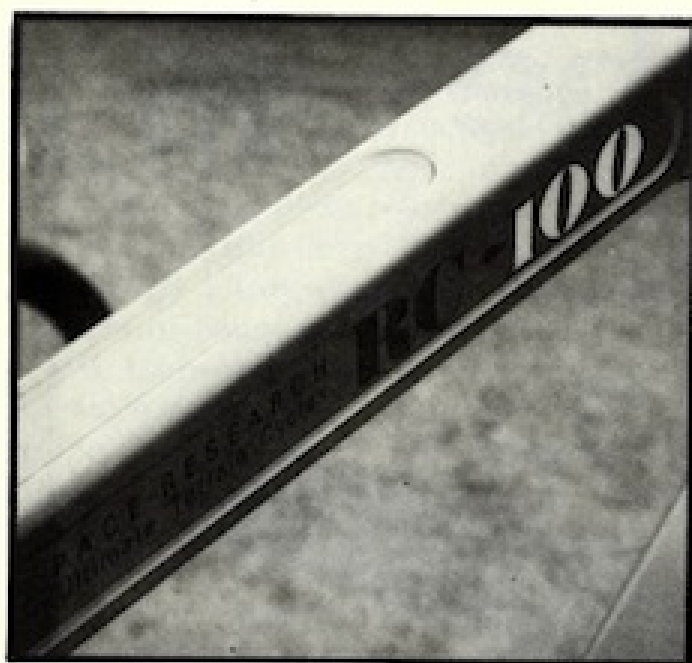


The Superbikes

MBUK scooptests the Pace Research RC100...

At £1500 the RC-100 is a machine most of us can only afford to ogle. But our thorough offroad test not only gives an inside look at the thinking behind state-of-the-art MTB design, but tests a bunch of topline components with the sort of rep that make them likely contenders for anyone planning to uprate a bike this year.





Pace Research is two guys : Adrian Carter and Duncan MacDonald who came to mountain biking from off-road motorcycling three years ago. Adrian (design and marketing) had some success racing MTBs and he and Duncan (engineering and production) soon got fed up with off-the-peg bikes and turned their talents to pushing back the limits of MTB performance. The *RC-100* is the result of two years work.

The MBUK Test Team (Northern Branch): JOHN STEVENSON, JAMIE CARR and BRANT RICHARDS, rode it hard in the Dalby Forest, North Yorkshire. Here is their report.

SQUARE TUBES

The first thing that leaps out at you is the unusual tubes. The *RC-100* has externally butted, *7000 series* rectangular tubes for the entire main frame except the head tube. This looks weird but works really well, the frame is light and stiff, weighing in at 3½ lbs for the main frame. *7000 series* is the strongest aluminium alloy available, allowing a very light weight frame. Currently the only other frame in this weight range is **Cannondale's 3 series** frame, most steel or aluminium frames are 1lb or so heavier.

The tubes are rectangular for good reason – most of the flexing forces in a bike frame are in the vertical and horizontal planes, there's very little torsional stress down the frame, so square tubes, which resist horizontal and vertical forces better for the same weight, make a lot of sense.

Since internally butted square tubes are not available. Duncan Macdonald mills cut-away butts into the outside of the tube, reducing weight where it's not needed and giving a distinctive, high-tech look. **Pace** used computer-assisted design to find out the best places to position the butts and made the interesting discovery that the head tube area needed the most beef and the seat cluster and rear triangle the least. They designed accordingly.

The welding on the *RC-100* is immaculate; clean, neat and uniform.

WHY STRAIGHT FORKS?

At speed conventional curved forks can produce excessive control-robbing flex. Correctly designed straight forks are stiffer and more precise with a slight trade off, in front-end comfort being an inevitable result. **Pace** use a 1½in **Reynolds 531** seat tube as a fork blade and braze in steel plate dropouts to give the fork offset. The blades are held at the top in a machined *7000 series* alloy fork crown which clamps both fork blades and the steerer tube, making replacement of crash-damaged fork components easy, and allowing **Pace** to tailor the fork blade to the rider by fitting lighter blades for lighter riders.

The steerer column is also the handle bar stem – doing more with less. The top headset race slides on from below to stop against a brazed-on ring. The steerer is then fitted to the frame and the headset adjusted by tightening a single 10mm bolt. Headset adjustment is a serious improvement over conventional designs. The headset came loose as it bedded in during our test and taking up the slack was a three minute job using just a 10mm spanner and an allen key to loosen the fork crown bolts.

WHAT BRAKES!

Magura hydro-stops from Germany do the stopping. When it comes to brakes most mountain bikers can't seem to get enough slowdown. Give us brakes that'll lock wheels at 30mph and we still want more. Why? Because a brake that has stacks of power needs less effort to control, leaving the rider to get on with riding, and reducing hand fatigue and the death-grip syndrome.

These **Maguras** have got stacks and stacks of stopping power. You can lock the rear wheel with one finger and the feel is firm and easily modulated. Braking power is related to how hard you squeeze the lever more than how far you pull it. This means you can set the pads a reasonable distance from the rim for mud clearance and not worry about bottoming out the levers. The front brake has a softer action than the rear to prevent impromptu nosedives but one of the test crew still nearly managed a face plant when he forgot to allow for the awesome brake power he had to hand. The complete brake assembly is also absolutely featherweight.

THE SPEC?

Top of the line, right *down* the line. **Pace** chose the best shifting derailleur system in **Shimano's** short arm **Deore XT II Hyperglide** set which delivers outrageously fast shifts even under full load. **Pace** also went to **Shimano** for the pedals – which are the light and

compact **Deore XT II** units and the headset, a modified *105*. With **Biopace HP** chainrings that's the full extent of the **Shimano** fittings on this bike.

In an era of totally **Shimano** equipped clone-mobiles **Pace Research** deserve kudos for not taking the easy option but finding the absolute best components they could get.

The pedals carry **Christophe's** mountain toeclips and straps. The clips are excellent, being a slightly better shape than the similar **Specialized** product and very tough. The straps were a pain in the neck. Maybe we got a bad sample, but they would not stay tight, whatever we did. We'd fit **Carradice** or **Specialized** straps for preference.

Powering the drivetrain are a set of very trick **Bullseye** cranks. These little beauts are our favourite crankset, they're the lightest available, as well as the stiffest. They're ridiculously easy to fit and maintain, particularly if you've a grease nipple fitted, as the *RC-100* has. Their box section shape looks *trés* cool. They definitely contributed to the bikes excellent drivetrain rigidity.

Our semi-prototype test bike used **Araya RM 20** rims, but production models will feature the latest **Mavic Energy M7** which promise to be stronger and lighter. Laced 32 hole with stainless steel spokes and alloy nipples the production wheels will be among the best you can get.

The bar is a new double-butt unit from **Renthal**, famed for their indestructible moto-cross bars. At 200g these are one of the lightest bars around and will be available separately from **Pace**, who will distribute them to dealers.

Grips are **Madison's** highly regarded **Grab-On Mtn-2** which provide a firm comfortable resting place for the hands. **Madison** also provided the tyres, **Ritchey Racing Kevlars**, and **Latex** inner tubes. **Pace** buyers will be able to specify their own choice of tyre. If you've got a need for a £1500 mountainbike you should know what your favourite tyres are!

The saddle is the increasingly popular **Selle Italia Turbo**. This seat is narrow enough to make getting your backside off the back dead easy. It's also light and comfortable. On a race machine it's an ideal choice. The saddle is mounted on a **Tioga** carbon seatpost. **Pace** aren't happy with this unit which is proving less than durable and plan to obtain the highly thought of **IRD** seatpost from the US.

Finishing touches include the use of alloy bolts right through the bike, and a tool and spares kit, including all the necessary bits to service the brakes. **Pace** will also supply a full workshop manual for the bike, taking the guesswork out of maintenance.

THE RIDE

Out on the trails is where a bike succeeds or fails, however great it looks on paper. The boys from **Pace** took us to the place where Adrian will be running this year's **Yorkshire MBC National**, a tiny corner of the trackless wastes of Dalby Forest.

We hammered the *RC 100* up and down forest tracks, bounced it over rocky paths, hopped logs ploughed through ditches full of fallen trees and generally gave it a hard time. Under maximum load the frame is very stiff, looking down at the bottom bracket there was no discernible flex as we hammered it uphill. This meant an instant response to power input. When you pushed on the pedals the bike went, no muss, no fuss, no flex.

The 11.95in bottom bracket, combined with the low profile pedals, gave plenty of ground clearance, without unduly compromising high speed stability. Jamie Carr felt that he'd like a bit more bottom bracket clearance, but the other testers felt it was well in the ball park for a production bike - very few riders need giraffes and high bottom bracket bikes are notoriously twitchy at speed, especially down very steep hills.

The combination of the 4in stem, 1.5in fork rake and 71 degree head angle gives an excellent balance of agile, precise low speed handling and high-speed stability. The bike has a light responsive feel which comes from the combination of the steering geometry and its 24.5lb all-up weight. We felt that a bike this size with a 23.1in top tube should have a longer, flatter stem than the one fitted. This would transfer more rider weight to the front wheel and improve high speed cornering and climbing. **Pace** buyers can specify stem shape and we'd probably fit a flat 5in or 6in stem if it was our bike.

Uphill the short 16.5in chainstays and 74 degree seat tube put plenty of load on the rear wheel, maintaining all-important traction. Part of the bike's excellent climbing performance was undoubtedly due to its stiff drivetrain and chainstays. The *RC-100* uses a special over-width bottom bracket shell to allow the short back end and increase rigidity. It has the shortest chainstays of any aluminium bike and the use of a wide shell and square chainstays gives it one of the largest tyre clearances around.

At the end of the chainstays are the most massive dropouts on any aluminium frame around. The wheel pulls rearwards out of the bike, so that there is a continuous 12mm thick plate filling the space between the axle and rear mech, giving a totally indestructible assembly where alloy frames are often weak.

We slammed the **Pace** hard into a few corners and felt that the tyres were slightly letting down its performance in this category. Since tyres are dead easy



to change at point of sale we'd go for *Ground Control S's* which are still the test crew's fave competition tyre.

Over jolting surfaces the forks felt slightly harsh, but those fitted to our bike were thicker than those that will be fitted to production models. Correct tube choice is vital to the performance of straight blade forks and the light gauge forks which production models will carry will be more resilient.

We could find no fault with the rest of the spec, the *Hyperglide* performed faultlessly and the ultra powerful brakes were a major boon, reducing hand fatigue and providing tool control in all conditions. At 23½in the bar width was spot on, though we'd have liked a longer, flatter stem.

The overall feel of the machine is light, precise and nimble. The impression is of a bike which has been thoroughly thought out, where every detail of construction and equipment has been examined and improved, where possible, to extract the last ounce of performance. There are no gimmicks, no bizarre cable routings or wishbone seatstays just sound, innovative engineering from a base of extensive real off-road riding.

The **Pace Research RC 100** represents the current state of the art in mountainbike design and is a machine which must be on the shortlist of best buys for the dedicated mountainbiker who wants to own an original machine and for whom price is no object.



1. The men behind the bikes. Adrian Carter (in the purple) and Duncan Macdonald.

2. Magura Hydro-stop brakes offer outrageous stopping power.

3. The unique fork assembly is machined from solid alloy. The fork blades and steerer clamp into the crown for an easily repaired and bullet proof arrangement.

4. Reversed seat lug stops mud entering down rear slot.

5. Light and stiff, the American-made Bullseye cranks are the trickiest units made.