



BIKE
TEST

BEST OF BRITISH

Feeling patriotic and fit? We test three iron-distance ready bikes from UK brands to find the best flag-flying race machine

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If you're looking for a super-fast long-distance racer and you have your heart set on buying British, then frankly, you have slim pickings. The frame building industry in the UK is thriving if you want a handmade steel bike for your Sunday best, but an aero carbon monocoque? Those are as rare as rocking horse poo. Even assembling this trio required some bending of the definition of a British bike.

Planet X has long been a pillar of the UK tri scene and it was where the company's founder, Dave Loughran,

cut his teeth in the industry. Value for money has always been central to Planet X and achieving it dictates that they look to Asia to source frames, wheels and components. That process is more advanced than simply buying blank frames and slapping on some decals; Planet X contributed to the design of this Exo3 and had the chance to wind tunnel and CFD test and approve prototypes but they don't make it.

Boardman Bikes, meanwhile, is practically a British institution. Founded by Olympic gold medallist Chris ▶

Boardman MBE, still British owned (by Halfords) and raced by many famous UK athletes (including the Brownlees until this season), Boardman is as British as afternoon tea. The bikes are designed and developed in the UK and this TTE, like the other aero models in the range, did time at the R J Mitchell wind tunnel. Yet the bikes still aren't made in the UK because doing so is expensive. Like Planet X, Boardman sell direct to consumers with value as a key factor, so like 99% of the bike industry they outsource manufacturing to Asia.

INTRODUCING REAP

There's actually just one carbon fibre tri bike that's 100% British – Reap. So new are Reap that frame numbers are barely into double digits and this radical beam bike doesn't yet have a model name. It goes without saying, then, that this is a world exclusive test. Reap was founded in 2015 by Martin Meir – a former elite triathlete in the '90s – when opportunity aligned for him to fulfil a dream to make his own bike and to do so in the UK.

As owner of an engineering company providing carbon composite services to automotive and military clients, and with staff from F1 and aerospace backgrounds, Meir had something of a headstart. Crucially, he knew the importance of assembling the right team. He enlisted design agency Quarterre and computational fluid dynamics experts TotalSim, who worked on the hugely successful UK Sport bikes for the 2008 and 2012 Olympics. Prototypes were tested at the University of Southampton and also in a velodrome by multiple national track champion Dan Bigham of WattShop. This three-way cross-referencing of aero data is rare and should ensure the bike delivers on

the road what it promises in a computer simulation.

The Reap is a tri-specific 'beam' bike, with no seat tube or seatstays, broadly similar in concept to the Dimond Brilliant we tested in issue 337 and to the old Zipp 2001 or Softride bikes. Unlike those bikes, the Reap is a one-piece carbon monocoque; it has a separate seatpost with a cap for minor adjustment and a clever wedge system at its base to provide 40mm of effective top tube adjustment, creating a virtual seat tube angle of up to 80°.

The front brake is hidden behind a magnetic cover, the rear is behind the bottom bracket, all the cables are run internally and the Di2 battery is mounted in the frame behind the faired-in front mech. In comparative testing, Reap say it eclipsed a Cervélo P5 Six in the velodrome and the wind tunnel, the latter across a full sweep of yaw angles and four different speeds. The frameset costs £4,500 and is made from exceptionally high grades of carbon fibre: Textreme and Toray M46J, which Reap tell us is six tiers above the Toray T700 commonly used in good bikes and three levels above the T1100 that's only used by a very small number of top-end brands such as Pinarello. Reap believe Cipollini is the only other brand using M46J.

This Reap is the new race bike of Brit pro Ironman Harry Wiltshire and is built to his spec with Rotor Q-Rings and an Infocrank power meter as deviations from the Shimano Dura-Ace Di2 groupset. The rapid wheelset combines deep Knight 95 clinchers with Vittoria Corsa Speed tyres; the saddle is our own. You can choose the spec, of course, though the cockpit options are dictated by the need for internal cabling. Reap are developing their own stem and also looking at other aerobars to avoid the oval extensions of this PRO Missile bar which limit accessory options, though they've made their own 3D-printed clamps to mount a Profile Design hydration system. The total build cost of this bike, not including the power meter, is around £9,500.

“The TTE 9.2 is as remarkably affordable as every bike to carry the Olympic hero's name”

OTHER BRIT BIKES

The only other carbon bike made in the UK is the new Dassi Interceptor road bike. The Interceptor uses the wonder material graphene to boost the properties of the carbon fibre, for a claimed weight of 750g for a 50cm frame. Complete bikes start at £5,995. Beyond the Dassi, UK options are legion if you want a handmade metal frame and there are carbon aero bikes from VO2, Ribble and Moda.

MAXIMISING AIRFOIL

The Planet X Exo3 costs less than half of the Reap, even after this bike's £205 of upgrades to a SRAM Red crankset and Prologo Zero TRI PAS saddle. For £4,204.99 you get SRAM Red eTap, plus a cockpit, rear disc and front five-spoke wheel from in-house brand Selcoff. It's potentially outrageous value, if it can go as good as it looks in this Team Carnac colour scheme.

When we first tested the Exo3 at the start of the year we criticised the use of SRAM Blips on the stubby extensions. While the latter remain oddly short on this test bike, we were pleased to see proper Clics fitted in the ends. At least you can change the extensions relatively easily and cheaply.

The Boardman TTE 9.2 is as remarkably affordable as pretty much every other bike to carry the Olympic hero's name. We're not suggesting that the quoted £5,999 is anything other than a large sum of money but what you get in return is impressive: this bike has the official Ultegra Di2 option, taking the 9.2 from £2,799 to £3,499, plus a rather less official upgrade to a Zipp combination of 808 NSW clincher front and Super-9 Disc clincher ▶



BOARDMAN TTE 9.2 £5,999 boardmanbikes.com



SPECIFICATION

Weight 9.01Kg
Frame Boardman TTE, C10 carbon
Fork Boardman T9 carbon
Gears Shimano Ultegra Di2 6870
Brakes TRP Integrated
Wheels Zipp 808 NSW front/ Super-9 Disc rear
Finishing kit ISM Adamo Road saddle; Boardman integrated carbon cockpit; Pro Missile bars

HIGHS

Super-quick and well finished racer with pedigree

LOWS

Compliance shown up by the Reap; Zipp's not official spec

BUY IF

If you want a bike that reflects years of R&D by cycling's top brains

93
%



rear. While the wheels aren't listed online, and this bike was built especially for our test, Boardman told us that you can spec them when ordering your bike. But when we phoned the sales line they knew nothing about it. Still, with Wiggle's current prices you can buy the wheels for £2,465, the 9.2 for £3,499, and get the stock Air Elite Five training wheels into the bargain for less than £6k, so it isn't exactly a scandal.

This trio of Brits have some shared features, such as hidden front brakes all round, but are more disparate than they are similar. The Boardman and Planet X are both UCI-legal and maximise their airfoil shapes within those regulations. Like the Reap, the Boardman's stem is integrated and its cables run internally, elements that make the Planet X appear dated and messy.

“Precise handling is an underrated metric for triathlon bikes”

Boardman say that it's largely thanks to these two changes that the TTE is 1:23mins faster than the original AirTT over 40km.

While the Reap's key aero features are visible from about 100m away, you have to get within about 100mm to spot that of the Boardman. The TTE has been around since 2013 but it hasn't been neglected and last year it was updated with trip tape on the fork, down tube and seat tube, the purpose to encourage laminar (smooth) airflow. Boardman say it's worth an average of six watts at 29mph in a sweep from -20 to +20° in the wind tunnel and that the sharp edges and optimum 1.25mm

PLANET X EXO3 £4,204 planetx.co.uk



SPECIFICATION

Weight 9.10kg
Frame Exocet3
 TT Tri Carbon
Fork Carbon
Gears Sram Red
 Etap 11-28t
Brakes TRP
 TTV09
Wheels Planet X/
 Selcoff Quin-
 spoke and carbon
 disc
Finishing kit
 Prologo Zero Tri
 PAS saddle; Tufo
 S33 Pro tubular
 tyres; Selcof
 Advanced Aero
 Design Bars

HIGHS

More affordable,
 good handling
 and fair comfort

LOWS

Slow tyres, poor
 wheels, unrefined
 frame

BUY IF

You want a good-
 looking,
 compliant bike
 with some decent
 spec

82
%

depth arrived at in development could only be achieved with the stick-on tape because moulding always rounds off the corners.

SHIFTING BATTLES

The two conventionally-framed bikes betray their TT leanings with their lack of storage options. Whereas our long-term test, Orbea's Ordu Ltd, is both UCI-legal and tri-friendly with an array of extra bosses, these two only have the standard positions inside the frame which are best eschewed in favour of aftermarket systems. The Reap displays its tri commitment by having no bottle bosses at all; Reap want you to use more aerobar- and saddle-mounted solutions.

Unusually for an aero bike test, all three offer really good braking. The Boardman's are the most neatly integrated but harder to access than the Reap's. We praised the Exo3's aggressively sprung V-brakes when we first tested it and this is just as good, although the cheap carbon rims feel a bit grabby when there's some temperature in the pads and, worse, adjusting the rear brake or changing the pads requires the crankset to come out. The Zipp's

slightly outperform the Knights for wet braking. The cheap Selcoff wheels in the Planet X are an unknown but with plain carbon brake tracks they are unlikely to give you that feeling of truly dropping anchor on wet roads.

Shifting is, once again, a battle between SRAM's eTap on the Planet X and Shimano's Di2 on the other two. Compared to our previous experiences, here the eTap Blip buttons were easier to use under the Exo3's thin bar tape and we experienced a lot fewer missed shifts but we still don't like the contrasting feel to the extension Clics nor the slower shift speed compared to Di2, however slight. The placement of the eTap 'Brain' on the extensions of the Planet X looks odd until you add a Garmin in front of it and the two line up neatly. It places lots of wires in the wind, though, and uses up cockpit real estate that could otherwise be carrying your drink.

WHERE RACES ARE WON

No more foreplay, it's time to get down to riding, and so to the key battlegrounds of handling, comfort and speed. Almost regardless of the

BUILD IT BRITISH

If you want the most Brit bike starting from a frameset, go for the UK-made Reap, fitted with Fabric's Tri saddle. USE design and assemble their aero bar in the UK, though it's made in Asia. US brand Enve make their rims at home but the aero design was done by Brit Simon Smart, which is loophole enough for us to ride our favourite wheels. The tyres and groupset you'll have to swallow, though you could use Middleburn chainrings.

other details, this is where tests – and races – are won and lost. Precise handling can be an underrated metric for tri bikes but its absence leads to a lack of confidence in the corners that will see you bleed seconds at every turn. Even if you're racing Ironman Arizona, with barely 40 corners in the bike leg's 180km, that's valuable time and just imagine how many junctions and roundabouts you negotiate on a typical UK course.

Happily, all three of these bikes steer with an accuracy that testifies to sturdy head tubes and torsionally robust forks. Unusually, they all lose a little at the cockpit: the Exo3's extensions are awkwardly short and those of the Boardman and Reap can move on their spacer stacks. The Reap's PRO bar is also less rigid than we'd like and it's something we'd set for an early upgrade.

When you get out of the saddle and hoof them, all three frames do a good job of transferring your power but with a hierarchy tangle, nonetheless. While the Planet X isn't inefficient, it feels less direct than the other two and also suffers from lateral flex in the fork blades and the weighty rear disc wheel ▶

REAP £9,500 (£4,500 FRAME) reapbikes.com



SPECIFICATION

Weight 9.4kg as tested
Frame One-piece carbon monocoque
Fork Carbon
Gears Shimano Dura-Ace Di2
Brakes TRP TTV RC; TRP T851
Wheels Knight 95 clinchers
Finishing kit Vittoria Corsa Speed tyres; Rotor Q-Ring cranks; PRO Missile bars

HIGHS

Searingly fast, soothingly comfortable, precise and customisable

LOWS

Spec and finish are still being polished. That price

BUY IF

You want a brilliantly engineered bike that's as British as it gets

The Boardman's frame is good, as are the high-end Zipp wheels, though its fork can also wag a little. Perhaps surprisingly, given that some 40% of its frame is missing, the Reap feels the most direct of the trio when you gas it; it feels like a very good conventional bike under power and it has the staunchest fork, too. It makes for a fun ride.

On that basis, what comes next is even more remarkable. The Planet X offers greater compliance than most TT bikes but compromises comfort with so-so pads and short extensions, and the Boardman goes some way to making up for a slightly firmer ride with its outstanding Cee Gees pads and ISM saddle. But the Reap is the most comfortable bike here by a long way. What's more, it achieves this on the exact same 23mm tyres as fitted to the Boardman. Reap tell us they worked very hard on the carbon lay-up to achieve this balance of power transfer and comfort to make sure you can run well off it. It paid off – there's a pronounced difference between what road noise you feel at the pedals and what reaches your hands and backside, and that's achieved by the frame.

“The Reap is the most comfortable bike here by a long way”

Judging the speed of bikes subjectively is very difficult... unless there's a marked difference. For a bike rolling on a disc and five-spoke with tubs, the Planet X felt slow on its first few rides versus the power going into it, a sensation underlined by jumping straight onto one of the other two. Suspecting the fairly cheap Tufo tyres might be to blame, we switched in a Mavic Comete rear disc and the Reap's Knight 95 front wheel. Immediately it felt faster – measurably so versus power output, teeth grindingly so to those who gave up Strava KOMs to its charge. But still, it didn't feel quite on par with the other two.

More so than their outright pace at max effort, it's the ease that both the Boardman and the Reap can cruise at 25mph that impresses. Both are truly stable and fast bikes for that 180km Iron bike leg. **220**



OVERALL VERDICT

It's tight at the top but the sensational Reap just edges the win for us. It isn't yet such a polished production piece as the slick Boardman, and you can argue that being barely out of its prototype nappies is no excuse, but the combination of its amazing comfort, speed and handling is irresistible. What's more, it's designed and manufactured in the UK, which is very special and what this test is all about.

The Boardman arguably represents an easier buying decision, given the lower price and the brand's scale, and we gladly recommend it. The spec of this bike is a bit cheeky but the TTE 9.2 is both affordable and vice free, so you can buy one without the Zips and upgrade it later.

It impressed us on our first ride last year, but the Planet X is left trailing in this test. While it doesn't do anything terribly, nor does it manage to do even one thing especially well. It's okay to ride and well priced but £4k is still a lot of money.