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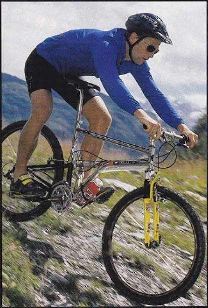
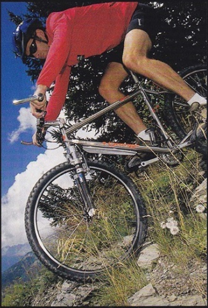




Oran

are not the only fruit

This month, some pithy comments about suspension from Steve Worland to help you choose between three of Orange's juicier models...

The bikes we chose

Choosing bikes for each month's MTB Pro test is tough at the best of times. All the manufacturers and distributors want to get their bikes tested and, with the idea of the test process being to offer you a reasonable assessment of the choices you're likely to encounter in your local specialist dealer, it's rare that we can offer any one brand more than two test slots in a year. It's difficult to compare differences in materials or groupsets, though, when you're testing bikes from different manufacturers. So this month's rather unusual test was inspired by a letter from Russell Vann who wanted an Orange, but couldn't decide whether to go for steel, alu or full suspension.

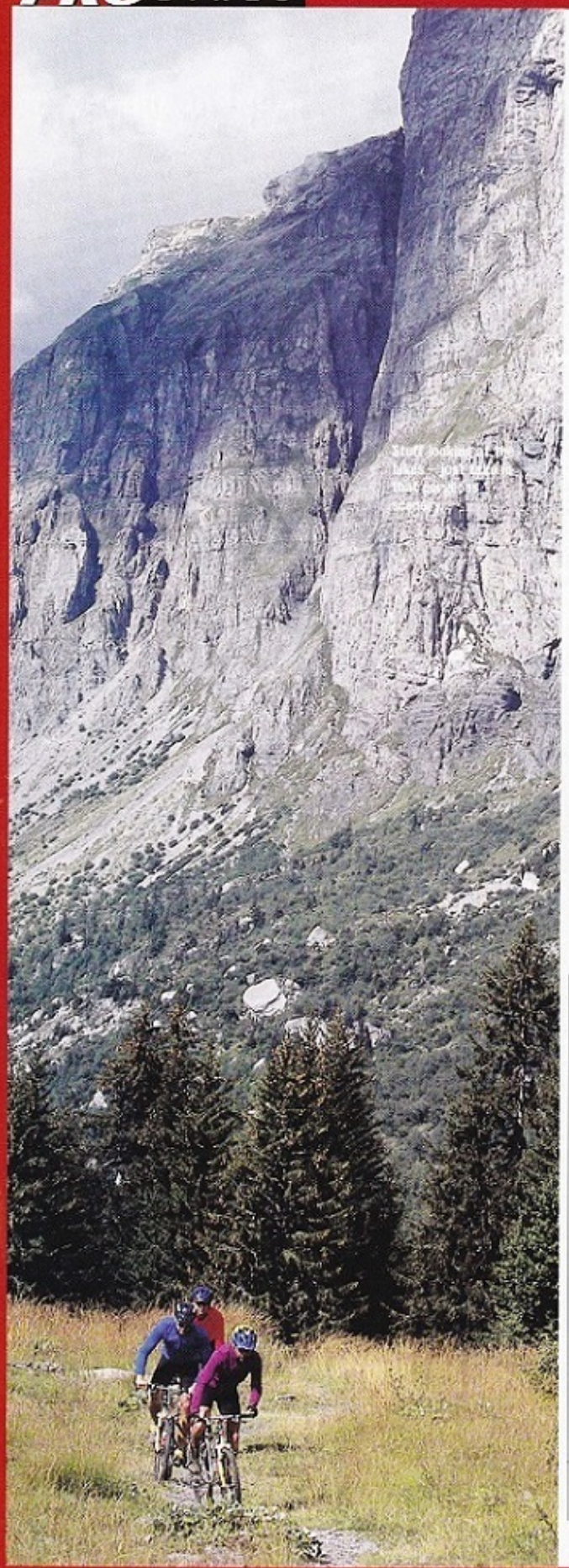
"Which is a better bike to go for, the E3 or P7? Or if my budget can stretch, is the X1 for normal people or just for loonies?" he asked.

We seem to get more reader's letters asking us which Orange they should buy than for any other brand. But this dilemma could easily apply to most manufacturers.

How we test bikes

Our resident mechanic, Cullen, strips down all the test bikes to their underwear and puts everything on the scales. While they're vulnerable, all the bits are given the once-over for potential problems. Frame alignment and wheel-build quality is checked and joins are inspected. Our test team, a continually changing rabble of riders ranging from hardened trail gurus to absolute beginners, ride the bikes until we've collectively decided what to think. That usually takes about a month.

Orange



Photography Steve Behr/STOCKFILE

A few years ago, a suspension fork was a luxury option. Now, if you want a bit of comfort and damage limitation, it's regarded as an essential and the big marketeers are trying to steer you towards a full suspension option. Confused about what to buy? We certainly are. We plucked a price point from one of Chipps' old Bula hats and got one of the UK's most popular MTB makers to send us three bikes – a steel and an alu hardtail, and a full suspension. With all three at around £1,200, which offers the best deal?

Despite all the buzz and the draw of the downhill scene, the real market for downhill-only full suspension bikes is a relatively small one. Once you've discounted all the sponsored racers and the show-purposes-only bikes, full price annual sales for the top-dog specialist machines can be counted on the fishy fingers of a solitary pack of Captain Birdseye. But sales of all-rounder full suspension bikes, the ones that can confidently handle the uphills, are growing fast and there'll be more than ever on the cross-country race circuit and elsewhere in '97.

Once you've topped the £700 mark, most MTB manufacturers can offer you a choice of a classy chromoly-framed front suspension bike, a slightly downgraded alu-framed hardtail bike or an even more downgraded full suspension bike at any given price point. As both frame and groupset technology improve in leaps and bounds, those downgrades are becoming less relevant than previously and the bike choices are becoming harder to make.

Weight is often the deciding factor because no one knows what else to compare – inevitably, the full bounce options will be heavier, but there's a lot more to it than that. Only a few years ago everyone was moaning about the weight of suspension forks, and now look where we are. Cross-country racers may not yet be using full bounce in their droves, but then cross-country racers are a conservative and traditionally cynical bunch; they're much more obsessed with sheer speed than average riders and they possess well-toughened hides, so the comfort element of the full bounce approach is no big deal.

We've been thinking about doing this test for quite a while now – since the start of '94, actually – when front suspension bikes first started to make a small dent on the market. Pro-flex were the first to present a serious challenge to the presumption of the hardtail bike for all-round riding. They have been joined by almost everyone else and the learning curve is levelling. Much of this month's test was carried out in vaguely scientific terms. We didn't get into breathing masks, heart monitors or stress gauges but we did monitor our rider's times for each bike over a couple of challenging circuits. We're not going to claim that the results are conclusive, because stuff like hangovers and prejudices got in the way, but there's lots of food for thought here.

In the workshop

The Orange tree

Compared to the likes of Trek, Marin, Specialized, Raleigh et al, Orange are but a tiny pip in the blossoming MTB family tree. They've been making bikes for just over a decade now, and their popularity in the UK is based mainly on the fact that they've always supported grass-roots racing.

Their directors and staff are as likely to be seen on the race course as their pro riders. Their team spreads across all categories and disciplines, seeming more like an extended working family, so it's no big surprise that their MTB designs are always bang up to date and as varied as the needs of their riders.

Orange manufacture their frames in Taiwan then assemble in the UK, giving dealers and riders a wide selection of groupset and custom choices for each frame in the range.

With off-the-peg bikes ranging from £559 to £2,580, there's no shortage of options. You'll find 26 'standard' models to choose from, plus colour and fork choices.

We plumped for £1,200 as a guide price because that's about where a choice between front and full bounce starts to get interesting.

The bikes we chose are the chromoly steel P7, LX group, equipped with a Pace MXCD fork; the aluminium E3 with a STX RC group and a Rock Shox Quadra 21R fork; and the full bounce X1 Expert with a

The luxury of a full suspension frame usually means a compromise in other areas of the bike. Here, the X1 has cheaper forks and components to keep it at the £1,200 tag.

STX RC/LX/Gripshift group mix and a Quadra 21R fork.

Frames

When you're limited by a budget ceiling, and let's face it most of us are, you'll have to choose your area of compromise. At around £1,200, the steel frame approach of the P7 will let you fit an excellent suspension fork and a classy groupset. In Orange's case, the cost-cutting effect of steel is extended to their X1 suspension frame. A complete X1 Expert LX/STX RC bike costs a little less than a superlight aluminium E3 hardtail with STX RC. Immediately, you start to get confused by the trade-offs.

First, let's look at frame weights. Weight will never tell the whole story but initially, it creates the biggest stumbling-block when you start to consider the full suspension options. Downhill, any extra frame weight is all but irrelevant; if anything, a heavier frame, like a heavier rim or tyre, feels more stable. Uphill, extra weight has to be driven by your body. A few extra pounds can be a real drag. On the flat you have to weigh up the pros and cons of the stabilising influence of more weight versus the reduced effort required for less weight. Lob rear suspension into the equation and it's a whole new ball game, because the way a frame deals with the terrain is far more important than how far it pushes the needle up the scales. The mechanics of softtails are complex. There's no easy answer and there is no way of generalising, because there are too many variables. We never really know whether we're moving towards or away from a solution at any given time. So weight is of debatable relevance.

With all that said, we still weighed the frames because we know you want us to. The E3 is 3lb 10oz, the P7 is about a pound more and the X1 is, er, quite a bit more – 7lb 10oz to be exact, which is more than many of its full suspension price opposition. Weights vary a bit with size.

The P7 is Orange's top chromoly frame. If you're considering steel, you could consider opting for the slightly less costly C16 with a Deore XT group. Many riders prefer the more

We've not heard a bad word about the Strata Shock yet.

New, snazzy white SRT 600s from Gripshift, paired with decent Tektros.

compliant ride of a C16. Orange built the P7 in response to the demands of riders who were nervous about the super-light skinny tubes of an average Tange Prestige frame. The P7 is beefed up a bit in its tube diameters, and since Orange made this move, a few other manufacturers have followed suit. P stands for Prestige, as in Tange Prestige. 7 refers to the fact that this is a seventh generation Prestige tubed frame in the O range. The P7 is promoted as the sporting rider's light steel frame, suitable for hard play time or racing. It should last you a while but if you do manage to break it, the workability of steel allows an easy repair by any competent metal-worker.

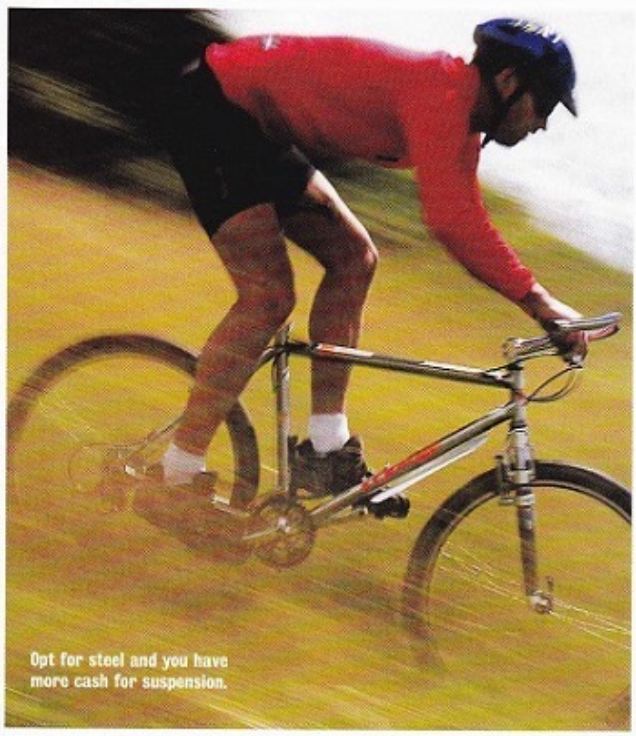
The E3 is the third generation of Orange's Elite alu frames. It uses 7005 butted tubes to achieve a combination of low weight, stiffness in tracking and acceleration and a degree of comfort over rugged terrain that most riders find surprising for an aluminium frame. Like the P7, it also features a wishbone seatstay configuration and loads of space for big tyres. The head tube is ring reinforced and there's a shock-spreading gusset behind the head tube underneath the down tube.

Alu frames tend to be popular among racers because of their low weight and fast drive power, but there's always a trade-off in comfort and durability. You will probably run bigger treads on the E3 than you would on a P7, and you can not really expect a lifetime of carefree thrills on an alu frame. If you stack, alu tubes are more troublesome than steel to repair back to their former glory. With that in mind, the E3 has a bolted gear hanger, but that may not be

Photography Steve Behr/STOCKFILE

Component details

		Orange P7	Orange E3	Orange X1
Details	Price	£1,248	£1,229	£1,179
	Weight	11.92kilos - 26.48lb	11.37kilos - 25.26lb	13.1kilos - 29.1lb
	Distributor	Orange 01768 890700	Orange 01768 890700	Orange 01768 890700
Frameset	Frame	Series 8 Micro Butted Chromoly (2,100g - 4lb 10.5oz)	7005 Butted Aluminium (1,630g - 3lb 10oz)	X1 Full Suspension Chromoly (3,440g - 7lb 10oz)
	Forks	Pace MXCD Suspension (1,427g)	Rock Shox Quadra 21R (1490g)	Rock Shox Quadra 21R (1,490g)
	Headset	Logic Aheadset (136g)	Ritchey Logic Aheadset (136g)	Ritchey Logic Aheadset (136g)
Transmission	Crankset	Shimano 96 Deore LX 22,32,42 (718g)	Shimano STX RC 22,32,42 (735g)	Shimano 96 Deore STX RC 22,32,42 (735g)
	Derailleurs	Shimano 96 Deore LX (rear 292g, front 123g)	Shimano STX RC (rear 295g, front 132g)	Shimano 96 Deore LX (rear 292g, front 123g)
	Shifters	Shimano Deore LX 97 Rapidfire Separates (129g)	Shimano STX RC Rapidfire Plus (337g)	Gripshift SRT600 (152g pr)
	Freewheel	Shimano Deore LX 11-28 8 Speed	Shimano STX RC 11-28 7 Speed	Shimano Deore LX 11-28 8 Speed
	Chain	Shimano (285g)	Shimano	Shimano (285g)
	Pedals	Orange by VP (576g pr with clips & straps)	Orange by VP (576g with clips & straps)	Orange by VP (576g pr with clips & straps)
	Bottom bracket	Shimano UN52 Cartridge (318g)	Shimano UN52 Cartridge (318g)	Shimano UN52 Cartridge (318g)
Wheels/Tyres	Hubs	Shimano Deore LX	Shimano STX RC	Shimano Deore LX
	Rims	FIR eyeletted	FIR	FIR eyeletted
	Spokes	32 DT Revolution Stainless	DT Revolution Stainless	32 DT Revolution Stainless
	Wheel weight	Front 813g; rear 1,419g	Front 835g; rear 1,345g	Front 828g; rear 1,390g
	Tyres/tubes	Ritchey 1.9in Alfa Bite front (641g); Omega Bite rear (680g)/Butyl (155g)	Ritchey Z Max 2.1in SC (715g) Butyl (155g)	Ritchey 1.9in Alfa Bite front (639g); Omega Bite rear (622g) / Butyl (155g)
Brakes	Brakes	Shimano M600 V-brake (196g pr)	Shimano/Tektro mix (183g pr)	Shimano/Tektro mix (183g pr)
	Brakelevers	Shimano Servo Wave M600 (196g pr)	Shimano STX RC Combi	Tektro
Fine detail	Handlebars	Orange Hot Rod 22in (152g)	Orange Hot Rod 22in (163g)	Orange Hot Rod 22in (152g)
	Stem	Orange SK9 130mm (192g)	Orange SK9 115mm (181g)	Orange SK9 130mm (192g)
	Bar ends	Orange (96g pr)	Orange (91g)	None
	Grips	Foam	Foam	Gripshift
	Saddle	Ritchey Vector (300g)	Ritchey Vector (300g)	Ritchey Vector (300g)
	Seatpost	Orange Chromoly 320mm (202g)	Orange Chromoly 360mm (265g)	Orange Chromoly 360mm (265g)
	Seatbolt	Allen	Allen	Allen
Geometry		Listed size 19in • Bottom bracket to top of top tube 17.75in • Standover height 30.5in • Head angle 71.5 degrees nominal • Seat angle 71° nominal • Top tube length 23in • Wheelbase 41.5in	Listed size 19in • BB to top of top tube 17.5in • Standover height 31in • Head angle 69° nominal • Seat angle 70° nominal • Top tube length 22.75in • Wheelbase 42in • Rear end 16.5in • BB height 11.5in	Medium (18in) • BB to top of top tube 17.75in • Standover height 31.25in • Head angle 69° nominal • Seat angle 73° nominal • Top tube length 23in • Wheelbase 42.25in• Rear end 16.25in • BB height 13in



Opt for steel and you have more cash for suspension.

enough if you're a clumsy bugger. It has no mudguard mounts, while the P7 does, but both frames have Crudcatcher eyelets.

The X1 is the new kid on the block, and a radical departure as far as Orange are concerned. The fact that Orange co-director Steve Wade has been racing (and beating me) in some of the Vets National Series cross-country races on the X1 says much for its potential. It's a unified rear triangle frame (the whole drivetrain is on the swingarm) so there is no direct pedal-related suspension feedback. The suspension motion comes from bumps and, to a lesser extent, from weight shifts during the pedal motion. You will find you learn to pedal in smoother circles when you ride full bounce.

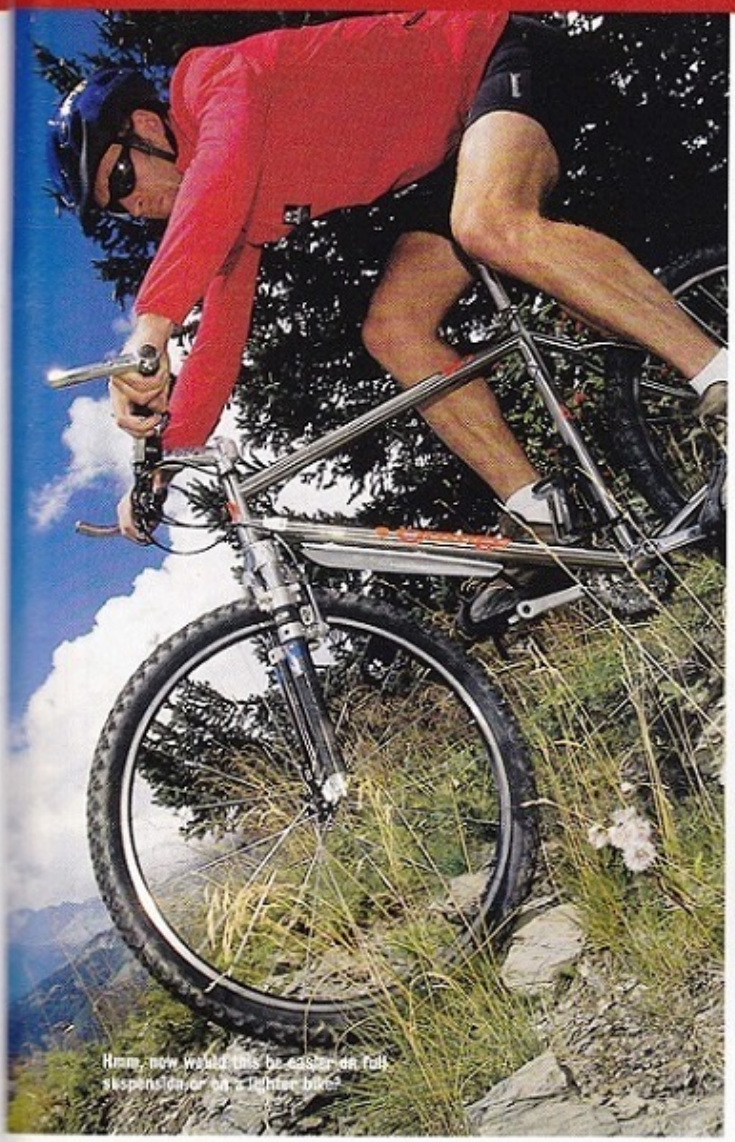
Opinion is split about the pros and cons of unified rear triangle designs. The approach, oft referred to as a 'floating drivetrain', overcomes many of the moans that established hardtailers have about softtails. Some unified bikes (higher pivot ones) almost lock out when you stand, because most of your body weight is on the swingarm rather than on the sprung mass of the frame. The X1, with its pivot closer to the bottom bracket, remains active when you stand, but still less so than if you sit.

The X1 Expert comes with a Strata shock and offers about 4in of rear wheel travel. Our chromed frame, one of the first production bikes, was not very well finished. Rust had already started to bubble up around the shock mount welds after only a couple of weeks, and the bottom of the seat tube was open ended and roughly finished, with a single bottle boss still left from the tube's original purpose.

Fitting a bottle is often a problem on full suspension frames. On the X1, a single bottle fits (very inconveniently) under the down tube. We had to use a strap to keep the bottle in the cage.

Up-front

Fork choice is as crucial as frame choice these days, and often almost as



On the trails

Groupsets

With the mix and match approach to groupsets dominating production bikes these days, it's good to see that Orange stick to almost complete groups, although you can choose Gripshift if you want. Standard spec on the X1 Expert for '97 will include Gripshift shifters and ESP mechs. Inevitably, if you're limited by budget, a more costly frame will mean a less costly groupset. The P7 is the best equipped, specing a full Deore LX group but, in all honesty, there's no functional disadvantage in the STX RC approach of the E3, or in the mixed approach of the X1 Expert.

The only differences that we'd consider relevant are that the LX groupset offers an eighth sprocket on the cassette and the crankset is lighter. But with 8-speed cassettes and new V-brakes creeping down the range in '97, the differences between STX, LX and even XT are becoming increasingly superficial. Our test bikes have a mix of '96 and '97 group parts – Orange tell us they'll be fitting V-brakes to all '97 bikes. A more up market drivetrain is slightly harder wearing and a few ounces lighter but there's really not much else to choose between them.

Detail

All of Orange's wheels are hand-built, and reliably well built, so there is really not much to choose between the hoops on the P7, the E3 and the X1. All boast DT Swiss spokes and FIR hard anodised eyeletted rims, and most Orange dealers will be happy to fit the tyres of your choice.

The rest of the finishing kit is also pretty much the same on all their bikes. Their own-branded Hot Rod bars (22in), height adjustable or front loader stems (you have a choice of height because Orange fit three spacers to Aheadsets), bar ends, seats and posts are all reasonable in quality and lightweight, although the weights of some apparently identical parts do vary. No one found the saddles particularly comfortable and one of them squeaked intolerably. SPD type pedals are an upgrade assumption on £1,200 bikes; Orange fit reasonable units with clips and straps to start.

Trail manners

So to the big question. Which bike rides best? Inevitably, the question spawns an offspring of related questions. What sort of rider are you? In what order do you value the attributes of durability, speed, image, fun, value for money and comfort? And why do you want to spend £1,200 on a bike in the first place when something cheaper might do? Answering all the questions might help the decision process, but how can you sort out all the marketing chaff of a company like Orange from the wheat of real-time experience? That's where we step in. We spent three weeks with the P7, the E3 and the X1, including a week in the Alps where we put in about 150 off road miles on each bike. Here are our impressions...

P7 versus E3

We'll compare the rides of the P7 and the E3 directly, simply because this is the more obvious head to head battle of the test, and the more confusing one to sort through. The P7 is a bit different to the 'classic' steel MTB in that it's stiffer than most. You'll notice this if you have a chance to compare it to the C16. The less compliant character of the P7 frame, compared to the cheaper C16 (there's £100 price difference in frame and fork packages) makes it a top choice for racer types because it feels fast, and somehow lighter than its actual weight suggests. The downside of that is slightly less comfort over the bumps than a C16, although the Pace fork obviously shuns the discomfort at the front.

The weight of the P7 is about a pound more than the E3 but the majority of our test riders say they prefer the approach of the P7 to the E3 because it feels 'more animated'. Some begged to differ.

'Animated' is a word that often seems to crop up in test riders' descriptions of quality steel frames. While aluminium frames appear to absorb trail vibration through the metal of the tubes alone (because alu is softer than steel), good chromoly steel frames are more absorbent as a complete structure. Alu frames cannot afford to be overtly flexible as a structure because alu fatigues ➥

Wot, no V-brakes? You've got to cut some corners if you want aluminium.

The P7 features Shimano's 600 series V-brakes and levers.

costly. The immediate advantage of opting for a P7 is that you can choose a top fork with the money saved elsewhere. Our P7 comes with Pace's MXCD, a Rolls Royce of the cross-country fork market. You can save a few ounces and spend another £35 on the more compact shorter travel MXC, but we suspect many riders will be initially tempted by the 60mm travel option or a price equivalent like the Rock Shox Judy XC.

To keep the price of an E3 or X1 to £1,200, you'll have to settle for the Rock Shox Quadra 21R, or a similar fork. The 21R still offers good suspension action, and the travel is the same as the Pace MXCD, but the steering accuracy is not as good, weight is a little higher, build quality is inferior and there are less parts independently available if problems occur. The '97 Rock Shox Indys look a better bet, especially the SL which comes in a long travel (75mm) version that may better suit the X1.

Photography Steve Behr/STOCKFILE

A British bike built to race a brooding sky

Bar ends, seatposts and saddle are of the 'reasonable but not special' family

OK, I'll try it on the aluminium bike and see if it's any better. At least the sun glints nicely off the tubes and makes my tanned legs look even more rugged.

and eventually breaks if it's subjected to constant 'flexing'. So, all those words like springy, resilient, supple, whippy and even irrepressible come out to play. And, of course, none of them are truly representative of what's really happening with a steel frame, just as the much-used 'soft' or 'compliant' are not accurate ways of describing the feel of an alu frame. But it's a question of getting the image across; the complex mechanical figures about the characteristics of 7005 alu versus Tange Prestige steel are baffling compared to the words that a rider will come up with.

So, here goes. The P7 offers a tight and lively ride feel, a bit less forgiving than chromoly frames of the skinnier tubed variety but is still a little less harsh than the E3. This is where it gets confusing. The E3 is a much less harsh frame than many other 7005 alu frames we've tested. We think that's mainly down to the wishbone seatstay design, but we're not sure. The E3 just seems to absorb and disperse the trail vibrations far more effectively than many alu frames, so it's a fairly comfortable bike to ride, having a lot in common with the top (and more expensive) offerings from the Easton tube stable.

In theory, Orange have got their geometry as well sorted as any other manufacturer out there. They tell us that they stick to the same formula across the board, but our workshop geometry measurements do not bear that out, even if making allowances for different fork lengths and tyre sizes. Still, steering characteristics are confident, at times inspiring, at both low and high speeds on the E3 and the P7.

A couple of riders did question the presumed advantages of the longer travel on the Pace MXCD fork. On the P7 (the same could apply to any other hardtail bike) we think the lighter weight and short travel of Pace's MXC fork would be more suited to the frame and the ride style of the average cross-country rider. The big move towards long travel forks for '97 is convincing for the full suspension approach but we're still in two minds about the advantages of increasing front travel on a hardtail. The MXCD's 60mm is acceptable, but any more can create extremes of frame geometry in certain situations, like big drop-offs, where the fork compresses fully and the head angle starts to become steep enough to challenge steering stability.

Comparing the E3 with the P7 on climbs, especially climbs of the technical variety, the E3 feels sharper in response to rapid acceleration, but the front end of the P7 handles more technically challenging terrain and sudden direction shifts better. That is more a function of the fork than of the bike as a whole, and the '97 Rock Shox Indy forks do promise more direct steering than '96 Quadras. On fast descents, the E3 feels a bit more nervous than the P7, and it's also less

Shot of the P7, showing the rack mounts and 600 series V-brakes.

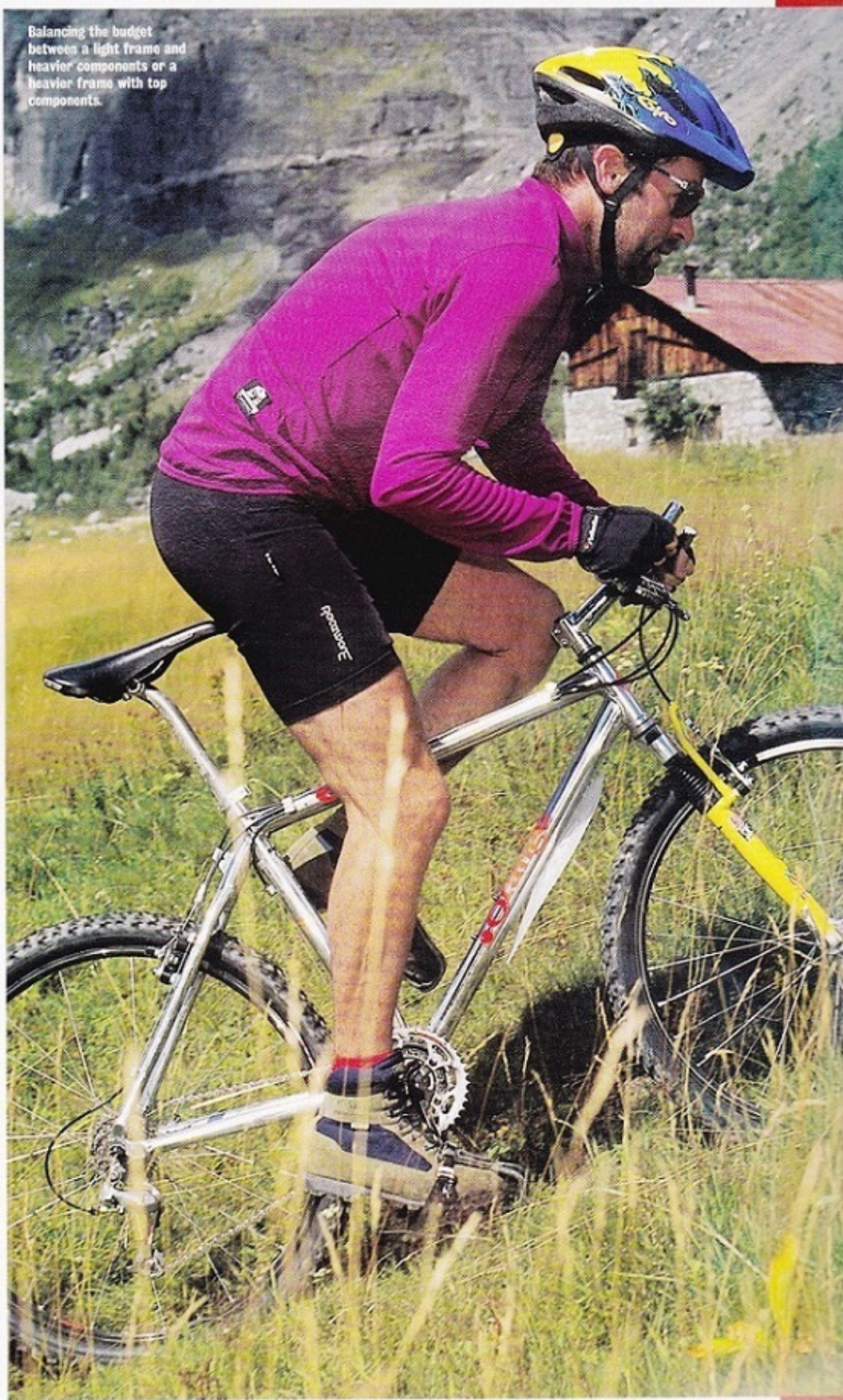
forgiving over bumps, a function of the fork as well as the frame, but the bigger treads of the E3 do improve comfort (and shock absorption, and traction) slightly.

The X1

For some stuff, a dual suspension bike is a prerequisite. For some stuff, it's almost necessary. For some stuff, it's just fun. For some stuff, it's neither a prerequisite, necessary nor fun. Learning about full bounce is not really about understanding pivot points, or even the pros and cons of multiple linkages versus a single pivot unified rear triangle. It's about finding out whether the sort of riding you do needs, or is more fun with a bike with bounce at both ends. In order to decide that, you need to ride several bikes with bounce at both ends to find out which one, or which approach, suits you. Lots of shops offer open days and test rides. Take up their offers, but also bear in mind that it can take several rides to get used to a full bounce bike. We'd even go as far as saying that there are many things that you need to re-learn to get the best out of the dual suspension approach. Don't judge purely on rumour and first musings.

The X1 is a heavy bike, heavier than many full bounce bikes, even at this price. Orange's use of steel is the main culprit. Most of the best full bounce bikes use aluminium because you don't really need the inherent tube flexibility of steel tubes when bumps are being processed through independent shock absorbing units, front and rear. Orange have probably used steel because it's cheaper. At the £1,200 price point, the X1 is among the best equipped softtail bikes on the market.

There's a common assumption that a full suspension bike will



Balancing the budget between a light frame and heavier components or a heavier frame with top components.

What's the betting that they're not discussing frame materials, but what shape of pasta to have when they get back home? Steve opts for the little bow tie shapes.

Bustin' ass on a downslope, the pain of the climb is forgotten and the rush of the descent begins.

be much faster on the downs and much slower on the ups. That assumption is responsible for a steaming heap of misgivings that can narrow minds. The first thing you notice on the X1 is that there are times when it gets you uphill faster than a hardtail. The long steady smoother climbs are certainly a drag, but that's more a function of the weight burden than the suspension action. The revelation is on shorter, more technical climbs that tend to come on rolling singletrack. You can really pound over this stuff, allowing the back end to do all the traction and drive work that, on a hardtail, is often hindered by the skipping about over the bumps that forces you to ease pedalling.

The downside of the X1, as on most full bounce bikes, is on tight slow technical stuff. It wallows. Rigid bikes are usually better for the trialsy stuff. Front suspension bikes are second best. A characteristic of unified rear triangle designs, and other full suspension designs to a lesser degree, is their tendency to dive forward slightly when you brake (the rear shock extends, the front compresses and the bike wallows and rocks away from its ideal handling geometry). At speed, there's enough stuff happening in quick succession to create a compensatory reaction, but if you're riding slowly through technical terrain, the fine handling balance that's necessary for hops and sharp turns is upset.

Comparisons

Because the X1 is inherently more comfortable, forgiving and chuckable than either the P7 or the E3, it's a big fun bike over short fast radical terrain. But on longer rides, you feel that extra 3-4 pounds of weight. We used three riders for our two test circuits. For three days (every second day, to help balance the variables) and in unchanged terrain conditions, each rider rode a time trial on both circuits, using a different bike each day. On our first timed circuit, four miles of fast but rolling technical single track, the X1 was always faster, with the E3 and P7 almost dead equal. On our other course, twice around a two mile hilly circuit, the E3 took the advantage shortly followed by the P7, with the X1 losing out enough on the single 400 metre climb to make catching up on the singletrack and the downhill nigh on impossible.

Towards the end of the three week test period, we repeated the challenge. Almost inevitably, all three riders recorded improved times on both circuits because they had spent more time with the bikes. The interesting thing was that the rider who had spent more time with the X1 improved his times far more radically, coming close to his hardtail time for the hillier circuit. The consensus was that it takes a while to learn how to get the best out of the X1 but, in the long run, you learn to maximise its trail-taming ability to the point where you can haul in the time you lose on the climbs.

MOUNTAIN BIKE Pro Verdict

With a steel and an alu hardtail, and a full suspension to choose from, at around £1,200 apiece, which offers the best deal?

How much does speed matter to you? Of our three riders, two are cross-country racers who care (often obsessively) about speed advantage, the other is a casual rider who appreciates speed thrills on the downs but can't really be bothered to hammer on the ups. All riders warmed to the X1, but all expressed reservations. If you're having a good day, the X1 can feel great. If you're hungry or just plain dog-tired, the X1 feels sluggish on the ups and you'll long for the 25lbs of the E3.

For the past year or so in tests, we've said that you can drag two to three pounds of extra weight around on a good softtail without getting dropped by the hardtails. You'll probably feel less tired at the end of a ride, too. The three to four pound handicap of the X1 is borderline. If you want a big terrain pounder, go for it, but be aware that its durability has not yet been conclusively proven (and watch that chrome plating). If you're wary of the extra hill effort, or you just prefer the uncluttered simplicity or slower speed manoeuvrability of a hardtail, it's a close call between the E3 and the P7. Most of our test team said they'd go for the better componentry of the P7, and all said they'd prefer the X1 as a second bike rather than their only machine.

Ratings

	Orange	Orange	Orange
Frame	P7	E3	X1
Design	90%	85%	80%
Detail	85%	85%	70%
Finish	80%	90%	65%
Fork Specification	100%	80%	80%
Function	95%	85%	85%
Transmission			
Specification	90%	75%	80%
Function	95%	90%	85%
Brakes			
Specification	95%	80%	80%
Function	100%	80%	80%
Wheels			
Wheel Spec	95%	95%	95%
Tyre Spec	90%	95%	90%
Build	100%	100%	100%
Fine Detail			
Specification	90%	90%	90%
Function	85%	85%	85%
Handling			
Fast downhill	85%	80%	95%
Technical downhill	85%	85%	85%
Fast uphill	90%	95%	75%
Technical uphill	90%	90%	85%
Singletrack general	90%	85%	85%
Cross country general	90%	90%	85%
Overall			
Weight	90%	95%	75%
Value for money	85%	80%	80%
Comfort	90%	85%	95%
Performance	90%	85%	85%

The other contenders

It has become increasingly obvious that the competition between hardtail and softtail machines at any given price point is close. The fact that Orange have launched their X1 Expert bike at £1,200, the price of their two most popular race bikes, is no coincidence. Of the '97 ranges we've seen to date, each has a softtail bike close to that price.

Of the others we've seen, Trek, Cannondale, Specialized, Marin and GT all offer highlights around that price. Even the sub grand market was starting to look competitive in '96, with bikes like the Pro-flex Attack making their mark against the hardtail opposition. Expect that to hot up further in '97, and look out for Kona's new stable. There's always going to be a few pounds weight gain on the softtail options but, as the designs and functions have improved, the weight gain has become less of a burden.

Think carefully about the sort of riding you favour before you choose between hard- and softtails. Read through our thoughts on the Oranges again and apply them to other marques. If the bikes are well designed, the general principles remain the same.