



Co-designer Lance Gillies takes the wheel



A 4.9-litre diesel provides adequate grunt



**W**hen two astute off-road competitors, Kym Bolton and Lance Gillies, saw the need for a motorhome with the best possible off-road credentials, they couldn't find one on the shelf, so they built their own. Now, an EarthCruiser can be yours, too.

Anyone who's camped under canvas in heavy rain knows how much more pleasant it is to have a hard roof and a floor that's well clear of the mud. The

problem is that motorhomes are way too sookie to go seriously off-road. The only available 4X4 motorhomes are built on VW Transporter or Mercedes-Benz Sprinter 4WD chassis that are more 'traction vehicles' than serious off-roaders. (Yes, we know that Oberaigner in Austria does the 4X4 package for the Sprinter and the goody tin includes diff locks and a lower-speed transfer case, but this spec isn't available Down Under.)

So, what to do for the basis of a serious off-road motorhome? Kym and Lance start with the Fuso Canter 4X4 light truck. This vehicle is designed around the mechanicals of a road-going Canter,

using the 4X2's tilt-cab, diesel engine, main transmission, rear suspension and rear axle. To provide clearance for a drive axle under the cab a special S-profile chassis does double duty, lifting the cab up higher at the same time.

The Canter 4M50-3AT7 four-cylinder, 4.9-litre diesel is a true light-truck donk, so it's a tad rattly at idle, but with turbo-charging and common-rail injection, it's rated at 110kW at 2700rpm with 471Nm of torque at 1600rpm. To meet ADR 80/02, emissions exhaust gas recirculation (EGR) and a catalytic converter are fitted. The transmission is a five-speed manual with synchromesh on second to



The Fuso Canter light-truck only seemed like an odd choice at first

fifth gears and there is a power take-off opening on the left-hand side of the case, so it's possible to have a mechanical winch if required.

The transfer box is a two-speed TF3 with a low-ratio of 1.987 and a high of 1.090 with a cable-operated selector in a console to the left of the driver. The final drive ratio is 5.285:1.

The fully-floating axle load capacities are a lot higher than normal 4X4 axles: rear axle capacity is 4300kg and front axle, 2600kg. Although the EarthCruiser has a gross mass rating of 4500kg, so it can be driven by people with a passenger car driving licence, its actual Fuso Canter rating is 6000kg and towing capacity is 3500kg. Importantly, the EarthCruiser

is a secondary manufactured vehicle, so there are no 'modified vehicle' registration or insurance issues with it. Standard fuel tankage is 125 litres, with an additional 90-litre tank available.

Ride quality in the standard Fuso Canter 4X4 is dreadful: short, stiff leaf springs, ineffective dampers and fixed-base seats combine to give driver and passenger bums a real workout. I've refused to road test new versions of this truck and the Isuzu equivalent because they're too hard on my aged body. I can still manage a few rounds of judo, but I draw the line at driving these Japanese lorries on rough bush tracks.

So what were Kym and Lance thinking when they settled on it as the basis for

the EarthCruiser motorhome? They were thinking, it turns out, that the ride-quality ills could be cured in three steps.

Step one was to throw away the standard front and rear leaf springs, move the aft spring hangers back 100mm on the chassis and fit longer front and rear spring packs. And install a set of shock absorbers that actually work.

Step two involved replacing the skinny standard wheels with wider rims that mounted high-sidewall, 255/100R16 Michelin XZL steel-carcass-ply rubber. The dual wheels at the rear were replaced by higher-flotation, softer-riding singles. Clever wheel nave proportions mean that the same wheel fits front and rear axles, but is reversed to ensure rear

The bathroom is a simple, practical affair



Ceramic cooktop is diesel-powered



The EarthCruiser control centre



Two-seater dinette converts to a single bed



Neat, electrically-operated staircase gives access to acres of headroom



## ON- AND OFF-ROAD



■ Despite its height and boxy appearance, the EarthCruiser isn't much larger than a LandCruiser – around 700mm longer and 100mm wider. It fits quite well on most bush tracks, although drivers need to be aware of its 2.5-metre height when ducking under low branches. (Incidentally, the EarthCruiser fits into a 20-foot ISO container, should an owner want to ship it across the seas.)

Forward and side vision from the lofty driving perch is superb and rear vision is down to a reversing camera. Forward control makes it easy to position the EarthCruiser accurately on rocky trails.

Ride quality is streets ahead of the standard Canter, thanks to suspension seats, longer springs, powerful dampers and big single tyres. I punted the EarthCruiser through potholes and across heavy corrugations without feeling uncomfortable, and the truck didn't appear to be suffering, either.

Wheel travel wasn't brilliant, but the Canter chassis is designed to flex, so keeping the tyres in contact with the ground wasn't an issue on all but severe rock shelves. Its powerful Thornton rear limited-slip differential aided tyre grip in loose and slippery conditions, but an air-locking front diff is a worthwhile option.

Our test wasn't long enough to gain real-world fuel consumption figures, but EarthCruiser's own testing indicates consumption around 18L/100km at 100km/h average speed, dropping to 16.5L/100km at 80km/h average speed. In soft sand, consumption has worked out at 21L/100km, EarthCruiser says.

Electric power comes from four 100AH deep-cycle batteries, fed by the on-board charging system and three rooftop solar panels. There's also a 1800-watt inverter provided. All electrical functions are controlled from a marine-style single wall panel.

## Suspension seats fitted for no numb bums



axle track matches front track. Finally, the stock chairs were replaced by Stratos suspension-base seats.

The boys then turned their attention to the motorhome bodywork, which is fabricated in fibreglass, with integral internal modules to help stiffen the structure. The solid FRP roof raises and lowers on four electrically-powered rams and has a marine-grade vinyl gaiter to fill the space between the top of the FRP walls and the roof. This flexible-wall section is laminated with an insulation layer and fitted with meshed ventilation panels that have zippered rain covers. An electrically-operated staircase unfolds to provide side-door access.

Fitting a stiff body to a flexible truck chassis can cause cracking problems in both, unless the mating is done properly. The EarthCruiser body attaches to the chassis via coil-spring chassis mounts that allow a great deal of body/chassis movement. There's also a flexible gasket



between the cab rear wall and the front of the body.

Because the test vehicle was built on the short (2860mm) wheelbase Canter, it came with the smaller body package that features an across the rear double bed, shower and toilet module, diesel-powered ceramic cooktop, sink, 120-litre 12V fridge and a two-seat dinette that can convert to a single bed. The longer wheelbase version comes with three single beds or a double and single, plus two tables and more cupboard space.

In both versions it's possible to clamber inside without raising the roof, so a roadside lunch stop is easily done.

All this innovation and mobile home comfort doesn't come cheap; the haggling starts around \$180k. If that seems a lot, check out the quality and compare the EarthCruiser with the combined cost of buying, registering, insuring and running a large 4X4 wagon plus a top-shelf camper trailer or off-road caravan. **4OR**

## A flexible Canter chassis makes up for the minimal wheel travel available

