



● The T4 still looks well proportioned with its new tail. Note hatch on nearside rear for removal of toilet tank.

T4 grows A TAIL

Chris Burlace looks under the skin of the first British T4 conversion to feature an extended body.

Ever since it was fitted out with Westfalia's 'Camping Box' in 1951, Volkswagen's Transporter has enjoyed favourite status with motorcaravan converters and buyers. The success is down to the versatility of the Transporter, its refinement, and its good looks compared with its contemporaries; but scarcely to the ease with which it could be converted!

In fact, VW's designers have always posed problems for the motorcaravan maker. Through its first three generations the rear engine was in the way of fitments and floor-space. Now, in the front-engined T4, those elegant curves which make it a leader on style conspire to constrain space for the converter and, in the standard short-wheelbase model, there is actually less usable length behind the cab.

Forty years ago the camper van owner was happy to take a cold wash from a plastic bowl, which was itself an innovation. Today he expects to enjoy a warm shower in the morning! The new VW's rivals, Fiat Ducato and Talbot Express, have space to squeeze in a toilet/shower cubicle but in the swb Transporter there is no room.

Even with the extra 16 inches afforded by the lwb T4, there is a problem due to the inward slope of the back of the vehicle which restricts space. A solution adopted by two German motor caravan constructors, Dehler and Karmann, is to graft a GRP extension on to the rear of the vehicle. Now Auto-Sleepers are the first British converter to lengthen the VW, giving us a T4 with a tail.

Dehler's extension on their Optima models on swb and lwb T4 adds just a foot; Karmann on the lwb VW add 20 inches to their Karuso. Auto-Sleepers have been a little more ambitious still with a 21 inch addition; and, with a more rounded profile to the front of their high-top and the alteration to height-to-length ratio compared with their Trident model on swb T4, the new Trophy is a sleek-looking machine. The integration of original body and extension is so well done that one might think this is just a new, long-tailed version of the Transporter straight from the VW design office. But what looks simple on the surface in fact hides considerable complication...

When Auto-Sleepers convert the swb T4 into their Trident

hightop both the roof 'B' and 'C' members (rear of cab and rear of side door respectively) have to be removed. The structural strength lost is compensated for by fitting a bracing section around the roof opening before the high-top is attached. However, with the Trophy the roof D-member (above the rear doors/tailgate) has also to be cut away to allow walk-through into the extension.

Now, with three key structural sections removed the T4 would be about as rigid as a jelly in a force 8 gale if one were to take it to the road. Rigidity has to be restored, but in a way which correctly distributes stress within the whole of the vehicle structure.

Volkswagen were brought into the design discussions at an early stage and were very helpful. Naturally, they made it clear that whatever changes were made to the body structure it would have to at least equal the integrity criteria of the original VW design. What's more, a prototype would have to be put through a demanding series of static and dynamic tests to satisfy VW engineers both here and at Wolfsburg.

Initial studies using Auto-Sleepers' computer-aided design facility were followed by detailed analysis and then design by consultants. A tubular steel spaceframe was devised, which would not only be bonded into the GRP extension but would also extend into the original body for proper distribution of stresses throughout the combined structure. VW inspected and approved the drawings before this frame was made.

The static checks on torsional rigidity involved loading both

axles of the vehicle to their maximum permitted weights and then raising diagonally opposite wheels by 50mm increments until each was 200mm above the levels of the other two wheels. At each stage measurements were made between datum points on the vehicle to check for twisting.

A secondary check, when the van was back on all four wheels again, was to check (with weigh pads under each wheel) that the original weight distribution had not altered. This static test procedure was repeated for each of six stages, as follows:

1. Unmodified vehicle.
2. Space frame fitted and tailgate removed.
3. Roof removed between B and D members.
4. Rear extension and GRP hightop fitted.
5. Roof D member removed.
6. Roof B member removed.

The prototype Trophy came through the static programme with flying colours. So, forward to the dynamic assessment – which might be called the torture trail – on the Ministry of Defence test ground at Chobham.

The two-mile test track includes a long section of the worst kind of Belgian *pavé*; a *pavé* stretch set with kerbstones raised two or three inches and in herringbone pattern; another stretch (the ultimate torture) with kerbstones set in randomly, edges and corners uppermost; and then 'The Snake', which is a twisting and undulating track. Joining these suspension-wrecking sections at one end is a high-speed banking.

Was it tough? Well, drivers were permitted only two-hour stints at the wheel for fear of kidney damage; the first tyre



● Worst stretch of the Chobham vehicle torture trail, the randomly set kerbstones!

wore out in just 1,500 miles, and the 5,000 miles clocked on Chobham's wrecker track is calculated to be the equivalent of 250,000 miles of normal driving!

VW sent their man from Germany just to be sure that the conditions were as atrocious as they were claimed to be – and he was convinced. Trophy was given a clean bill of health.

Now, a look inside the Trophy, which those familiar with the marque will have no trouble identifying instantly as Auto-Sleepers. Cabinetwork is in the European light oak, which has long been the trademark of the company from Willersey. The forward layout copies that in their 'Harmony' model on the swb Talbot van. The forward-facing seat is provided with a three-point seatbelt and, cleverly, is arranged to move slightly inboard for travel to take its occupant away from the 'tumblehome' inward slope of the T4's side. The side-facer has a lap belt and, on the camp site, the backrest has adjustable rake.

For dining, a tabletop fits on an island leg in the centre gangway and a second table can be installed on a cranked leg to serve the reserved cab passenger seat. At night, caravan and cab seats come together to make a pair of single beds, or they can be combined into a double. Under-seat storage access is made easy with slide-out baskets fitted in both caravan seat units, while the plinth of the cab passenger seat serves as a caravan safe.

Amidships, the kitchen is split, with cooking facilities on the offside and washing facilities opposite. The cooker is the usual A-S model in stainless steel with two burners, grill and fold-out splash guards; below is a thermostatically-controlled oven. The fixed section of worktop beside the cooker provides a reasonable working area.

On the nearside a one-piece hinged worktop lifts to reveal a sink and separate drainer, below which is the fridge. Various cupboards, drawers and lockers



● A first view of the interior when Auto-Sleepers unveiled their prototype. Note drawer units under seats.



● The passenger seat swings to complete the on-site seating group. Centre overcab locker would be the place to stuff bedding; side lockers have crockery and glasses sets.

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● Breakfast time, room for two or maybe three at the main table. Note underseat drawers.

in the two kitchen units provide a reasonable amount of storage space and are supplemented by the banks of slim lockers at eye level.

Finally, stepping through into the T4's extension, the *pièce de résistance* of this van conversion is the shower/toilet room, which is entered through space-saving double sliding doors. On your right you find a Thetford cassette toilet, the holding tank easily extracted through a hatch in the rear of the vehicle, with above a foldaway washbasin. On the left is the wardrobe. The cubicle has full shower equipment and is well ventilated by a top-hung rear window and a roof-light.

The Trophy packs the facilities of a coachbuilt motorcaravan, although rather less by way of storage space, into the slim lines of a panel van for go-anywhere capability. With that in mind, it

also retains the tighter turning circle of the swb T4.

Auto-Sleepers have not stinted on the spec, and you get plenty of ventilation: a sliding window in the side door, top-hung units (double-glazed) in the hightop, on the offside over the kitchen unit and in the toilet room, and a second slider forward on the offside. All windows come with cassette blinds/flyscreens.

The roof-light in the kitchen area has both flyscreen and a night-blind and can, as an option, be replaced by a 3-speed reversible fan. Heating comprises the Carver Cascade unit with gas/240 volt options for water, and the Propex gas-fired warm-air unit for space heating. Thermally lined curtains will make for further snugness in winter.

Britain's major motorcaravan makers had, until now, been



● The rear extension creates the space for a practical toilet room. To close it off, half-doors slide from both sides and thus intrude into neither toilet nor kitchen space.

disappointingly conservative in their treatment of the T4. Trophy, stylish and practical, and built to the high quality standard which we expect from our longest-established motor caravan manufacturer, shows that there is

a capability to keep up with the Continentals.

Now, will Auto-Sleepers also be so bold in the next few years as to actually try to sell some of their excellent products to Europe? ■

Dimensions

Length	17ft (5182mm)
Width (excl mirrors)	6ft 4½in (1943mm)
Height	8ft 5in (2565mm)
Internal height	6ft 3½in (1918mm) max. 5ft 10½in (1791mm) min.
Turning circle	38ft 5in (11.7m)
Fuel tank	17.6 gal (80 litres)
Fresh water	16.5 gal (75 litres)
Waste water	13.2 gal (60 litres)
Gas storage	2 x Gaz 907 or Calor 4.5/3.9 kg bottles
Secondary battery	66 Ah
Unladen weight	2095 kg (2-litre petrol engine) 2170 kg (2.5 petrol/2.4 diesel)
Payload (Trophy is built on 1200 kg T4)	605 kg (all engine versions)

Internal

Beds: 2 x singles	74in x 25½in (1880mm x 648mm)
double	74in x 58½in (1880mm x 1486mm)
Shower cubicle	44in x 26½in (118mm x 673mm)

Kitchen worktop height	36in (914mm)
Refrigerator	Electrolux RM4217 gas/12V/240V
Water heater	Carver Cascade 10 litre gas/240V
Space heater	Propex 1600 blown-air, thermostatic control
Electrical	Mains input with RCD/overload trips, battery charge, 3 x 240V sockets
Lighting	6 x 16W fluorescent, 12V, 1 x 240V fluorescent, 1 x 10W 12V spotlight

Base Vehicle

VW swb 1200kg Transporter with 5-speed gearbox and power steering.
2-litre petrol engine 84 bhp (standard).
Options: 2.5-litre 110 bhp petrol engine, 2.4-litre 78 bhp diesel, 1.9-litre 68 bhp turbo-diesel. Automatic transmission with 2.4D and 2.5P engines only.

Converter: Auto-Sleepers Ltd, Orchard Works, Willersey, Worcs WR12 7QF, Tel: (0386) 853338.