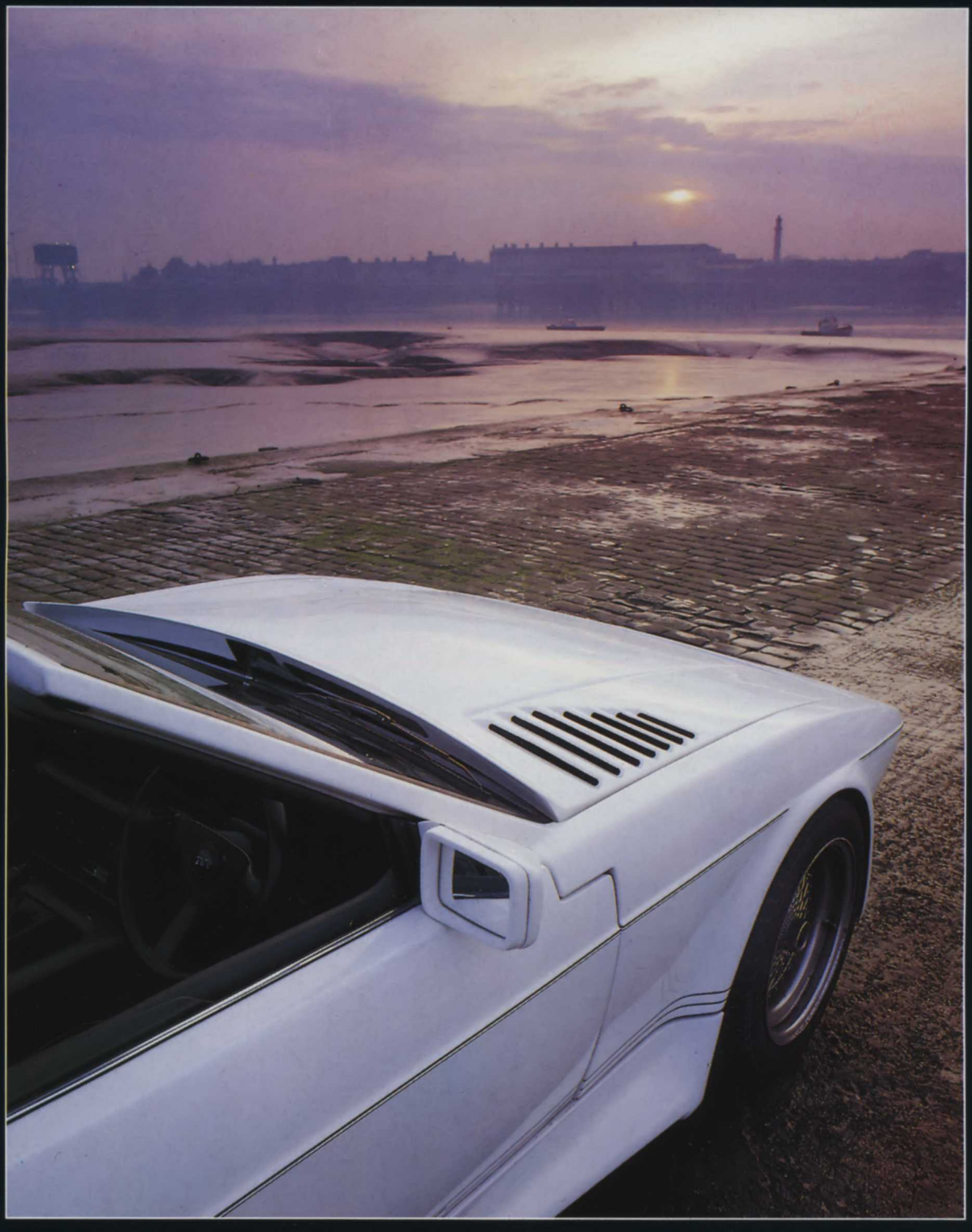
CLASSIC AND SPORTSCAR



TVR SUPPLEMENT

WHITE LIGHTNING

Mark Hughes is the first journalist to be let loose with TVR's new 420SEAC

It's a bold claim that TVR make for their 420SEAC, saying in their brochure that it can 'rocket to sixty miles per hour in five seconds or under with a maximum speed of over 165mph'. This sort of capability, yet to be officially corroborated against the stopwatch by our sister magazine, *Autocar*, puts the car firmly at the top of the performance league – *Autocar*, in fact, records that only one current production car, the Lamborghini Countach Quattrovalvole, is capable of 0-60mph in under 5secs. So how on earth has a little manufacturer in Blackpool, producing cars from a factory not much bigger than a tennis court, managed to haul itself into such exalted company?

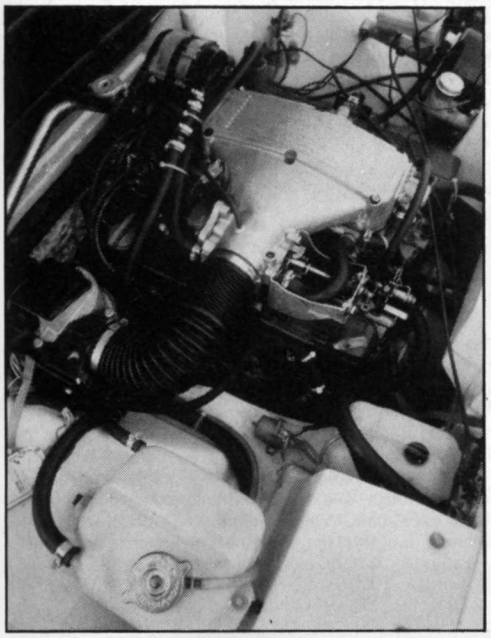
The answer is that TVR have conscientiously worked in recent years at evolving their Rover aluminium V8 engined-350i, still the mainstay of their production, into the ultimate performance car. The first sign of their efforts was revealed in 1984 when a 3905cc version of the Rover unit was installed in a 350i chassis. Designated 390SE, this car provided a massive jump in power to 275bhp at 5500rpm (compare this with the 190bhp of the Rover Vitesse fuel-injected specification unit in the 350i), with torque of 270lbs ft at 3500rpm. Andy Rouse looked after engine development, achieving the capacity increase by boring out to 93.5mm. Lightweight Cosworth pistons, gas-flowed cylinder heads, a higher compression ratio of 10.5:1, high-lift cams, double valve springs, modification of the L-Jetronic fuel injection, new exhaust manifolds, blueprinting and balancing all added up to nigh on 50 per cent more power.

Further work has brought the engine to the specification found in the 420SEAC. Having taken the bore just about as far as it will reliably go, the

next step was to lengthen the stroke to 77.0mm with a new steel crankshaft, giving a capacity of 4228cc. To aid breathing at higher engine speeds, the heads were given larger diameter valves and springs, and an uprated lubrication system with a larger capacity sump and an oil cooler was fitted. The result was another power increase, albeit a smaller one, to 300bhp at 5500rpm, with torque of 290lbs ft peaking 1000rpm higher up the scale at 4500rpm. This is where the engine technology stands today, with the Rover V8 producing around double the punch of the humble SD1 saloons.

The mobile test-beds for all this tuning activity have been a series of production sports car racers, giving credence to the old saying that 'racing improves the breed'. The contribution from track development has been very direct, reaching beyond these flagship supercars. Just one example is a revised rear suspension lay-out now found on all Rover V8 powered TVRs. When the racing programme began in 1985 with two factory sponsored 390SE cars, the standard fabricated trailing arm set-up at the back was soon found inadequate, with movement in the rubber mountings under excessive standing start stresses. This was rectified with a

Scenes from a day out with the 420SEAC: on a country road near Garstang (bottom left), sitting on the slipway at Knott End (below) and pausing in the Trough of Bowland (right)



four-point lower wishbone (mounting onto the hub carrier at two points) with a torque reaction arm running backwards from the last chassis outrigger to the hub carrier. Better adhesion resulted from the improved rear wheel location, and by mid-1986 all 350is were leaving the factory in this form.

One of the 1985 racing 390SEs had been fitted with the 4228cc V8, but for the 1986 racing campaign TVR went the whole hog with a substantially modified and lightened car built around this large engine, and this, of course, is the car tested by Gerry Marshall on page 142. The road version of this 420SEAC, of which 12 have so far been built, is really just a replica of the racer, and the car I tested is the very first one built, delivered to its owner, Dr Simon Cox, last May. Coincidentally, the last time *C&S* tested a modern TVR (*Ancient & Modern*, April 1985) it was a 390SE also owned by Simon.

The 420SEAC's distinctive appearance and cumbersome title give the clues to its most special features. SEAC stands for Special Equipment Aramid Composite, which, if you're still in the dark, means that it has a high-tech bodyshell weighing 300lbs less than a 350i's glass-fibre body. A 420SEAC body is laid-up in moulds using the same technique as glass-fibre, but the matting from which it achieves its superior strength and lighter weight is Kevlar. The one disadvantage of Kevlar (apart from being four times as expensive as glass-fibre) is that it warps over large flat areas, so some strategic sections – the nose panel, bulkheads and boot lid – are formed from thermo-plastic honeycomb foam for better rigidity. TVR are continuing to experiment with carbon-fibre, but on the 420SEAC it is used to strengthen all body-to-chassis mounting points. Rethinking the whole method of bodyshell construction allowed fewer parts to be used (the 420SEAC's sills, for example, are integral with the entire side panels) and several body sections had to be altered: the wheelarches are flared to accommodate wider tyres, the front and rear bumper sections are quite different and make the car 6ins shorter overall, and there is a massive 'tea-tray' wing on the back. All of these changes were made to improve aerodynamics at 120mph and above on the racer.

To match the 420SEAC's much higher performance potential, some running gear changes have been made. Although the suspension has the same geometry as the other models, spring rates have been increased and Bilstein gas-filled shock absorbers have replaced the standard Armstrongs. Like the 350i, the 420SEAC has disc brakes all round (outboard at the front, inboard at the rear), but those at the front are larger and ventilated, all four carrying larger, four-pot calipers. Wheels are elegant Galaxy alloy split-rims shod with 245/60 VR 15 Bridgestone RE71 tyres, but optional 16ins rims were fitted to 'our' car. To cope with moving all that rubber at parking speeds, power steering is standard on the 420SEAC. Three special 420SEACs have also been built with fully Rose-jointed suspension, a stainless steel chassis and dry sump lubrication.

And what does all this cost? The answer is a cool £29,500, as against £17,865 for a regular 350i. Is it worth it?

As I drove slowly out of Blackpool on the 50mph-restricted A586 to Garstang, I must admit that nothing felt very different from the 350i with which I had spent a couple of hours earlier in the morning. Apart from the rear wing blocking most of the view behind, the cockpit surroundings are just the same. There's a familiar burr walnut finish to the facia, which is all rectangles and straight lines in design (a new style is coming, I was told). Instrumentation is identical, with rather small tachometer and speedo dials flanked by four little gauges for oil pressure, fuel, water temperature and battery charge. Creature comforts like electrically-operated windows and door mirrors are shared with the 350i, and there is the same snug seating position.

Even with the top down on this crisp winter's day, it was really very cosy in the cockpit, with the heater pumping out plenty of warmth and the hood-down aerodynamics working so well that there is literally no buffeting at sensible speeds. You wouldn't even need to keep a comb in the glovebox. The hood is just about the neatest and quickest to open up that I have encountered, consisting of a solid roof panel which stows in the small boot and a rear window section which folds flat behind the seats. There are no studs, zips or clips – just two triangulated arms which hold the hood in tension against the roof panel. With practice, the whole operation can be completed in about 20secs. With the hood removed, though, I found the closeness of the top of the windscreen to my forehead a little disconcerting at first – anyone under 5ft 6ins might find his head nearly touching. Perhaps it's because all the top people at TVR are so tall that the driving position hasn't been brought back an inch or two!

It's not a question of talking about a little extra punch at so many rpm – it's all there all the time

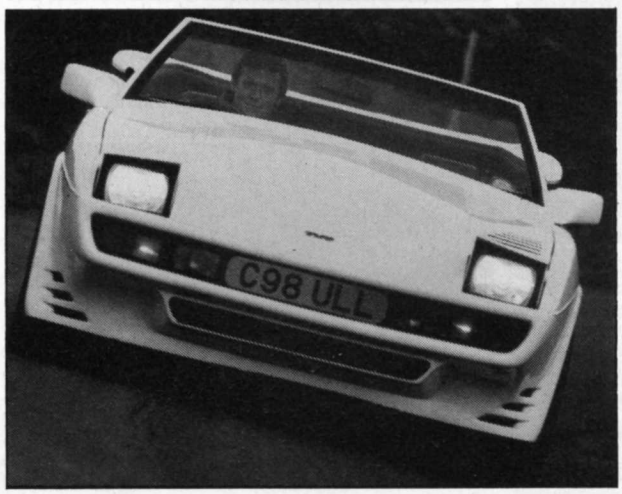
Indeed, the only clues to this car's identity in the first few gentle miles were the power steering, distinctly harsher ride and noticeably crisper exhaust bark. For such a highly-bred Rover V8, however, none of the standard fuel-injected engine's endearing flexibility has been lost. It will pull cleanly in top gear from an unbelievable 500rpm, around 15mph, and its stump-pulling torque starts to become apparent at 1500rpm. But enough of this on-the-leash stuff. We're now on the A6 for a few miles, heading for the Trough of Bowland, a hill pass in this outlying patch of the Pennines. Dropping down to third to overtake for the first time, the 420SEAC suddenly and vividly reveals its true character.

The acceleration is quite stupendous, the power flowing in with complete smoothness. It kicks you in the back instantaneously with pressure on the accelerator pedal, but thereafter builds with a smoothness which few performance cars can emulate, accompanied by a glorious V8 roar. The power delivery feels so even that the car seems to be accelerating as quickly at 2000rpm as 6000rpm. It doesn't come on cam, and it doesn't peak – it all seems very controlled. After a while, the subjective impression is that perhaps the car isn't as quick as you thought, but I'm convinced this is simply a result of the smoothness. It's not a question of talking about a little bit of extra punch at so many rpm – it's all there all the time.

Turning right off the A6 almost anywhere between Garstang and Lancaster leads into the web of roads which meet near the Trough of Bowland. They're all winding, undulating and open, the perfect conditions for getting to know a car. The TVR immediately seems razor-sharp, with a turn-in ability which has it darting into corners more quickly than you anticipate. Once in a corner, adhesion at the rear is just as good, bumps upsetting the car's attitude more than heavy prods at the throttle. The bonus of that firm ride noted earlier is that the 420SEAC is rock-steady in corners, with virtually no roll and appreciably more poise than the 350i. Where the 350i had given a little twitch at the rear when you jumped on the power (the car I tried had the old trailing arm rear suspension), the 420SEAC kept a true line, just tightening a fraction. All this firmness, precision of line and 'quick' steering gives away the race breeding, imparting the feeling that there actually isn't any suspension at all. The only occasions where the suspension shows any shortcomings are cresting sharp brows, when pitching causes the front spoiler to scrape the road.

The brakes are very good, but not quite in the same class of excellence as the car's other dynamic qualities. A little more servo-assistance would be a good thing so that the pressure required on the brake pedal is more closely matched to the light steering, gentle throttle and sweet clutch. But these tiny quibbles, the only ones that I can think of, paled away as we ambled back to Blackpool, photographer John Colley's work in the hills done. Mixed up in the stop-start of normal traffic, we agreed that the 420SEAC is an excellent car in all conditions.

Above all, the lasting impression is that it has almost no equal as a genuinely high performance convertible. Few cars can match its capabilities, but even fewer allow you to experience this level of performance while enjoying the sun on your head – the only two I can think of are the Porsche 911 Carrera Cabriolet and the Ferrari Mondial Cabriolet, which cost £6000 and £15,000 more respectively. Who would ever have thought, even only a few years ago, that TVR could be young pretenders in this market?



Top left: Continuous development of the Rover V8 has seen a progressive increase in power. A lengthened stroke and new steel crank equals 4228cc and 300bhp. Left: Handling is rock steady in corners, with virtually no roll