PHOTOS BY JOHN DINKLE & JOE RUSZ


ROAD & TRACK R&T ROAD TEST

# VOLVO 242GL

*Practical, luxurious safety car*

VOLVO, MORE THAN any other carmaker, has jumped on the safety/damage-resistance bandwagon and made it a product philosophy and marketing tool. Volvos for all markets, for instance, get the same bumpers; and as the eye sees and insurance-industry tests show, they're the biggest and most effective of all. This year Volvo has gone one step farther in its quest for the "safe" car, introducing the most extensively redesigned generation of cars—the 240 series—since the 140 range Volvo has been selling in the U.S. since 1966. The most obvious difference is the front end, reshaped not simply for styling purposes but to give the 1975 models the benefits derived from Volvo's experience with its Experimental Safety Vehicles. The body shell has been completely redesigned and strengthened from the bulkhead forward to improve impact characteristics: the 240 records about the same cockpit deceleration in a barrier crash at 40 mph as the 140 series did at 30 mph. New MacPherson-strut front suspension and rack-and-pinion steering are also included in the front-end redesign.

The 240 series, like its predecessor, is available in five models: 242 and 242GL two-door sedans, 244 and 244GL four-door sedans and 245 station wagon. Grand Luxe models are more luxurious versions of the standard sedans and feature leather-faced seats, sunroof, tachometer, heated driver's seat, metallic paint, power-assisted steering and a choice of automatic transmission or manual with overdrive.

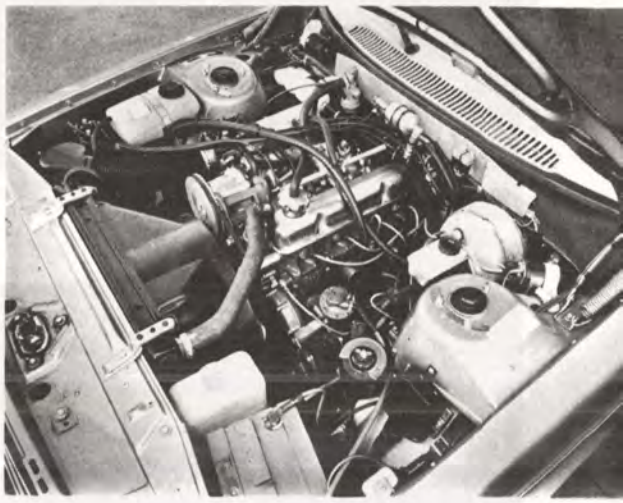
Differences between the 140 and 240 inside are more subtle. Most visible are new see-through (dare we say Saab-inspired?) head restraints to aid rear vision, and there's a long list of improvements to the already excellent seats that includes better lumbar support, stronger seat frames, longer fore-aft travel, and individual height adjustment of the front and rear portions of the seat cushion to three different positions. The handbrake has been relocated from outboard of the driver's seat to a new central console incorporating lighted seatbelt anchorages, and the instrument panel, completely new in 1973, has been redesigned again. The same speedometer, coolant-temperature and fuel-level gauges and small tachometer (GL models only) face the driver but larger, rectangular heater-vent outlets replace the dash-level eyeball vents used previously and two fixed outlets have been added to clear the front side windows. The revised vent system draws only mixed reviews because in our air-conditioned 242GL the dash vents didn't shut off completely and the flow of air through them was never adequate without resorting to the fan. As we didn't drive a car without air conditioning for comparison, we don't know if the latter criticism is always true.

Except for the radio location (it's too low and the dial is impossible to read) the Volvo's ergonomics are excellent. The pedals, padded steering wheel and shift lever are within easy reach of almost any size driver and column controls are particularly well thought out. Triangular-section stalks control directionals, high-low beams and day flasher, and washers and wipers. The same principle is used for the wipers as for lane

change directionals: if you don't push the stalk all the way to the first notch but just against the spring load, the wipers work only while you push. This is especially useful in mist or light rain. There are other thoughtful touches. A warning light on the dash comes on if a low beam, rear side light, license-plate light or brake light fails, and the overdrive switch has been moved from the steering column to a more convenient location on the gearshift knob.

Since the basic body is still the same, you sit high as in previous Volvos—that's how Volvo gets such a roomy car without resorting to independent rear suspension. Sitting high has its advantages, as it gives the driver a good visual command of the road in front of him. Vision to the sides and rear is equally impressive, as the 242 has expansive glass areas.

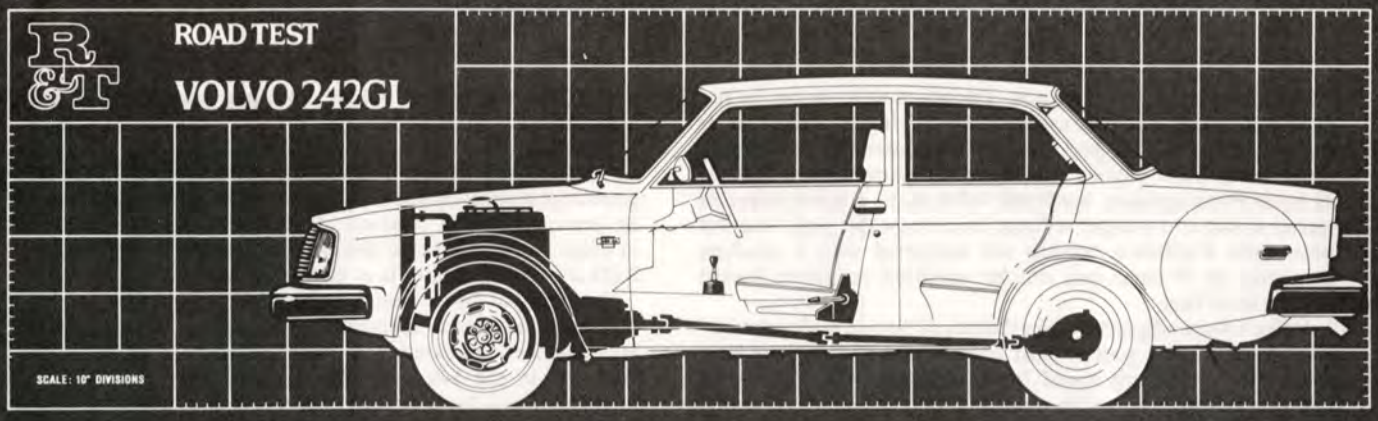
A conservative company, Volvo has chosen to market the 240 series in the U.S. with the well proven B20F 2-liter pushrod engine, using Bosch continuous fuel injection as in 1974, instead of the new 2.1-liter four with crossflow aluminum head and belt-driven overhead camshaft fitted to European models. This way any unforeseen design problems can be corrected closer to home. U.S. 240s will get this more powerful and more efficient overhead-cam engine next year, but until then must make do with a much weaker version of last year's engine. Meeting 1975 emission requirements has cost Volvo an incredible 11 bhp (15 in California); maximum torque has dropped 5 lb-ft in the federal version and an additional 5 in California. Even though it gets off the line decently because 1st gear was made numerically higher in 1973, there's no power left and this coupled with a 200-lb increase in weight leave the 242GL totally gutless. The 242GL is noticeably slower than a comparable 142GL R&T tested last year, taking 1.5 seconds longer to reach 60 mph and requiring an additional 1.4 sec to cover the standing quarter-mile. Driveability of the injected engine, however, is virtually flawless. It starts instantly hot or cold, runs without fault during warmup and there's no lean surge to mar ➟



*Safety-concious Volvo is one of the few makers to provide both lap and shoulder belts for the rear passengers. The Volvo's individual front seats are as comfortable as they look.*

R&T

# ROAD TEST
# VOLVO 242GL




## PRICE

List price, all POE ..... $6795
Price as tested ..... $7639
Price as tested includes standard equipment (4-wheel disc brakes, sunroof, 4-speed with OD, power steering & brakes), A/C ($398), AM/FM/tape deck ($263), trailer hitch ($43), dlr prep & dest ($140)

## IMPORTER

Volvo, Inc
Rockleigh, N.J. 07646

## GENERAL

Curb weight, lb ..... 3090
Test weight ..... 3440
Weight distribution (with driver), front/rear, % ..... 53/47
Wheelbase, in. ..... 104.0
Track, front/rear ..... 55.9/53.1
Length ..... 192.6
Width ..... 67.1
Height ..... 56.5
Ground clearance ..... 7.1
Overhang, front/rear ..... 38.9/49.7
Usable trunk space, cu ft ..... 17.9
Fuel capacity, U.S. gal ..... 15.8

## ENGINE

Type ..... ohv inline 4
Bore x stroke, mm ..... 88.9 x 80.0
Equivalent in. ..... 3.50 x 3.15
Displacement, cc/cu in ..... 1990/121
Compression ratio ..... 8.7:1
Bhp @ rpm, net ..... 94 @ 6000
Equivalent mph ..... 132
Torque @ rpm, lb-ft ..... 105 @ 3500
Equivalent mph ..... 75
Fuel injection ..... Bosch CIS
Fuel requirement ..... unleaded, 91-oct
Exhaust-emission control equipment: air injection, catalytic converter, exhaust-gas recirculation

## DRIVETRAIN

Transmission 4-sp manual with OD
Gear ratios: OD (0.80) ..... 3.43:1
4th (1.00) ..... 4.30:1
3rd (1.36) ..... 5.85:1
2nd (1.99) ..... 8.56:1
1st (3.41) ..... 14.66:1
Final drive ratio ..... 4.30:1

## CHASSIS & BODY

Layout ..... front engine/rear drive
Body/frame ..... unit steel
Brake system ..... 10.3-in. discs front, 11.0-in. discs rear; vac ast
Swept area, sq in. ..... 420
Wheels ..... steel disc, 14 x 5½ J
Tires ..... Michelin X, 185-14
Steering type ..... rack & pinion, power assisted
Overall ratio ..... 17.1:1
Turns, lock-to-lock ..... 3.5
Turning circle, ft ..... 32.2
Front suspension: MacPherson struts, lower A-arms, coil springs, tube shocks, anti-roll bar
Rear suspension: live axle on trailing arms & Panhard rod, coil springs, tube shocks, anti-roll bar

## INSTRUMENTATION

Instruments: 130-mph speedo, 7000-rpm tach, 999,999 odo, 999.9 trip odo, coolant temp, fuel level, clock
Warning lights: oil press., brake system, parking brake, alternator, overdrive, rear-window heat, bulb failure, egr, seatbelts, hazard, high beam, directionals

## ACCOMMODATION

Seating capacity, persons ..... 5
Seat width, f/r ..... 2 x 20.0/51.0
Head room, f/r ..... 37.0/35.0
Seat back adjustment, deg ..... 80

## MAINTENANCE

Service intervals, mi:
Oil change ..... 7500
Filter change ..... 7500
Chassis lube ..... none
Tuneup ..... 15,000
Warranty, mo/mi ..... 12/unlimited

## CALCULATED DATA

Lb/bhp (test weight) ..... 36.6
Mph/1000 rpm (OD) ..... 21.0
Engine revs/mi (60 mph) ..... 2860
Piston travel, ft/mi ..... 1500
R&T steering index ..... 1.13
Brake swept area, sq in./ton ..... 244

## RELIABILITY

From R&T Owner Surveys the average number of trouble areas for all models surveyed is 12. As owners of earlier-model Volvos reported 10 trouble areas, we expect the reliability of the Volvo 242GL to be slightly better than average.

# ROAD TEST RESULTS

## ACCELERATION

Time to distance, sec:
0-100 ft ..... 4.2
0-500 ft ..... 10.9
0-1320 ft (¼ mi) ..... 20.1
Speed at end of ¼ mi, mph ..... 70.0
Time to speed sec:
0-30 mph ..... 4.5
0-40 mph ..... 7.1
0-50 mph ..... 10.0
0-60 mph ..... 14.2
0-70 mph ..... 20.1
0-80 mph ..... 26.8

## SPEEDS IN GEARS

OD gear (4400 rpm) ..... 95
4th (5250) ..... 95
3rd (6000) ..... 78
2nd (6000) ..... 54
1st (6000) ..... 31

## FUEL ECONOMY

Normal driving, mpg ..... 18.5
Cruising range, mi (1-gal res) ..... 274

## HANDLING

Speed on 100-ft radius, mph ..... 31.7
Lateral acceleration, g ..... 0.673
Speed thru 700-ft slalom, mph ..... 53.0

## BRAKES

Minimum stopping distances, ft:
From 60 mph ..... 180
From 80 mph ..... 287
Control in panic stop ..... very good
Pedal effort for 0.5g stop lb ..... 30
Fade: percent increase in pedal effort to maintain 0.5g deceleration in 6 stops from 60 mph ..... 27
Parking: hold 30% grade? ..... yes
Overall brake rating ..... good

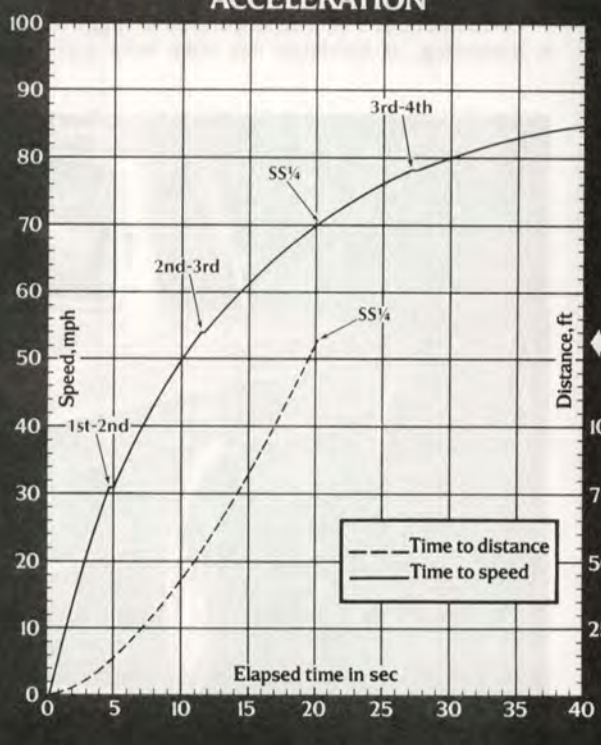
## INTERIOR NOISE

All noise readings in dBA:
Idle in neutral ..... 55
Maximum, 1st gear ..... 77
Constant 30 mph ..... 62
50 mph ..... 67
70 mph ..... 74

## SPEEDOMETER ERROR

30 mph indicated is actually ..... 30.5
50 mph ..... 51.0
60 mph ..... 61.0
70 mph ..... 71.5
80 mph ..... 81.0
Odometer, 10.0 mi ..... 10.3

## ACCELERATION



its light-throttle performance. There's a mild boom in the 3000-rpm range and the usual inline 4-cylinder roughness as the engine approaches peak revs, but otherwise it's a remarkably smooth and quiet engine. And it should be even more durable as breakerless ignition, hardened valve seats, a more powerful starter motor and a larger radiator are all new this year. Another plus: only California models are equipped with a catalytic converter so 49-state cars can be operated on either leaded or unleaded fuel.

Volvo's 4-speed gearbox, like the rest of the car, feels unbreakable and the crisp, precise shift linkage ranks among the best. Even with a 55-mph speed limit overdrive is a worthwhile addition as it makes for very quiet and relaxed highway cruising, which is what the Volvo does best.

The single most important change in the 240 series, besides the improved crashworthiness described earlier, is the adoption of MacPherson-strut front suspension and rack-and-pinion steering in place of the unequal-length A-arms and cam-and-gear steering used previously. The primary reasons for the switch to strut suspension were additional room under the hood for engine and accessories, improved ride comfort and increased roll stiffness. With the new suspension goes a 2.8-inch-wider front track, a reduction in wheel-rim diameter from 15 in. to 14 and the use of steel-belted radials on all models. The rear suspension has undergone minor modifications to match front-end characteristics and an anti-roll bar is fitted to all models except the station wagon.

We'd like to say these changes have transformed the Volvo's handling—but they haven't. The 240, like its predecessor, has no sporting pretentions; but it's definitely less stodgy and a bit more fun to drive briskly. Even though fast cornering still produces a large amount of body roll, the ponderous understeer, vague, unresponsive steering and final oversteer of the 140 series are gone. Instead there's moderate understeer at all times, with cornering power limited by lifting of the inside rear wheel. All very safe and predictable. Transient response is noticeably improved (the 242GL was 3.6 mph faster in our slalom test than the 142GL) and steady-state cornering measured on a skidpad is higher too. The power-assisted rack-and-pinion steering standard on the GL deserves credit for a large share of the improved handling response. It provides just enough assist so that you know it's there when you need it most—for parking and low-speed sharp turns—and otherwise it's unobtrusive. It's also much more precise than the previous design, is reasonably quick and has good road feel.

Volvo's adoption of strut suspension to improve ride comfort is interesting, as harshness has often been a criticism of the strut. Generous use of rubber bushings provides good road isolation and on most surfaces the 242 rides better than its predecessor. The one exception is freeway driving. There the softer springing and strut suspension seem to magnify the tiny pavement ripples characteristic of many U.S. freeways, causing an annoying case of "freeway hop." Revalved front shocks are in order, we think. Some things never change, though, and the 240's dip-taking ability is as impressive as the 140's.

Switching to 14-in. wheels necessitated a reduction in brake disc diameter, and to maintain stopping power the pad surface area has been increased. New materials are used to reduce pad wear. As in the 140 series, the four discs are split into two separate triangular hydraulic systems; if one systems fails, the two front brakes and one rear brake still operate normally. And a new stepped-bore master cylinder provides the same braking power and approximately the same brake pedal travel even if one brake circuit is entirely empty of fluid. It is obvious that Volvo has done some work with brake proportioning too. Last year's 242GL suffered from premature locking of the rear brakes during "panic" stops, making the driver work hard to maintain control. This year the reverse is true—the fronts tend to lock during hard braking. Stops from 60 mph are a little longer this year and those from 80 mph are a bit shorter, but the 242's brakes get a higher overall rating because pedal modulation is improved, fade is reduced and pedal effort for a ½g stop is now what we consider ideal: 30 pounds.

You're probably wondering why this test is appearing so long after the 240 first appeared in the U.S. It's a long story: this is actually the third 242 we have tried to test. The two previous attempts ended in failure, the first because of a fuel-injection malfunction traced to tampering by one of R&T's competitors and the second because dirt from the fuel tank clogged one of the injector nozzles. Even this latest car wasn't entirely free of problems: the overdrive switch worked sporadically when we first got the car and the engine refused to idle after our fourth quarter-mile acceleration run.

On to more pleasant things. The 242GL is endowed with the legendary solidity of its forebears, and although it's no longer on the outside than an American compact, inside it's a truly roomy car with ample room for five adults plus a cavernous trunk to swallow all their luggage. The sluggish performance detracts from the pleasure of city driving, but the Volvo is still one of the most comfortable long-distance cruisers around. And the fuel economy (18.5 mpg in our test) is impressive. If the price is high so is the level of fit, finish and standard equipment. An eminently practical, luxurious safety car, that's the Volvo 242GL.