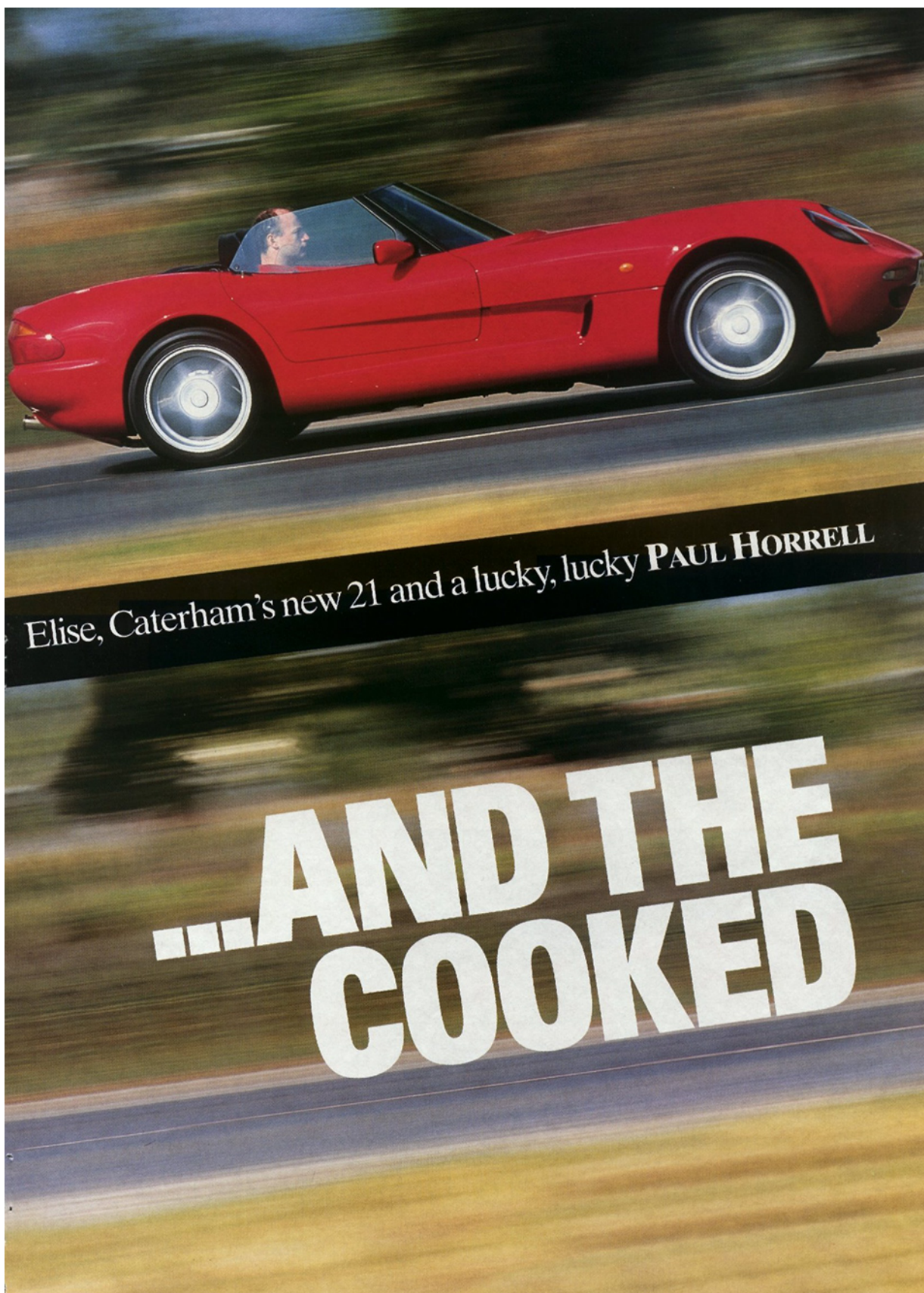


THE RAW...

Hot tarmac, the crisp clear air of the Peak District, a Lotus





Elise, Caterham's new 21 and a lucky, lucky **PAUL HORRELL**

**...AND THE
COOKED**

Caterham C-21 v Lotus Elise

REMEMBER THE MORGAN Plus Four Plus and the Lotus Seven S4? Or the Volkswagen type 3 1500 come to that, or even the Mini Clubman? Cars the world forgot. It can be a fraught business giving an old but loved vehicle a modish new body. Caterham Cars owner (and ex-Lotus employee) Graham Nearn knows this as well as anybody; having taken over the rights to build the Lotus Seven, he promptly and wisely reverted to the familiar S3 bodywork. Still, if you've watched it go wrong before, you are in a better position to make sure it goes right the second time.

Hence the 21. Putting a new body onto the Seven chassis has given Caterham a handy opportunity to, shall we say, hone certain facets of the Seven's character. A Seven has a hood-down drag coefficient of 0.76. A 21, also hood-down, can claim 0.42. A Seven has enough luggage room for a light bag that's been on a weight-loss course. A 21 can carry suitcases. A 21 has internally adjustable door mirrors, a tiltable steering column and a boot that shuts merely by pressing a lid, rather than popping half-a-dozen press studs. But it isn't a Seven run to flab. The sheer intensity of the driving experience is very much intact. To negotiate a twisting, narrow country road still asks for less time and offers more fun than you could possibly imagine. And it's still just as hard to climb out at the other end. With the roof erect, as with the Seven, the easiest way out appears to be with forceps or by Caesarean section.

The decision to do the 21 was made at the end of 1993 by Graham Nearn and Caterham's technical director Jez Coates, the man responsible for the Seven's current pitch of development. Coates had wanted to do such a car for ages: 'It's everyone's dream, to do their own car.' But he adds that they were prompted into action by requests from potential Seven

buyers for more luggage space in their Sevens, and a 'proper' body. Nearn says the Caterham business could easily have been left in aspic, continuing to churn out an unchanged Seven in steady numbers.

'It would have seen me out. And my sons.' But he, too, wanted to do an additional car – fear not, the Seven continues – to develop and expand the company and the skills within.

Within a year the prototype, bodied in polished aluminium, was at the Birmingham Motor Show. Quick work, but that's what you get if you ignore the committee approach in favour of a tiny core of strong-minded individuals. In this case the individuals were Coates, Nearn and stylist Iain Robertson. Robertson, an RCA graduate as well as part-time journalist, had formerly been Caterham's sales and marketing manager. He has owned and raced Sevens, too.

In the ensuing two years, the aerodynamics and suspension have been comprehensively tweaked. The body is now in glassfibre and contributes to the car's rigidity, which in torsion is four times greater than a Seven's. Robertson and Coates worked hard to keep the shape unsullied, but in the end accepted a small lip on the boot-lid to balance front and rear lift. The chassis frame was strengthened with a new transmission tunnel (which is now on Sevens, too), engine-bay diagonal braces and a rollover-proof steel screen surround. Although overall width is the same, the front track is 80mm wider than the Seven's, improving stability.

Entering or leaving a 21 is so undignified because of the whole structure of the car. It uses the Seven's tube-steel backbone chassis and, very commendably, is no wider overall. One main aim of building the 21 in the first place was to improve crash protection and, to that end, all the space between your outer hip and the edge of the car is taken up by a

Caterham provides extremes compared to Elise. Initial understeer and power oversteer more pronounced than intimate slip-angle language of the Elise. This doesn't make it worse, or better, just different

PHOTOGRAPHS BY DARRIN HEATH



Kicked-up bootlid preserves front/rear lift balance. Hood not unattractive, but liable to cause extended aggravation during erection process

composite crush member. The top of this is high enough off the road to fend off an incoming vehicle's bumper (and Europe's legislators), bringing it just about level with the transmission tunnel. On top of the sill is a polished alloy plate which you climb over, and almost inevitably scratch with your soles. Because the doors need no impact structure, they're paper-light. Ergo fragile: don't lean on them.

You sit in the narrow valley between these structures, your legs confined down the bowels of the footwell. When the roof's off, you can climb in feet first, but with the roof on, that course is closed and you need to go head-first, dragging your torso across to the passenger's side until there's room to fold your legs in behind

'Committees ignored in favour of a



you over that sill. The 21's improved frontal protection causes no such aggro. It has been arranged by installing the radiator almost horizontal and the space-saver spare above it, and using the pair as a crush zone, carried in a sacrificial outrigger frame.

Although the 21 prototype used a Vauxhall engine, it doesn't fit the finished car, which instead comes with a choice of versions of Rover's 1.6-litre K-series. The standard item gives 115bhp, but the Supersport edition, exclusive to Caterham but developed for it by Rover, does a very healthy 137bhp at 7000rpm, a rotational speed it attains with enormous enthusiasm. That hot motor is mated to Caterham's own six-speed gearbox, in a

Supersport package that also includes uprated brakes, springs, dampers and anti-roll bars and an even quicker steering rack. All 21s are offered in finish-it-yourself form at the moment: Caterham has sold just a couple of dozen fully-built Sevens in Britain in the past three years. A Supersport is £22,995, the basic 1.6 five-speed £19,495.

The 21's shape, says Robertson, isn't intended to be especially modern nor retro. The aim was simply to make it stem from what's underneath, stretching skin-tight over the mechanicals. The Mondeo rear lights slink nicely into the overall shape. For the front, Robertson says the 21's smallness made nearly all proprietary indicators look colossal, so he



strong-minded core of individuals'

Caterham C-21 v Lotus Elise

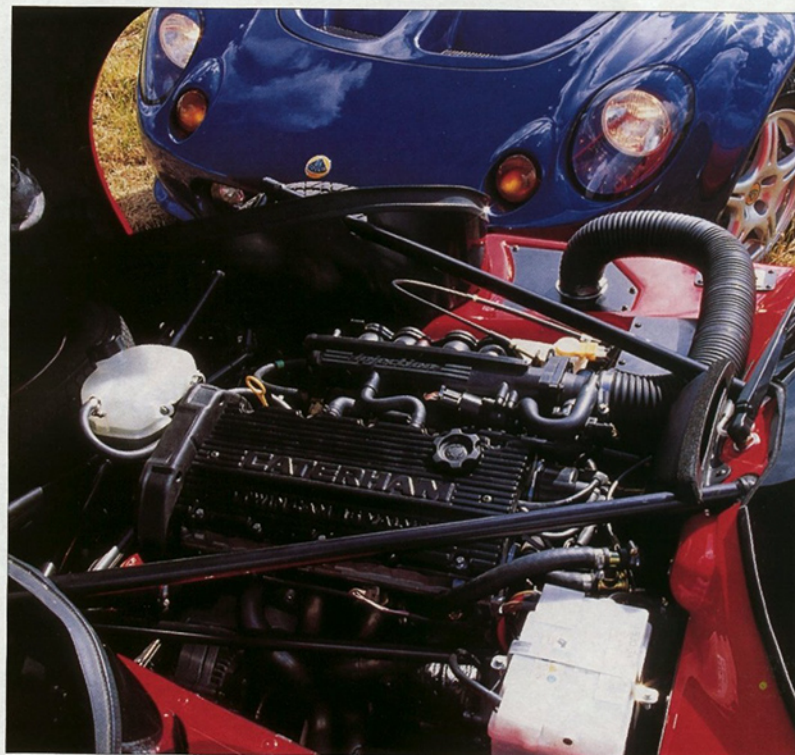
settled on units from the even dinkier Suzuki Cappuccino. Inside, the cockpit is a stylish affair based on a pair of trimmed hoops that rise from the transmission tunnel up ahead of the two occupants then down again to the doors. The passenger's houses a small glovebox (itself a Caterham first), the driver's the speedo and rev-counter. Supplementary dials and switches are in the centre, between the two hoops. Body-colour mouldings in the doors and dash mean the inside of the car flows naturally into the outside, as in a Fiat Barchetta.

In the two years since the 21's Birmingham debut, something else significant has happened to Caterham. The Lotus Elise. Provided Lotus, the company, has a future, then the Elise is a natural rival. Both cars claim a piece of Lotus Seven heritage, and both are entirely legit in doing it.

There are remarkable similarities. In common are light weight (the Caterham is the lighter, though not by a lot), glassfibre bodies, and Rover K-series engines, though the Lotus has a 1.8. Differences? The Caterham uses traditional steel tubes for its skeleton, while the Lotus has bonded aluminium extrusions. The Lotus is mid-engined, the Caterham puts the motor ahead of you. But actually the Caterham's motor is well aft of its front axle line, so the pedantic would call it mid-engined, too. Whatever, the Caterham has a higher polar moment of inertia, thanks to the widely spread masses of engine, gearbox and rear diff.

But none of this prepares you for how different this pair are to drive. Or that both can be so brilliant. You'd think that there would be a blueprint for how a lightweight sports car should drive. It isn't so. Most of the time, you can't just take this pair and look at their steering response or their ride quality or their clutch action and decide which of the two is better, which one most closely approaches the ideal. They're simply different. And there's the fascination.

The Lotus is roomy, quiet, easy to operate. Its steering, though full of life, is fingertip-light at all speeds. Its pedals swing through long arcs, regulating their functions with fabulous delicacy. It rides with terrific suppleness. The Caterham is the opposite. 'Intimate,' says Caterham of the cockpit. 'Too right,' say I: it's so tight across the hips that I drive better if I've emptied my trouser pockets first. The loud-piped engine blares and hisses and barks *con brio*. The steering is heavier than the Elise's, more high-gear and nervous. The brake pedal is modulated more by pressure than travel, the throttle's more like an on-off switch. The Caterham also rides well as a standard 1.6, though

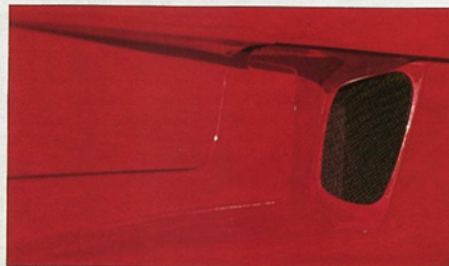


with a higher bounce frequency than the Elise, but the Supersport is on the bonecrusher side of hard.

Wearing its new slippery suit, this Caterham whistles through the air a lot more easily than any previous type. It's like being unshackled. At 80, at 90, at 100, the right pedal gets real action in the 21. It's not just a matter of sheer go; the new car is a lot more stable at speed, and with its new curved windscreen and glass side windows, the cockpit typhoon has abated. But it's still kinda noisy in there. The Lotus is quieter going fast; with the rear window in place (usually the case because there's nowhere in the car to store it), you're blown about very little. Caterham's roof arrangement is pretty much the trad British sports-car affair, press-studs and all. No picnic to operate, but once in position, it meets its job description. The glass side-windows don't wind down but instead come off entirely. Removal is a snap, replacement a right old fiddle. Leave them in place. The Elise has proper wind-down windows. Its roof is more elegant when erect, but having novices construct the thing would make a titterworthy few minutes on a game-show.



Four-pot calipers bite the 21's vented iron discs – feel and power



Man-sized excavation on the flank admits engine's air supply

'On paper, these cars differ most in



Not the most get-in-and-outable car in the world, but nothing...



...compares to the 21 for that sardinesque hip-hugging intimacy

In Supersport trim, the 21 is a very rapid device. Not just fast in the way the speedo needle climbs around, but fast in *all* that's going on. Caterham's own gearbox squeezes its ratios hard up close together, fitting six of them where most cars have just the first four. The 137bhp Supersport K-series has gained its high-rev urge without any sacrifice to the mid-ranges, so you can get along swiftly enough without taking it up to maximum spin. When you use the six-speed with determination, the rev-counter needle flutters busily between 5000rpm and 7000rpm, its every oscillation triggered by another in a thick-and-fast flood of gearchanges up or down the box. And at each of those changes, there's a suck of intake hiss from the great drum of an air-filter when you blip the throttle, and a hair-raising blast of exhaust noise when you get back on it.

After all of which, the Elise's propulsion is a bit over-subtle. The engine, silenced on the intake and exhaust by pretty much standard MGF arrangements, is torquier than the 21's because it runs to 1.8 rather than 1.6 litres. Although it doesn't complain at high revs, it doesn't take

wing in the way the 21's K does. More pertinent, its gear ratios are both rangey and distantly separated. So the Elise doesn't feel as busy or as fast as the 21. But it does have a nicer, longer throttle pedal action, so it's easier to modulate the delivery. This comes in handy both in wet roundabouts and when you're slotting back in after overtaking traffic.

Both cars have wonderful brakes. Four-pot race-style calipers clamp the Supersport 21's vented iron discs, while the Elise has unique high-tech alloy discs. No ABS nor servo are to be found on either spec-sheet, but on the road both have delightful pedal feel and, when you need it, stopping force that's brutal.

On paper, it's in the cornering that these cars will differ most. So it turns out, and you certainly don't need to get to the edge of grip to notice it. The Lotus, so light on its front feet, begins with light steering, and into corners it never loses it. Yet there's always intimate road-feel at your fingers. In the Caterham, you have to work harder to swivel the wheel. Because it's higher geared than the Elise's helm, the 21 feels more lively as you pour it into a bend, but over bumps it's stiffer and a lot

the cornering, and so it turns out.'



more prone to kickback, which masks the feel of tyre treads going to work. Because it's such a narrow device, the 21 can afford to be knocked off course a bit, but the Elise makes it feel nervous all the same. The Caterham's long, arching front wings are your aiming point. You follow them through a bend from your position between the rear tyres. In the Lotus, there's not much ahead of you and when you swing the wheel-rim the whole car seems to pivot around you.

Pile on the lateral force in the Elise and the result is small (though intimately communicated) slip-angles at either end. Understeer is only the upshot of lunacy in

your entry speed; oversteer needs brutal provocation in the dry. High-speed wet corners need caution, though. Too much rear-end aerodynamic lift is the problem. When the Caterham understeers, it does it more than the Elise; when the tail takes an excursion under power, it goes out further but more controllably. Its rear tyres are wide and the weight on them small: wet-road powerslides are never far away. Don't like the C21's handling balance? Then get your spanners out and tweak the adjustable rear anti-roll bar.

Bumps don't just wriggle the Caterham from side to side, the Supersport is a stiffer, jigglier car than the Elise, too.

Lotus has found a remarkably supple ride for its newcomer. Sure, in town there's patter and you never forget it's a sports car, a feeling not helped by upholstery-free seats. But once you've some speed on, it glides with effortless elasticity.

There's a danger, when comparison-testing like this, of giving sway to the language of measurement and of objectivity. This allows a creeping assumption that in any area where there are differences between the pair, one must be the better, the other the worse. It isn't so. They are different, these two, but they are both sublime, the two purest driving machines this side of an F50. Both work

Both these cars are sensory experiences of the purest kind. The Caterham – visceral, raw-boned and meaty. The Lotus – refined, delicate and poised

'Both different, but the two purest



Caterham C-21 v Lotus Elise

SPECIFICATIONS

	CATERHAM 21 SUPERSPORT	LOTUS ELISE
Price	£22,995 (50 hour home-build)	£18,990
Engine	1588cc 16V dohc four, longitudinal, front-mounted	1796cc 16V dohc four, transverse, mid-mounted
Bore/stroke, mm	80.0/79.0	80.0/89.3
Compression ratio	10.5 to one	10.5 to one
Power	138bhp at 7000rpm	120bhp at 5500rpm
Torque	115lb ft at 5000rpm	122lb ft at 3000rpm
Power-to-weight ratio	213bhp per tonne	178bhp per tonne
Transmission	Six-speed manual, rwd	Five-speed manual, rwd
Gearing	18.5mph/1000rpm in sixth	23.3mph/1000rpm in fifth
Front suspension	Double wishbones, coil springs, anti-roll bar	Double wishbones, coil springs, anti-roll bar
Rear suspension	De Dion with A-frame location, radius arms, coil springs, anti-roll bar	Double wishbones, coil springs
Brakes front/rear	Vent discs/discs, unservoed	Ventilated discs, unservoed
Tyres	205/45R16	185/55 R15 (front) 205/50 R16 (rear)
Length/width/wheelbase	3800/1580/2230mm	3726/1701/2300mm
Weight	848kg	675kg
PERFORMANCE		
0-60mph, sec	5.8	6.5
Top speed, mph	131	122



on a premise abandoned by almost every other car maker: that the best way to make something better is to make it simpler. The fact that they're both British and both available for 20-ish thousand says a lot about the tradition here of low-volume sports-car building. A tragically low volume, perhaps, in the Elise's case.

The Lotus, a strong but not eye-popping performer and a loud but not deafening cruiser, might seem the more meek of these two. But it works like no other car. It's uncanny in the way it separates signal from noise: the way it shrugs off bumps but responds to the tiniest input from its steering wheel, and the way it feeds back

without kicking back. The Caterham, even ignoring its thrilling engine/gearbox combo, is a more hectic experience, drilling itself into your consciousness, overloading your senses with blurring motion, demanding more physical effort to use to its full extent. Does that make it more fun? Does that make it the better car? For me, the answer to either question is no. I'd take the Lotus, for the revelation of its controls, the way they marry lightness to precision and feedback. Others would want the rawness and exuberance of the 21. I can't blame them. Tomorrow I might be feeling that way too. It's that close. 🏎️

driving devices this side of an F50'