

JAGUAR XJ-S, RENAULT 5 GTL & HOT CAPRI TESTS

ROAD & TRACK

JANUARY 1976

UK 35p

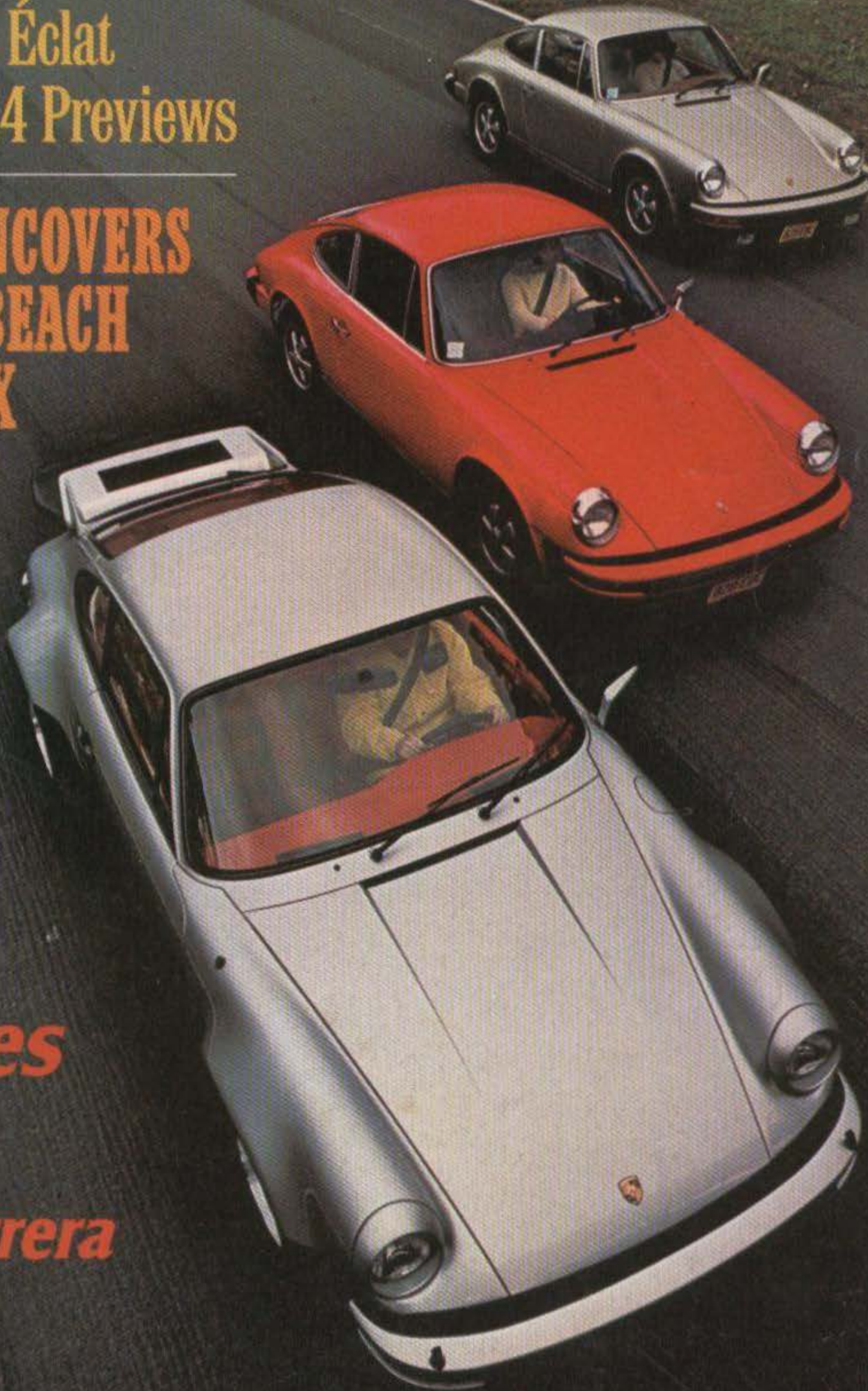
ONE DOLLAR

Lotus Esprit, Éclat
& Porsche 924 Previews

MANNEY UNCOVERS
THE LONG BEACH
GRAND PRIX

**New
Porsches
Tested**

**Turbo Carrera
912E
911S**



Editorial Staff

Editor: TONY HOGG
Engineering Editor: JOHN DINKEL
Managing Editor: DOROTHY CLENDENIN
Associate Editor: THOS L. BRYANT
Feature Editor: JOHN LAMM
Motor Sports Editor: JOE RUSZ
Editorial Associate: SALLY TATOM
Editorial Assistant: NATHALIE MICHAUD
European Editor: RON WAKEFIELD
European Photographer: GEOFFREY GODDARD
Editor-at-Large: HENRY N. MANNEY III
Librarian: ROGER WICKERSHAM

Art Staff

Art Director: WM A. MOTTA
Associate Art Director: LIL FOX
Assistant Art Director: CHUCK QUEENER
Art Associate: SONJA KEITH

Production Staff

Production Director: DAVE BLACK
Production Assistant: RAMONA BOLHOUS

Contributing Editors

DEAN BATCHELOR	PETER COLTRIN
HAL CRIPPEN	PAUL FRÈRE
TOM LANKARD	DICK O'KANE
CYRIL POSTHUMUS	BJÖRN SVALLNER
JONATHAN THOMPSON	ROB WALKER
CAM WARREN	JACK YAMAGUCHI

Contributing Photographers

JESSE ALEXANDER	LIONEL BIRNBOM
BILL FOX	SCOTT MALCOLM
RAINER SCHLEGELMILCH	BOB TRONOLONE
BILL WARNER	

Contributing Artists

RUSSELL BROCKBANK	WERNER BÜHRER
RICHARD CORSON	JON DAHLSTROM
STAN MOTT	BILL NEALE
SAM POSEY	HOWARD SHOEMAKER
MARK STEHREBERGER	

Executive Staff

Publisher: RICHARD A. BARTKUS
Consulting Publisher: ELAINE BOND
Executive Publisher: THEODORE R. BINDER
Advertising Director: H. CLIFFORD PARRIS
Circulation Marketing Director: BRUCE A. MILLER
Circulation Assistant: NORMA TAYLOR
Consulting Circulation Director: RAY POWERS
Business Manager: RICHARD W. ADAMSON

Advertising Staff

Western Advertising Manager: LEN MEYERS
1499 Monrovia Ave., Newport Beach, Calif. 92663
Telephone 714-646-4451, Teletype 910-596-1353
Advertising Coordinator: MARSHA GOEGGEL
Advertising Manager: FRANK WILLARD
30100 Telegraph Rd—Suite 226, Birmingham, Mich. 48010
Telephone 313-646-7080, Teletype 810-232-5119
New York Manager: H. CLIFFORD PARRIS
383 Madison Ave, Third Floor
New York, N.Y. 10017
Telephone 212-661-4200, Teletype 710-581-5061

Advertising Marketing Services
Western Manager: JOHN E. SCHUG
Director: W. RONALD KOPS

Market Place Director: SHIRLEY RINEHART

ROAD & TRACK is published monthly by CBS Publications, the Consumer Publishing Division of CBS Inc., 600 3rd Avenue, New York, N.Y. 10016. Editorial and Production offices located at 1499 Monrovia Avenue, Newport Beach, Calif. 92663, phone 714-646-4451; John S. Suhler, President, Theodore R. Binder, Vice President. CBS Publications is the Consumer Publishing Division of CBS Inc. Second-class postage paid at New York, N.Y., and additional mailing offices. Authorized as second-class mail by the Post Office Department, Ottawa, and for payment of postage in cash. Printed in U.S.A. POSTMASTER: SEND FORM #3579 to ROAD & TRACK, 540 Bond Drive, Marion, Ohio 43302.

© 1975, CBS PUBLICATIONS

the Consumer Publishing Division of CBS Inc.
All Rights Reserved

PORSCHE TESTS

Porsche 912E, 911S & Turbo Carrera—\$50,570 worth of Teutonic luxury 32

ROAD TESTS

Jaguar XJ-S—a rare blend of breeding, good manners and high spirit 44
Renault 5 GTL—popular in France since 1972, now the U.S. gets its turn 65
Black Gold—a very special Capri gets Tested in Europe by Ron Wakefield 60

NEW MODELS

Porsche 924—an exciting 2+2 fastback that will be here in the spring 58
Lotus Esprit, Éclat & Elite 504—the British are celebrating 1976 too 88

FEATURES

Profile: Tony Southgate—UOP Shadow's Chief Designer & how he got there 10
A Pair of 1976 GP Cars—Tyrrell's six-wheeler & Chapman's Adjust-a-racer 48
1936 Delahaye Type 135 Compétition—Rob Walker's sports-racing car 50
Cobra II—Ford dresses up a Mustang II 2+2 and resurrects a racy name 78
Frankfurt Show—"Live Better with the Automobile" as seen by the Germans 90
Graham Hill—in honor of his retirement, we review *The Driver & The Man* 94
Ferdinand Piech Interview—Audi's Chief Engineer talks about the future 98

TECHNICAL

Auto Dictionary—John Dinkel takes us through the Esses in auto terms 83

COMPETITION

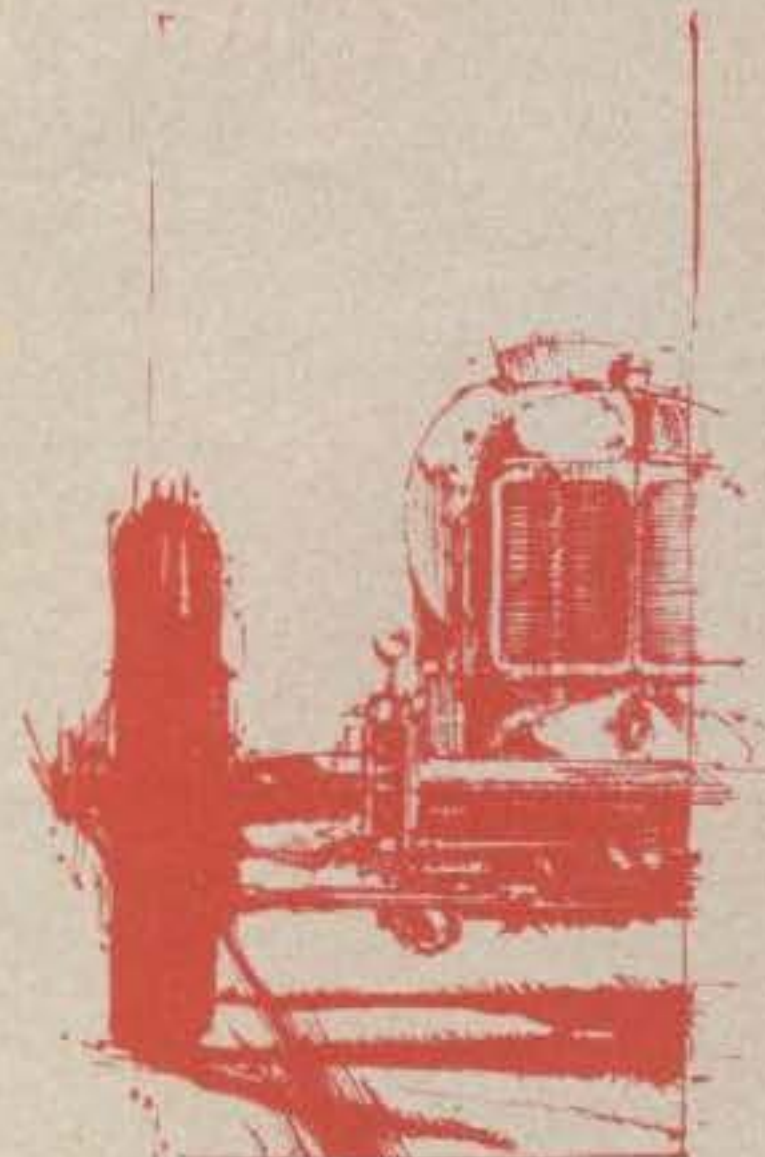
Long Beach Grand Prix—a miracle in the west recounted by our wisemen 38
United States Grand Prix—the recapitulation of champions Lauda & Ferrari 70
Canadian Grand Prix—Rob Walker tells us why it didn't happen in 1975 74

DEPARTMENTS

People & Places 2
Letters 4
Time & Place 16
Road Test Summary 18
Years Ago 20
Reviews 24
Miscellaneous Ramblings 27
About the Sport 74
Ampersand 78
Letter from Europe 98
Market Place 101
Technical Correspondence 108
PS 112

COVER

Three Porsches—photographed at
Lime Rock Park, Connecticut by Joe Rusz



KEN ROOT DRAWING

PORSCHE 912E, 911S & TURBO CARRERA

*Variations on an old theme—
but still three of the world's best
sports/GT cars*

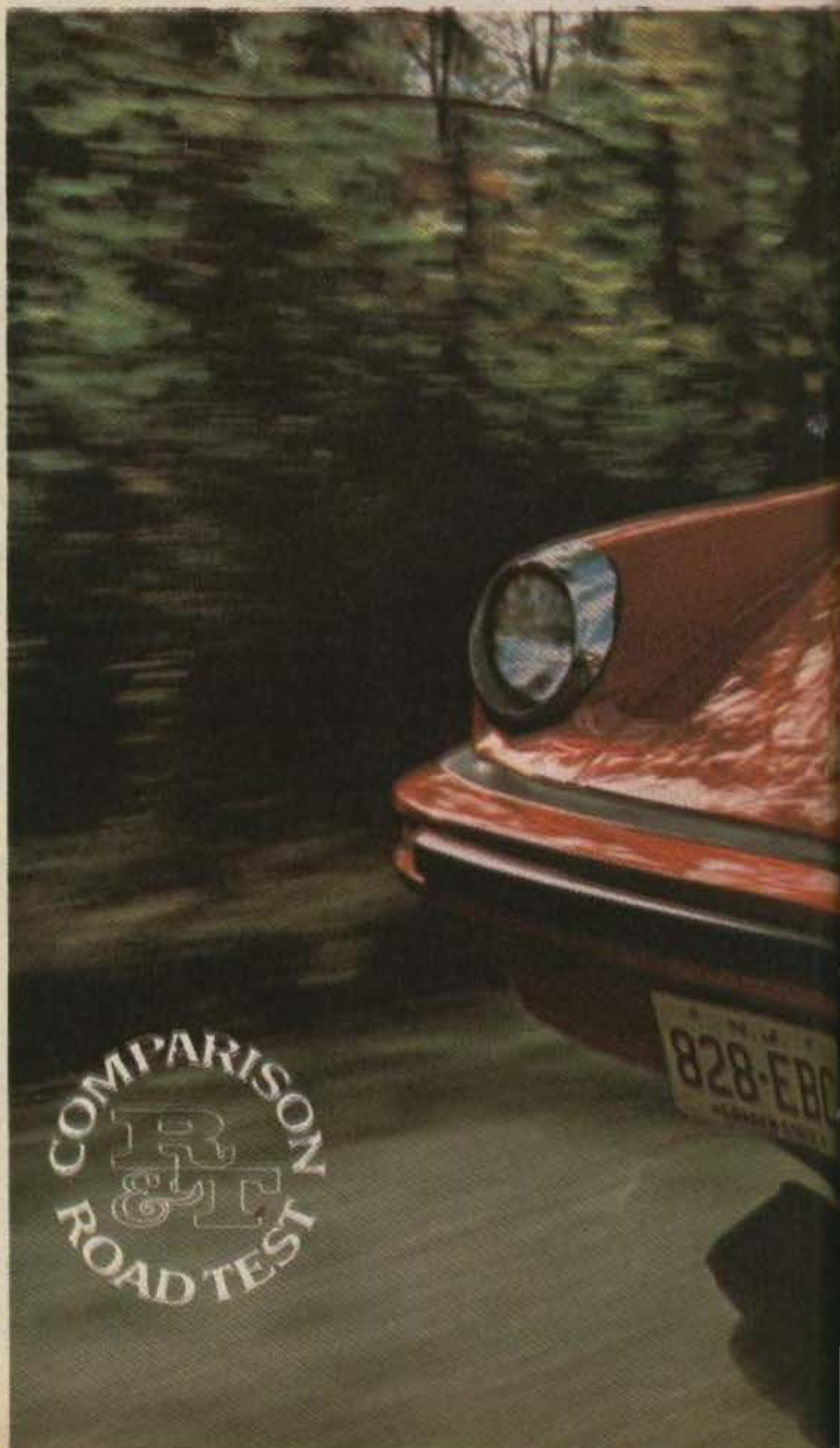


ONE MIGHT EXPECT that with Porsche's passenger-car development departments busily working away on two totally new front-engine, water-cooled cars (see November 1975 *Road & Track*) that the venerable 911, standard bearer of that small West German carmaker for more than a decade, would be all but forgotten. Not so. As readers of our December issue already know, the lineup of models is extensively revised for 1976. After an absence of six years, Porsche is reintroducing an economy (at \$11,000!) 4-cylinder version of the 911, the 912E, using the injected 2-liter engine from the 914 instead of a derivative of the original Porsche 4-cyl fitted to the earlier 912. And the car every Porsche fanatic would mortgage his soul to Stuttgart to own, the sensational Turbo Carrera, makes its U.S. debut in the same menacing flared-fender, whale-tail form as it was sold in Europe in 1975. Virtually the only difference between U.S. and European Turbos is horsepower—about 16 bhp less in the U.S. to meet our stricter emissions standards—but even this loss is not enough to prevent the Turbo from being the most powerful production Porsche ever sold in this country. Only 400 U.S. Turbos at almost \$26,000 a copy will be built for the 1976 model year.

In 1975 both U.S. 911 models, the 911S and Carrera, used the same 2687-cc injected engine in 49-state (157 bhp) and California (152 bhp) configurations. With the addition of turbocharging, Porsche increased the displacement of this single-overhead cam flat 6-cyl engine to 2993 cc by a 5-mm bore increase and lowered the compression ratio to 6.5:1. So only the 911S has the same engine and output as it did in 1975.

From outside it takes an aficionado to distinguish a base 912E from any other 911. Inside, however, several cost-cutting measures are obvious. The instrumentation is less extensive, the vinyl covering on the seats looks like VW material, the carpeting has shorter pile, the door panels are less ornate, the storage compartments in the doors aren't lined with carpeting as in the S and Turbo and the rear-quarter windows are fixed. None of these detract from the functional nature of the car except the latter. Despite small air vents at the dash ends, ventilation is marginal in hot weather. Pop-open rear-side windows improve the flow of air appreciably but Porsche has the nerve to charge extra for them. Otherwise the materials, fit and finish were of the expected high Porsche quality.

To partially justify the 911S's higher base price (\$1000 more than last year) a few items previously optional are now standard. ➤





are noted. As we found in our previous Carrera test, that front skirt and rear spoiler plus those wider rear tires improve the Turbo's stability from 90 mph on up. And with its wider track (a 2.4-in. increase up front and a whopping 4.8-in. increase at the rear compared to the 1975 Carrera) and race-car derived suspension, the Turbo was far and away the easiest Porsche to drive near the limit that we have ever tested. Both the Turbo and the S went through our slalom test faster than the 1975 Carrera, the Turbo's 62.8 mph average breaking the record previously held by a Ferrari Boxer by 2.4 mph! Skidpad figures for all three models are also impressive, ranging from 0.779g (better than our 1975 Carrera) for the 912E to 0.852g for the Turbo. We obtained these results on a new skidpad at Stewart Airport in Newburgh, New York and we'll try to verify these high numbers later in the year by retesting at least one of the 1976 models at our usual southern California skidpad.

Further proof of the Turbo's race-car heritage came during our final day of testing at Lime Rock Park. Sam Posey, a long time resident of the area, wandered out to the track looking for the car he'd be racing that weekend and discovered our trio of Porsches. Would he like to try the Turbo? That was all the urging a car freak like Posey needed and he was buckling himself into the car almost before we finished saying the words. Then, with R&T's editors taking turns in the passenger seat, Posey proceeded to break the Lime Rock track record for production cars by a substantial margin.

Such impressive handling is not achieved without some compromises: stiffer springs and shocks plus wider wheels mean the Turbo rides even more firmly than the S. The steering is slightly heavier, there's more jolting over bumps and potholes and the high performance Pirelli CN36s whine loudly except on very smooth pavement. Luckily the Turbo, like other 911s, has an impressive amount of wheel travel and ground clearance and it's also endowed with that rock solid, unbreakable feel traditional with Porsches.

All three cars have very good brakes. Information received at the 1976 Porsche long lead led us to believe the 912E and the 911s share identical braking systems. Almost, but not quite. The 912E's discs aren't vented as we reported in the December issue and a slightly softer pad material is used up front. Consequently, braking effort is lighter—35 lb for a ½g stop vs 45 lb for the 911s—and the brakes exhibited slight fade vs none for the S and Turbo. Otherwise the brakes perform similarly,

being easy to modulate near the locking point and almost impossible to lock. In the "panic" braking tests the Turbo equipped with the same size wheels and tires as our earlier Carrera stopped quicker despite a 260-lb higher curb weight. Both Carreras had Pirelli CN36 radials, textile belted on the 1975 model and steel belted on the Turbo, and we credit the stickier, more solid-responding steel-belted Pirellis for much of the improvement noted in braking and handling. The S had steel-belted CN36s too, and it also stopped better than the 1975 Carrera. The lighter 912E was equipped with softer riding Uniroyal Rallye 240 radials that were the Pirelli's equal from 60 mph but not quite as effective in our 80-0 mph stops.

Conclusion

IN SUMMATION, the 912E, 911S and Turbo Carrera are three very different yet similar cars that should have even wider appeal than the 1975 models. The 912E will obviously find favor with those who prefer a slightly more practical and tractable Porsche. It's a car with almost all the sporting virtues of the more expensive 911S, yet its simpler pushrod 4-cyl engine should make for better fuel economy and less expensive maintenance than the 911's six.

The 911S is now the only 6-cyl model within the reach of the semi-affluent masses. Those who think of the 912 as something less than a true Porsche won't be satisfied with anything less. And they'll pay the price to get that unique combination of sports car and grand touring machine, characteristics that only a Porsche provides.

At a time when safety and emission regulations have had a strangling effect on automotive advancement, the Turbo Carrera stands out as a significant technical achievement. In one fell swoop Porsche engineers have not only proved that turbocharging and low emissions are totally compatible but have also silenced the critics who say racing doesn't improve the breed. True, such clever engineering doesn't come cheaply, but then Porsche has never before offered a 911 with the luxury, performance and technical sophistication of the Turbo.

Unfortunately, all good things come to an end and in a few years we'll be seeing that new generation of front-engine, water-cooled Porsches mentioned previously. But these new models will have to be more than very good cars to displace the marque loyalty, admiration and respect that has built up over the years for the type 901 body style.

912E ROAD TEST RESULTS

ACCELERATION

Time to distance, sec:	
0-100 ft	3.8
0-500 ft	9.8
0-1320 ft (¼ mi)	18.2
Speed at end of ¼ mi, mph	75.0
Time to speed, sec:	
0-30 mph	3.7
0-50 mph	8.0
0-60 mph	11.3
0-70 mph	15.4
0-80 mph	21.0
0-90 mph	29.5

SPEEDS IN GEARS

5th gear (5050 rpm)	115
4th (5800)	104
3rd (5800)	73
2nd (5800)	50
1st (5800)	29

FUEL ECONOMY

Normal driving, mpg	23.0
Cruising range, mi (1-gal. res)	462

HANDLING

Speed on 100-ft radius, mph	34.1
Lateral acceleration, g	0.779
Speed thru 700-ft slalom, mph	56.8

BRAKES

Minimum stopping distances, ft:	
From 60 mph	155
From 80 mph	279
Control in panic stop	very good
Pedal effort for 0.5g stop, lb	35
Fade: percent increase in pedal effort to maintain 0.5g deceleration in 6 stops from 60 mph	29
Parking: hold 30% grade?	yes
Overall brake rating	very good

INTERIOR NOISE

All noise readings in dBA:	
Idle in neutral	55
Maximum, 1st gear	82
Constant 30 mph	67
50 mph	71
70 mph	76

SPEEDOMETER ERROR

30 mph indicated is actually	26.0
50 mph	46.0
60 mph	56.0
70 mph	66.0
80 mph	76.0
Odometer, 10.0 mi	9.8

911S ROAD TEST RESULTS

ACCELERATION

Time to distance, sec:	
0-100 ft	3.6
0-500 ft	8.9
0-1320 ft (¼ mi)	15.8
Speed at end of ¼ mi, mph	90.5
Time to speed, sec:	
0-30 mph	3.0
0-50 mph	5.7
0-60 mph	7.5
0-70 mph	9.8
0-80 mph	12.4
0-100 mph	20.0

SPEEDS IN GEARS

5th gear (5800 rpm)	138
4th (6600)	125
3rd (6600)	98
2nd (6600)	69
1st (6600)	38

FUEL ECONOMY

Normal driving, mpg	20.0
Cruising range, mi (1-gal. res)	402

HANDLING

Speed on 100-ft radius, mph	35.0
Lateral acceleration, g	0.817
Speed thru 700-ft slalom, mph	61.2

BRAKES

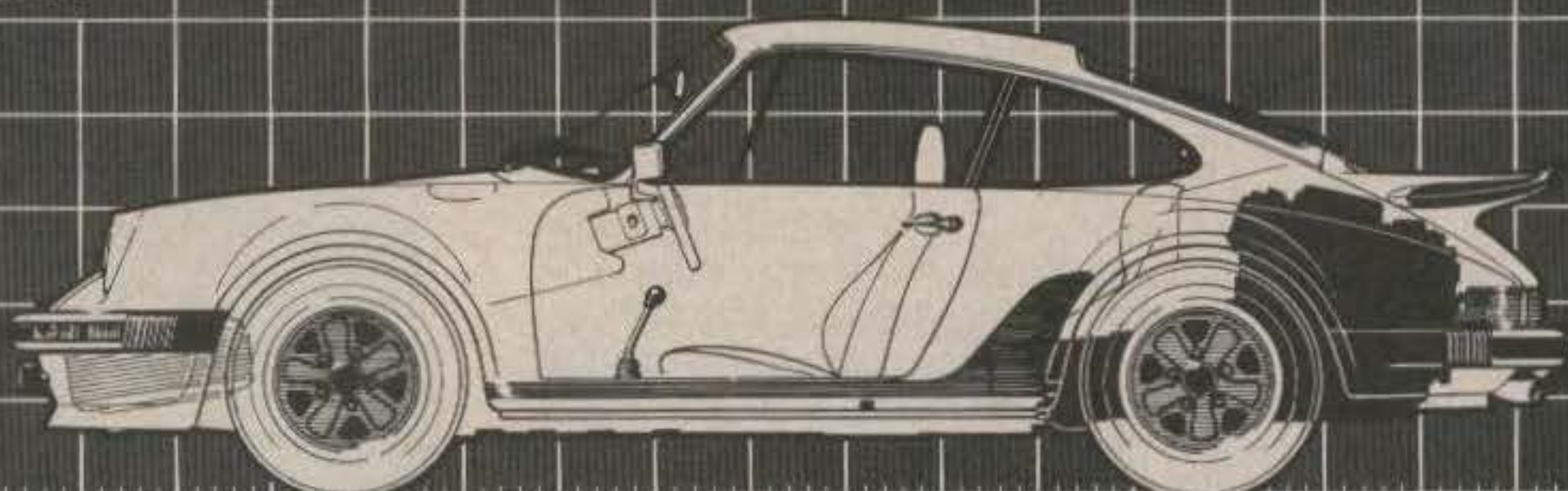
Minimum stopping distances, ft:	
From 60 mph	152
From 80 mph	265
Control in panic stop	very good
Pedal effort for 0.5g stop, lb	45
Fade: percent increase in pedal effort to maintain 0.5g deceleration in 6 stops from 60 mph	nil
Parking: hold 30% grade?	yes
Overall brake rating	very good

INTERIOR NOISE

All noise readings in dBA:	
Idle in neutral	60
Maximum, 1st gear	83
Constant 30 mph	69
50 mph	73
70 mph	77
90 mph	80

SPEEDOMETER ERROR

30 mph indicated is actually	26.5
50 mph	46.0
60 mph	56.0
70 mph	66.0
80 mph	76.0
Odometer, 10.0 mi	9.8



SCALE: 10' DIVISIONS

PRICE

List price, east coast \$25,880
List price, west coast \$26,000
Price as tested, east coast \$25,880
Price as tested includes standard equipment (air conditioning, automatic heat control, AM/FM/stereo, electric antenna, electric window lifts, leather interior)

IMPORTER

Porsche-Audi Div, VW of America
818 Sylvan Ave
Englewood Cliffs, N.J. 07632

GENERAL

Curb weight, lb 2785
Test weight 3155
Weight distribution (with driver), front/rear, % 38/62
Wheelbase, in. 89.4
Track, front/rear 56.4/59.1
Length 168.9
Width 69.9
Height 52.0
Ground clearance 5.9
Overhang, front/rear 36.7/42.8
Usable trunk space, cu ft 4.5
Fuel capacity, U.S. gal. 21.1

ENGINE

Type sohc flat 6
Bore x stroke, mm 95.0 x 70.4
Equivalent in. 3.74 x 2.77
Displacement, cc/cu in. 2993/183
Compression ratio 6.5:1
Bhp @ rpm, net 234 @ 5500
Equivalent mph 140
Torque @ rpm, lb-ft. 246 @ 4500
Equivalent mph 115
Fuel injection Bosch CIS
Fuel requirement: .. premium, 96-oct
Exhaust-emission control equipment: two thermal reactors, air injection

DRIVETRAIN

Transmission 4-sp manual
Gear ratios: 4th (0.66) 2.79:1
3rd (0.89) 3.76:1
2nd (1.30) 5.49:1
1st (2.25) 9.50:1
Final drive ratio 4.22:1

CHASSIS & BODY

Layout rear engine/rear drive
Body/frame unit steel
Brake system vented discs; 11.1-in. front, 11.4-in. rear
Swept area, sq in. 500
Wheels forged alloy; 15 x 7J front, 15 x 8J rear
Tires Pirelli CN36; 185/70VR-15 front, 215/60VR-15 rear
Steering type rack & pinion
Overall ratio 17.8:1
Turns, lock-to-lock 3.1
Turning circle, ft 35.4
Front suspension: MacPherson struts, lower arms, torsion bars, tube shocks, anti-roll bar
Rear suspension: semi-trailing arms, torsion bars, tube shocks, a-r bar

INSTRUMENTATION

Instruments: 180-mph speedo, 8000-rpm tach, 999,999 odo, 999.9 trip odo, oil press., oil temp, oil level, fuel level, clock
Warning lights: oil temp, brake system, handbrake, alternator, low fuel, parking lights, fog lights, rear-window heat, hazard, seatbelts, high beam, directionals

ACCOMMODATION

Seating capacity, persons 2+2
Seat width 2 x 19.5 / 2 x 13.5
Head room 38.0/31.5
Seat back adjustment, deg 70

MAINTENANCE

Service intervals, mi:
Oil change 15,000
Filter change 15,000
Chassis lube none
Tuneup 15,000
Warranty, mo/mi 12/20,000

CALCULATED DATA

Lb/bhp (test weight) 13.5
Mph/1000 rpm (4th gear) 26.0
Engine revs/mi (60 mph) 2310
Piston travel, ft/mi 1065
R&T steering index 1.10
Brake swept area, sq in./ton. 317

RELIABILITY

From R&T Owner Surveys the average number of trouble areas for all models surveyed is 12. As owners of earlier-model 911s reported 8 trouble areas, we expect the reliability of the 911 Turbo Carrera to be better than average.

TURBO CARRERA ROAD TEST RESULTS

ACCELERATION

Time to distance, sec:
0-100 ft 4.0
0-500 ft 8.7
0-1320 ft (¼ mi) 15.2
Speed at end of ¼ mi, mph 99.5
Time to speed, sec:
0-30 mph 3.8
0-40 mph 4.5
0-50 mph 5.2
0-60 mph 6.7
0-70 mph 8.2
0-80 mph 9.9
0-100 mph 15.3

SPEEDS IN GEARS

4th gear (6150 rpm) 156
3rd (6950) 139
2nd (6950) 85
1st (6950) 51

FUEL ECONOMY

Normal driving, mpg 17.0
Cruising range, mi (1-gal. res.) 342

HANDLING

Speed on 100-ft radius, mph 35.7
Lateral acceleration, g 0.852
Speed thru 700-ft slalom, mph 62.8

BRAKES

Minimum stopping distances, ft:
From 60 mph 158
From 80 mph 253
Control in panic stop very good
Pedal effort for 0.5g stop, lb 45
Fade: percent increase in pedal effort to maintain 0.5g deceleration in 6 stops from 60 mph nil
Parking: hold 30% grade? yes
Overall brake rating very good

INTERIOR NOISE

All noise readings in dBA:
Idle in neutral 57
Maximum, 1st gear 81
Constant 30 mph 70
50 mph 72
70 mph 76
90 mph 80

SPEEDOMETER ERROR

30 mph indicated is actually 24.0
50 mph 43.0
60 mph 53.0
70 mph 63.0
80 mph 72.0
Odometer, 10.0 mi 9.8

ACCELERATION

