



Comfortable cockpit was an excellent blend of modern ergonomics with traditional style

The compact 3-litre alloy-head overhead cam V8 fits with room to spare in the engine bay

£10,000, though half that amount will buy a good '76/77 car, and £1,500 an early example. A few years ago, old Stags were such bad news in the trade you could hardly give them away: like the NSU RO80, many an otherwise sound car with a duff engine was sold for little more than scrap value.

It was just such a sick car that kindled Tony Hart's interest in the model a few years back, since when his Hart Racing Services in Britannia Rd, London SW6 has become Britain's largest Stag specialist. To underline his faith in the car, Tony not only drives one on the road but is now campaigning a wide-wheeled modsport version which, even with a standard engine (there's a 250 bhp tweaked one on the way) has already raised a few eyebrows. As two thirds of the 26,000 Stags that Triumph produced remained in Britain — the car was not a great export success, which was disappointing, as it seemed just right for sunny American climes — there are plenty around to receive his expert attention. And, more to the point, plenty on the market for buyers to choose from.

Jeremy Sinek has described the nature of the engine problems on page 70, so I won't go into it all here. It all sounds and looks a bit alarming, but Hart claims that the use of a good quality anti-freeze with the right inhibitor to prevent corrosion, and flushing out the whole system once a year — particularly the radiator to unclog

it — are the only precautions necessary to prevent these chronic disorders. He also strongly recommends changing the oil and filter every 3,000 miles and checking the timing chain every 25,000: once they start to zizz, there's a danger of jumping a tooth which is sufficient to cause destructive encounters of the eight-fold kind between valves and pistons. And if you've had the heads off for any reason, Hart recommends torquing them down to 60 lb ft instead of the recommended 55, then re-torquing them immediately after the engine has been warmed to full running temperature, rather than after the recommended 500 miles.

What you mustn't do in a Stag is to attempt — as the previous owner of Tony Hart's car apparently did — to make it to the next garage if there are any signs, from whatever cause, of overheating. With an iron-headed engine you might make it without serious consequences. In the Triumph, with its very heat-sensitive alloy heads and lubrication system, you won't. If you're buying a Stag, incidentally, a rattly engine does not necessarily indicate imminent bearing failure: it could simply be a loose timing chain which, provided it doesn't jump first and self destruct the innards, is probably not as serious as it sounds. Check that the radiator is as hot at the bottom as it is at the top: if it's not, there's something amiss with the circulation and the expensive damage may

continued over

Golden Oldie

Stag at bay . . .

. . . no longer. Only two years after its demise, (hastened by its engine's fragile reputation), the Stag is now a star ascendant among cars worth keeping, as Roger Bell explains

"DON'T BE AFRAID to boot it!" Tony Hart's invitation to have a blast in his five-year-old car certainly helped to restore confidence in the machinery. Tales of woe from other owners over the years had seriously undermined the reputation and

respectability of the Triumph Stag, which ranks as one of Leyland's more endearing misfits, superb in concept but found wanting a little in execution, development and perhaps glamour. Its Michelotti body, conceived in the early 'sixties, was not the most eye-catching of Italian jobs, though it clothed what on paper was a very respectable, even exciting, running gear. Ironically, the engine that helped to make the Stag the undeniably appealing car that it was (and still is) also accounts for its reputation as an expensive liability — which, as we shall see, is not altogether justified.

The 3-litre V8, in simple terms a doubled-up Dolomite "four", was designed and developed for the Stag and an up-market 3-litre version of the 2.5 saloon before BL's rationalisation programme was in full swing with its axe. It was a *fait accompli* that Leyland could have chopped but elected to live with, though with the ex-Buick Rover V8 also in the stable, Triumph's offering, despite being on paper a more modern and attractive design with its overhead cam valvegear, was a luxury they could have done without. Had Leyland foreseen the problems that were to dog the engine in service, no doubt they *would* have abandoned it at a very late stage, and shoe-horned the Rover V8 into the Stag instead. Yes, it does fit, as the engine swappers have proved. So does the straight-six Triumph and Ford's

V6, both of which are now also powering a number of Stags that blew their original engines. Not having driven any of these hybrids, I must take the word of Stag specialist and purist Tony Hart that they are expensive and inferior alternatives to the real thing. And the real thing when it's in good shape is a very pleasing and potent piece of machinery, as *Motor's* original 1970 road test underlines. Even with a test weight approaching 1½ tons, the original press car accelerated to 60 mph from rest in 9.7 sec and lapped MIRA at 117 mph, reaching well over 120 mph on the fastest section of the course. Tony Hart's car felt every bit as quick as the automatic *Motor* tested in 1973, which did 112 mph and was only a fifth of a second slower to 60 mph. O, the two, the six-speed manual is surely the more attractive, though, its long-legged overdrive top giving over 24 mph/1000 rpm and therefore very relaxed and economical cruising — almost 30 mpg at 70 mph. Tony Hart reckons to get 20 mpg overall from his automatic, while some of his customers claim over 26 mpg from gently driven manual versions.

The Stag was born in 1970 as a luxury grand tourer with particularly sophisticated headgear — open, closed or ragtop — and it wasn't until after production had ceased two years ago that many people began to appreciate just how attractive it was in concept and character. Ignoring supercar

Mercedes, the prices of which are out of sight, there is nothing on the market now that comes anywhere close, which is why young, low-mileage Stags can command very high prices. Rumour has it that a few T-registered cars, the last of the new stock, have actually changed hands for around



Broken harts

Jeremy Sinek attempts to sort the fact from the fiction about what went wrong with the Stag, and why

TO USE a culinary simile, the Triumph Stag was an exotic dish with top-quality basic ingredients, which went somewhat awry when it came to the herbs and spices of its technical execution. But make no mistake: the Stag had — and second-hand examples still do have — all the makings of a dish fit for kings.

For a start, it looks distinctive, with styling by an Italian coachbuilder (Michelotti) that's recognisably different from the Triumph stable, yet stylishly different from the 2000/2500 saloons from whose floorplan and running gear the Stag was developed. In its concept — as a civilised convertible with two plus two accommodation — the Stag was near flawless.

Under the skin, its all-independent suspension layout has much in common with those adopted by certain teutonic thoroughbreds, with MacPherson struts at the front and semi-trailing arms at the rear; but the steering has the theoretical superiority of a rack and pinion mechanism. Transmission-wise, the choice was between a three-speed automatic, or a four-speed manual with overdrive.

So far, the technicalities follow Triumph's big-saloon practice, and as originally conceived the Stag would probably have also had the same straight-six engine. When it finally appeared, though, it was with an all-new overhead cam three-litre V8, and in the event this engine's greater capacity and power necessitated many detail changes to the saloon's running gear: the gearbox was uprated, and so were the final drive gears; it was felt that bigger brakes were needed, and that in turn meant the adoption of 14-inch instead of 13-inch wheels.

It was that engine, though, that on paper was the source of much of the Stag's appeal, but which in practice was also the cause of nearly all its problems.

On the face of it there was no reason why the Stag's V8 should have proved troublesome in service: there was nothing over-ambitious about its design, nor was it in a particularly high state of tune. The two cylinder banks are set at 90 deg in a cast iron block incorporating a crankcase which extends well below the crankshaft centre-line, with bore/stroke dimensions of 86x64.5 mm giving a swept volume of 2,997 cc.

Separate single-roller chains are driven by separate sprockets on the nose of the crankshaft, and each operates a single overhead camshaft in each alloy cross-flow cylinder head. The inverted valves, in wedge-shaped combustion chambers, are operated by the cams via

suspension, as well as the rather agitated high-speed ride, are typical characteristics, the slight pull to the left in the steering, and an off-centre wheel, minor irritations hopefully peculiar to this five-year-old. The brakes were strong and true, though the pedal was a little spongy.

Even by current standards — in fact especially by current plasticky standards — the interior gets high marks. Triumph really did have a knack of embracing a modern control layout in a traditional British setting, represented by generous areas of attractive matt-finish wood. Real timber at that. Aesthetically and ergonomically, it is an excellent arrangement, with a neat, readable and comprehensive set of instruments supported by Triumph's all-systems-go cluster of warning lights, handy fingertip switchgear, and efficient heating and ventilation. A nice steering wheel that's adjustable for reach and rake helps to achieve a comfortable driving position, though Tony Hart's car reminded me of two gripes of old — the seat cushion is too flat and the transmission bulge forces your left leg to rest on it awkwardly. The pedals are also offset to the right for the same reason. Even so, the Stag is a comfortable, relaxing and pleasant car to drive as well as to ride in — provided you're in the front. The back seat is very cramped for adults. Refinement, though, is marred by excessive wind noise — a problem that was never developed out of the car — even with the heavy but totally weatherproof hardtop in place. It's a two-man job to remove, incidentally, so you can't slip it off with every break in the clouds. For me, the car is at its excellent best as an open sunshine tourer.

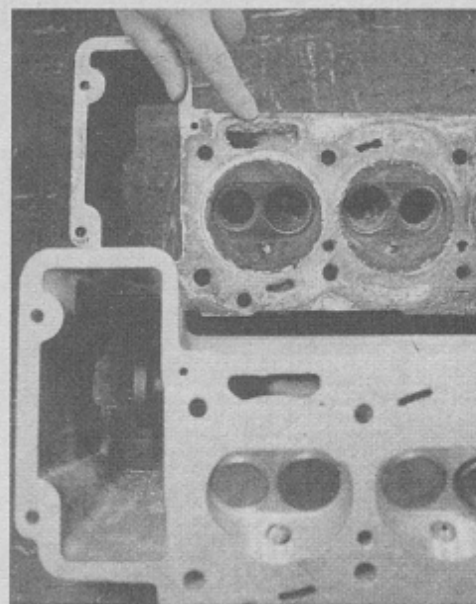
Like so many interesting, up-market cars, third and fourth-hand Stags were often bought by people who could not really afford to run and maintain them properly. However, Tony Hart is now aware of changing trends in ownership. Stags are definitely becoming respectable again, even rather desirable. A number of his customers are well-heeled enthusiasts who could no doubt afford more expensive modern machinery but prefer instead to run a Stag because of its investment value and appealing concept, and to have it professionally attended to by a specialist who not only understands the car but shares their love for it. Hart, who sees 25 to 30 Stags through his large and well-equipped premises every week, offers a range of routine services, as well as major repair and restoration work. He can be contacted on 01-731 3287.

already have been done. Check, too, that the radiator thermostat hasn't been removed to mask some chronic cooling problem, and make sure that the oil pressure light is connected. Leave well alone if it's not.

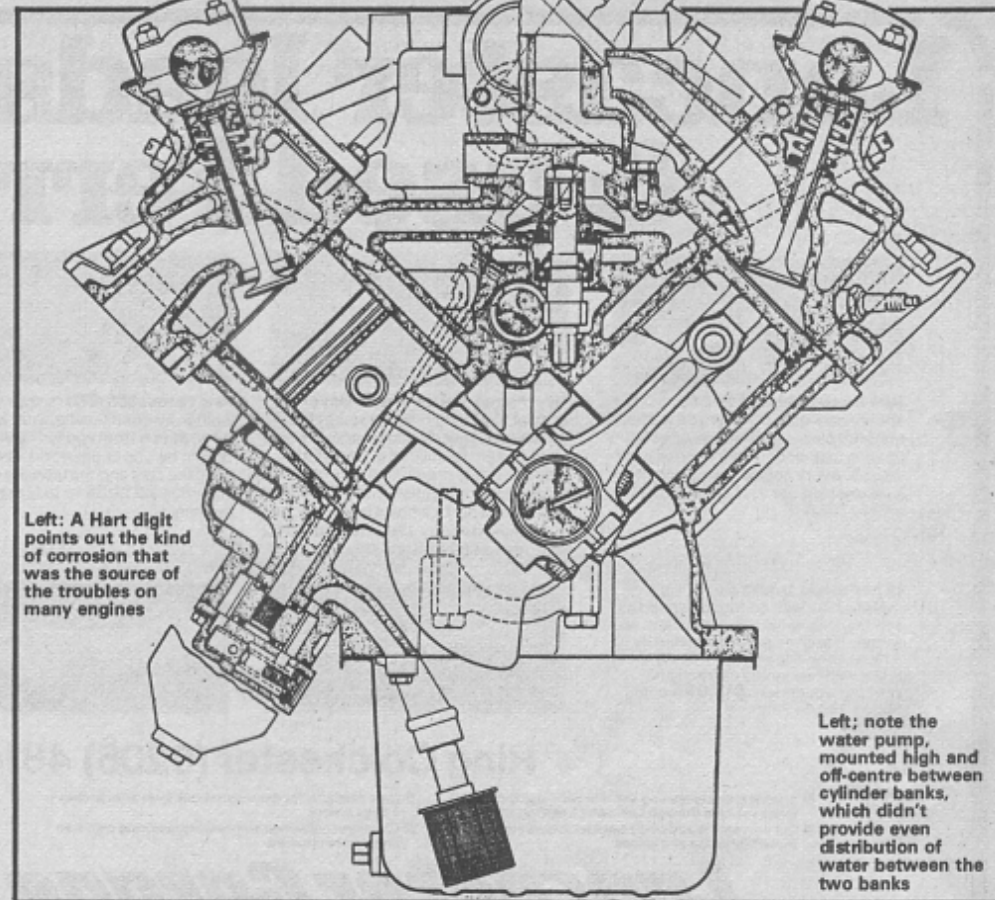
Apart from the engine, which can give long and reliable service provided it is properly maintained, Tony Hart contends that the Stag has no other major weaknesses, though it's important to keep the rear axle breather clear. Clogging here can cause the oil to overheat and escape, with the consequent danger of seizure. Although you need to watch for corrosion over the front wheelarches and rear wing/sill joints, rust is not a serious problem. The bodywork of Tony Hart's car, an N-registered automatic with 45,000 miles on the clock, was generally in good shape despite a few rust blemishes.

To drive, his Stag was much as I remembered, with a number of endearing qualities and a few innate flaws too. Start-up was prompt and apart from a lumpy idle, the engine ran smoothly and cleanly up to the red line at 6500 rpm with a characteristic burble that has always seemed a little more pronounced than on other V8s. Something to do with the exhaust it seems. Despite its fairly high weight of 26 cwt with the hardtop in place, and a relatively modest output which remained at 145 bhp throughout the car's production run, the performance is satisfyingly brisk, though the Borg Warner 35 automatic gearbox of this car had seen better days. It thumped fiercely when engaging gear, and seemed a little reluctant to shift into top when pottering around town.

The power steering (which all Stags had) has the same sort of feel as that of the Rover SD1s — quick in response and accurate with it, though a little lacking in feel. On non-standard 205 section tyres, the cornering powers of Tony Hart's car are very high, though on fast bends there's a discernible loss of composure and enough diagonal pitching to wobble your head uncomfortably. Although the car nose dives under braking, and squats when you accelerate hard, just as it always did, there was no evidence of the twitching off line when you changed gear or throttled back, behaviour that we criticised in the road tests. We always put this irritating characteristic down to spline lock (an unlock) in the drive-shafts, but Tony Hart says it can be cured by replacing the rubber suspension bushes with harder nylon ones. The slightly soft, sloppy and clonky behaviour of the



Left: A Hart digit points out the kind of corrosion that was the source of the troubles on many engines



Left; note the water pump, mounted high and off-centre between cylinder banks, which didn't provide even distribution of water between the two banks

inverted bucket type tappets, with adjustment by hardened steel shims.

Skew gears on a jackshaft, driven by one of the timing chains, drive the ancillaries — the oil pump, distributor and water pump. The latter is of the impeller type, and is mounted vertically between the banks where it also directs water through the inlet manifold, on which are mounted a pair of Stromberg 175CDS carburetters. On a compression ratio of 8.8:1 the engine produces a useful but conservative 145 bhp (net) at 5,500 rpm, and 170 lb ft of torque at 3,500 rpm.

It shouldn't have added up to a fragile and temperamental unit, but such it has proved to be.

One weakness was in the timing chains, which wear rapidly and become noisy, often requiring replacement every 25 to 30 thousand miles — a problem that might well have been avoided with twin-roller chains.

Then there was a brief period when crankshaft bearings wore out prematurely, a consequence of a (temporary) machining problem which resulted in the wrong surface finish on the crankshaft journals. Premature wear could also occur as a consequence of poor maintenance, or if the engine (and hence, the oil) was running too hot as a consequence of cooling problems.

Everyone I've talked to, including some who were involved in the development of the engine, are agreed that it was various aspects of the cooling system that, in an interlinked sort of way, were the main problem areas.

It does seem that the design of the cooling system was somewhat marginal in several respects, any one of which could initiate problems which would in turn reduce the safety margin in other areas; but it's difficult to pinpoint any single root cause, or to define a specific sequence of events.

What *does* seem clear is as follows: on the Stag engine — as with most V8 engines having a single water pump — water flow between the cylinder banks is delicately balanced and easily upset; that Stag engines need more care in assembly than most, which the garages that repaired them (or even the workers who originally assembled them?) were not always able to provide, leading to poor gasket sealing and continuing problems for owners who had spent hundreds of pounds on repairs; and that some of the anti-freeze/inhibitors used didn't always work as well as they should have, allowing corrosion that affected gasket sealing and

water circulation.

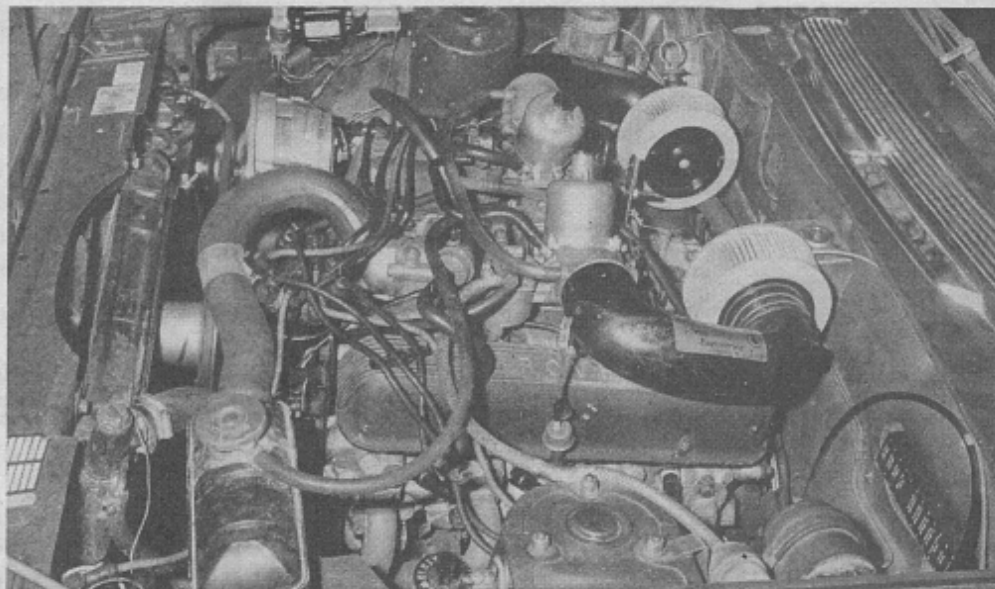
What it boils down to (ouch) is that the Stag's is an engine that can't simply be thrown together after an overhaul, nor is it one that can be neglected in daily use, or small problems can develop into major ones. You only need to lose a little bit of water, from a leaking hose for example, for the water level to drop below that of the high-mounted water pump and hence cease to circulate; or a poorly sealing head gasket (provoked, perhaps, by careless assembly, or by corrosion), could allow combustion gases to interfere with the delicately balanced flow through one bank of cylinders, cause localised overheating (which might well not register on the water temperature gauge) and if it went on long enough the head could warp. Then the gasket leaks could get worse and in

extreme cases cause total loss of water at speed and a badly cooked engine.

Even if things didn't quite reach that stage, the heads would usually have to come off for skimming or even replacement, and sometimes that would be easier said than done, corrosion around the studs making it near-impossible to get the head off at all.

Then again, choked radiators (a common ailment arising out of corrosion deposits) could lead to poor circulation and excessively high running temperatures, which means overheated oil, ineffective lubrication, and big-end failures.

If it all begins to sound pretty hopeless, then take heart (ouch); Tony Hart has got the answer — but you've read all about that in the preceding Golden Oldie feature.



For peace of mind, many Stag owners have opted for the transplant route. Above is a Rover V8 conversion, as effected by C. J. Hutton Automotive Services, 142A East St. Epsom. A similar conversion is available from V8 Conversions, Oak Farm, Green Street Green, Orpington, Kent; or a d-i-y kit is available from Dawson Stag Conversions, details from Ashted (Surrey) 76951. Alternatively, you can have the Ford V6 fitted by Hurley Motor Engineering, 10-16 Arbury Ave, Foleshill, Coventry, or fit it yourself using Hurley's kit

To say the Stag

... came about by accident is a gross over-simplification, but if it hadn't been for the friendship between two men it might have been a totally different animal. Mike McCarthy talked to Harry Webster, formerly Chief Engineer at Triumph

HARRY WEBSTER first met Giovanni Michelotti back in 1957, when the Italian stylist was working for the coachbuilder Vignale: he was responsible for the facelift of the Standard Vanguard, a model which in fact became known as the Vignale Vanguard.

"I used to go and see 'Micho' every other weekend or so for, oh, five or six years or more ... My missus used to play hell with me ... I used to set sail (after the races) from Coventry to London, fly to Paris, then change and fly on to Turin — it was the only way I could get there on a Saturday. I used to work with him, often on Saturday night and certainly on Sunday, then set off home on Monday morning — there's a direct flight back: it was very convenient ...

"Micho's first major job was the Herald, and he went on to design most of what was to become the Triumph range — Spitfires, Vitesse, GT6s, and so on ..."

Having completed the Triumph 2000 and 1300, Michelotti asked Harry if he could have a 2000 chassis for a one-off show special. "These styling boys, they're proud fellows, they always want to show you what they can do, show off a bit ... Anyway, he asked me for a 2000 chassis so that he could put a one-off body on it and put it in the Turin show that year (1966 — MM).

"I agreed to let him have the chassis, but on one condition — that if we liked it we would pay him for it and take it back to Coventry ..."

It was on one of his trips to Italy that Harry saw what Michelotti had done. He had created a smooth, sleek convertible featuring a wide, horizontal grille behind which hid the headlights (fronted by electrically-operated flaps), wire wheels and a sharply cut off tail again with wide horizontal tail-lights, which echoed the shape of the grille particularly at the edges where the side lamps came to a point. Interestingly enough one feature that was to make the production car so distinctive didn't appear on the prototype



— the T-bar over the passenger compartment.

"Well, when I went to see it, I liked it, took it back, and set the wheels in motion for production ..."

The other major difference between the prototype and the production car was the engine. As first envisaged, the Stag was to be equipped with the 2.5 litre fuel-injected straight six engine from the TR and 2.5PI. However, in 1963 a clever Triumph engineer, Lewis Dawtrey, had drawn up a report, proposing Triumph's future engine plans. It boiled down to basically two: a slant-four, originally of 1500 cc but capable of enlargement to 2 litres, and by "ordering in" the other half of the four cylinders, a V-8. When Spen King, now Deputy Chairman, BL Technology, took over as Chief Engineer at Triumph after Harry's appointment to the Austin-Morris division following the Leyland/BMC merger, he, too, liked the car but felt it could take a lot more power: he therefore delayed the introduction of the car until the V8 was ready. This put the weight up slightly, and, though the six (since the car was basically a 2000) slotted straight in, the engine bay had to be widened to take the V8. This led to a lot more modifications until eventually there were very few (if any) common body parts between the Stag and the big Triumph saloons. And it also meant that the car didn't see the light of day until 1970.

The T-bar was another story again. "After 'Micho' finished the prototype we made some hand-built prototypes ourselves — and suffered from the most enormous scuttle-shake! Oh boy, it was horrid! You almost had to try and catch the steering wheel, if you know what I mean! The torsional stiffness of the body had gone to hell, of course, and the only way to get it back was to join up the A and B posts (the structural members fore and aft of the door — MM) with a good torsional box across the top, and that's exactly what the T-bar does". So it wasn't just brought in to help with roll-over



Above: Harry Webster (on the left) with his successor at Triumph, Spen King. They were responsible for the birth of the Stag.

Left: the Stag as envisaged by Michelotti, sans T-bar and side ornamentation but with wire wheels and hidden headlights

regulations or for styling? "Oh no! Of course it helped with the roll-over conditions, but it's very much part of the structure, I can assure you!"

Were there many other problems? "Not while I was in charge, remembering it was to have the six cylinder engine — after all most of the suspension, engine, transmission and so on had been sorted in the saloon. One of the interesting problems was the convertible top: it had to disappear completely into a bin behind the seats with a lid on so that we could fit the hard top. The way the hood folded gave us some headaches ..."

So the Stag came about because Harry liked what Michelotti had done

— but what was the rationale behind the car? "Triumph realised back then that we couldn't compete with the big boys — we had to find a niche or market gap to fill, and that was where the Stag came in. It was aimed at the "young executive", someone who'd gone through the motor bike/sports car/family and family saloon, and wanted something different, something sporty but with creature comforts. Hell, I wanted one myself at the time!"

Then the surprise of the day: "I'm getting one myself, actually. My wife wants me to have one when I retire — something to play about with ..."

How's that for confidence in your own product?



Little deer ■ ■ ■

Proud owners of Triumph Stags may like to know that a model of their car, to 1/43rd scale, is available from Western Models Ltd, Morris Road, South Nutfield, Redhill, Surrey RH1 5SD, for £9.45 in kit form or £12.95 assembled ...