



MASTER CLASS

A bespoke, handmade bicycle is the pinnacle for many riders but there is a way to achieve an even more personal ownership experience. **Urban Cyclist** visits the frame-building course that helps you to make your dream bike from scratch

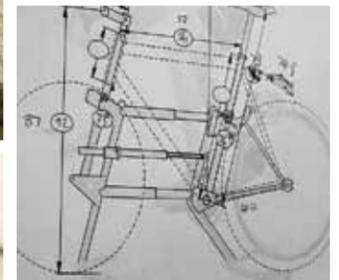
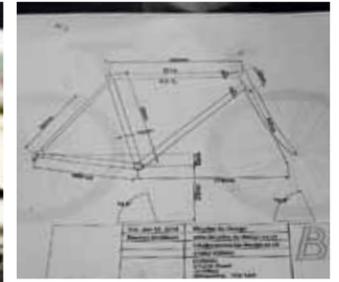
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Left Headtube lugs have to be positioned precisely and require some persuasion

Below Work begins with a lot of laborious cutting to get the tubeset sized



Above BikeCAD software is used to simulate the frame and calculate exact dimensions

Left All the measurements are dialled into the building jig

If you've ever assembled a bike from a pile of bits, or even just fitted a few upgrades, you'll know how satisfying it is to stand back and look at something that you had a hand in... and that maybe little bits of your hands are still stuck in. For some, that's merely one early step in a journey that leads them to seek out the most personal connection with their bike possible. After owning a bespoke frame, the only thing left to do is build a frame for yourself. That isn't feasible for most people - even those who can operate a blowtorch without soon after requiring the attendance of at least two of the emergency services - but there is a way.



We were recently invited to a frame building course at bespoke bike builders Swallow, and we were left captivated by the experience and its surprising accessibility.

Situated within the wonderful Ironbridge world heritage site in Shropshire, UK, is the workshop of Peter Bird and Robert Wade. Swallow have never offered a production run of any frame. Instead, their customers are involved in a lengthy and totally individual experience that offers everything an off-the-peg purchase cannot. Both men have been offering bespoke steel frames since the early 80s, giving them nearly 60 years of combined experience, and they are ideally placed to guide would-be frame builders on their first project.

The five-day courses are strictly one-to-one and are booked through to next summer, with people travelling from all over the UK to attend. The furthest anyone has travelled is from Sweden

and that particular customer has booked his second course so he can come back and build a frame using Columbus XCR stainless steel tubing which is much harder to work with.

BUILDING DREAMS

Peter Bird ran the UK's first frame building course in 1993. One of his first clients, Steve Mundie, now builds frames as a sideline to his day job and had a stand at the 2012 Bespoked Bristol show where the two bumped into each other and had the chance to catch up after nearly 20 years. In the meantime, Peter has taught and guided dozens of customers as they've built their dream bikes.

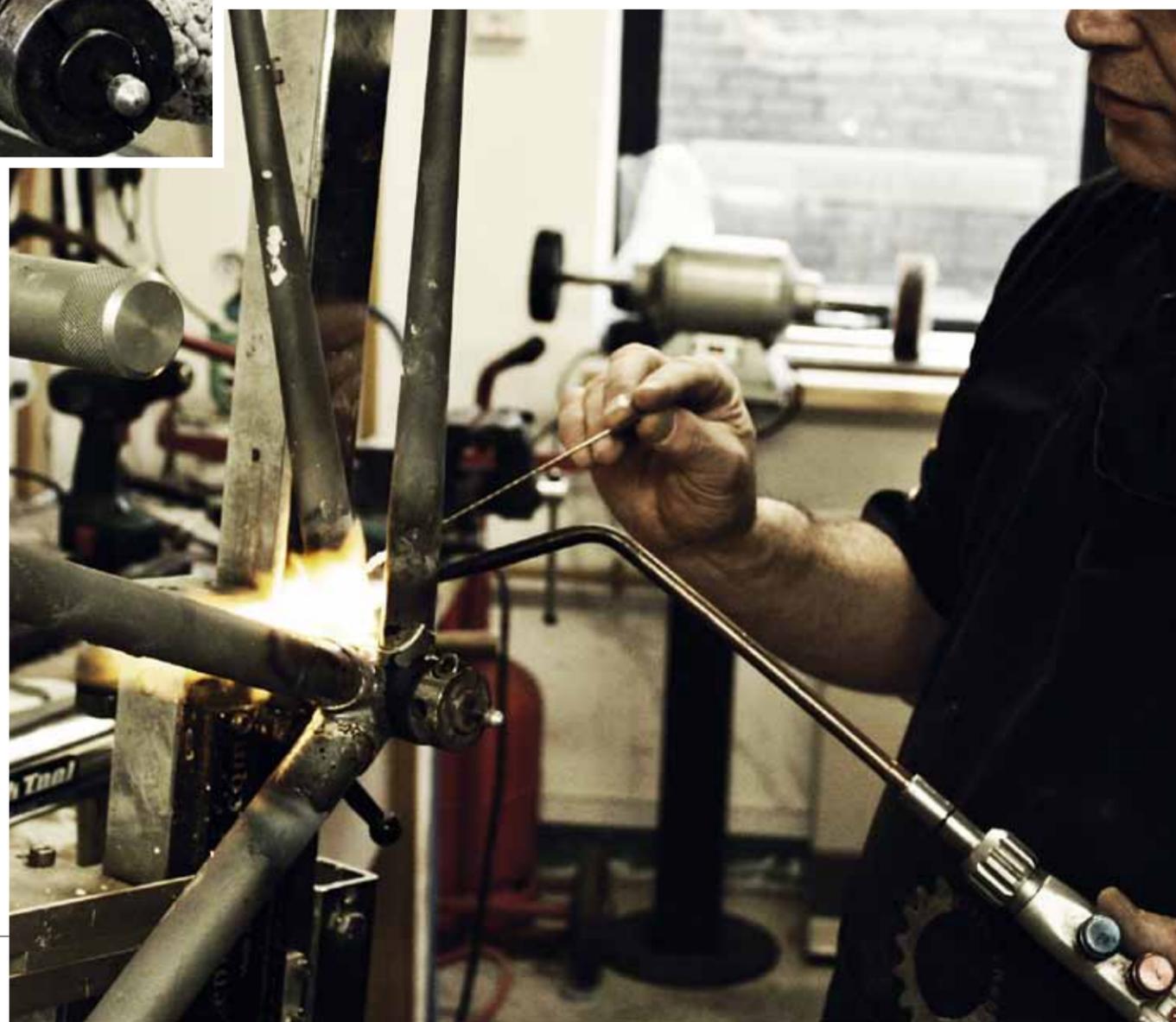
During our visit, we shadowed keen cyclist Blackett Ditchburn. He'd paid for a week-long frame building course with Peter and had set out to build an Italian-inspired, lugged steel racer. ☺





Right The lugs can be a tight fit and stubborn joints may need help from our favourite tool

Below After flux is applied and all the metal heated up, brass can be fed in



Top Peter checks that the lugs fit flush with the tubes while the frame takes shape in the jig

Left Brazing the intricate but crucial area behind the bottom bracket

He plans to ride the bike from Rome to London, and then on to his home in Buckinghamshire.

Buids on the course are subject to only a few limitations. All frames are subject to only a few limitations. All frames are subject to only a few limitations. All frames are subject to only a few limitations.

"We like to let people build whatever they want," Peter tells us. "We had one chap who built a replica World War 2 army bike, another built a frame with shaft drive... When we first started running the courses we built tricycles and recumbents, all sorts, but those builds are too complicated so now we stick to solo bikes."

GRAFTING

The customer benefits from the same attention to their personal requirements as when a bespoke frame is made for them. The course literally starts with a blank sheet of paper. At this point Peter listens, discusses and advises as they work out the customer's exact requirements together. In Blackett's case, it was decided that he would build a Columbus tubed road bike using attractive but not overly ornate lugs.

Once the type, style and material of the build has been agreed, Swallow use a Calfee Sizer bike to carry out a thorough fitting. More so than just about any other bike purchase imaginable, the

bikes made on these courses are frames for life, so they had better fit perfectly.

But all of that is the easy bit. We ask Peter, where do you begin to teach someone to build a bicycle frame? "The first thing I always do is tell people to rub their stomach, pat their head, stand on their right leg and rotate their left leg in an anti-clockwise direction. That's what brazing a frame is like... you're doing three things at once and they all have to be precise and coordinated. Then we start cutting..."

Five days doesn't sound like much time to build a frame, we point out. Has a frame ever remained unfinished at the end of the course? "We always get the frame finished in the five days," says Peter. "Occasionally we've had someone tell us that they're worried about finishing in time but the trick is to give the customer some early confidence by getting a lot done on the first day."

"I also tell them that we'll have the front triangle done by the end of the Wednesday. That gives them a goal to work towards and then hit which provides a boost when they might be flagging. It's a hard course. After three days some people are exhausted, mentally and physically. It takes a lot of concentration and, of course, some people aren't used to the manual labour that's involved."

"Most of the process is graft - cutting and filing. So long as they keep working it's okay. Sometimes I have to say to them that if we keep chatting ☹"



Left John Swallow's frame, fresh from the painters and ready to be built up



this much we won't get it done. We can talk, so long as we keep working. I really enjoy that level of personal engagement and getting to know each customer which is one reason why we keep the courses one-to-one. The main reason is that everyone has their own different aptitudes and existing skills and working one-to-one allows us to work around that."

Both Peter and Robert like their pupils be as hands-on as possible. All work is completed under supervision, so every cut, bit of filing and braze is carefully checked before moving on to the next step. That means that you can leave the course assured that your frame has been built to very exacting standards - good to know come the first high-speed descent.

Would it be possible for a customer to build another frame on their own after the course? "They don't leave as fully-fledged frame builders," explains Peter. "They're building with help. The course is half about gaining skills, half about the experience. If you could teach it in a week it wouldn't be considered such a craft. The skills they learn need a lot of practice. It's all about the flame and learning how the brass moves.

"People say to us 'You make it look easy' but it should look easy after 32 years! Frame building isn't a black art these days but it is complicated. There's a lot going on, a lot to get right. Fifty years ago, before modern frame jigs came along to hold everything in place, builders had even more to do at once. A few people still like to work jigless."

That sort of artisan skill is up with the freehand painting of coachlines and manual follow-focusing in action photography as a hallowed technique,

Right A very happy customer, John Swallow, with his finished frame at the end of the course

Below Krister Ljungberg subtly beautiful bike; he's planning a second visit to build in XCR



talked of reverentially and kept alive by a dedicated few for its own sake. Aspiring frame builders with an inclination to attempt jigless construction would be well advised to use some very cheap tubing and reserve a hanging space on the wall rather than a Campagnolo groupset for the resulting tangle of metal.

PAINT AND FINISH

Building your first frame in a week is demanding enough; it isn't possible for the customer to paint the frame too. When you last see your frame at the end of the course it looks decent but raw. "Many people are surprised at how much fettling

is needed," says Peter. "The customer does most of it, then we do a final fettle to prep it for painting. "We find out exactly what the customer wants and send the frame to Argos Cycles in Bristol. They know the standards we require and always do a great job. It takes between four and six weeks after the course for the frame to be ready."

It must be rewarding to witness customers seeing their finished bike for the first time, we suggest. "Absolutely," says Peter. "In fact, the most memorable project was a recent one, a chap called James Lees who actually had tears in his eyes when he first saw his frame after painting. The finish was inspired by his favourite Rapha jersey and an old VW that he'd restored. He'd struggled to picture the end result during the build and when he collected it he couldn't quite believe that he'd made such a beautiful bike. That was a really special one."

YOUR TURN

Five days of tuition on one of Swallow's frame building courses costs £850 and most builds require £200 to £300 in materials. See www.bicycles-by-design.co.uk for more information.

