Autotest

VOLVO 144S (1,986 c.c.) 2227

AT-A-GLANCE Roomy practical family saloon from Sweden, well-planned seating, large luggage space. Lacking mechanical refinement; indifferent gear change. Average suspension, steering, ride and handling. Some brake fade. Relatively expensive.

MANUFACTURER:
AB Volvo, 405 08 Goteborg, Sweden

UK CONCESSIONAIRES:

Volvo Concessionaires Ltd., Raeburn Road, Ipswich, Suffolk.

PRICES:

Basic	£1,200	0s.	0d.
Purchase Tax	£368	19s.	2d.
Total (in GB)	£1,568	19s.	2d.

EXTRAS (inc. P.T.)

*Radio (approx.)	£25	0s.	0d.

*Fitted to test car

PRICE AS TESTED . . £1,593 19s. 2d.

PERFORMANCE SUMMARY

Mean maximum speed	99 mph
Standing start ¼-mile	18.8 sec
0-60 mph	12.9 sec
30-70 mph through gears	13.9 sec
Typical fuel consumption	25 mpg
Miles per tankful	340

VOLVOS have the advantage of coming here from an EFTA country and are therefore duty-free. They have established quite a name over the years for robust build, good service and a healthy performance, and in the USA the make is one of the most popular among imported cars. Since our previous tests of the 144S saloon (6 July 1967) and the 145S estate car (27 June 1968) the engine capacity has been increased from 1,778 to 1,986 c.c., and special inlet manifolding introduced to bring it into line with US Federal "clean air" requirements. Peak power of 100 bhp at 5,500 rpm is unchanged, but the maximum torque figure is up from 107 to 112 lb. ft, still at 3,500 rpm. The B20B engine in this "S" version has twin SU carburettors whereas the B20A in the standard 144 has a single Zenith-Stromberg and gives 82 bhp at 4,700. All the above figures are net, incidentally.

Whereas earlier Volvos had some real distinction in appearance as well as above-average performance for their class, the current series have an international look and general concept, but with considerably more space for passengers and baggage than their forbears. Technically, too, they are conventional, with the 2-litre 4-cylinder engine set vertically in front, and rear-wheel drive through a 4-speed gearbox and coil-sprung live axle. This is located by trailing links and a transverse Panhard rod; at the front are wishbones and coil springs, coupled by an anti-roll bar.

Brakes are servo-assisted Girling discs, the rear ones incorporating small drums for the parking brake. Twin hydraulic circuits each unite both front brakes to one rear brake, so that should one circuit fail only one rear brake is lost.

Volvo have made an intensive study of front seat-contour cushioning, adjustments and anchorage, and the result is generally very satisfactory. They have revived a feature introduced for the larger Wolseleys of 30 years ago—variable lumbar support for the small of the back. Whereas Wolseleys did it with a small pneumatic bladder hidden within the upholstery, the Volvo has a concealed tension strap with handwheel adjustment at the side of each backrest. A secure friction lock enables the backrest to be set at any angle of rake, and it can be lowered right down to meet the rear cushion and form a makeshift bed. The seats slide exceptionally easily on their runners and have a long range of adjustment; there are three height settings for the frame, but this means getting out a spanner.

Armed with this, you can also alter the angle of tilt of the frame by adjusting an eye-bolt at the front. But all this is too complicated for most people to bother with, and it seems a pity there are not straightforward means of adjustment to enable differently built members of a family to alter the settings when taking turns at the wheel during a journey. Trim material is unventilated pvc. While the contouring holds one securely yet unobtrusively in place, we are not too sure about the thick roll beneath the thighs, an area where support should be light and yielding, to offer the least resistance to compression when the driver is pressing pedals.

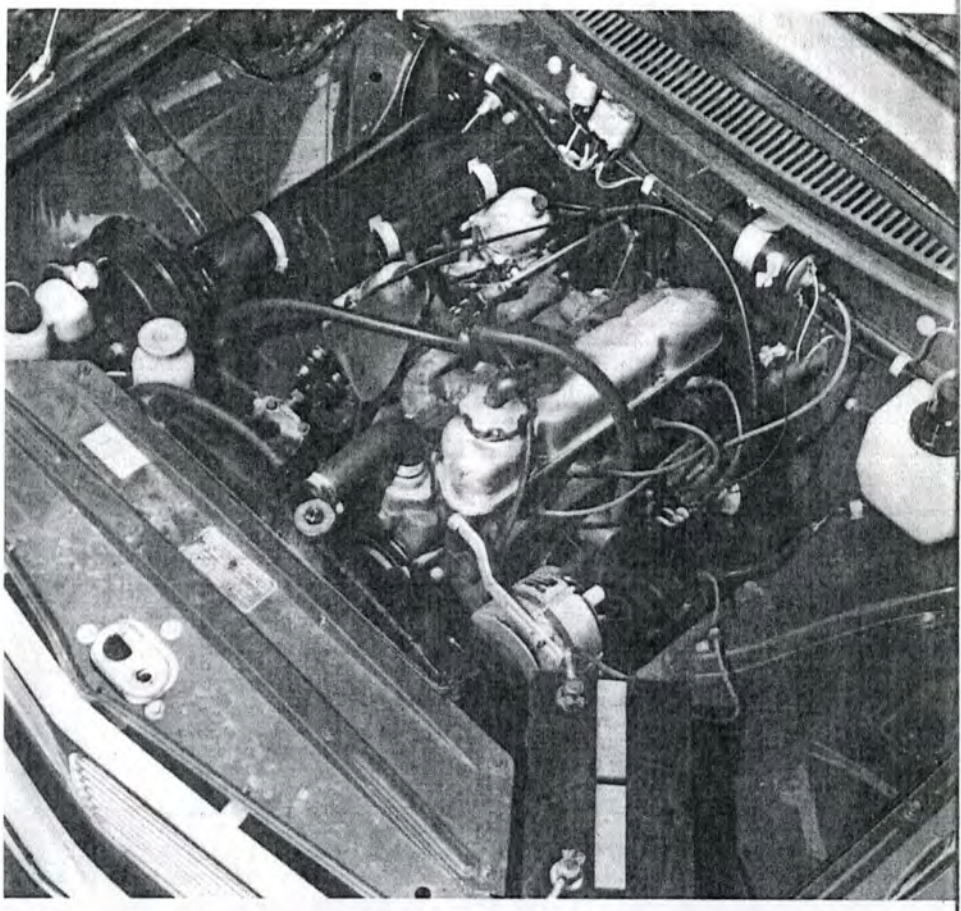
It seemed quite like old times to sit behind such a large wheel and waggle such a long gear lever; these days most floor levers are nearer vertical than the Volvo's, with a fore-and-aft rather than up-and-down action. We were none too happy with the pedal layout. To reach the accelerator comfortably meant sitting too far forward in relation to the other pedals and steering-wheel, and the lift from accelerator to brake is excessive. Morever the combination of very powerful throttle return springs and an awkward angle of pedal was found tiring on

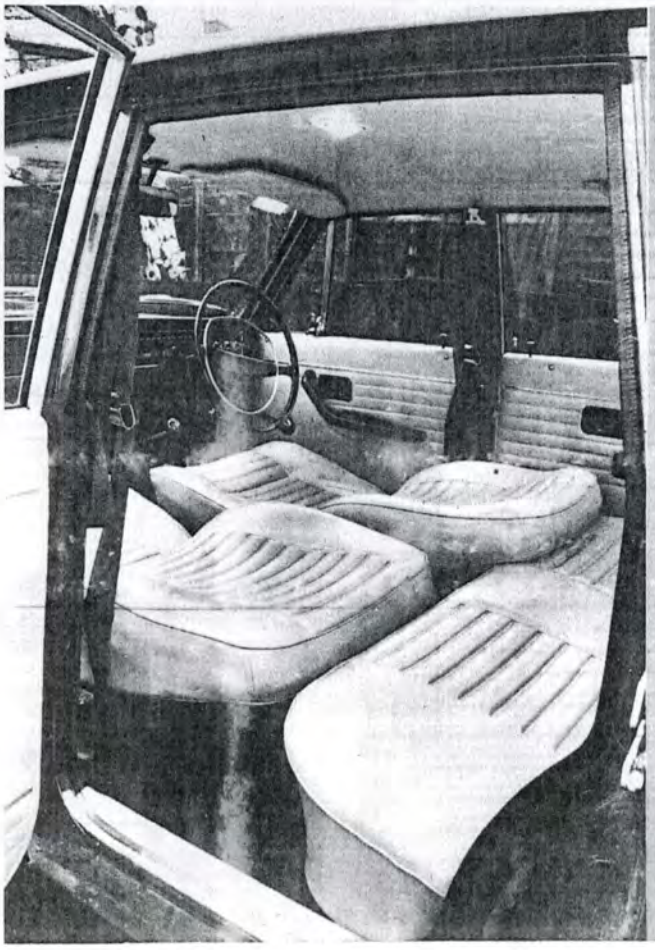
even short runs. The clutch also needs considerable effort to release.

Minor controls are commendably few and simple, and quite conveniently arranged. There is a manual choke, and two-pull switches control the lamps and two-speed wipers. The latter knob is turned to bring the electric screen-washers into play. A fingertip lever behind the wheel controls direction signals and headlamp beams, flashing them with the main lighting switch off and dipping or raising them when it is on. The spring-loaded repeater action is one of the best we have tried.

For heating and demisting there are three parallel knurled wheels projecting from the middle of the facia, marked *Temp, Defr* and *Floor*. They have progressive red strip markings illuminated at night. With the *Floor* valves open some of the output is directed through ducts to the rear compartment, and there are feeds to the back window from the defrosting system. Fresh air vents are fitted low down at each side of the scuttle, but there is none at face level. One cannot have cool air coming into the upper part of the car while the feet are being kept warm. While not versatile by modern standards, therefore, the heating and ventilation could be termed satisfactory within their limitations.

As would be expected of a car coming from a country with hard winters, the Volvo engine starts easily on a cold morning and soon builds up to normal working temperature. The performance figures speak for themselves, and the 144S is a fast mover when pressed, although it could not quite reach 100 mph as a mean maximum. Final drive gearing to give 17.4 mph road speed at 1,000 engine rpm brings the car to 99 mph at 5,680 rpm, just over peak power revs, so our figures equate well with the designers' intentions. But we could not match the figures reached with the smaller-engined version of 1967.





Above: Twin SU carburettors distinguish this high-performance S version. The angled battery location makes it very easy to top up

The front seats will move right forward to allow the reclining backrests to match up with the rear seats and form a fairly comfortable bed

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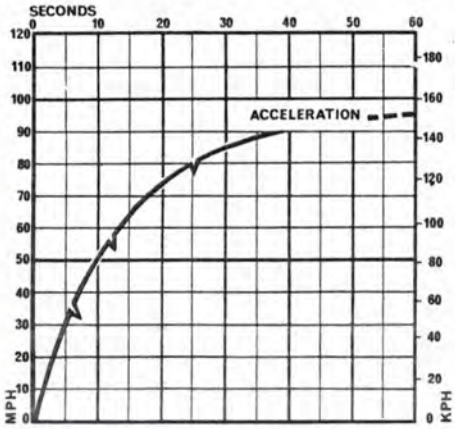
PERFORMANCE



MAXIMUM SPEEDS

Gear	mph	kph	rpm
Top (mean)	99	159	5,680
(best)	102	164	5,860
3rd	80	129	6,250
2nd	56	90	6,400
1st	36	58	6,400

Standing ¼-mile 18.8 sec. 71 mph
Standing kilometre 35.1 sec. 87 mph

MOTORWAY CRUISING

Indicated speed at 70 mph	74 mph
Engine (rpm at 70 mph)	4,250 rpm
(mean piston speed)	2,230ft/min
Fuel (mpg at 70 mph)	26.3 mpg
Passing (50-70 mph)	9.0 sec
Noise (per cent silent at 70 mph)	50 per cent

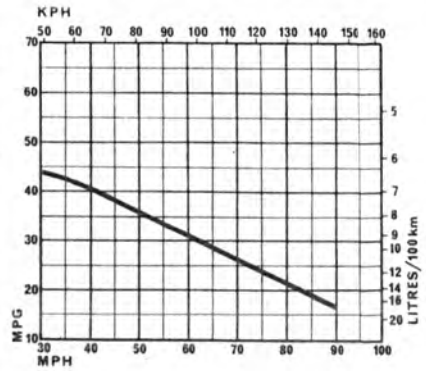
TIME IN SECONDS	0	4.1	6.5	9.0	12.9	18.0	24.8	38.7
TRUE SPEED MPH		30	40	50	60	70	80	90	100
INDICATED SPEED		34	44	54	64	74	85	95	105

Test distance 1,601 miles.
Mileage recorder 0.2 per cent over-reading.

SPEED RANGE, GEAR RATIOS AND TIME IN SECONDS

mph	Top (4.10)	3rd (5.57)	2nd (8.16)	1st (12.83)
10-30	—	8.1	5.1	3.2
20-40	10.7	6.9	4.6	—
30-50	9.8	6.6	4.9	—
40-60	10.2	7.2	—	—
50-70	11.8	8.9	—	—
60-80	14.4	11.9	—	—
70-90	21.7	—	—	—

CONSUMPTION



FUEL

(At constant speeds—mpg)	
30 mph	43.0
40 mph	40.3
50 mph	35.7
60 mph	30.7
70 mph	26.3
80 mph	21.8
90 mph	17.9

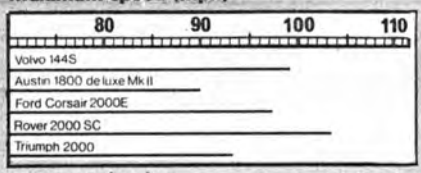
Typical mpg 25 (11.3 litres/100km)
Calculated (DIN) mpg 23.9 (11.8 litres/100km)
Overall mpg 22.3 (12.7 litres/100km)
Grade of fuel . Super Premium, 5-star (min 100RM)

OIL

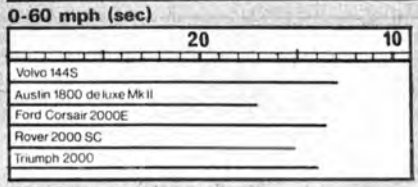
Miles per pint (SAE10W/40) 1,000

HOW THE CAR COMPARES

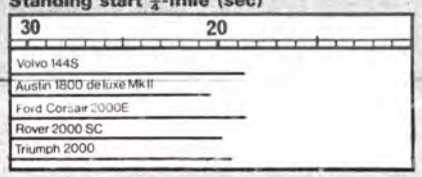
Maximum speed (mph)



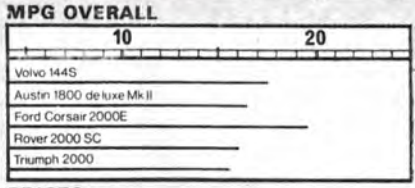
0-60 mph (sec)



Standing start ¼-mile (sec)



MPG OVERALL



PRICES:

Volvo 144S	£1,569
Austin 1800 de luxe Mk II	£1,021
Ford Corsair 2000E	£1,133
Rover 2000SC	£1,504
Triumph 2000	£1,297

TEST CONDITIONS

Weather: Cloudy. Wind: 3-5 mph. Temperature: 12 deg. C (54 deg. F). Barometer: 29.6in. Hg. Humidity: 88 per cent. Surfaces: Dry concrete and asphalt.

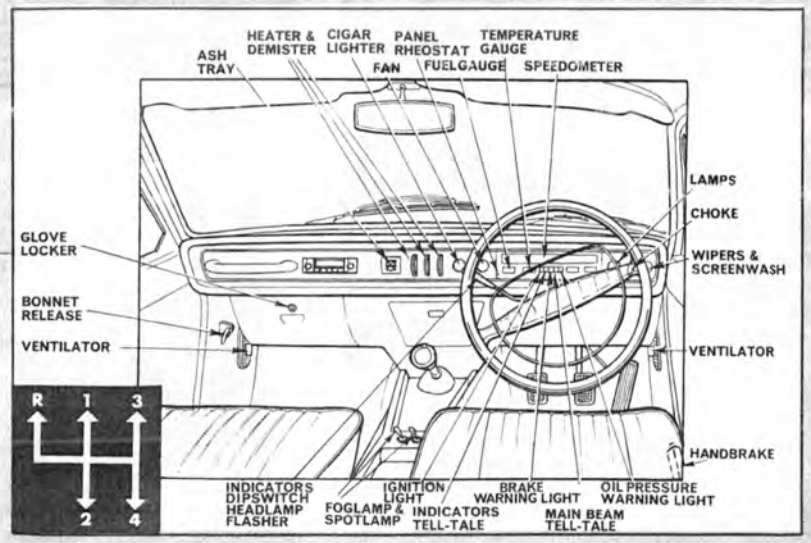
WEIGHT

Kerb weight 22.7 cwt (2,548 lb—1,157 kg) (with oil, water and half full fuel tank). Distribution, per cent F, 51.3; R, 48.7. Laden as tested: 26.4 cwt (2,958 lb—1,343 kg).

TURNING CIRCLES

Between kerbs L, 31ft 2.5in; R, 30ft 10in.
Between walls L, 33ft 5.5in; R, 33ft 1in.
Steering wheel turns, lock to lock 4.0

Figures taken at 7,400 miles by our own staff at the Motor Industry Research Association proving ground at Nuneaton.



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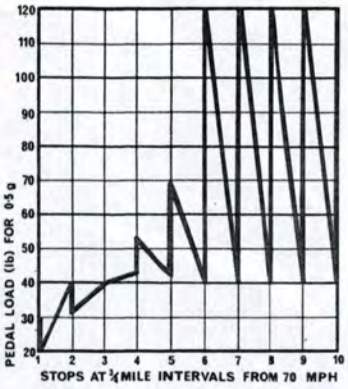
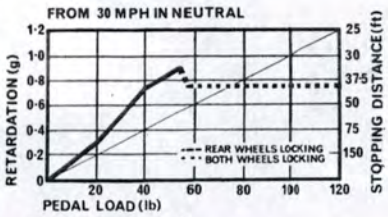
BRAKES



RESPONSE (from 30 mph in neutral)

Load	g	Distance
20 lb	0.29	104 ft
40 lb	0.68	44 ft
55 lb	0.87	34.6 ft
Handbrake	0.28	107 ft
Max. Gradient	1 in 4	



CLUTCH

Pedal 42 lb and 5.8in.

SPECIFICATION

FRONT ENGINE, REAR WHEEL DRIVE

ENGINE

Cylinders	4, in line
Main bearings	5
Cooling system	Water: pump, fan and thermostat
Bore	88.9mm (3.50 in.)
Stroke	80mm (3.15 in.)
Displacement	1,986c.c. (121 cu. in.)
Valve gear	Overhead: pushrods and rockers
Compression ratio	9.5-to-1 Min. octane rating: 100
Carburettors	Twin SU HS6
Fuel pump	Mechanical
Oil filter	Full flow, renewable element
Max. power	118 bhp (net) at 6,000 rpm
Max. torque	123 lb. ft (net) at 3,500 rpm

TRANSMISSION

Clutch	Borg and Beck, diaphragm spring, 8.5in. dia.
Gearbox	Four-speed, all-synchromesh
Gear ratios	Top 1.0 Third 1.36 Second 1.99 First 3.13 Reverse 3.25
Final drive	Hypoid bevel, 4.10-to-1

CHASSIS and BODY

Construction	Integral, with steel body

SUSPENSION

Front	Independent, wishbones, coil springs, telescopic dampers, anti-roll bar
Rear	Live axle, coil springs, twin trailing arms, Panhard rod, telescopic dampers

STEERING

Type	Gemmer, cam and roller
Wheel dia.	16.5 in.

BRAKES

Make and type	Girling, discs all round
Servo	Vacuum
Dimensions	F. 11.6 in. dia; R. 11.6 in. dia
Swept area	F. 212 sq. in., R. 198 sq. in. Total 410 sq. in. (310 sq. in./ton laden)

WHEELS

Type	Pressed steel disc, 4-stud fixing 4.5 in. wide rim.
Tyres—make	Pirelli
—type	Cinturato radial ply tubed
—size	165-15

EQUIPMENT

Battery	12 Volt 60 Ah
Alternator	Motorola 30-amp a.c.
Headlamps	Bosch sealed beam, 90/90-watt (total)
Reversing lamp	Twin standard
Electric fuses	9
Screen wipers	Two-speed, self-parking
Screen washer	Standard, electric
Interior heater	Standard, thermostat water-valve
Heated backlight	Not available
Safety belts	Standard
Interior trim	Vinyl seats. Vinyl headlining.
Floor covering	Rubber
Jack	Screw pillar
Jacking points	Two each side under sills
Windscreen	Laminated
Underbody protection	Galvanised bottom rails before painting, underseal elsewhere

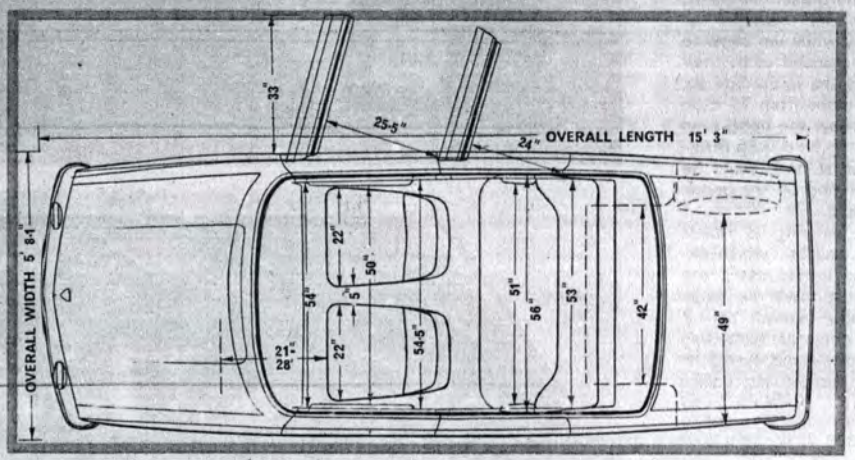
MAINTENANCE

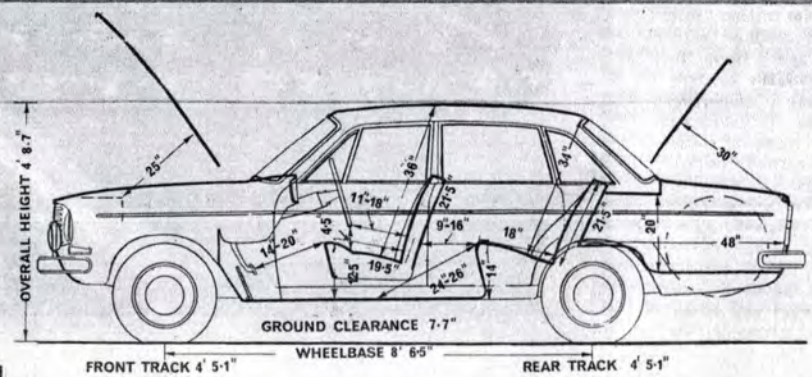
Fuel tank	13.5 Imp. gallons (no reserve) (61.4 litres)
Cooling system	8 pints (including heater)
Engine sump	6.6 pints (3.75 litres). Change oil every 6,000 miles. Change filter element every 6,000 miles
Gearbox	1.2 pints SAE 80 Change oil every 25,000 miles
Final drive	2.3 pints SAE 80EP Change oil only at first 3,000 miles
Grease	No points
Tyre pressures	F. 20; R. 23 psi (normal driving) F. 24; R. 27 psi (fast driving) F. 23; R. 30 psi (full load)
Max. payload	1,056 lb (478 kg)

PERFORMANCE DATA

Top gear mph per 1,000 rpm	17.4
Mean piston speed at max. power	2,860 ft/min
Bhp per ton laden	89.3

STANDARD GARAGE 16ft x 8ft 6in.





SCALE 0.3in. to 1ft.
Cushions uncompressed

The unit is quite tractable at low engine speeds, about 20 mph being the practical minimum in top, below which it turns rough. Although by no means harsh, it is not specially quiet or refined and has a healthy snarl when working hard. Between around 60 and 75 mph there is some resonant boom, unfortunately covering the normal motorway cruising range in this country; above and below this it is quite sweet, but the general noise level, including some wind roar, is high enough to require the radio volume to be turned up for it to remain audible. For habitual long-distance travellers, the optional overdrive would be well worth having.

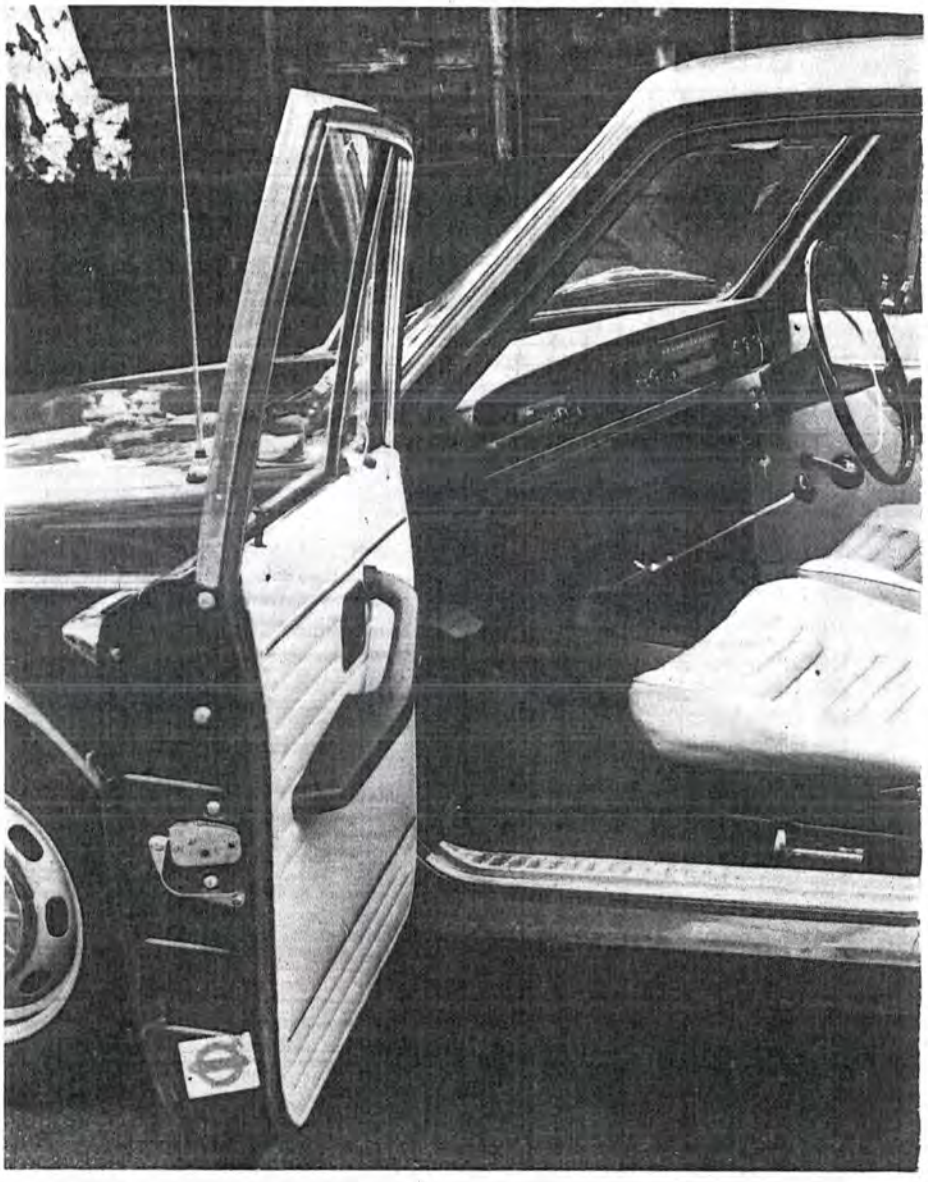
Using full revs in the indirects the 144S can cover the standing-start ¼-mile in only 18.8 sec, and is up to 80 mph in under 25 sec—still in 3rd gear—which is good going indeed. With a normal fuel consumption not far short of 25 mpg and a 12¼-gallon tank it has a long range between refuelling stops; there is no reserve supply, only a red marking on the gauge quadrant to indicate when the level is low.

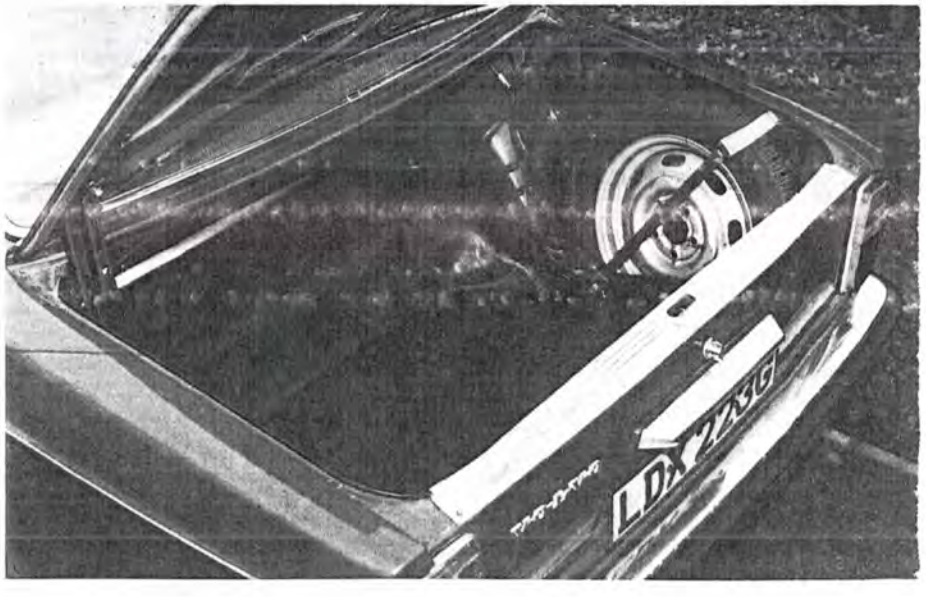
In ordinary use the gearbox synchromesh is satisfactory, but it cannot quite meet the case of a lightning change from 3rd to top. For some reason it scarcely worked at all if one by-passed 3rd and went straight from 2nd to top, even slowly and deliberately. The transmission was quiet, with no audible hum from the final drive. Restarting on the 1-in-3 test hill was really too much for the clutch in view of the fairly high 1st gear, although we just made it by "playing the pedals" carefully with only the driver on board. The handbrake just held the car here, pointing either way.

On the road we found the brakes excellent, with progressive and powerful response for light pedal loads. It was only when we came to our fade testing that they surprised us by their lack of endurance. Whereas the initial bite for each of the 10 successive stops from 70 mph was normal, during the last few the pedal load had to be increased greatly to hold 0.5g retardation, and finally this was all that could be maintained when really standing on the pedal. Luckily recovery was very rapid.

At parking speeds the steering is rather heavy (on Pirelli Cinturato radials), which explains why a 16½-in. wheel is necessary; the alternative would have been to lower the gearing, which seems low enough already at 4.2 turns lock-to-lock, although one must relate this to the excellent turning circles—just over 30ft between kerbs. On the move the car steers well, can be placed accurately on the road and is directionally stable. It is not badly affected by gusting side-winds at speed.

For no clear reason even quite ordinary imported saloons are apt to be credited with sporting characteristics, but apart from its tuned engine there is nothing specially sporting about the Volvo's behaviour and it would be unfair to judge it in that context. Its handling properties are no better than those of most family saloons these days, and certainly not as good as some, but it has no tricks or vices and high average speeds can be maintained without too much concentration. It is generally sure-footed and can be cornered fast without much roll or tyre squeal. When heavily laden, particularly with the long, overhung tail filled, one becomes aware of the car's short wheelbase (8ft 6in.) in relation to an overall length of 15ft





Wide doors open into a really roomy interior with ample leg room for all. Ahead of the long gearlever is a detachable panel covering the fuses

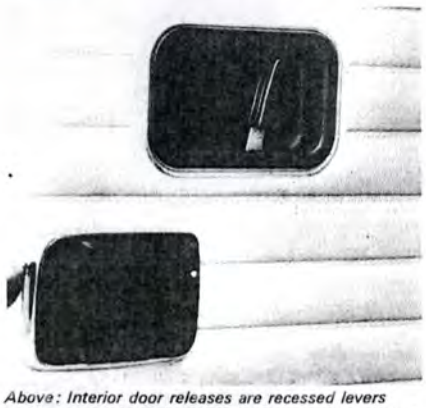
3in., and the handling deteriorates somewhat. Although the headlamp beams have handy screw adjustments easily reached under the bonnet, it would benefit from the two-way triggers beneath the lenses as found on certain French cars, to compensate for the nose-up attitude when laden.

In average conditions the car rides well, with comparatively low-rate suspension movements, but on indifferent surfaces it becomes rather harsh and there is considerable bump-thump below. Unmetalled roads with potholes throw it around more than might be expected of a Scandinavian product, and over MIRA's *pavé* its directional stability was disappointing even at moderate speed, the rear end drifting from side to side. For some reason the interior roof lamp flickered continuously over the *pavé* and washboard surfaces.

Single headlamps give very adequate illumination on dipped and main beams, and there are automatic reversing lamps. There is no illumination, though, for the boot; it should have been simple to arrange a leakage of light from the rear or number-plate lamps to provide this! But the boot capacity is enormous, even if one does have to lift baggage over the high cliff of a tail panel. In wet weather the screenwipers stay on the screen at speed, the left-hand one having an airfoil deflector to assist it. On the driver's side (with right-hand drive) a fair-size triangle next to the pillar is unswept. The rear view mirror is wide, but placed high enough not to obstruct forward vision where it matters.

Back seat passengers have plenty of leg room even with the front seats right back on their runners, and have a folding armrest between them. Side-rests are combined with pulls on all four doors, and there are grab-handles in the roof at the back serving also as coat-hangers, having small sliding hooks. Floor and sills are lined like a swimming pool with a one-piece rubber moulding which appears non-detachable. Servicing is simplified by the absence of any routine greasing points, all steering and suspension joints being pre-packed during assembly □

Left: The boot is deep and long, but luggage has to be lifted over a high sill, topped by a rubbing strip. Spare wheel and jack are held in with a rubber strap. Below: Practical features include anodized aluminium bumpers with rubber insets, and mud flaps behind each wheel arch



Above: Interior door releases are recessed levers with a very light action. Below: Front seat backrests have these controls for adjusting the tension of a concealed lumbar support