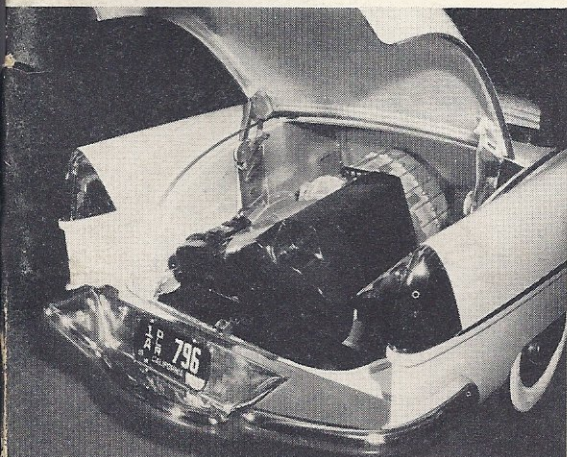


ROAD & TRACK

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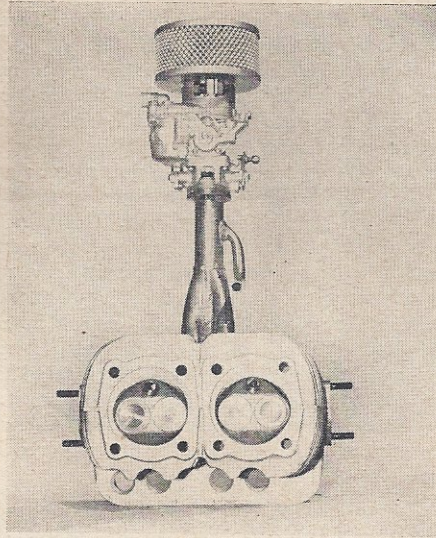
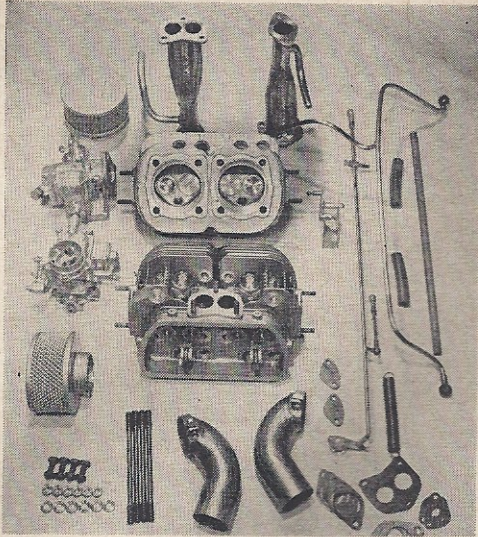
APRIL 1957

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IS STEAM COMING BACK?

THE TRUE STORY OF THE PAXTON PHOENIX



ROAD TEST: VW-OKRASA

If you want more performance from your German beetle, there are four routes to take—and they all cost money.

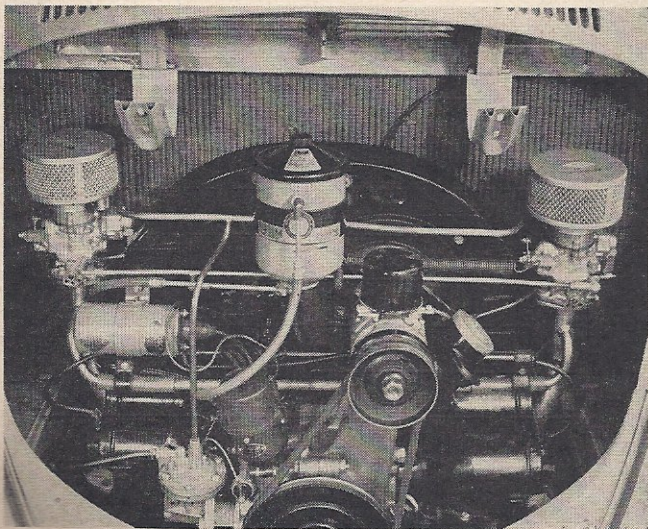
1. Install high-compression pistons, a reground camshaft, etc.
2. Buy the Okrasa Kit
3. Add a supercharger
4. Install a Porsche engine

Of these four alternatives, we have tested (briefly) several examples of the first possibility, and they give a definite improvement at the lowest cost, provided that you do the installation yourself. The acceleration time to 60 mph (after a speedometer correction) is about 24 to 25 seconds, and the top speed of a 1955 sedan (timed, of course) was 76/77 mph with the speedo at 83.

Item No. 2 is the primary subject of this test.

Item No. 3 (supercharging) offers the most performance gain per dollar spent. However, successful and satisfactory operation depends on two important factors. First, the air/fuel ratio must be checked out carefully, as too lean a mixture will produce overheating. Secondly, the driver must use his extra performance with proper re-

This shows the Okrasa kit installed in a VW sedan.



spect for an air-cooled engine. Cooling is dependent entirely on air flow, and the cooling fan must turn-up fast enough to keep a good blast of air going yet not turn so fast as to cavitate. In other words, with supercharging do not lug the engine, yet do not overspeed.

Bearing the above in mind, we have no objections to supercharging the VW, and our test work to date indicates a zero to 60 time of 16 to 17 seconds, a top speed of almost 90 mph with a sedan.

The limitations and possibilities of installing a Porsche engine, item No. 4, were thoroughly explored in our correspondence columns last year, and in the final analysis a Porsche engine is too expensive.

The subject of this test report is a VW-GK coupe, standard in every respect except that it was fitted with the "Okrasa Kit" manufactured in Germany. The cost of this kit is \$249.50 plus installation and our test car was loaned to us by the importer, European Motor Products Inc., Box 668, Riverside, California.

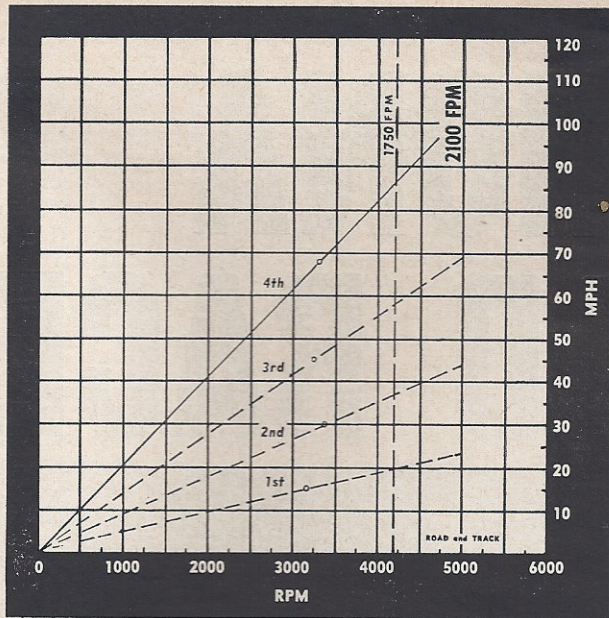
Reserving a technical discussion on the kit itself for later, the test results show a startling and worthwhile improvement, to wit:

	STOCK '56	OKRASA
Top speed (cpe).....	76.0	86.5
best run	77.9	87.5
Acceleration		
0-30	6.9	5.5
0-60	28.8	18.4
0-70	49.2	30.0
SS ¼	23.6	20.0

The data speaks for itself and in both cases refers to the "GK" or Ghia-Karmann coupe which, though 120 lbs heavier than a standard VW sedan, will normally out-perform the sedan in the higher speed ranges and in timed top speed.

Conservatively, the Okrasa Kit adds 10 mph to the honest top speed and give acceleration to 70 mph in about the same time as formerly required to attain 60 mph. More significant, the time to cover the standing-start ¼ mile is reduced by over 3 seconds, and the speed at the end is increased from about 56 mph to 62 mph. Calculations based on this performance indicate that if the standard VW develops an S.A.E. rating of 36 bhp at 3700 rpm, the Okrasa modification can reasonably claim 46 bhp at about 4200 rpm (Okrasa supply no dynamometer data).

Further calculations, using the Tapley meter lbs/ton data, prove that the low speed pulling power (or torque) is increased by 18%,



Puts a sting in the beetle

i.e., from 56 ft-lbs to 66 ft-lbs. Here, the gain can never equal the boost of a positive-displacement supercharger, but even an 18% improvement is well worth-while.

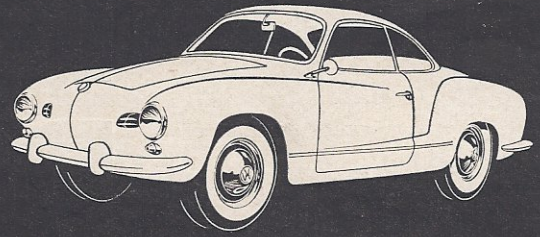
There is absolutely nothing about this kit which will give any outward clue as to the modifications—when riding with a driver who treats it very gently. It idles the same, sounds the same, feels the same. Yet anyone who owns and drives a normal VW will know instantly that something is different. You put it in 1st gear, tread on the gas, and you are past the red numeral 1 without realizing it. In fact, this brings up our one and only serious objection to the Okrasa Kit—it is much too easy and too tempting to over-rev. We ourselves over-rev the VW when getting the best possible acceleration data, but the red marks at 15, 30, and 45 mph are there for a purpose, and anyone who habitually exceeds these limits can expect trouble. Usually this takes the form of a broken crankshaft, and the only reason for such failures is excessive rpm, even though the actual break does not always occur at high speed. To facilitate analysis of the engine speed factor in the VW, we include here a chart of rpm vs. mph with circles showing the factory recommended limits and our own limit for occasional use (vertical dotted line), based on a piston speed of 1750 fpm.

So much for the performance and the one drawback. As shown here, the Okrasa Kit consists of special cylinder heads and related parts. Using special head castings accomplishes several important objectives: 1) It gives better cooling with more fins, 2) it increases compression ratio to 7.50 without the need for h.c. pistons, 3) it provides the necessary room for a much larger intake valve, and 4) it allows larger ports, not siamesed as in the standard heads.

Each of these four items is important and worthwhile: the improved cooling eliminates any sign of detonation which sometimes appears when 7.50 pistons alone are installed in a VW (but are OK with a reground camshaft); the higher compression gives both more power and better mpg; the power of an engine goes up in almost direct proportion to intake valve area increase; and elimination of the VW's siamesed intake ports makes twin carburetors a much more practical proposition. In summation, the Okrasa Kit tackles the basic problem correctly by beginning with the premise that new heads are the starting point. The rest of the changes, though important to the overall result, are incidental details. Although much more expensive than a supercharger, the Okrasa Kit makes the VW perform the way an 1192cc car (unblown) should. ●

ROAD & TRACK, APRIL, 1957

R & T ROAD TEST NO. 130



VW-OKRASA KIT

SPECIFICATIONS

List price (Okrasa kit).....	\$249.50
Wheelbase	94.5
Tread, f/r	50.8/49.2
Tire size.....	5.60-15
Curb weight, lbs.....	1760
distribution, %.....	43.5/56.5
Test weight	2080
Engine	flat-4, ohv
Bore & stroke.....	3.03x2.52
Displacement, cu in.....	72.7
cu cm.....	1192
Compression ratio	7.50
Horsepower (est.)	46
peaking speed	4200
equivalent mph	86.6
Torque, ft-lbs. (est.).....	66
peaking speed	2100
equivalent mph	43.3
Gear ratios, overall	
4th	3.61
3rd	5.41
2nd	8.27
1st	15.8

PERFORMANCE, Mph

Top speed, avg.....	86.5
best run	87.5
3rd (5000).....	69.0
2nd (5000).....	45.5
1st (5000).....	23.3
see chart for shift points	
Mileage range.....	28/35 mpg

ACCELERATION, Secs.

0-30 mph	5.5
0-40 mph	8.6
0-50 mph	12.7
0-60 mph	18.4
0-70 mph	30.0
Standing start 1/4 mile.....	20.0

TAPLEY DATA, Lbs/ton

4th	165 @ 45 mph
3rd	295 @ 40 mph
2nd	400 @ 31 mph
1st	500 @ 19 mph
Total drag at 60 mph, 90 lbs.	

SPEEDO ERROR

Indicated	Actual
30 mph.....	30.3
40 mph.....	38.0
50 mph.....	47.6
60 mph.....	57.0
70 mph.....	66.5
80 mph.....	76.4
91 mph.....	87.5

CALCULATED DATA

Lbs/hp (test wt.).....	43.3
Cu ft/ton mile.....	59.0
Engine revs/mile.....	2910
Piston travel, ft/mi.....	1220
Mph @ 2500 fpm.....	123

