THE SHERPA STORY

Bauke Muntz and Harry van der Liende describe an innovative commuter bike's progress from concept to reality.

The story of the Sherpa begins in 1987, when Harry van der Liende, a professional maintenance mechanic, started building recumbents. He based his machines on the then relatively new Flevobike and Trike, and built several bikes over the years. Then in 1998 he, and many fellow recumbent riders, were treated to an extremely cold and wet winter. This was the last straw for Harry, and he decided it was time for a change. His musings led him to a half-covered long wheelbase recumbent with an enclosed transmission.

A second enthusiast with a similar idea was Bauke Muntz, designer and illustrator by profession. He had started building 'high and low' recumbents around 1993. His vision was of a bike with a pneumatically-operated mechanism to vary seat level and wheelbase to give two different riding positions, for in and out of town. And an aerodynamic luggage box between the wheels would give a low centre of gravity .

They both became members of the NVHPV, the Dutch Human Powered Vehicles Association, which is in effect a club for recumbent riders. The two men met at the annual 'Cycle Vision' event and got along very well, as they agreed on many aspects of the design.

A year later, the NVHPV asked them to participate in a jury for the 'Bike 2000 Design Competition', which had as its objective the 'ideal commuter bike'. The contest committee responded enthusiastically to Bauke's sketches and decided to use them for public relations purposes. To set a yardstick for the contestants, Harry and Bauke built the bike, which they had decided to call 'Sherpa' (the carrier).

In March 2000, the prototype was shown at the major Dutch cycle show, the FietsRAI. During the exhibition Bauke and Harry gathered feedback to measure interest, and found that they had struck a chord.

The Sherpa concept

The basic idea is to integrate all components within an attractive shaped body: scooters are built using the same principle. The main advantage of this 'coachwork' method is the opportunity it offers to enclose the chain, lighting and cables. An aerodynamic luggage box is also easy integrated into the basic design.

A normal derailleur was not an option since it has to fit inside the bodywork, so the Sherpa uses a custom-made gear shifter which also allows the rider to change gears when pedalling backwards. This is very convenient when it comes to starting off again after an emergency stop. The whole transmission unit is covered by a flexible polyethylene body which can be bent outward if maintenance is required.

The seat level/wheelbase variation system is controlled by a hydraulic/pneumatic gas-cylinder with a lockout device built in. The cylinder and the mono-stay rear 'fork' are joined by a rubber suspension block. The idea is simple: you need a high seat level and short wheelbase in the city and vice versa on the open road. The steering angle changes as you change the seat height, and 'tunes' the handling for each different riding mode.

Since every cyclist hates wet legs in the rain, the Sherpa is equipped with a custom-made transparent windscreen.

All electrical functions can be controlled from a dashboard on the handlebar. The prototype also had an LCD screen installed, linked to a closed video-circuit to give a clear view backwards, but this idea was not supported by the general public. The screen does however make it possible to have a GPS system and an internet connection on board!

Future plans

The Sherpa will be heavily modified and restyled according to the results of the feedback. In time, a small pre-production range will see the light of day, and after that it just depends on the demand.

Bauke and Harry have taken a third member into the team: Pieter de Jong, a well-known home-building colleague and also a good friend. He was the only entrant in the Bike 2000 Design Competition who presented a fully-functional enclosed drive unit. Pieter joined the NVHPV nine years ago and started building his own bikes two years later. A mechanical engineer by profession, he will work on the Sherpa's manufacturing process.

Could this 'perfect commuter' go into production? We certainly hope so!

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DOUBLE TAKE

A most unusual tandem intrigued David Black from Glasgow, UK, and he caught up with its creator to find out more

ABOVE Sarah Kenchington takes the back seat

RIGHT The tandem's double-decker pedals

BELOW The rear axle was the most difficult part to build

Glasgow isn't the sort of place where you expect to see odd bikes, but if you are going to spot any, the annual Glasgow Cyclefest is probably your best bet. I was standing watching the end of the folding bike race when two women cycled past.

"Oh look a tandem", I said to myself.

"Jings, it's a tandem tricycle!"

"It looks home made..."

"Hang on, it's only got one set of pedals and both people are pedalling! Eh?"

That cyclists look at other bikes is a fact of life, but for me the double-take potential of this tricycle sets it above all the high end super-bikes. Built from a collection of bike bits, this pedal creation has an old mountain bike at the front with a recumbent seat (an office chair?) at the back, and driver and passenger share the same set of cranks through a set of upstairs-downstairs, double-decker pedals.

Intrigued, I found out that the trike was made by Sarah Kenchington, a sculptor who lives and works on an old farm just outside Glasgow. Sarah has always cycled and about five years ago she had to pick up a friend's son from primary school. She went down with her folding shopper bike, and as he wanted to cycle home, dropped the saddle down to the frame and sat him on this. She sat on the luggage rack: this allowed her to pedal with the passenger safely held between her arms. He rested his feet on top of Sarah's feet and they both pedalled home. So was born the idea of the double pedals.

Sarah was intrigued by the possibilities that double-decker pedals offered, and decided to make a trike using them. As a sculptor Sarah has a range of metal working skills, so the idea of forging a bike held no fears. She had been looking round local bike shops and thought that recumbent bikes looked 'comfy' but very expensive.

Rather than build from scratch Sarah was interested in recycling other bike bits. As she explained:

"I'm a sculptor not an engineer, so I decided to make my bike from other bike bits. I welded up my rear axle from two bottom brackets but it was a bit squint. I was trying to invent a tandem back axle from pictures and got stumped. I spent a lot of time wandering round bike shops trying to figure out how to make it. Going to visit the bike display at the Glasgow Transport Museum was good because they have Tri-shaws that look as if they were welded together in someone's shed. It reminded me that one of the first bikes ever was made by Kirkpatrick McMillan, a Scottish blacksmith, so a metal-bashing sculptor fits in with that history. Also, the idea of recycling is used in real bikes – look at Graham Obree's washing-machine bearing bike – so this bike, strange as it is, can be seen as part of the continuum of cycling history."

It's a fun bike to ride and has a wonderful turning circle, as Sarah showed when she took part in the street parade later that day. Cycling with well-known Glasgow tricycle extrovert Colin Guthrie, the pairs' spins and wheelies were real crowd pleasers.

Sarah will continue to develop her bike. She aims to get the weight down and is hoping to make a better seat for the back and find a comfier saddle for the front.

"Most bikes are just the same things in different colours" she said, "I'm interested in looking at other things to do with tricycles. I've got this idea for building a giant music box out of an oil drum that would fit on the back..."