PHOTOS BY GORDON CHITTENDEN



VOLKSWAGEN 411

A more affluent wagen for more affluent volks

WITH THEIR NEW 411, Volkswagen moves into a new class of car: the over-$3000, semi-luxury middle-class sedan of which there are so many examples already from Europe—from Audi, VW's corporate sibling, Peugeot, BMW, Volvo, Saab plus other makes not sold in the U.S. For VW it is a fairly bold venture away from the tradition of economy cars and everything but the rear-mounted, aircooled engine is new. It's VW's first 4-door car (also available as a 2-door wagon), was the first VW model to get MacPherson-strut front suspension, has a long hood in the modern vogue, to the eye strongly resembles the Renault 16, and comes with an automatic transmission standard.

During our visit with the 411, which was before U.S. introduction, we found it a great attention getter. Although altogether new, it is recognizable to most people as a VW. It certainly is a traditional VW in that its main emphases are on quality, utility and economy. Its finish, inside and out, is outstanding: good paint, pleasant if somewhat austere materials that are everywhere properly fitted and probably durable. It is tall, for maximum inside space, and there's plenty of glass in the 6-window configuration so that the driver can see out of it. And getting 22.5 mpg with automatic transmission, it is decidedly economical of fuel. It has been on the European market for about a year and has not sold very well; perhaps there is a market resistance to a car of this class built around the People's Car layout. Undeniably the 411 suffers somewhat in matters of stability and noise, as we shall see, because of this—but it has a lot to recommend it too.

The sound emanating from the 411's rear is characteristically VW but is far more subdued than in lesser VWs. Going up through the gears to the unexpectedly high automatic shift points at 5200 rpm, it sounds busy and whirry; at freeway speeds it is audible but not intrusive. This is the same 1679-cc, 85-bhp unit with electronic fuel injection that's used in the VW-Porsche 914; it's not a powerhouse but provides a decent level of performance for the car. Being a relatively

low-speed unit it is particularly well suited to a torque-converter automatic transmission and we found the combination of engine and transmission pleasant despite occasional erratic shifting. The same transmission had performed perfectly in a Squareback we tested some time ago. With the electronic injection the VW is somewhat ahead of its time as we expect many more cars to have it as smog restrictions get tighter; it also means there's little adjusting to be done on the engine, though if something goes wrong with it the entire electronic "black box" is likely to require replacement. Certainly the overall behavior of the engine, in cold starting, warmup and tractability, is impressive.

By U.S. standards the 411 is a maneuverable car; there's certainly no need for power steering with only some 1000 lb on the front wheels. In an effort to get maximum luggage space up front, however, the designers restricted steering lock and the turning circle is fairly large. For all normal driving the handling is responsive and pleasant and one can even toss the tall sedan around with aplomb at low speeds, though with considerable body roll and a lateral cornering capability of 0.61g it's obviously no sports sedan. At highway speeds a rear-engine fault is clearly there: sensitivity to sidewinds. But we didn't find the 411 nearly as eager to oversteer at high speeds as the Super Beetle is. On the skidpad for the cornering speed test it was predictably ready to slide its tail when the throttle was lifted, but everything considered this side of the rear-engine tendencies is well under control.

The 411's ride brings out another evidence of the rear engine, one we don't like: over gentle undulations there's a pronounced tendency to longitudinal pitch due to rather soft rear springs, which are there to keep rear-end roll stiffness low. In this respect it's very much like Corvairs and if you've ever noticed their rear ends bobbing up and down you'll know what we mean. This soft back end also makes the 411 a tail-bottomer on road dips, so one must slow down a bit when crossing them. The front end, with relatively stiff springs to handle luggage loads, sits high in the air and looks funny.

All this should not obscure the fact that under a variety of conditions the 411 rides fairly well, and over very rough roads its staunch, rattlefree body structure is a definite plus.

Brakes are disc front, drum rear. With no vacuum assist they require a slightly heavy 40 lb for a ½-g stop, but there's no trace of the bothersome squeal we so often get from disc brakes. With the car lightly laden (test weight 2505 lb) the front brakes lock early in a panic stop, and though the car stays in a straight line it doesn't stop very quickly. It probably does better with a full load of luggage. Fade resistance is about average for a car of this class. We found that the disc brakes keep the nice silver wheels dirty with black pad dust.

VW has looked after driver and passengers well in the 411. There's lots of headroom front and rear and generous legroom for rear-seat passengers, who also have a fold-down armrest. Front seats are individual and have an unusual range of adjustment: the seat moves back and forth on an odd curved track and there is a separate rocking adjustment that tilts the whole seat rather than just the backrest. Once one figures out the combination there's a good position for nearly anybody, but it takes some experimenting.

The view overhood is that of a front-engine car, with the hood long and high to enclose 8 cu ft of luggage space. Vision, as we noted, is good; ventless front door windows aid in this but bring on their usual problems of drafts when they're rolled down. Instrumentation is in the VW mold: simple, with only a speedometer, odometers and fuel gauge—the speedometer of the test car was quite inaccurate, as were the odometers. All of this is set into a handsome, modern instrument panel which includes two other niceties as standard: a rear-window heat control and a headlight switch that won't leave the lights on when you turn off the ignition.

Heating and ventilation have never been VW strong points and it seems the designers have bent over backwards to correct this in the 411. There's a terrific raw-air vent system that brings in an impressive volume of air through dash vents, even at low speeds. A 2-speed blower assists defrosting, whereas normal interior heating is done by the engine blower as in the past—which brings in considerable extra engine noise. Finally, a gasoline heater, with a green warning light and a timer that won't let it run too long, assists engine heat in bitter weather and allows heating with the engine off.

Luggage space is about right for the car's size and the front (main) space is finished to the usual high VW standard →





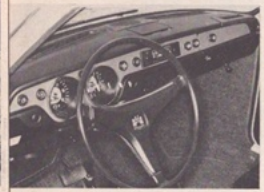


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and airtight. The additional 2 cu ft of space behind the rear seat is shallow, unlike the deep well in the Beetle because of differences in engine configuration, but provides a useful measure of capacity.

As an all-around family car, roomy, well finished and capable of performing properly with an automatic transmission —and likely durable and reliable—the 411 has a lot of offer. It certainly should have plenty of appeal to those who are happy with their Beetles, Fastbacks or Squarebacks and want to move up to something faster and more luxurious. We prefer the front-engine, front-drive approach to a maximum-space family car, however, and in case this becomes the clear preference of the buying public VW has its bets covered with its new K70 model of NSU descent—the first front-engine, watercooled VW!



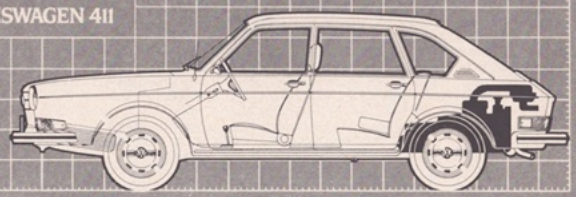






R&T ROAD TEST

VOLKSWAGEN 411



PRICE

List price, west coast.....$3074
Price as tested, west coast...$3109
Price as tested includes standard equipment (automatic trans, radial tires, adj. seatbacks, gasoline heater, rear window heater), dealer prep ($35)

IMPORTER

Volkswagen of America, Inc., 600 Sylvan Ave., Englewood Cliffs, N.J.

ENGINE

Type.....ohv flat 4
Bore x stroke, mm.....90.0 x 66.0
Equivalent in.....3.54 x 2.60
Displacement, cc/cu in.1679/102.5
Compression ratio.....8.2:1
Bhp @ rpm.....85 @ 5000
Equivalent mph.....89
Torque @ rpm, lb-ft.....99 @ 3500
Equivalent mph.....63
Fuel injection.....Bosch electric
Type fuel required.....premium
Emission control.....fuel injection

DRIVE TRAIN

Transmission.....automatic; torque converter with 3-sp planetary gearbox
Gear ratios:
3rd (1.00).....3.67:1
2nd (1.59).....5.83:1
1st (2.65).....9.73:1
1st (2.5 x 2.65).....24.3:1
Final drive ratio.....3.67:1

CHASSIS & BODY

Layout.....rear engine/rear drive
Body/frame.....unit steel
Brake type 11.1-in. disc front, 9.8 x 1.78-in. drum rear
Swept area, sq. in.....311
Wheels.....steel disc, 15 x 4½
Tires.....155-15
Steering type.....recirculating ball
Overall ratio.....19.4:1
Turns, lock-to-lock.....3.5
Turning circle, ft.....37.5
Front suspension: MacPherson struts, lower arms, coil springs, tube shocks, anti-roll bar
Rear suspension: semi-trailing arms, coil springs, tube shocks

ACCOMMODATION

Seating capacity, persons.....4+1
Seat width, front/rear.2 x 21.0/52.0
Head room, front/rear...37.5/38.0
Seat back adjustment, degrees. 30

INSTRUMENTATION

Instruments: 110-mph speedometer, 99 999 odometer, 999.9 trip odometer, fuel level
Warning lights oil pressure, brake system, generator, directionals, parking lamps, high beam, rear window heat, gasoline heater

MAINTENANCE

Service intervals, mi:
Oil change.....3000
Filter change.....6000
Chassis lube.....none
Minor tuneup.....6000
Major tuneup.....12,000
Warranty, mo/mi.....24/24,000

GENERAL

Curb weight, lb.....2430
Test weight.....2775
Weight distribution (with driver), front/rear, %.....43/57
Wheelbase, in.....98.4
Track, front/rear.....54.1/53.0
Overall length.....179.2
Width.....64.3
Height.....58.4
Ground clearance.....5.3
Overhang, front/rear...41.6/39.2
Usable trunk space, cu ft. 8.1+2.2
Fuel tank capacity, U.S. gal...13.2

CALCULATED DATA

Lb/bhp (test weight).....33.9
Mph/1000 rpm (3rd gear).....18.0
Engine revs/mi (60 mph).....3330
Piston travel, ft/mi.....1445
R & T steering index.....1.31
Brake swept area sq in/ton....216

RELIABILITY

From R&T Owner Surveys the average number of trouble areas for all models surveyed is 10.6. As owners of earlier model Volkswagens reported 5 trouble areas, we expect the reliability of the VW 411 to be better than average.

ROAD TEST RESULTS

ACCELERATION

Time to distance, sec:
0-100 ft.....4.8
0-250 ft.....7.9
0-500 ft.....11.9
0-750 ft.....15.1
0-1000 ft.....17.7
0-1320 ft (¼ mi).....20.9
Speed at end of ¼ mi, mph...66
Time to speed, sec:
0-30 mph.....5.5
0-40 mph.....8.1
0-50 mph.....11.7
0-60 mph.....16.3
0-70 mph.....26.2
0-80 mph.....39.3
Passing exposure time, sec:
To pass car going 50 mph....7.1

FUEL CONSUMPTION

Normal driving, mpg.....22.5
Cruising range, mi.....297

SPEEDS IN GEARS

3rd gear (4700 rpm).....84
2nd (5200).....59
1st (5200).....36

BRAKES

Panic stop from 80 mph:
Max. deceleration rate, % g ..71
Stopping distance, ft.....335
Control.....very good
Pedal effort for 50%-g stop, lb...40
Fade test: percent increase in pedal effort to maintain 50%-g deceleration rate in 6 stops from 60 mph.....75
Parking: Hold 30% grade?....yes
Overall brake rating.....good

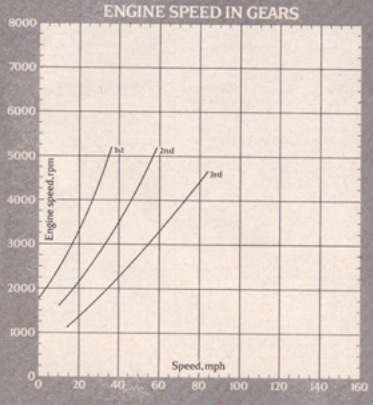
HANDLING

Speed on 100-ft radius, mph ..30.1
Lateral acceleration, % g....0.609

SPEEDOMETER ERROR

30 mph indicated is actually....26
40 mph.....36.5
50 mph.....46.5
60 mph.....56.5
70 mph.....65
80 mph.....74.5
Odometer, 10.0 mi.....9.5

ENGINE SPEED IN GEARS



ACCELERATION

