

ROAD and TRACK ROAD TEST No. F-8-52

Porsche Coupe, 356-4

SPECIFICATIONS

Cylinders.....4, horiz. opposed	1st gear (overall).....15.93:1
Valves.....inclined ohv, pushrod	2nd gear (overall).....9.16:1
Horsepower.....65 at 4800 rpm	3rd gear (overall).....5.54:1
Bore and Stroke.....80 x 74 mm (3.14 x 2.91 in.)	4th gear " (o'drive) 3.54:1
Displacement.....1488 cc (90.7 cu in.)	Curb weight.....1850 lbs
Compression ratio.....7.2:1	Weight, front.....844 lbs
Mph per 1000 rpm.....20.7	rear.....1006 lbs
Steering lock to lock.....2 1/8 turns	Weight as tested.....2150 lbs
Turning circle.....33 ft. 8 in.	Track, front.....50 3/4 in.
Tire size.....5.00 x 16	rear.....49 1/4 in.
Transmission.....4 speed non- synchronesh; center shift	Overall length.....152 1/2 in.
	Overall width.....63 1/4 in.
	Ground Clearance.....7 in.
	Seating cap.....2, occasional 3

List price.....\$4208 (East) \$4350 (West)



PERFORMANCE

Test conditions—Sea level, calm, dry night, 85° F., Premium fuel

Flying 1/4 mile.....	103.4 mph
Fastest one way.....	104.6 mph
Standing 1/4 mile.....	18.35 secs.

TAPLEY READINGS

Pulling power	Gear	mph
545 lbs per ton	1st	28
417 lbs per ton	2nd	40
255 lbs per ton	3rd	53
138 lbs per ton	4th	69

Deceleration Rate (Coasting)

32 lbs per ton at.....	10 mph
44 lbs per ton at.....	30 mph
78 lbs per ton at.....	60 mph

ACCELERATION THRU GEARS

0-30 mph.....	4.8 secs.
0-40 mph.....	6.7 secs.
0-50 mph.....	8.7 secs.
0-60 mph.....	13.8 secs.
0-70 mph.....	17.5 secs.
0-80 mph.....	24.4 secs.

SHIFTING POINTS

From	At
1st gear.....	33 mph
2nd gear.....	60 mph
3rd gear.....	85 mph

SPEEDOMETER CORRECTION

Speedometer	Actual
30 mph.....	27.6
40 mph.....	36.8
50 mph.....	46.1
60 mph.....	55.1
70 mph.....	67.4
80 mph.....	75.3
90 mph.....	85.7
100 mph.....	97.7

FUEL CONSUMPTION

City driving.....	27 mpg
Open road.....	35 mpg
Fuel capacity.....	13 gal. 1 1/2 gal. reserve
Oil capacity.....	2 1/2 qt.

During the war, while 75% of production for civilian use was stopped and most of the world's economy was geared to Martian needs—we were periodically bombarded by something other than Axis munitions.

That something was the oft repeated prophecy about *The Post War Car*. This fantastic new machine was to be the Dream Car of the Century—completely new in concept. And it was to roll from the production lines as soon as the last battle cry of World War II had died away. It was to be a car such as was envisioned in popular magazines and described by captions which started out "Artist's conception of the car of the future. Note streamlining, etc. . . ."

For various reasons the promised car did not materialize. Instead, in 1946, we were treated to (and happy to get) pre-war design and engineering. In due fairness to the

automotive industry, let us state that in the ensuing seven years some advancements have been made. But until the road test of the 356 Porsche coupe, *Road and Track* has found few of the hinted-at engineering concepts actually materialized in production cars.

But, after a turn at the wheel of the new Porsche and a thoro recording of test figures, one is forced to admit that *this* is The Car of Tomorrow. That appears, on its face, to be an exaggerated statement, but experience with the car has given an entirely new driving experience to the test staff. It is safe to say that no car in the history of *Road and Track* has offered so many different and new driving sensations.

In the first place, the car is aerodynamic enough to give the actual feeling that it is (in the words of one of the staff) "slicing thru the air." Secondly, the steering is light enough to allow gradual curves to be taken

with only the tip of the thumb resting on the steering wheel. Thirdly, the car is exceptionally economical. If staff member Samuel Weill is to be believed—and we think he is—the Weill Porsche not only covers 27/30 miles on each gallon of fuel in town, but delivers 35 mpg and up on the road—cruising at speeds up to 70 mph. Fourthly, the Porsche is light and streamlined enough to produce virtually unparalleled (for 1500 cc) acceleration figures and a phenomenal top speed.

To recapitulate; the coupe, furnished by John von Neumann of Competition Motors (North Hollywood, California) has an extremely low frontal area for a two (and occasionally three) passenger closed car. Possibly even more important is the smoothness of the airfoil. The profile contour starts at the front of the hood (at bumper height), continues with very little interruption up over the slanting, one-piece curved windshield and over the roof of the car. From there it drops gradually and smoothly to the rear—and the sides of the Porsche are equally well thought out. The result of this design is to give the driver the happy realization that the car needs less "pushing" than others in the 1500 cc class. It goes so *easily*. At 3500 rpm, or 77 mph, the engine seems to loaf along. The driver has no impression of urging the car in order to maintain high speeds. As a matter of fact, with its short stroke, the engine reaches 2500 feet per minute speed somewhere in the neighborhood of a theoretical 130 mph. If we accept the dictum that 2500 fpm is the safe rate of piston travel for maximum cruising speeds in a passenger car, it is difficult to understand how one would go about over-revving the admirable horizontal-opposed four cylinder air-cooled engine.

"Remarkable" might be more the term for

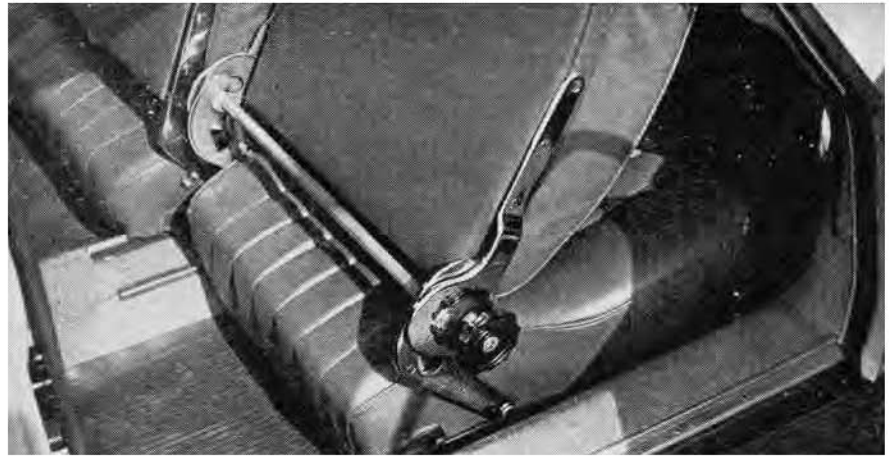


Travelers appreciate Porsche's reclining seat. †

the Porsche engine—with its aluminum-bearing Hirth crankshaft, roller bearing connecting rods, chrome-plated forged aluminum cylinders, and practically all-aluminum construction. The engine, because of this light metal and absence of liquid for cooling, (and 2½ quart oil capacity) is reputed to weigh but 160 lbs.—including all accessories . . . generator, exhaust headers, etc. This lightness permits engine mounting behind the rear axles without disturbing to any great extent the front/rear weight ratio. As far as this balance was concerned, the car manifested none of the "dangerous" handling characteristics so often attributed to rear-engined cars. With the gasoline tank and the 30 pound spare wheel mounted in the luggage compartment under the hood (plus the weight of the driver well forward), the Porsche seems to behave perfectly on the road. It is difficult to diagnose its characteristics as either under or oversteer. If any, the former is present to a happy degree.

To further investigate the handling of the coupe, there is a lightness in the controls of this little 83 inch wheelbase German car which comes as somewhat of a shock on first acquaintance. Anyone accustomed to the steering of "normal" cars is inclined to over-control; much the same tendency as is experienced when first taking the controls of a light plane. And speaking of planes, John von Neumann, who accompanied *Road and Track* on the all-night trek to and from the test strip (and actually drove the car on acceleration and high speed runs), likened the sensations brought on by driving the 356 to those felt in a DC-6 pilot's seat. And it is actually true that the driver feels more as if he were airborne than bound to the highway. It is not poesy to say that the remote thrumming of the happy overhead valve engine in the rear is similar to the outboard engines of the well-known four-engined plane—the less intense. With its light controls and the dropping off of the gently sloping hood; curved windshield and aircraft type comfort in the bucket seats . . . one may well imagine a plane about to become sky-borne. (For those who may feel anxious at the analogy, the curve of the Porsche hood increasingly loads the front end, until at 60 mph there are some 160 pounds of extra air pressure pushing downward on the front wheels. It will definitely not become airborne, or even lose front tire adhesion as speed increases!) To cap the aircraft illusion, the sound of the engine when the throttle is backed off from, say, 70 to 80 mph causes the broad highway in front of you to turn magically into a long landing strip. The feeling is hard to shake off. It is that realistic.

The designers (see Porsche story, page 32) have accomplished many things in the design. In the first place, turbulence between the underside of the car and the road is greatly minimized by the smoothness of what appears to be a "belly-pan," but is in actuality the floor of the car—with protrusions and indentations filled in to give a flat surface from stern to stern. Because not only the engine, but the gearbox is rear mounted, no space is wasted in the "cab" or under the body. All gears and drive units are neatly confined to the rear. This aftward location of the engine and drive train not only serves to cut down the distance over which the power must travel to reach the driving wheels, but also exhibits the tendency to exhaust engine and gearbox noises backward and away from the driver and passenger—contrary to what happens in the forward-engined, centrally-transmissioned vehicle . . . not to mention the neat dispersal of engine fumes, heat and exhaust gases—



all of which are carried off to the rear without ever menacing the car's occupants.

von Neumann, who so brilliantly won the 1500 cc class at Torrey Pines Road Race in his competition Porsche coupe (with the top cut away), and who proudly welcomed Bob Doidge as he came across the finish line in first place with his stock Porsche 356 (in the Production class), says that a worry expressed by most potential Porsche buyers is that the small grille above the engine in the rear "won't let enough air in." Johnny's stock reply is that with the Porsche it isn't a question of letting air in—the huge blower atop the engine takes care of that—but a question of letting the air out. The performance of the car more neatly answered the question, for the little two seater not only failed to show any heating distress, but surprised *Road and Track* when it cooled considerably while idling after each test run.

Dr. Porsche, as you remember, is credited with the development of the laminated torsion bar for use in place of the more conventional coil or leaf spring, so it is not unusual to find that type of suspension on all four corners of the new German import. "Torsion" bars (and the word is advisedly set off in quotes because coil springs also exercise a torsional movement and may in that sense be construed as "torsion bars") . . . torsion bars are usually a solid member of high tensile strength. What the great genius Porsche "invented" was a laminated metal torsion bar which cost less to produce than the conventional bar. The laminated bar will stand greater stresses than a solid bar of the same quality material—hence a greater safety factor is attained at a lesser cost. It is these laminated torsion bars which are found on the Porsche 1500 cc coupe—both front and rear. The front suspension is independent with parallel trailing arms and

the rear independent via swing axles. The 356, like the Mercedes 170 sedan (*Road and Track*, February 1952), had an excellent ride over rough roads—tho the car in question was obviously sprung and "shocked" more firmly than the sedan—for a more sports car type ride. But both have the same tendency to "walk" on a smooth straight highway. It was discovered, with the Mercedes, that any undue increase of tire pressure brought on this walking, while recommended pressures tended to cancel it out. The same may be assumed of the Porsche—in fact was guaranteed by von Neumann, who had the tires pumped up extra hard for the tests. Be that as it may, independent rear suspension is undoubtedly the development of the future. Cost considerations seem to be the only factor today which keeps this device from appearing on all first rate cars.

NOTES AND COMMENTS

The interior finish is excellent. When you see it you will decide for yourself. One glance at the handsome interior and the smart instrument panel will make up your mind. And the passengers seat . . . it is fully reclining . . . adjustable by an easy-to-reach knob . . . marvelous on long trips.

The amount of distortion in the curved windshield was disturbing. This may be a particular batch of faulty glass and may not appear on your Porsche. Three-way switch turns off fuel supply, or cuts in reserve. Firewall—in this this case behind driver—is underseated, isolating occupants from gear and engine noise. Radio, heater, standard equipment. Crankshaft dynamically and statically balanced. Transmission non-synchromesh but quite simple to operate. Porsche has so many stellar virtues, owners will be glad to put up with some inconvenience of getting in and out of seats. —DEARBORN

