TRANSPORTER TRADITION TRIUMPHS

VW introduces its third new Transporter—in as many decades—and surprise, its engine is still at the rear

BY RON WAKEFIELD

PHOTOS BY THE AUTHOR

OVER THE PAST year or so, rumors of a new VW bus have grown more frequent and detailed. A working assumption of most of them was that after nearly 30 years with an aircooled rear engine, the traditional VW layout would finally give way to something more like the German carmaker's passenger cars: probably front drive with one of the many inline, watercooled engines used in models from the VW Golf-Rabbit through the Audi 5000. Or perhaps one of these powerplants coupled to conventional rear-wheel drive, as in VW's larger commercial line, the LT.

Then appeared the first photos of prototypes and, lo and behold, they had big air intakes at the rear just like the old model. But they also sported full-width front grilles. What was up? Aircooled engine at the rear plus a watercooled one up front, one running on liquid hydrogen and the other solar-powered? Fake grille on the prototypes?

The new model is out, and those who insist on something new will be disappointed. VW has stuck with the tried-and-true layout, the traditional *Boxermotor* behind the transaxle, driving the rear wheels. This despite the fact that, in Germany at least, VW no longer produces a single car model of this genre. Now, is that any way to maximize profits?

People from the Transporter engineering departments (Transporter is and always has been the official name of the vehicle) assured me of the correctness of their decision. They have spent decades perfecting the concept, making the "pancake" engine durable enough to suffer the slings and arrows of a bulky shape about as aerodynamically slick as a cigar box, not to mention loads the original 1131-cc, 25-bhp VW engine never dreamed of in its worst nightmares. Power has been nursed upward to 70 bhp in the latest 2-liter engine, the formerly problematical valves treated to hydraulic lifters and sodium cooling—and now you want us to throw all that out the window?

Logical enough, but there *is* a 2-liter engine in the VW family that's already been converted for truck use. It powers the LT and, in other forms, the Porsche 924 and AMC Spirit-Concord. But here VW engineers elaborate that 2 liters is the upper limit of the Transporter range, and that they wanted to continue with a 1.6 option for European and other markets. This displacement exists in their watercooled line too, but adapting the engine and/or modifying one of the car powertrains for heavy-duty use would have cost enough to wipe out the benefits of increased inter-

changeability for years to come. So the basic decision was made to keep the aircooled engine.

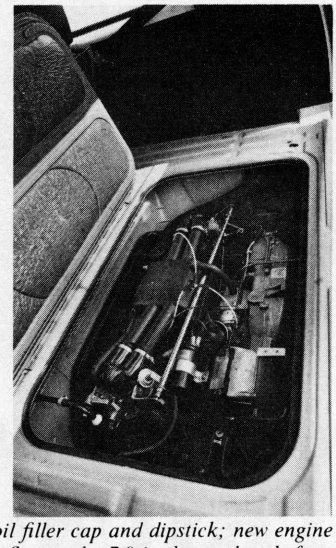
This did not mean it had to be at the rear. In an evaluation of 12 possible engine-drive configurations, VW planners considered such far-out possibilities as mounting the familiar package forward of or behind the front axle. In the end, however, they narrowed it down to three rear-engine candidates, and finally to the old layout. There were 52 criteria, covering all possible functional aspects but also taking "image" into account, and some of the advantages of the chosen configuration do sound convincing:

—The *Frontlenker* ("front steerer") layout frees 68 percent of the space the vehicle occupies on the road for cargo, versus only 56 percent for the short-hooded front-engine/rear-drive layout favored by American companies in the U.S. and Europe.

—50/50 weight distribution is possible, empty or loaded.

—For climbing hills with marginal traction, front drive is at a disadvantage.

—Access to the rear compartment from the front is easy.



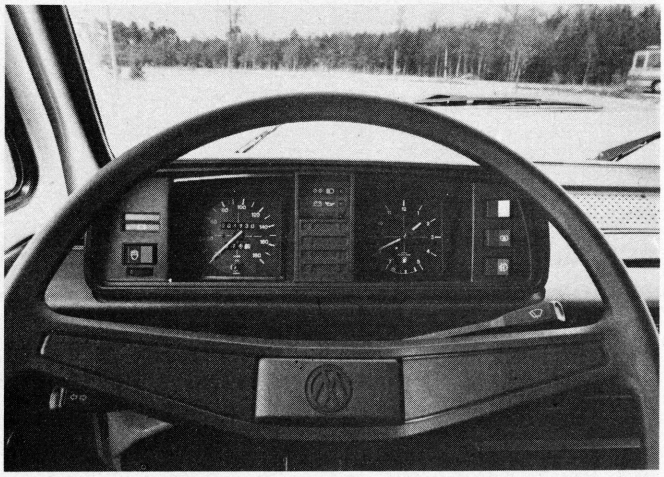
License plate flap gives access to oil filler cap and dipstick; new engine profile allows the cargo floor to be 7.9 in. lower than before.

There are disadvantages too. One has been a high floor over the rear engine, another a pronounced sensitivity to crosswinds. But these were seen as chances to make improvements. One was in engine height: For several years now a 2-liter aircooled engine has been available, and its cooling fan is driven by the crankshaft. In contrast to the older engine's belt-driven fan at the front of the engine, this decreases its height dramatically, but since the smaller engine was still offered in most markets, VW left the rear floor high enough to accommodate it. Now it has inherited the more modern cooling arrangement, and as a result the rear floor has been lowered a full 7.9 in.

To whittle down the side wind problem, the designers increased the wheelbase 2.4 in., which in combination with the new body shape enabled them to move the center of gravity to a point just ahead of the van-bus body's center of pressure in the side view. Although such slab sides necessarily mean a lot of push from a crosswind, at least the change centers that push behind the center of gravity instead of ahead of it. The result: Wind force tends to steer the vehicle back into the wind, rather than in the wind direction. To a degree, then, the vehicle tends to self-correct, reducing the wind's effect.

Aside from the traditional engine-drivetrain with its improvements (which for the European market include hydraulic valve lifters, formerly used only in North America, full electronic ignition and an electronic feedback device to stabilize engine idle under all conditions), the Transporter is virtually an all-new vehicle. Only the third shape it has had, the new body is almost identical to the old in all major external dimensions but width; it is 4.9 in. wider. Its windshield is deeper and more rakishly sloped, its side windows taller and the rear window almost doubled in size; the roof is flatter, improving head room for driver and front passenger and allowing taller doors. The front grille gives it a strong family resemblance to the LT series; except for the general concept it bears no similarity to its predecessor. Bus and *Kombi* versions retain the popular sliding right door.

There are six basic versions. One is the standard van, another the van with a 15.7-in. higher roof. Then there are the *Kombis*, with windows like the bus's but fittings more like the vans', with or without passenger benches, a *Pritschenwagen* (high-bed pickup); and a pickup with double cab and shorter bed. As



before, all manner of special bodywork, including campers, can be ordered or added to the bare chassis in Europe. U.S. choices will be limited, as before, to *Kombi* and bus; a tariff on German trucks imposed during the "chicken war" many years ago continues to discourage VW from importing the others.

Inside, the redesign is as complete as it is outside. Thanks to the longer wheelbase and a new rack-and-pinion steering gear, the steering column is more raked, giving less of the bus-driver effect. Instruments and warning lights are set into a pod above a typical contemporary molded-plastic dash, everything is clean, logical and legible, and twin steering column stalks control a variety of functions just as in the VW cars.

As usual these days, computers were used for designing the body structure; one benefit is that the floor pan could be made 3.9 in. shallower for a further contribution to interior space.

Another is in crash safety: Through improved energy-absorption design and 3.9 in. more length ahead of the front wheels, crash performance has been brought into conformance with the latest U.S. passenger-car regulations.

The Transporter's chassis is almost all-new, though most components are evolutionary. When the second series was introduced in 1967, rear swing axles gave way to fully articulated axles that cured the Beetle's worst handling problems. These are retained, but with new "miniblock" variable-rate coil springs. Up front, however, the suspension is completely new: Unequal-length A-arms and variable-rate coil springs replace trailing arms and torsion bars that were a hangover from the very first Beetle. Here an anti-roll bar is standard. At both ends, the track has been increased: 6.9 in. at the front, 4.5. in. at the rear for a uniform 61.8 in. at both ends. Steering, as mentioned, is now by rack and pinion (formerly worm and roller), made by Gemmer and not available with power assist. Brakes, discs at the front and drums at the rear with a deceleration-sensitive proportioning valve between them, are essentially carryover; a vacuum booster is standard with the 2-liter engine.

"Neutral, good-natured handling" is VW's claim for the new chassis. In numbers, the claimed improvement is dramatic: from 0.62 to 0.70g cornering capability. At the same time, efforts were directed toward increased comfort, through the progressive-rate springing and improved sound insulation. VW's figures indicate noise at 100 km/h (62 mph) is down from 82 dBA to 77 dBA in the rear seat of the bus, from 81 to 78 dBA in the front seat.

For markets outside the U.S., two engine variations are offered: 1573 cc/50 bhp DIN and 1970 cc/70 bhp, both tuned for regular fuel and both now sporting the American-made hydraulic valve lifters that improved the American 2-liter in 1978. According to Rüdiger Schüler of VW Transporter engineering, they are not only better but less expensive than the mechanical lifters Europeans still cling to.

To explain the full-width grille: In about a year, a 4-cylinder diesel engine will be added to the option list. It too will be at the rear, an inline unit inclined to fit under the floor. Its radiator will be up front.

For America, as before, only one gasoline engine will be available: the 2-liter with Bosch K-Jetronic fuel injection, developing 67 bhp SAE net (actually the same as 70 bhp DIN) at 4200 rpm, with 4-speed manual or 3-speed automatic transmission. The diesel is sure to be offered, too, when it goes into production.

Driving: Almost Like a Car Too

As WITH every VW Transporter up to now, one climbs up into it, takes a seat above the usual 4-wheeled world and has a commanding view of the road ahead. But the feeling is much more carlike now, thanks to the new steering wheel angle and instrument panel design. Still, the seats are tall and the gearshift lever long, just to remind us that we're not in someone's slinky station wagon.

The model I chose for a 100-mile test drive was an 8-passenger bus, fitted out with the L (Luxus) package and powered by the 2-liter engine with 4-speed gearbox. The most carlike version, to be sure, and its rich brown carpeting and corduroy seats enhanced this impression. So did its noise level once on the road; of itself the aircooled engine is far from quiet, but it's also far from the driver's seat and so well insulated now that it's very subdued inside. Wind noise, though, is high but quality is so good that there's no hint of air leaks, much less rattles or squeaks.

VW attributes to the new Transporter a chassis "in the category of high-caliber middle-class passenger cars." Certainly the specifications bear this out, and in reality the vehicle confirms it by delivering a soft but well controlled ride. Gobs of suspension travel make it especially competent on a miserable unpaved road—so competent, in fact, that I couldn't quite believe my eyes as the bus conquered huge pothole after huge pothole. The vertical movements of driver and front passenger, sitting atop the front wheels, do tend to exaggerate things, however.

Another VW claim had to do with the handling, so I tried a little hard cornering—something one normally does not do with a VW bus. Sure enough, it was well up to whatever I subjected it to; strange as it may sound, speeds over winding roads will not be limited by cornering ability.

As for performance, well, not much change here. These vehicles were always best suited to a leisurely driving style. A good deal of shifting is required to coax the bus along, but this is by no means unpleasant: VW has long since mastered the difficulties of long shift linkage.

There was no opportunity to test crosswind stability. To be sure, the bulky body still catches the wind to a considerable degree. But only a controlled test, or longer acquaintance, would show if the expected improvement is there.

Whatever the outcome, however, the new VW Transporter—or Bully, as the Germans call VW vans and buses—is a markedly improved vehicle. With its proven engine and drivetrain, it should be quite reliable too. VW expects an increasing proportion of them to be used as private transportation in Germany, where they are seen more as utility vehicles. Americans, on the other hand, should continue to favor them as family and recreational vehicles as well as efficient carpool transportation. At least until the domestic makers of vans and small buses move to reduce weight and engine size, the Transporter is unique for its combination of carrying capacity and fuel economy.

As for price, it should be only a little more expensive than its predecessor. Including Germany's 12-percent value-added tax, the model I drove costs 20,710 Deutsche Marks, or some $10,900 at current exchange rates. For a before-tax price in the U.S., that figure shouldn't be too far off.

1980 VOLKSWAGEN TRANSPORTER (PROBABLE U.S. VERSION) SPECIFICATIONS

GENERAL		
Curb weight (bus), lb/kg	3170	1440
Wheelbase, in./mm	96.9	2460
Track, front & rear	61.8	1570
Length	179.9	4570
Luggage capacity (with rear seat folded), cu ft/liters	49.4	1400
ENGINE & DRIVETRAIN		
Type	ohv flat 4	
Bore x stroke, in./mm	3.70 x 2.80	94.0 x 71.0
Displacement, cu in./cc	120	1970
Compression ratio	7.3:1	
Bhp @ rpm, SAE net/kW	67/50 @ 4200	
Torque @ rpm, lb-ft/Nm	101/137 @ 3000	
Fuel injection	Bosch K-Jetronic	
Transmission	4-sp manual or 3-sp auto	
CHASSIS & BODY		
Layout	rear engine/rear drive	
Body/frame	unit steel	
Brake system	discs front, drums rear; vacuum assist	
Wheels	steel disc, 14 x 5½J	
Tires	185SR-14	
Steering	rack & pinion	
Suspension, front/rear:	unequal-length A-arms, coil springs, tube shocks, anti-roll bar/semi-trailing arms, coil springs, tube shocks	

Doors are similar to previous design, but hatch opens onto substantially lower floor.