NO
Sliding roof	NO	NO	NO
Vanity mirror	YES	YES	YES
Reversing lights	YES	YES	YES
Coat hooks	NO	YES	NO
Grab handles	YES	YES	YES
Reclining seats	YES	YES	YES
Wipe/wash facility	YES	YES	YES
Map pocket	YES	YES	NO
Boot light	YES	NO	YES
Engine compartment light	NO	NO	NO
Adjustable steering wheel	NO	NO	NO
Oil pressure gauge	NO	EXTRA	NO
Oil temperature gauge	NO	EXTRA	NO
Water temperature gauge	NO	YES	YES
Ammeter	YES	EXTRA	NO
Electric window winding	NO	NO	NO
Petrol filler lock	EXTRA	NO	NO
Fuel low level warning	NO	YES	NO
Underseal	YES	YES	YES
Glove locker	YES	YES	YES
Parcels shelf (front)	NO	NO	YES
Parcels shelf (rear)	NO	NO	NO
Headrests	EXTRA	YES	YES
Steering lock	YES	YES	YES
Parking lights	NO	YES	NO
Door armrests	YES	YES	YES
Rear centre armrest	NO	YES	NO
Front centre armrest	NO	NO	NO
Dipping mirror	YES	YES	YES
Laminated screen	EXTRA	YES	YES



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above most of these really big guns? There is much about them that is irreconcilable with current attitudes, much as there must have been about Bucciali brothers' fantasies (see page 48) in the early 1930s. I can see the new generation of nippy tiddlers surviving, but the thirsty, demanding and outrageously expensive V12?

In the former category, Porsche's new Carrera appeared in a supplementary version for the first time, fully trimmed and sanitary instead of all stark and extroverted as in Paris. You takes your choice, at £8255 with and £5826 without. Incidentally, stand by for some more aggressive Porsche selling now that the factory has taken a controlling interest in the Aldington family's old Frazer-Nash setup down at Isleworth. This is something I discussed with the new management when I was at the works last winter, and it has

come to pass.

Of the British specialists, only Lotus seemed fully prepared for the fall of the VAT axe with a range made more desirable by some much needed attention to detail finish and the addition of a proper five speed gearbox. The Europa Special, in particular, looks like developing into a first class weapon with its extra power and the old wide-ratio bugbear licked at last, all this despite being painted such a silly colour. What else do you buy? A Jensen Healey (laughter)?

I noted sadly that Martin Lilley of TVR appeared to have forgotten about the exciting looking prototype he showed last year, falling back instead on the old faithful body shape with yet another facelift to see it through the impact regulations and a rehashed suspension to drag it more or less into the 1970s. Gilbern, having survived a rather lean time in the past year or so, had emerged with what they claimed was a new model. It turned out to be the old

Invader with altered suspension and some new peripheral body bulges. I even heard a whisper that it was soon to be joined by a full four seater model, née Marcos Mantis...

Ginetta put on a brave show despite all kinds of worries about the need to sacrifice a significant proportion of their tiny output to the concrete guillotine at MIRA, and Clan were all excited about their Crusader's recent run of rallying success. The vintage Morgans were, as ever, widely admired, resplendent in new colours and with some much needed interior padding (wrong of me, though, to include them at this juncture as, like Ray Wiggin of Reliant, Peter Morgan has always spurned the temptation to sell in kit form). And over against the wall, brightly lit and drawing crowds right from Day One, was a surprise in the form of the Panther J72S—an even more overt throwback, XK-powered, beautifully finished and with flowing body lines strongly reminiscent of the old SS100. Will it be any more of a success, commercially, than

the equally admirable but absent Dri-Sleeve Bugatti?

Let me see now. Ah yes, the coachbuilders. Even less to see in this department than usual, with nothing new at all on the spacious Pininfarina and Bertone acres and Messrs Crayford, usually good for a laugh, reduced to a brace of reasonably tidy Mercedes estate car conversions and a rather obviously safety-conscious Cortina convertible which preserved the original tin roof rails all the way round. Should stop it shaking, at least.

The special Telegraph Magazine exhibit in the middle of the hall was a big disappointment, housing only a half hearted (and half-finished) mobile test bench coupe by Bill Towns for GKN, obviously done on the cheap, and the prize-winning Cirrus coupe built with generous help from Ford, Joe Lucas and others, which turned out in the flesh to be narrow-gutted, awkward and unoriginal.

Britain can do better than this, chaps surely? DEB ●

GIANT TEST

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actuator has been transferred from the steering wheel to the winker stalk, and the heater controls are too complicated.

Many of the major objections to the interior of previous Volkos have been overcome in the 1973 version. The fascia has been completely redesigned and incorporates four fresh-air outlets in place of the virtually non-existent ventilation of the last model. Although the steering wheel still fouls the legs of tall drivers, the general layout of the minor controls and instruments is good with the correct priorities. The hand-brake, beside the driver's seat, is powerful and easy to work, but the gearchange is cumbersome and heavy.

Citroen have kept their independence by doggedly sticking to a steering column gearchange, which works very well and is certainly the most convenient method of keeping in touch with the transmission mounted in front of the engine. Less satisfactory is the hand-brake which is located under the dashboard and is virtually impossible to reach when wearing a safety belt. A tachometer is included on the fascia, along with the speedo and fuel contents gauge. There is an annunciator panel (complete with a check switch) that covers other malfunctions, including low

hydraulic pressure, oil pressure, engine temperature and such. It is, in fact, a very efficient method of instrumentation for the brilliance of the warning display is compelling.

CONCLUSIONS

Well, the most obvious conclusion is that the Volvo, while attractive in some respects, does not live up to its reputation in others. Very much in its favour is that it is well made, and is seen to be well made. What's more, it is known to be highly resistant to corrosion which ultimately enhances its resale value. And as far as safety goes it is quite special. It has built-in side impact protection, very safe interior and a new steering wheel which is heavily padded and looks as though it is readily convertible to accept an airbag and the explosive charge that goes with it.

Less virtuous are its poor ride qualities, heavy handling at low speeds and the general clumsiness on corners. It's roadability is out of date in other words, just as its engine is antiquated in its performance, and too noisy as well. Visually the 145 has some appeal and it will certainly carry a lot of people, or a lot of anything you like, come to that. It is the only one of the trio that has proper facilities to keep the rear window clean but it almost seems that the equipment and the interior have been designed to take the mind off

the other deficiencies of the car.

The Citroen Safari is at the opposite end of the scale completely. Its suspension is fantastic, and it certainly carries a large load. However, it takes time to get used to the brakes and the steering and to learn how to exploit the high level of roadholding. Performance is good, but the engine is a bit lumpy. The interior of the Safari looks something less than luxurious compared with the Volvo, for instance, yet it is practical and immensely comfortable. Without wishing to sound patronising, the Safari is the meat of the few.

Peugeot's 504 estate and family models are riding a crest of fashion at the moment. To have a Peugeot is to be in, but it is more than just fashion that makes it popular. It is an extremely good vehicle that combines generous load carrying capabilities with refined suspension, excellent roadholding and handling and superior economy to the other two. However, its performance on paper is not quite as good as that of either the Citroen or the Volvo, although from point-to-point it is a lot quicker than the Volvo and at least equal to the Safari. We like most things about the 504 but in making it our Number One choice let us say that the seating arrangements were a strong influence as well as its feel and responsiveness on the road. ●