

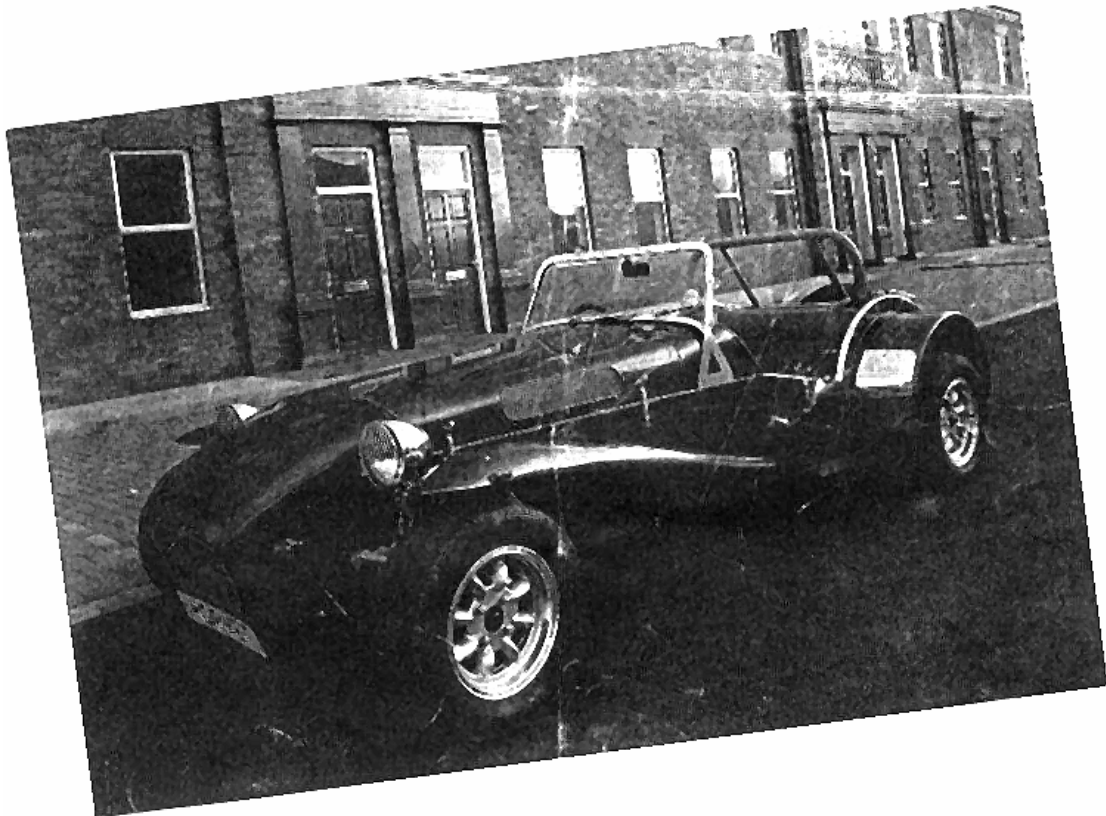
This is taken from a low resolution scan of a magazine article I was sent.

Hornet

The Ply that Came In From The Cold...

Following their great success with the plywood and GRP bodied Locust, T&J Sportscars have produced an improved, simplified, more spacious and more comfortable derivative. So will it reach a broader market? David Hill tried it for size.

ONE LAUGHABLE AND YET unfortunate aspect of kit buying is the effect of blind faith. This happens to even the most rational of buyers when they fall so much in love with the idea of a car that they totally disregard reality. We pressmen repeatedly advise potential buyers to try out the cars but, for all that, the punters still make ill-conceived purchases. Those tall enough to border on mutant status buy low profiled GT cars, those who can scarcely afford a car at all buy kits which demand at least £10K's investment to build properly and those with Marina driving skills expect to be able to handle 200+bhp as a matter of course.



Of all the kits on the market, the ones which bear more than a passing resemblance to the famous Lotus Seven can cause problems. They are, to be brutally frank, tiny. This is not surprising because the original was a competition car which happened to be road legal and as such could be driven to and from race meetings, hill climbs and the like. Accommodating two in a car of the type was a masterly piece of design but compromises remained. What also remains is the unalterable fact that a human being of certain size

will not fit comfortably in a car whose seat width is based around a lightly padded human pelvis. However, big people still want to buy the cars, such is the power of love. In real terms, being wedged tightly into a driving seat is a positive advantage especially in a car which is capable of generating a high lateral G force. The snag lies in entering and leaving the car. Even with the knack, the driver has to have a degree of flexibility, the more so when the hood is up. In fact, even the markedly lithe have been known to park out of sight before attempting to emerge from their be-hooded Seven. This fact was by no means the only reason for the development of the T&J Hornet but it had a bearing on the matter. The initial design brief also took ride comfort into account, as well as single donorship, appearance ease of build, practicality and cost.

For the conception of the Hornet Trevor had a wealth of experience to draw upon having spent a year or so manufacturing the component parts of the John Cowperthwaite Locust. Trevor had a starting point to work from. However whilst John Cowperthwaite owns the rights to the plans and patterns of both the Locust and its sister car the Midge, the Hornet is a T&J Sportscars production. With the 2 cars side by side its tempting to dismiss the Hornet as no more than a stretched Locust but notwithstanding the common parts there are significant differences as will become clear. Below decks the Hornet couldn't be simpler, the chassis is unarguably a twin rail with two 80cm x 40cm x 3.2mm box sections running all the way from the front crossmember to the rear axle kick up. The chassis rails then continue rearwards joined by a large damper crossmember and a smaller rail which provides attachment points for the handbrake cable. Descending steel tubes terminate on fabricated rear spring seats and a pair of vestigial members carry side rails which run forwards to rejoin the main rails forming a long right angled triangle.

At first sight the chassis looks long and narrow enough to exhibit a lack of stiffness but closer inspection reveals a K frame joining the gearbox support plates, and the double wishbone front suspension lower plates are 5mm thick and are reinforced with equally heavy bracing plates. These additions add to the weight of the chassis but add immensely to its strength.

The chassis of the Hornet is designed to accept the rear axle of none other than the Ford Cortina. This unit is mounted with its own trailing arms springs dampers and brakes. The same car's propshaft in shortened form is joined by its gearbox and engine, rack and front uprights complete with hubs and discs. The builder has a choice of 1600 or 2000 cc's and can use the Cortina's radiator brake servo and master cylinder as well as its heater matrix and fan. The pedals are replaced with fabricated and the items the wiper mechanism comes from a Mini. The Hornet's relative dimensions also command the use of a fabricated fuel tank and an extended steering shaft.

Like the Locust the Hornet can be fitted with Cortina front wishbones but the demonstrator wears T&J's own option of fabricated wishbones. These use a Transit steering drag link ball joint to facilitate camber adjustment. The suspension also employs Cortina upper wishbone mounting pins to carry the upper eyes of the adjustable dampers and the wishbone inner bushes are

also Cortina items. The Result is an adjustable front suspension which is as easy to maintain as the Cortina system but has a much lower unsprung weight. Moreover it looks the part which matters when the system is there for all to see.

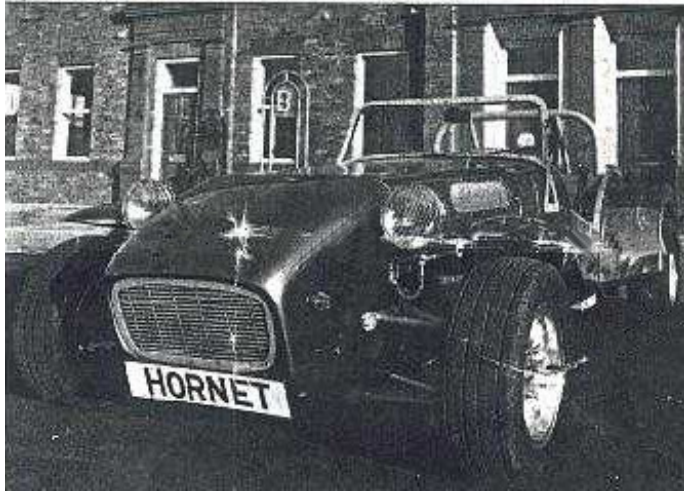
The chassis of the Hornet is clothed in a screwed and glued plywood body skinned in aluminium. Since this makes panels that are essentially flat other materials have to be used. These appear in the form of GRP wings, nosecone and scuttle, and GRP is also used for the heater plenum chamber and pedal boxes. ON the test car only the wings and nosecone were GRP, the rest being made of alloy sheet, such are prototypes. Both prototype and production models will share an alloy bonnet, which may be polished or painted as preferred.

The Hornet's exterior furniture is produced partially in-house, with such components as the screen frame, weather gear, roll-over bar and spare wheel frame being bespoke items. The remainder of the hardware is aftermarket equipment, the demonstrator using Lucas lights, VDO gauges, switches and other minor items from Europa.

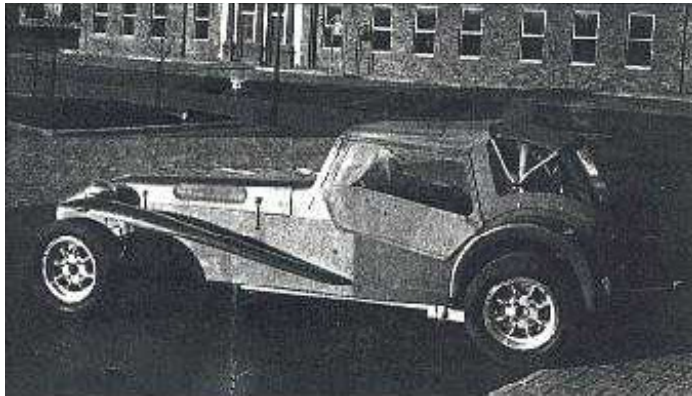
Squeezing in the relatively tall Pinto engine involves raising the alternator for which purpose T&J offer a special bracket to be used in conjunction with a Sierra fanbelt.

Gleaning this information whilst sitting in a warm office with coffee to hand was the easy part of testing the Hornet, the photography and test driving that followed were altogether different. The sunshine in the photographs was pleasant enough, the same couldn't be said for the air temperature, which was only just on the right side of zero. Fortunately a short test drive was enough and during that drive the welcome efficiency of the heater allowed my lower half to thaw – to an extent.

My first entry into the car was made characteristic by the presence of the hood. Most of you will have heard about the affliction known as "Seven Elbow", but what about the Seven Shuffle? This is the means of entry and involves inserting the left leg into the cockpit folding the body in two about the hips and hopping and swivelling the remainder into place and finally threading the right leg between the cockpit side and the steering wheel. In the Hornet as significant amount of extra space made the shuffle relatively easy. Installed I found the same applied to the cockpit itself. Sitting in the Hornet was much like sitting in any small sports car, you don't sit in a Seven you wear it.



Above: T&J's optional front suspension uses many Cortina parts but allows camber adjustment and lower unsprung weight, a worthwhile addition. Below: The neatly executed weather equipment and effective heater were welcome in the chilly conditions. The big rear quarter windows helped in traffic.

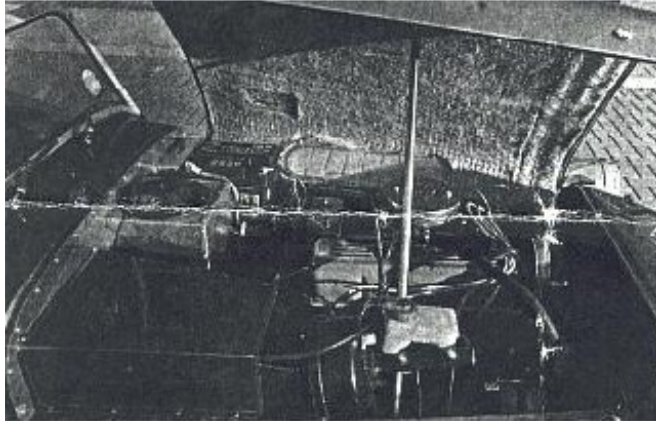


Being Trevors own, the test car had some spacing between the seat and the floor. That caused problems in headroom for my Simian build, the same reflected in a stretch to the pedals. Those shorter of back and longer of leg would find the relaxed driving position perfect as was. For me a lower seat base and more rake to the squab was needed. For all that, the interior was a pleasant place to occupy, with tasteful grey VinYl and carpet, excellently tailored by Trevor's partner Joseph Horwath . The range of visual information offered was comprehensive despite the minor gauges' distant position on the nearside of the dash, and the major instruments central location removed the need to peer through the spokes of the wheel.

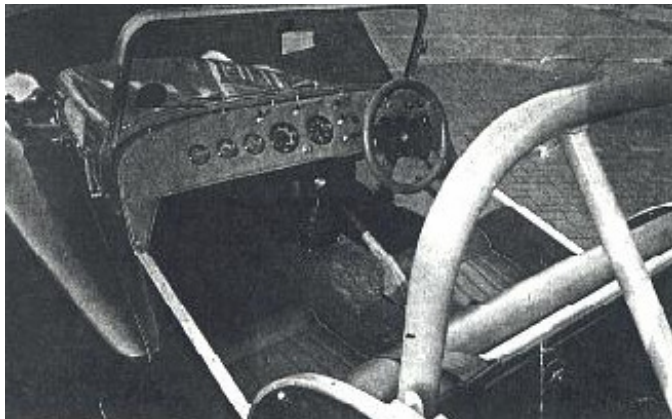
The scattered mixture of switches warning lights and Cortina Estate push switches was confusing at first but experimentation soon revealed the various controls' functions. The handbrake and wheel fell easily to hand and the comparative increase in scuttle height removed all possibility of grazed knuckles when operating the stubby gearlever. Th presence of a chassis mounted double-braced roll-over bar was immensely reassuring and the

mounting of the inertia reels looked likely to pass their impending STATUS test.

For the “proper” test drive rather than the slow trundle round to the photo location I removed the hood. Doing this negated the headroom problem. On the other hand I had difficulty with the prototype pedals. The footwell was narrow, as might have been expected but my shoes were just that shade too wide. Allied to a long pedal travel this complicated driving the Hornet somewhat. It was nevertheless possible to press on regardless and shod in trainers I would have had no problems.



Above: The unusual side hinged bonnet restricted access from the nearside otherwise the mechanical access was fairly good. Below: The cockpit offered a full 16” seat width; that and the increased scuttle height making a roomy car for its type



The Hornet’s exhaust was a mixture of manufacturers parts which consisted of a visible under car system with no more than a Cherry Bomb for the gases to expand in the driver and anyone within earshot were left in no doubt about the car’s sporting character. Similarly with a 2-litre axle ratio slightly geared down by 60 profile Firehawks, was in the now-you-see-me now-you-don’t league. In the dry wheelspin was easily induced and first gear was over very quickly. In wet conditions using second gear from rest would be wise. Steaming up through the gears, the Hornet showed its capacity to continue accelerating viciously, watching the Taco all the time as with only 220 miles on the odometer thrashing new engines isn’t recommended.

Several circuits of the Rotherham test track, which is a long sinuous road with a roundabout at each end revealed the car's characteristics admirably. These belied its appearance soft springing coupled to relatively long suspension travel giving an unexpectedly comfortable ride. In fact I was surprised to notice body roll in the bends. This actually occurring to a small degree was inherited from the donor and was joined by a less desirable inheritance, bumpsteer. The Hornet had been set up with an initial 5 degrees of castor and zero camber, so finding the turn-in suddenly increasing caused no drama. On the contrary, the steering was light and had plenty of feel making the necessary correction a second nature act in theory raising the rack in relation to the chassis would reduce the car's susceptibility to mid-bend nasties. In practical terms making that simple adjustment would be very simple.

The Hornet's other legacy from the Cortina was important although mostly a matter of personal taste. In short it had no need for the donor's servo. With it fitted the brake pedal had the overlong travel and indeterminate feel of any Cortina system. I would have gladly exchanged the need to push harder for the reward of a harder pedal. In anger the brakes would lock the front wheels and were more than powerful enough, but, in such a car the point of locking should be more clearly telegraphed to the driver.

The Hornet's layout means that the motor is set forwards in the chassis to allow clearance for the exhaust manifold and the steering rack, in conjunction with the suspension settings this created understeer. This in turn made the car entirely predictable. Round the roundabouts it was possible to hang the tail out at will. At higher speeds lifting off the throttle mid bends caused the tail to step out in mild admonishment for such treatment. Consequently I could place the car very accurately.

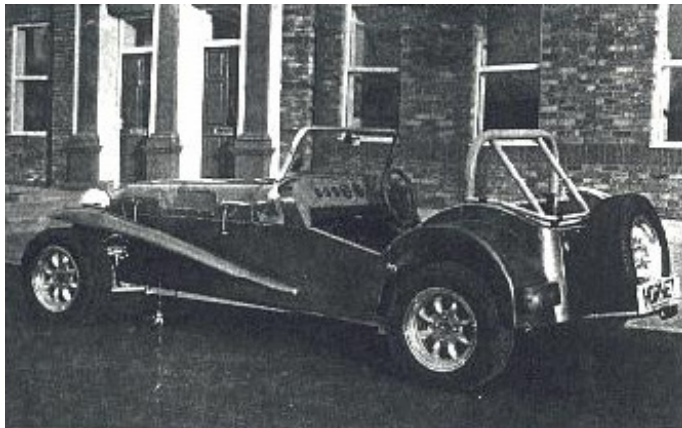
More importantly this would make the Hornet an ideal first quick car for the budding performance driver. I envisage a youngster raised on a diet of front wheel drive hot hatches. For him the Hornet would be the ideal tool for learning how to drive a proper car, in which the rear wheels do half the work. Like the midget and sprite it could teach him the ropes without endangering the public.

My overall impression of the Hornet was favourable, the more so in view of its undoubted prototype status. The use of as much of the Cortina parts as possible is praiseworthy, but I would certainly recommend T&J's own front wishbones. Only those in the know would be aware of the car's radical method of construction, which by allowing the body to be made totally at home yields benefits in terms of cost. Slotting in the ubiquitous Pinto engine does compromise the styling by the need to raise the bonnet line, but that is outweighed by the simplicity of the build; no need for cut down sumps and angled radiators here. The quality of those parts which come from the manufacturer is undoubtedly good but the greatest benefit involved is one of the uppermost in the minds of everyone – value for money.

The test Hornet had been fitted with top quality equipment throughout, was professionally finished in two-pack and had an exchange reconditioned engine. It cost a shade under £5K to build.

According to Trevor it would be possible to assemble a roadworthy Hornet for £2.5-£3K, a small outlay by kit car standards. Moreover the costs can be spread, the builder making a start with the body plans and manual at £45 + VAT. A built Alloy skinned body tub costs exactly ten times that amount and at £290 + VAT, the chassis, finished in red lead paint, constitutes the next highest outlay. The remainder could be bought piecemeal, a further investment of £225 + VAT bringing the GRP body panels, leaving only the bonnet at £68 + VAT to finish the shell. From there on T&J can supply anything from a side indicator repeater to a full hood and sidescreen set.

I like any kit which heavily involves the builder in its construction, the end result reflects the individuals ability and ingenuity. The woodwork involved would appear to be little more than schoolboy stuff, depending more on patience and accuracy than outright skill. I also suspect that there would be much opportunity for individual tailoring in many areas, which could only increase the satisfaction felt by a builder Like the initial choice its all down to him. I have no doubt that plenty of people will before long be building Hornets and enjoying every minute of the experience.



The test car cost less than £500 to build. The deep body sides and large rear arch clearances are a Cortina legacy, as is the high bonnet line. Low cost good ground clearance and simplicity are the benefits

T&J HORNET AT A GLANCE

KIT SPECIFICATION

Donor vehicle: Ford Cortina MK 3, 4 or 5

Chassis Type: Twin rail in RHS, with suspension points body outriggers and mounting plinths. Finished in red lead primer

Front Suspension: Ford Cortina wishbones and uprights. Optional fabricated wishbones allowing camber adjustment.

Rear Suspension: Ford Cortina four link using donor springs and dampers

Steering: Ford Cortina column and rack with extended lower shaft.

Engine Options: Supplied with mounts for 1600 and 2000 Pinto. Other engines can be accommodated.

Body Construction: Screwed and glued plywood hull, skinned in alloy. Alloy bonnet, GRP wings, nosecone and scuttle.

Kit Prices: £1596 inclusive of VAT will see the purchase of a complete kit. Everything can be bought individually if preferred.

Options Available: Assembled body, trim and weather equipment, electrical accessories and wiring loom, roll bar and fuel tank.

OTHER DETAILS

Estimated build Time: Approximately 180 hours

Ease Of Build: Straight forward due to simple mechanical construction aided by single donor. The woodwork involved requires minimal skill.

Estimated On The Road Cost: Previous examples averaged £2500.

Build Up Manual: 45 loose-leaf pages with numerous photographs and diagrams.

Regulatory Approval: Car is shortly to undergo STATUS seatbelt anchorage and Code of Practice tests.

General: £50 deposit, 4-6 week waiting time; the company can arrange delivery. Owners Club recently founded.

Further details from:

**T&J Sportscars, Unit C, 11 Gateway Industrial Estate, Parkgate,
Rotherham, South Yorkshire, S62 6JL Tel: 0709527090**