THERE BE... LIGHT!

Are lighter bikes the answer and, if so, what's the question? The experts built a few for us to test, then we got STEVE BEHR to shoot first – and BRANT RICHARDS to ask questions afterwards

How much does your bike weigh? My first, bought seven years ago, weighed 32lbs. And that was considered light. My current bike weighs 9lbs less, is five times stronger and has front suspension. It's quite incredible. At this rate, in 18 years time mountain bikes will weigh nothing at all. Cool!

Some people say the weight of a bike doesn't matter... rubbish. Dep Ed Stevenson's bike weighs loads, about 26lbs or something, 'cause of all the stuff he's got on it. Mine is lean and svelte and stripped down to the bone.

Why? It's all about styles of riding. John enjoys extended trips into the hills, out of the way of civilisation. Me? Well, I rarely ride for more than two hours, and when I do it's fast and hard and big all the time. If you like, mine's a BMX, John's is a cruiser.

That doesn't mean that you can't cruise on a light bike. It's just that when the weight begins to drop below 24lbs, or so, the bike gets to feel like it's alive. It kicks, leaps and bounds, is great fun and can do incredible things. But the trade off is that it needs a firm, well-trained hand every now and then. You can easily get yourself into big trouble with a super-light bike... especially with suspension!

Those who have heavy bikes will tell you that light bikes are no good. They say they break. They say they're too hard to ride. They say it's not the bike, it's the rider. Yeah, right... and like size isn't important either!

As the most weight-conscious member of the MBUK regulars, I felt I ought to show you some of the stuff that's out there ready to lighten your load. After all, I'm the guy with a set of gram accurate scales in my garage for checking those bike bits on.

Here is a group of four gravity-defying bikes specially put together for you to drool over.

Pace RC-200 Works

If you're dad complains about not being able to park his car in the garage because of bike bits, tell him it's even cooler to turn it into a complete manufacturing shop. In his, Duncan MacDonald has tricked out a really lightweight bike just to see how far he can go.

Frame

Starting with regular **Pace** tubing, Duncan machined extra metal from the sides of the tube to get further weight savings. I guess this could be done on a production frame, but the extra time spent on the milling machine would cost the customer far more. It's impressive the lengths that Duncan's gone to on this frame. Even the chainstay bridges and the sides of the monostay are machined to save some weight. If you want your bike to really lose weight, you've got to

Drool, drool – all this and purple too! This is Duncan's personal Pace RC-200 and you can almost hear it purr

Right: those cutaways in full – although there's also a version with holes right through it that is even more extreme

Right: take to the trail and you soon find yourself taking to the air – with a bike as light as the Pace you can't help it

be obsessive! Duncan has also customised the frame. Because the bike is so light he has tried a new geometry. By putting one inch into the top tube length, and taking an inch out of the stem reach, the bike has the same pilot compartment, but is a lot less twitchy.

Stem

Yikes! An incredibly cool **Pace** stem graces the front end, all hand machined by Duncan in his workshop. There are a couple of models of this stem around, one with holes right through, and this one with a 3mm web in the centre adding some extra strength. With a front clamp, this is no knee-knocker.

Forks

MMC aluminium tubes are used to lighten the fork. These have the **MMC** tubes, and also the '94 internals, giving incredibly smooth performance. Jealous? All these bits are upgradable from the '93 forks, so don't panic. The action is far more progressive than the previous forks and when you land it feels like you've got a really big tyre on.

Wheels

Pace prototype carbon hubs have been seen around before, on their proto-bikes and also on one of the **Merlin** show bikes. They aren't going to be released as a unit, but certain features may make it on to the market. Duncan has been experimenting with front hub designs, to remove a lot of the flex from the forks. Though *RC-35s* are some of the stiffest forks around, any reduction in steering flex must be a good thing. These hubs feature an extended spacer which fits into the dropout slot below the axle, giving some extra support.

Saddle and post

A super-light **Selle** *Italia Carbon Flite* graces the top of an *American Classic* seatpost. Lighter posts are available, but most use a shim system, which Duncan isn't happy about in terms of strength. The carbon saddle looked uncomfortable, but wasn't as bad as we'd feared.

SPD's

Shimano's Spuds aren't the lightest pedals around, but for high performance riding they're essential. Duncan shaved quite a bit of weight off them by fitting titanium axles and machining away some of the tabs at the sides. A grease nipple is also fitted to allow easy maintenance.

Other bits

Pace bars hold machined-down *SS-5* levers, *XT* thumbies and **Renthal** grips. Wheels are **Campag** *Atek* rims with super light **Ritchey** *Z Max* 1.7's. The brakes are mine!.**On One** *Ex-L*[b] cantilevers. The block is a super light **Regina** *Aluminium*.

The ride

Duncan's bike is an absolute riot to ride on a cross country circuit – it just hammers. The wheels are super light, and the bike gets up to speed incredibly fast. Because of the light weight, it seems undergeared – it's so easy to go really fast.

It's a blast, and it was only the thought of stacking so much money worried me when I rode it. "I'll rip your arms out if anything happens to it", said Duncan.

5 swaps to lose weight

1. The tyres
2. The handlebars
3. The saddle and seatpost
4. The stem
5. Your wallet

Stif/Orange Project Ti Light

Stif aren't quite my local bike shop, but the guys are so cool, and their stock of bits so good, if anyone could build a superlight production scoot then it had to be them. Working from a new **Orange** *Vitamin T* frame, with various hand-picked goodies and much **SRP** titanium abuse, the first bike weighed a scary 20lbs! The boys were a little surprised at the outcome, because this ain't no rigid bike, it's got front suspension too. They took it along to the first BMBF NPS round –and some guy bought it.

Shucks! They had to go back and do it again. This time they'd sold out of **Pace** *RC-35 AB* forks (again!) and so they decided to go all out and build a stupidly light *rigid* bike.

Steering

The same *Vitamin T* frameset, but now with **Orange** *Aluminium* forks, held in with a **Mongo** headset; *Stif* aren't convinced about the merits of **Aheadset** systems – they say they can't get the parts. And **Syncros** co-sponsor the **Stif** team, so it seemed sensible to use their light but incredibly strong parts like Ti bars, and the fantastic titanium *Pro Post*. **Orange** grips capped the bars off, with *XTR* levers with aluminium

Right: This Orange really is, and really belongs to Paul of Stif who kindly let us borrow his dream-bike

Left: Brant helps himself to some big air on the Stif/Orange Project Ti light bike

Here's the Project Ti's Cook Bros Racing crank and the Pace chainring

The £1,000 bargain bike still isn't short of class and even the bolts are beautifully finished

Left: the front hub is a Hope titanium instead of the more usually supplied XC Expert...

Right: ... Pace forks don't get supplied with 'cheap' bikes either, OK?

bolts. Yes, I know *SS-5*s are lighter, but we didn't have any at the time.

Drive

The fantastic **Cook Bros Racing** *RSR* cranks spun around on a **Royce** bottom bracket, with **Pace** rings holding the chain tight, via a **Pace** chainring bolt kit. The bike came with **MKS** *Microclaw* pedals, to help keep the weight down, but we switched them for SPD's to ride in.

Hoops

Wheels were a combo of *XTR* and **Hope** titanium hubs with titanium **SRP** axles, **Campag** *Atek* 32-hole rims, double-butted spokes and alloy nipples. Lightweight **IRC** *Geoclaws* were fitted, but I don't like 'em Theyre OK on tarmac but they don't grip in remotely sticky stuff.

Upgrades

As for the rest of the *XTR* groupset, various bits were adorned with **SRP** upgraded goodies. Front and rear cantilevers had a total titanium upgrade, with **SRP** pad holders, clamp bolts and pivot bolts. The rear mech had titanium jockey wheel bolts, hanger bolts, pivots bolt, and cable clamp bolts. The front mech got aluminium cable clamp bolts and nut, and steel cable hanger bolts were replaced with aluminiums. The weight? 20.2lb!

Ride

The light weight of the *Vit* was cool. It's boss man Paul's own scoot, and he likes it set up with a tight headset and narrow bars, but we'd spec a shorter stem, smoother running headset and wider bars. It jumped pretty well, and the front brake action was much improved with a rocker system. **Stif** are the only folks on the planet who can set **Pace** rockers up properly. It works for them but probably isn't worth the hassle for you. And it weighs more.

Stif/Orange £1,000 bargain light

Based around an **Orange** *Prestige* bike, with *XC Expert*, John and the other workshop rats at *Stif* built a beauty down to a price. We've got a $1,000 bike with front suspension that weighs 24lbs! The *XC Expert* is a

Left: the mighty (light) Merlin, in fact the bike that got this whole idea started

Right: The Merlin's bars are MTB Cycletech carbon fibre. Much lighter than this you cannot get, Squire

Brant provides his own purple, the bike rides itself... and no, you can't get titanium ball bearings – yet

good place to start as it weighs 25.5lbs at stock with its nifty **Tange** *Ultralite Prestige* frame, and there are a heap of bits that can be changed easily.

Component changes

The tyres were switched to *Hardpack* 1.5's – very hot at the moment. Aluminium nipples in the rims, but standard skewers through the hubs hack off even more weight, and the front *XC Expert* hub was swapped for a **Hope** titanium. **Pace's** cheap (for titanium) chainring bolt kit takes grams off the boltset when coupled with judicious use of **Venhill** *Lightening* aluminium bolts in suitable areas.

We added an **Orange** titanium and treated the bottom bracket to a **Royce** unit, with **SRP** crank bolts.

Ride

For a £1,000 bike (which is cheap by these standards) the **Orange** gives a great ride. Park it next to a **Cannondale** and you start wondering about the strength of your tubes, but out on the trail, those doubts disappear. Plenty rapido acceleration due to the light wheelset, and comfy-womfy performance with the **Paces**. Whatever your standards, call **Stif** and get them to quote you for a price per pound.

5 reasons why a light bike is bad

1) All your friends want to ride it
2) It blows away in a stiff breeze
3) It will cost you loads
4) You can never ride a heavy bike again without moaning
5) Hey, it's not the bike, it's the rider... (huh!)

Project Merlin

This is the bike that started the whole idea, a superlight suspended **Merlin** tricked out by the Swiss team mechanic. The drawback is, it's packed with loads of bits that you can't get easily in this country. Make sure you keep the makers' names and numbers just in case.

Frame

Merlin frames are some of the finest around, weighing in at around 3.5lb. Heavy *Mag 21s* are bolted on to this superlight frame. We do love the forks' ride, but no – they aren't lightweights. We can cope. A **White Industries'** *Tracker* suspension hub is clamped between the dropouts to keep things straight.

Drivetrain

A **Tune** bottom bracket keeps the *XTR* cranks spinning, and though all the rest of the drive train is bog-standard old *XTR*, weight is saved throughout with a **Tune** aluminium bolt set. Titaniumed Spuds, hold your feet in place.

Controls

Bars and stem are one cool area, with **Cycletech** carbon bars, and an incredibly funky **Ibis** titanium stem. These really are a sight to behold, one of the coolest bits of pipework going. Clamped in place were some lightened *XTR* shifters, and **Grab On** grips.

The bar ends got lost in the post, thus reducing the weight even further – clever, huh?

Wheels

Running on **Ritchey** *Force Comp* tyres held on nice, round and light **Bontrager** hoops. double-butted spokes (of course) and alloy nipples kept things tight. At the rear a super-light **Tune** skewer held everything in place. And titanium axles were complemented by some **Tune** titanium ball bearings

Ride

We'd heard great things about the **Merlin's** weight, and were a little disappointed when it weighed in at 22lbs. But this was soon forgotten when we rode the baby.

It's a great bike, sprinting on the climbs and incredibly sure-footed on the descents. We've never been convinced of the merits of suspension on soft-ride titanium frames, but the new **Merlins** are far stiffer than those of old, and this means a frame that supports the suspension forks, rather than working against them. Great bike.

Do I need a 20lb dream-bike?

The key word is need. You *want* one, sure – but need? No way. You'd have to be at least a semi-pro to justify one of these as a 'need'

But mountain biking is plenty of fun even with a 30lb rigid bike. It doesn't make the hills any flatter (OK it helps), it doesn't make the sky bluer, the weather warmer or the downhills more radical. In the words of the great Mister Herbold: "Shut up and ride!"