MEETING THE MAKERS

We're taking a break this issue from our visits to specialist dealers. Instead we're taking a look at the operations of the people who actually make the bikes we write about.

First up is a visit to the workshop of Mike Burrows, cycle designer, author and HPV racer. Based in Rackheath, near Norwich, his headquarters is packed with interesting items for any fan of cycle design and engineering.

Our second visit takes us to Cornwall and the factory of Inspired Cycle Engineering, whose recumbent trikes are now produced in considerable numbers, largely for export. Their operation is on an impressive scale, as you'll see.

As these are manufacturing facilities, rather than retail dealers, our usual advice to phone first and visit only by appointment is especially appropriate! We did, and were made wonderfully welcome…

Mike Burrows (left) with his latest recumbent, the Marmot.

In the main picture he's standing next to a 1942 Milwaukee milling machine: it was built in the same year that Mike was born.

Burrows Engineering

The Rackheath Industrial Estate on the outskirts of Norwich may not look like much to the everyday visitor, but for people who make things, it's close to perfection. Within the drab industrial units are specialists in pretty much every sort of engineering and manufacturing, all working within a sort of informal mini-economy of traded favours. Fitting in perfectly is Mike Burrows, who in his purpose-made workshop mixes odd 'favour-returning' jobs for his peers with creating some of the most striking human-powered designs on the planet.

His work has been rich pickings for *Velo Vision*, and our back issues have, I think, featured or reviewed just about everything he's done over the last decade and more. Among the highlights are the classic Windcheetah recumbent trike, for many years produced commercially by AVD in Manchester, the 'Lotus bike' on which Chris Boardman won an Olympic gold medal, and a series of 'Ratcatcher' recumbents. Other creations include the '2D' city bike and his 8 Freight workbike, a lightweight favourite for cycle couriers across the UK and beyond. In the '90s he worked for Giant, the world's largest cycle company, and with the TCR 'compact road' design he sparked a trend which has since become almost universal in racing bikes.

Mike's currently in talks with a (different) well-known manufacturer who are interested in producing and selling the 8-Freight, and possibly other bikes too. Last but not least he's also an author, and his book *Bicycle Design* is still a must-read for anyone seriously interested in making better bicycles.

Alongside the bikes Mike makes for sale, he develops at least one new race bike every year on which to participate in British Human Power Club racing. His latest 'Ratracer' machine with its distinctive red tail fairing was parked up inside, while Mike worked on some new hub-centre steering components.

The workshop where it all happens was purpose-built to Mike's specification. He wisely bought some bargain land on the trading estate many years ago, and when he was bought out of a successful packaging machinery operation

Mike's drawing board is on the well lit mezzanine first floor, alongside his collection of cycling art, artefacts and of course bikes.

he used the proceeds to set up the workshop on the plot.

The building is laid out on two levels; the ground floor is the workshop proper, with two milling machines, a lathe, large bandsaw, shelves of tooling and several workbenches. Various 'in progress' bikes are in evidence, and there are plenty of bike parts in storage bins, but this floor has been kept commendably clear of 'just too good to throw away' cycling clutter – which I know from my own experience is remarkably easy to build up after a few years of fiddling with bikes.

There's plenty to attract the eye of the mechanically-minded in the workshop. Mike's machinery ranges from a hefty Milwaukee milling machine dating back to the second world war, which he saved from scrappage for a few pounds, to the Harrison lathe bought new just a couple of years ago. Real workshop geeks can admire the rather special bench vice by the window – a Swiss-made Gressel – and time-saving touches like the rolling workstand with drill and cutters all set out for easy access.

But it's upstairs on the mezzanine first floor that Burrows fans and cycling historians will find the richest pickings. The walls are covered in cycling art and memorabilia – there's a 'museum' of odd and old bits on one windowsill, and the shelves are full of *objets d'art* gathered over the years from fellow designers and artists. I was flattered to find a pile of *Velo Vision*s on the corner of a cabinet, to hand for easy reference.

Overlooking the workshop are ranks of bikes, many Mike's own creations and many more mementos of his time working with Giant. On the end, balanced on a beam, is a fully-streamlined 'Mk 7' Windcheetah, similar to the one used by Andy Wilkinson when he sent a Lands End to John O'Groats speed record of just over 41 hours some years ago.

Mike isn't really a computer sort of person, and he lays out his designs on a splendid old drawing board, neatly placed to catch the light of the window. He also doesn't do emails or websites, either, although Bikefix in London do maintain pages about some of his bikes (which they also sell).

One reason for my visit was to drop off my vintage Russian recumbent trike with Mike for repair (of which more in a future issue). It joined a motley collection of current projects; a child's scooter needed attention for someone on the estate, and a Carry Freedom trailer was awaiting modification as another favour.

Development work was also continuing on Mike's latest recumbent, the 'Marmot'. It's a long-wheelbase recumbent designed for comfort and speed, avoiding the very small and lightly-loaded front wheel typical of this layout.

Spending some time with Mike while taking the pictures was as ever a pleasure, as we delved into his seemingly endless store of cycling anecdotes, engineering musings and ingenious ways of setting the world to rights, in cycling terms and beyond…

Even if you don't get to visit him yourself, I hope that this glimpse into his working environment gives some sense of the craftsmanship, sustained creativity and clear-headed design which has made Mike Burrows one of cycling's national treasures.

Burrows Engineering: Tel 01603 721700

Inspired Cycle Engineering

Blimey that's big! As you'll see when you turn the page, it's hard not to be impressed when you walk onto the ICE factory shop floor: it's a cavernous space in a huge industrial warehouse, with a sea of cardboard boxes testament to the sheer volume of work in hand.

Since they took over making the Trice recumbent trike from its original designer Peter Ross way back in 1999, Neil Selwood and Chris Parker have built the business steadily, and today it's a significant enterprise, selling many hundred trikes a year, largely to the USA and other overseas markets. But the long trek from York to Cornwall means that although we've reviewed many of their trikes over the years and met up at countless shows, this was my first visit to their headquarters just outside Falmouth.

They've moved a number of times over the years, trading up into ever larger units within the Tregoniggie Industrial Estate. For once, the panoramic pictures don't exaggerate the size. And not shown are spacious offices at the front of the building where the business admin, marketing and sales take place, plus also space for a photo studio, reception area, spares storage (with parts for older models going back to since the business started) and staff bike parking.

Nowadays ICE do still manufacture some parts in house, but the majority of parts for new trikes arrive as finished parts or sub-assemblies from various suppliers, in Taiwan and more locally. This explains the piles of boxes: batches arrive by the container-load and need easily accessible storage before they're built into trikes. The same applies to the masses of cycle components which are eventually built into the machines. Purchasing alone accounts for one of the full-time office staff: ensuring every component for every model is available when required isn't a trivial undertaking.

Some parts do need making or finishing, and various workstations are set up with jigs to carry out operations such as bending mudguard stays or cutting and flaring the ends of chain tubes.

Once the order is finalised in the office and the paperwork complete, the build process starts with the parts being picked from the warehouse onto a trolley. When everything's there it joins the queue for assembly.

Neil Selwood and Chris Parker (above) took over from original Trice designer Peter Ross in 1999, and since then have built the business to a substantial scale.