

The ROBIN HOOD COLLECTION

PRODUCED IN
ASSOCIATION WITH

WHICH
KIT?



THE STORY OF ROBIN HOOD

Well known today as one of Britain's biggest kit car manufacturers, Robin Hood Engineering started life in a quite different role. We take a look here at the company's long and fascinating history.



ROBIN HOOD ENGINEERING IS TODAY one of the leading names in Britain's small but still highly impressive and relentlessly creative kit car industry. Run as a tight ship that incorporates the necessary freedom for design imagination and engineering ingenuity, the company has carved out for itself a strong niche in the ever-popular market for functional, high performance chariots inspired by the legendary Lotus Seven.

The difference with the Robin Hood range of S7 sports cars is two-fold: a high proportion of them look quite stunning with their brilliant stainless steel bonnets and side panels, and *all* of them are eminently affordable. An S7 on the road for around £2500 - £2750? Yes, very possible.

Within the Robin Hood philosophy of affordable entertainment and motoring pleasure lies a powerful clue to the company's origins. Boss Richard Stewart remembers clearly his earliest attempts at D.I.Y. creativity: "Our family wasn't

Above: Exotic Daytona replicas were produced with a number of different donors. Below right: Early S7s were Triumph based. Below: Wild 6-wheeled Escort pick-up.



particularly rich and at Christmas simply couldn't afford to buy me the more interesting (and expensive) toys. So I quickly learnt to be an inventor and make my own!"

Not surprisingly, Richard's formative teenage years saw a leaning more to the practical side of things than the academic. By the time he was nineteen he was working happily in the motor body repair trade. Significantly, he was soon specialising in saloon cars made using the earliest mass-production monocoque techniques: models such as the Austin A30, Hillman Minx and Morris Minor.

"This construction type was in its early stages for mass-production cars and so a lot of new problems were being created. I was fortunate enough to be in almost at the beginning of engineering and repair learning with monocoques and thus gained terrific experience in modern car body design. This was really valuable when I later started to build Robin Hood monocoques."

Success in the trade came easily to Richard. Running his own business from rented premises in Nottingham, he was soon specialising in 'classic' car repair and restoration. An avid sports car enthusiast, his taste for special cars wasn't restricted to working hours. Regular everyday transport involved such desirable machinery as an E-type Jaguar, Corvette Stingray, Aston Martin DBS and various Bentleys.

It was a beautiful Bentley S3 that Richard sold in 1971 to provide funds for the purchase of the workshop premises which he still occupies today. Situated in the Sherwood area, north of Nottingham, the rambling building had previously been a Wesleyan chapel, and its many different rooms of varying sizes were ideal for a growing motor body repair specialist — plenty of space for several workshops and lots of storage room, too.

Predictably enough, it wasn't long before Richard's creative instinct began to demand expression. Amidst the clatter and clunking of the day-to-day bread and butter work, there began to form a fairly outrageous (for the day) strain of 1962 Ford Anglia. Such mundane family transport had never for one moment been conceived with even an inkling of Jaguar 3.8-litre straight six power but there, in a corner of the old chapel, was Mr. Stewart making absolutely sure the strange marriage was consummated. The beast used Jaguar suspension, too, including the wire wheels. It was called the Janglia and charged on to become quite famous in hot rodding circles.

As time passed, several other body conversions were schemed and carried out by Richard's ever-fertile mind. They were mostly pick-ups and included one particular stunner, a 6-wheel truck based on a 1974 Escort. By this stage the company was not surprisingly as well known for its conversions as its repairs. Small surprise, then, that the boss's favourite reading came from American hot rodding magazines.

It was upon the debut of the company's first 'production' car (more a conversion than a kit) that the Robin Hood Engineering trading name came into being. "It was in 1979 that we slipped into the kitcar business," recalls Richard, "and it was almost by mistake. I very badly wanted a Ferrari Daytona but hadn't got the £50,000 they cost at the time. So I decided to build my own version, using the only method I knew: by cutting a Rover SD1 V8 into bits and welding it back together with new panels to create the Daytona shape."

Offered for sale as a Rover conversion which could be carried out at home by a skilled D.I.Y. enthusiast or completed by Robin Hood to turn-key stage (prices varied from £8000 for a full home-assembly kit to around £20,000 for the finished job), the RS Daytona was in regular small scale production during the early 1980s. By 1987 an optional version was available using the Jaguar XJ6 or 12 as its donor, the whole concept now clearly making more sense than ever. The original Ferraris had rocketed in price to anything between £80,000 and £120,000, depending on condition, while a Jaguar V12 powered RS replica provided lookalike styling, the same image and very similar performance, all for a fraction of the cost.

A small number of RS Daytonas were even built around the Triumph TR7 sports car but these more affordable versions came at the end of the marque's line. "It was getting more difficult to sell the Daytonas," Richard remembers, "because people were demanding better detailing and more perfection; they wanted to pass-off their cars as real Ferraris."

Time to move on. With something approaching 60 Daytona conversions sold/built, about two thirds of them on

Rovers, Robin Hood's master of imagination was scheming his next plan. Lying around the yard of the Sherwood premises were plenty of old TR7s which had been bought in anticipation of the RS Daytona conversion project carrying on unabated. It didn't take Richard Stewart long to decide what to do with them...

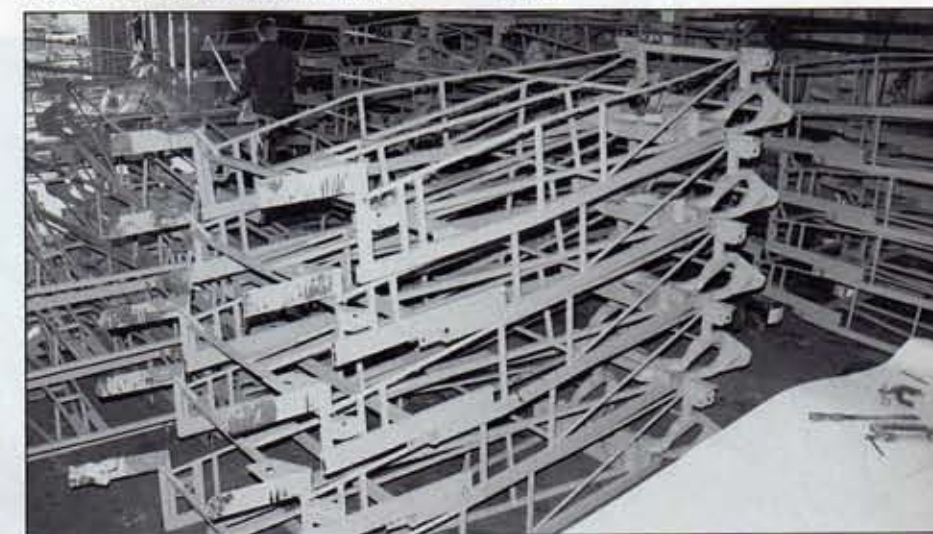
At the big Stoneleigh kit car show in Spring 1989, was launched the forerunner of the Robin Hood S7 that you know so well today. Billed at the time as "The Latest Chapter In The Evolution of The Super Seven" (not exactly to the pleasure of Caterham Cars), the all-new model was called the RS TR7. With kit prices starting at an affordable £995 +VAT, it was hardly surprising that the car caused an immediate buzz and soon started to sell well.

The inspiration for Richard's latest creation was somewhat obvious, the RS TR7 adopting an original-style sevenesque approach to its design and construction. Under the functionally pretty body was a true spaceframe chassis fabricated from square section steel tube. Body panelling was in brightly polished stainless steel for the bonnet, side section and rear end and in self-coloured GRP for the nosecone and wings.

From the TR7 came the majority of the mechanicals: the 2000cc aluminium head engine, gearbox, steering, driveshaft, complete rear axle and front stub axles, the latter working in conjunction with Robin Hood's own wishbones and special coil springs. With the donor car bought for around £500, it was claimed that the completed RS TR7 could be on the road for little over £2000.

It was the sort of budget that raw sports car enthusiasts liked — and were sorely tempted by. The new model was quickly in demand, successfully launching an exciting new era for Robin Hood Engineering. True, there were initial legal wrangles with Caterham Cars over design and copyright but these soon faded in favour of the Nottingham company,

Top left: Plexiglass front on Jaguar based Daytona. Below: S7 spaceframes after dipping. Large scale production already in action.



THE STORY OF

ROBIN HOOD

leaving the Robin Hood marque a clear path towards a deserved entry in British sports car history books.

Key to the immediate success of this forerunner to today's Robin Hood S7 was its enticing combination of classic sevenesque image, low on-the-road cost and larger size (and thus more spacious cockpit) than comparable Caterhams and Westfields. The only problem laid with the cost of actually manufacturing the chassis: the complex and extremely strong spaceframe was really too expensive and time-consuming to make for what was essentially intended as a 'volume' production kit.

The ever-inventive Mr. Stewart soon had the answer for this problem: a new model (indeed, the first to be called Robin Hood S7) packing the powertrain and running gear from a Triumph Dolomite into an all-new and somewhat unique monocoque body/chassis unit. Why unique? Because it was made entirely from stainless steel — a first for the kit car industry and, indeed, a first for the car industry, period.

Launched early in 1990, the new S7's revolutionary construction was created with the help of computer technology, which guided the laser-cutting of the stainless steel panels before folding and welding them to form an extremely robust assembly which would never be affected by the dreaded rust. By the time the process was complete, all interior and exterior body panels were in place. As virtually everything else required to complete the car, bar the donor vehicle parts, was included in the kit package (a leather interior was chucked in for good measure), it was clearly a sensible buy for the first-time builder.

Again, kit car enthusiasts were not slow to recognise a good deal when offered one. Even though the monocoque kit's price was now £2300 plus VAT, no vital extras (apart from the donor car!) were needed to complete a sensational looking sports car. Better still, the Dolomite came with a range of engines wide enough to suit every taste. There were 1300, 1500, 1850 and high-performance 2-litre Sprint options: everything from mild to wild. Not surprisingly, it wasn't long before the new S7 was in great demand.

Such popularity could only be enhanced by the availability of a Ford



donor vehicle, and so it was that early in 1991 the Robin Hood marque finally sealed its success with the announcement of an additional Cortina Mk. 4/5 based version. From that point on, there would be no looking back: the S7 would soon establish a reputation as one of the best known and most popular kits on the market.

Throughout its production, the Dolomite based S7 was always available in two forms: with the stainless steel monocoque or optionally with the old spaceframe chassis. For a while, this situation remained unchanged for the Cortina based version, mainly because of problems with outside suppliers in getting the revolutionary monocoque into full series production. Indeed, for one difficult period, lasting several months through 1992, the company found itself unable to accept further monocoque S7 orders while it cleared a rather large backlog.

Once this was sorted, however, the popular S7 went from strength to strength. Looking at the company's direct and aggressive marketing policy and the unusually comprehensive nature of the kit packages, it is perhaps easy to see why enthusiasts were tempted to the Robin Hood in such large numbers. The message was short, sharp and sweet: great kit value, one donor, an easy build, few necessary extras and a low on-the-road cost for an immensely strong, rust-free, good looking and practical sevenesque sports car.

Various S7 derivatives have been devised by the ever-fertile imagination of Richard Stewart over the last 24 months, including the mildly restyled S5 and S6, the Vauxhall Chevette based Cheven and the stunning Jaguar V12 powered prototype of 1993 (more on that later). In the end, though, it has always been the 'classic' Ford based S7 which has shone through as the Robin Hood that everyone wants. Not surprising when you assess its key features and check its sensational value for money.

The modern, thriving Robin Hood Engineering operation has unquestionably earned well its position as a leader in today's kit car industry. The point is, the company and its founder have never stood on their laurels and taken it easy. Constant evaluation and re-evaluation have taken place over the years, resulting in relentless development, regular improvements to models and hence an ever-improving deal for the customer. That's the important thing.

GETTING TECHNICAL

THE ROBIN HOOD MONOCOQUE

The manufacture of an advanced stainless steel monocoque requires a great deal of behind-the-scenes technology. We look now at the equipment and machinery used to make the Robin Hood range and at how the whole production process operates.

STAINLESS STEEL MONOCOQUES, computer-aided design and manufacture, plasma cutting and production line assembly could be taken to be evidence of any company's modern nature. If you try to imagine such a set-up, you might easily think of a clinical, floor-painted, barn-sized unit with bright yellow cyborgs oscillating and jerking backwards and forwards. Sparks shower from remote-controlled spot-welding machines and sparkling bodysheets glide from one bay to the next with timeless regularity. Probably a fairly accurate description of Ford's Flat Rock plant or Peugeot at Ryton.

Robin Hood's Mansfield Street works actually does fulfill some of the above-listed criteria for a modern production company but it isn't a new premises and the factory certainly can't be accused of being tidy by any stretch of the imagination. If a proportion of the development budget has been a fairly small proportion. The witness might say that the production system in operation is simply enduring a temporary ugly duckling exterior — before emerging as a sleek and well-preened animal at the end of the ongoing process.

How come such an innovative little kit car comes from old and rambling workshops? That's a fairly short but interesting story. RH manager Richard Stewart was shopping one day — looking for a 200-ton body press, as you do — when he met a chap called Zablockski (no,

really). Mr Z wanted to buy some of the bits that Stewart had just secured and a deal was struck on mutually suitable terms.

It just so happens that Mr Z worked for a specialist steel fabrication and design company called Vessel, Spears and Frame Technics. He was in the business of designing oil rigs and ski lifts, as well as other impressive things for major car manufacturers. The two kept in touch and Richard eventually asked Mr Z to design him a stainless steel monocoque for a Seven-esque sports car based on Dolomite components. This was the first thin-shell, 22-gauge Robin Hood monocoque body. This all happened in 1989.

After a few evolutionary years, the Cortina-based RH7 range available today is the refinement, by Stewart and Zablockski, of that original Dolomite-based car. It has proven so popular that RH Engineering has had to cram their Mansfield works full of equipment which one wouldn't normally associate with the kit car trade. The value of the tooling must be in excess of £100,000, claims MD Stewart.

The life of a typical Robin Hood monocoque shell starts usually on a Monday. This is cutting day. Sounds ominous but it isn't really. It's the most dramatic process of them all, as practically no cutting of the eight-foot by four-foot stainless steel sheets is done manually any more. It's phenomenally tough stuff and 'contact' cutting would be very expensive in terms of blades, bits and heavy machinery. Enter the

Completed body/chassis unit for a Sierra 7. Black plastic covering protects stainless finish during transport.

Top right: Latest model in the Robin Hood history. The all new Sierra based S7. Below: Richard Stewart (centre, white shirt) poses with the current workforce.



Manigraph Profile Cutter...

What actually happens is that RH's CAD/CAM expert programmes a computer with the right cutting patterns for the monocoque shell components and then lays a sheet of 8x4 stainless on top of the plasma cutter's water-table. (That's a slatted steel surface with a pool of cooling water beneath it). After some minutes of ponderous thought, the cutting head, mounted on sliding rails, finds a good spot on the sheet steel and starts cutting out odd-looking shapes.

When it reaches the right start point, the nozzle emits a bright electric arc, which is made much more lethal by a flow of compressed air blasting past it. This beam sears a tidy cut in the sheet stainless, or mild steel Zintec, and leaves a minimal amount of wasted material surrounding a super-accurate selection of body components.

Tuesday is folding day. The piles of pre-cut steel parts are de-burred and some of them are carefully slotted into the huge Edwards sheet metal folder. It can handle sheets up to eight feet long and the folding action is powered by a large electric motor with very low gearing and a clutch.

Thundering stuff that, as is the eight foot Pratt downstroke guillotine. Other Tuesday jobs also include louvre-cutting, with the

specially modified Gabro punch, and swaging, with the Edwards swager. (That means putting a step into the edges of certain steel panels so that they can overlap and thereby support adjoining panels.)

Wednesday, Thursday and Friday are assembling days. This is when the cut, de-burred, folded, curved, swaged and louvered bits all go on to one of six trolley-jigs all in a line in the welding shop. Each trolley is loaded up with the appropriate set of steel components, whether stainless or Zintec, and the welder/assembler can see from the fit of each component in the jig whether there has been a manufacturing fault somewhere along the line. If a component won't slot snugly in to place, it's obviously the wrong shape, oversized, or too small. Out it goes, to be replaced with a more suitable part.

Two sheet welding specialists walk up and down the line of steel shells undertaking a carefully defined programme of welding by stages. This kind of production line specialisation might not make for a particularly interesting life for the assemblers but it means that they get exceptionally well versed in their jobs and get it all done as quickly as possible. Thanks, Henry Ford, for that little idea. Richard Stewart has taken it on in order to get best result from

means that it is really handy as a container for more of the other components which are supplied in the kit. Much of the kit collection happens during the weekend and by the time Monday comes around again, it's cutting day once more.

How much sheet metal goes into the monocoque? For a typical car, three sheets of 16-gauge stainless are used for construction of the floor sections, sides and bulkhead. 22-gauge sheets are used for the unitary scuttle and the cut and curved bonnet. In the various reinforcing areas, 2 and 3mm thick sheets are used to cope with the higher stress mounting points. The Zintec mild steel shells also have a similar reinforcing regime around stress points, with the rest of the structure made from 1.5mm sheet. That's a good three times thicker than the average modern production car's shell. These thicknesses have been specified by the monocoque's original designer, who has undertaken the relevant computer stress calculations.

There are other components to be considered in making up the complete Robin Hood kit, however. Although the basic Cortina-based version uses Cortina front suspension components, up-market models have an increasing content of specialised parts made in-house. Basically, the mild steel tube components

are restricted to the rear number plate/spare wheel carrier, front wing brackets, the optional rear-braced roll-over bar and the higher-specification optional suspension components.

All of these tubular parts are made in-house at Robin Hood, using proprietary cutting and welding facilities, along with a recently acquired mandrel tube bender. This little gem can handle tube of up to 1.25" square or in diameter — namely the right size for the roll-over bar of the RH7. Wishbones are therefore very easily produced in-house.

Not much of the RH7 is made in GRP. The front and rear wings and the nosecone are the primary GRP components and they are hand-laminated in the time-honoured fashion. This involves a laminator, working in a dedicated part of the sprawling RH building, painting coloured gel into a mould, followed some time later by sections of composite mat and its catalysed resin. It might be economically viable to make such compound curve shapes from alloy or steel in the future, using that 200-ton press which currently remains dormant, but as they're the parts most likely to be damaged in everyday use, the cheap replacement cost of the GRP makes sense.

Next door to the 9000 square foot

factory, there's a newer 1000 square foot trim shop. In here, all of the Robin Hood trim components are made, including a selection of seats and optional colours of carpet and carpet sets. A new 24-foot cutting table has just been introduced and there are often two staff members employed in the trimming department. Again, sensible batch production, all using patterns and templates for consistent results, means lower costs and faster manufacturing times.

With the Sierra based IRS RH kit now established in the line-up, it seems inevitable that the Sherwood based company is likely to get at least third place in the output rankings behind Caterham and Westfield — who are undoubtedly the biggest and most prolific producers of sporting two-seater kit cars. What boss Richard Stewart envisages is expansion to a new factory unit in a green-field site. This would undoubtedly alleviate the logistical problems caused by having a factory full of smallish workshop areas. One long production line would be ideal.

In the very distant future, it is possible that Robin Hood Engineering might strike up a deal with a sales and marketing firm which would then supervise all public business. This would leave Richard Stewart and company to concentrate on refining the production and development side of the operation down to a very fine art. The current unit, although it does have a carpeted showroom area, certainly isn't very customer-friendly. All of the effort has been put into maintaining sufficient output to large numbers of clamouring new customers.

Up to now, there hasn't really been an active and orchestrated attempt to go out and really sell the RH7 and its concept. When this happens, the modern production plant could well be the next stage of development. Bearing in mind that virtually all of the mass-production car manufacturers are using steel monocoque structures, Robin Hood are onto the right system for producing good quantities of shells at the right price. Cutting and welding steel chassis tubes is an involved process in different ways, offering fewer opportunities to speed up production times.

When it comes to Low Volume Type Approval, and Richard Stewart's silence on that subject can't be taken as a denial of future plans, tightly monitored and regulated production line manufacture would work in any company's favour. Conformity of production is an important aspect of Type Approval and it's less likely to happen when a car is made in a series dark and dingy workshops.

When the RH7 eventually gains the peak of its production and design integrity, it could be the best value two-seater sports car ever produced. With independent rear suspension and top-of-the-range front suspension options, it must also be a challenger to the older established alternatives in the kit car world. Currently, it's already making its mark as a good kit at a good price. That has to be the recipe for a very interesting future.

Below: The old and new. Massive sheet folder makes light work of stainless panels. CAD controls plasma cutter and maximises use of sheets.



Tube bending machine at work.



the limited available space in the Mansfield Street works.

Welding is mostly by MIG but there are TIG welding facilities available in-house. These are handy for production of special Robin Hood fuel tanks. As you can TIG weld without a wire or rod, really fuel-tight steel tanks can be made up by skilfully fusing the sheet edges together. The tanks are then air-compression tested in water for leaks, which are both rare and easily rectified.

Once they're removed from the assembly jigs, the RH7 bodies are mounted on transportation bogeys where they will stay until collected by avid customers. The construction of the shell



THE RIGID WIDGET

The S7 monocoque on the road...

The monocoque under every Robin Hood car looks too simple to work: however, as Adolf Hitler's mum discovered, initial impressions can be deceptive. Iain Ayre went for a salutary spin.

WHEN YOU FIRST GET A LOOK AT THE Robin Hood monocoque, it really doesn't look as though it would be strong enough to do the job. There are only a few small box members to support the suspension, and only the top of the side members is folded. When you feel around under the flat area where you rest your elbows, it's not really a complex fold at all, and there's a lot of room underneath there for even a fairly fat bum to spread out.

There's no frame at all: the monocoque is all there is. When you think about it, this shouldn't pose a problem: after all, most of us are quite happy to drive around in monocoque cars made out of paper thin steel, and feel quite safe doing so. I don't personally feel very safe in production cars, but then I probably know too much.

Having just noticed a rather neat looking new Vauxhall van with pretty fluting down the sides, I now know that they did that to stop the sides flapping in the wind and to allow them to make the body out of tin foil.

However, I now also know that Richard makes his own monocoque out of very tough stainless steel, and that it's at least three times as thick as a production car. I know that there hasn't yet been a fracture failure, and that there are 400 S7s on the road. Even so, it's instinctive in kit car buffs to look for a big meaty tubular chassis, and odd to find that the S7 has no tubes at all; square, round or any other shape.

This perception of what a kit car should be has been a thorn in Robin Hood's flesh for years, and Richard has a solution to it. He posed the question to his theoretical awkward customer: suppose our little monocoque chassis could cope with a bloody great V12, would you believe it was good enough then? The answer is obviously yes, so that's what he did.

A 5.3 litre V12 Jaguar was ripped to bits, and was then crammed into the S7 frame. Surprisingly, it doesn't even show, except that the wheels are bigger and have five studs. This monster was wheeled out and started up, and we went off to lunch in it. The roads around Nottingham are no better than most city roads in the UK these days, and Richard was giving the car no quarter, banging it into potholes, giving it blasts of power and sharp dabs on the

brakes, prior to powering it round rough corners. Off and on the power, the massive torque from the V12 simply disappeared down on to the road.

No scuttle shake, no body twist, not even a squeak of protest: the car rode as though it were carved out of a single lump of metal. Okay, point taken: if it can

handle the V12, a Pinto will not be asking a lot of it. There is also an S7 with a Rover V8 in it lurking around in the showroom: I hereby give Richard advance notice that I want to play with that one day soon.

Having had my lesson in the nutter car, I then took a sensible demonstrator out for a drive on my own, where there was nobody about to make any excuses. The controls are very Lotus Seven, which isn't really my cup of tea but is the whole point for their many disciples. You poke your feet down to the bottom of the tunnel and plop your bum on to the leather. It's rucked, the leather on these seats, which means they're sort of pre-wrinkled, rather like Joan Collins. This means the wrinkles open up when you sit on them, and the leather doesn't stretch and crack.

The seats in the demonstrator are now

three years old and holding up well, so there's definitely something in this theory. More to the point is that the rucked seats really look like leather, whereas the smoother ones could just as well be vinyl. The seats are £150 a pair, and the rest of the leather interior adds a further £150. This compares favourably with some of the more expensive interiors available from the competition, some of which can cost £2000...

Anyway, plop into the seat and start the engine. Spits, pops and a rorty blast from the exhaust, which exits just under your elbow. There's a Weber under the shiny stainless bonnet, but it's only a bargain basement 1600cc Pinto engine although it sounds quite convincing. The steering wheel is a black Polo mint, at an Italian distance from the driver: your arms are fairly well stretched out. Likewise the stubby gear lever, which snicks into gear

with a twist of the wrist. The brakes are razor sharp, with the servo still fitted and most of the Cortina's bulk gone. The clutch is soft and light, much less sharp and direct than the rest of the controls, but easy to use.

Again, bumping out of the factory and on to the road, the suspension moves but the body of the car feels completely rigid. Within a hundred yard or so I'm stuck in a jam: some prat in a badge-plastered Granada has flattened a Fiesta and caused a huge clag-up. However, lots of time to examine the Robin Hood in some detail. The use of the Cortina dashboard air vents as screen demisters is neat and economical, and you can direct and control the flow, which is nice. However, the reflections in the screen from the mirror-like stainless steel are a nuisance. I would at least tape over the raised edge at the back of the dash top,





and I would be tempted to paint the whole dash top in a matt finish as well, or maybe trim it in the same colour as the interior.

Still creeping forward a few feet at a time, and the S7 is actually quite happy with this. Some cars of this type are almost undrivable in traffic, but this one's not giving me hard time at all. Past the little pile of squashed crumplezone and the road opens up a bit. With the light weight of this car, even the shopping Pinto is capable of putting up a reasonable

performance, and the spits and pops from the Weber go with a decent amount of acceleration.

Heading for the country now, and a couple of big and empty roundabouts invite a little abuse of the loud pedal. The suspension is soft and pliant, but there's no real body roll, and the long, flat bonnet remains steady as the wheels work up and down. There isn't enough grunt from the Pinto to get into trouble, but keeping your foot down out of bends provides a little entertainment.

It's always a pleasure to watch speeding hedgerows reflected in the back of chrome headlights, and the S7 is no exception. Although the handling feels sure and sharp, the softness of the ride means you could quite happily drive one for a long distance without regretting it. At least, you could if you had a hood and siderscreens with you, I would have liked a little more support for my lower back over a long trip, but of course when you're building one of these you arrange the seat

back, the pedal positions and all the rest of the fittings exactly as you want them; that's half the point of building a kit car in the first place.

My personal preference in steering wheels is your 16" skinny woodrim Moto-Lita, rather than fat little Polo mint numbers, but even with the tiny doughnut fitted to the Robin Hood, the steering is light and easy. When you get to a bit of winding road and give it some stick, you're held in place by the cockpit side and the transmission tunnel, and you find yourself chucking the car about with confidence quite early on in your relationship with it.

Filthy black clouds are looming overhead, and the temptation to take a long amble in the countryside recedes. Without the hood and siderscreens, and the S7 demonstrator is without the hood and siderscreens, these cars offer no protection at all from the elements. Even with my groovy leather flying helmet on, the increasing wind is turning fairly nasty. The windscreen would offer a bit of protection if it were closer to the driver, but to be authentic the screen has to stay where it is, and the true 7 enthusiast wouldn't have it any other way.

Me, I like my fresh air and weather as an optional extra, and when the clouds exploded and the right side of my face went numb from being hit by snow and hailstones driven horizontally across the road by a sub-zero blizzard, I decided enough was enough, hung a U and belted off back to the nice warm factory.

Having been in two of these cars, there's no question about how well they do their job on the road, but there are lots of options to be considered when it comes to building one. The Cortina

option is still open, and will remain so: it's still being improved, too. The latest factory mod is to fit the Cortina front subframe backwards, to get rid of the ugly lumps of pressed steel that are currently hidden behind the extra driving lamps you can see at the front. The subframe apparently works just as well backwards, and it certainly looks better that way.

Looking at the donor pile on the floor, the Cortina axle and suspension is retained complete, including the weird diagonal trailing arms that require bushes with great big holes in them to allow the suspension to flap about like Norman Wisdom on a skating rink. But look a little closer, and you notice that the diff casting now features a balljoint and a track control arm: this is the fifth link that completely stops the axle from rotating, which is the main reason why Cortina suspension feels horrible.

In the S7, the Cortina live axle works well, so the independent Sierra rear end will be a detail improvement rather than a big change. Likewise the new Sierra front end: inboard suspension is slightly lighter,



and moves some of the suspension weight in and down, both of which are a good idea. However, while this sort of suspension makes the few seconds of difference on the racetrack between winning and losing, it makes little difference on the A60.

The Sierra S7 will handle a little better than the Cortina S7, but I wouldn't rule the Cortina out on those grounds at all: the Cortina set-up works fine. Perhaps more important is the spares situation in years to come: a Robin Hood chassis will last more than long enough to make getting some Cortina spares a problem. Also, it's now worth thinking about unleaded engines.

We only have government assurances that lead from four star is more poisonous than aromatic carcinogens from unleaded petrol, or carcinogenic particles from diesel, but the fact is that politically it looks like they're doing something if they stop us using leaded petrol, so that's what they will do. Most Sierra engines are unleaded and therefore have a longer future. Also, post-Cortina five speed gearboxes are more economical and quieter than four-speed ones.

Of course, there is also the visual pollution of the country to think about: Cortinas are a bland, reasonably well balanced design, whereas Sierras are actively hideous. It is every citizen's civic

duty to demolish Sierras rather than Cortinas on purely aesthetic grounds. Overall, it's probably a better bet to go for the Sierra based S7, as the cost of the whole project will be comparable, and the end result will be slightly improved in various ways.

As to the other options available from Robin Hood, the first is the choice of what material you want the chassis made out of, and what level of construction you want to take on yourself. Cheapest of all, at a price yet to be announced but certainly in the low hundreds, is the Engineers' Kit. This is a set of cut and folded panels, which you have to assemble and bolt or weld together yourself. Not a smart move for a first time builder, but if you've already successfully completed a kit car, you've probably learned enough doing that to have a crack at this.

The Zintex option is not stainless steel, but mild steel electroplated with a thin coat of zinc. It's a good surface to paint, and it offers a good level of protection against corrosion. More important for the financially challenged, it's £300 cheaper than a stainless body. The key to making that decision is who is going to spray the body. If you spray it yourself, that'll cost maybe £50. However, if you get someone else to do it, it'll cost at least £300, which is exactly the same as having a stainless steel body which doesn't need painting at all, and which will last forever.

The GRP bits of the S7 are all supplied in red, blue or green gelcoat, so you just have to buff them up rather than spraying them. The mirror-like stainless finish is actually pretty tasty, so if it costs about the same it's the better option. Next up from the Engineers' Kit is the Part Assembled Body or PAB kit. This is a good option, as it saves a worthwhile amount of money and the hard bit has been done.

The PAB kit is supplied partly welded, and what you have to do is complete the body by drilling and bolting or by welding the panels together. The good thing is that Robin Hood have already done the tricky

THE RIGID WIDGET

Left: S7 used standard 1600cc OHC Pinto engine. Below: Robin Hood can now supply Ford Cortina donor packages.



THE RIGID WIDGET

bit of lining up the panels, and have then welded enough of it to keep it in shape until you finish it off. They supply the parts, you supply the labour: a good deal.

The Deluxe kit is fully welded stainless steel, and even includes a leather interior: it's just a straightforward matter of building it into a finished car, rather than getting involved in constructing the monocoque as well. The list of components included in the kit is awesome, and genuinely only requires the dead Ford to get you on the road: if you like, you can even skip that part, as Robin Hood offer a complete ready overhauled donor kit for the Cortina.

This includes a reconditioned engine, box, axle and brakes, new radiator and discs, and allows you to construct virtually a brand new sports car for an absurdly low price. You couldn't even buy a crap

third world shopping car new for this sort of money.

I keep banging on about the prices, but I'm at the sharp end of that right at the moment. I'm going into manufacturing as well as writing: I'm in the middle of doing the costings on my own replica Jag XK120 project, and I have a fair idea what things cost: Robin Hood are offering you retail prices that are considerably better than I could get as trade prices. As ever, when you're thinking about buying a kit, it's worth taking a good long look at the demonstrator. In the case of Robin Hood, you can only do this on a Saturday. One of the reasons for the low prices is a rigid time and motion structure at the factory, and a total lack of salesmen. The factory is completely shut to the public during the week, and the front door is shut and locked with a big sign on it saying so. Weekdays are for making cars, and Saturdays are for selling them and dispatching them. This makes a lot of sense, as any customer visiting a kit manufacturer will easily take up a couple of hours of time. If the production director at Ford had to stop work for a couple of hours a day to chat to customers, the cost of Fords would go up: the same principle applies at Robin Hood. Actually, Saturday is the best day for a visit anyway, as there are kits all over the place, and you can poke about to your heart's content examining them as they're loaded up and sent off.

No salesmen; unusual in a company this size, but the products are simply left to sell themselves. Richard will talk to you on a Saturday, and Gina who runs the office is friendly and approachable. A salesman would cost another ten to twenty thousand a year, and who would pay for him? We would, of course. Let's just carry on managing without, shall we?

The S7 build manual incorporates the approach I've been preaching to kit car manufacturers for years now — the more comprehensive the manual, the less time wasted on the phone explaining what you should have written down clearly in the first place. The S7 manual is 72 pages of sound advice, assuming only a limited mechanical knowledge on behalf of the customer, and it will tell you pretty well all you need to know about building the car. The manual is £8.00, and I'd recommend sending off for one if you're at all interested in the S7.

How about going to look at the real thing? If Nottingham's a bit of a long schlep, ring up and ask what shows Robin Hood are doing this year, because there's a good chance they'll be somewhere near you during the summer. They do all the major kit car shows and a few other car shows as well. They even do the national Motor Show.

If you're into Sevens, this one is well worth looking at, and it would be well worth looking at even if it were expensive. As it is, Richard Stewart's obsession with mass production and bulk purchase means the car is just a total bargain, with loads of expensive stuff thrown in at a few pounds over a rock bottom cost price. A steal, I reckon.

Below: Ruched leather seats look the business and whole interior was tidy and smart. Bottom: Cortina instrument pod is behind the dash somewhere.



ROBIN HOOD *meets* HENRY FORD

WE SURE WOULD LIKE TO KEEP CLEAR of dreadful Friar Tuck puns, 'but there's not much likelihood of that. (Sure would — Sherwood — oh well, never mind.) However, Robin Hood Engineering's Richard Stewart actually has more in common with Henry Ford than with the Sheriff of Nottingham's legendary tormentor. For the first time, mass production techniques have been applied to kit car construction to produce a unique stainless steel monocoque at a remarkably low price.

The basic idea is to rob the rich (Ford) and to give to the poor (us). The only reason that there aren't many more monocoques available in the kit car world is that they are too expensive to make. There are one or two successful kit designs around that use a GRP monocoque, and of course virtually all racing cars are now monocoque, but setting up to make them economically in metal involves big bucks.

Richard Stewart was lucky, or clever, depending how you look at it, in having some money behind him when he went into the kit business. He had for many years been repairing bent crumplezones, which is lucrative but no fun at all. When he got going in kits, he could afford to buy sheets of special stainless steel in batches of 500. When the current depression got going and hugely expensive engineering machines were suddenly available from the official receiver for 10% of their real value, Richard was able to buy an eight foot folding machine that would handle the thick 1.5mm stainless that is used for the S7.

He could also afford the enormous guillotine that squats massively in a corner and shakes the whole place when its blade crashes down. From the beginning, Robin Hood's cars were cheap and light, even with the steel three times as thick as production cars. Selling lots and lots of them — some four hundred to date — even at thin profit margins, has meant that

even now he can invest in new machines, although he's still decidedly canny and Northern about it. The plasma cutter, for instance, was bought as just the head and the motors: the computer and the programming of it was handled by a small local firm. For a good price, mind you.

The result of that was a better than 90% use of each metal sheet, as every inch of it was used up for dashboards, body sides, brackets, whatever. The Sierra kit is priced to sell like hot cakes, and Robin Hood will be able to handle more than twenty a week. If you see any long faces amongst the dozen or so people who work for Robin Hood, it's probably because the staff canteen was recently demolished to make room for the new Sierra production line. Yes, it is actually a production line, just like Henry Ford's one. Which brings us back to where we came in...

Iain Ayre kicks off our in-depth investigation of Robin Hood Engineering with a look at the new Sierra based S7.

Iain Ayre wearing a very fetching hat in the S7 demonstrator.



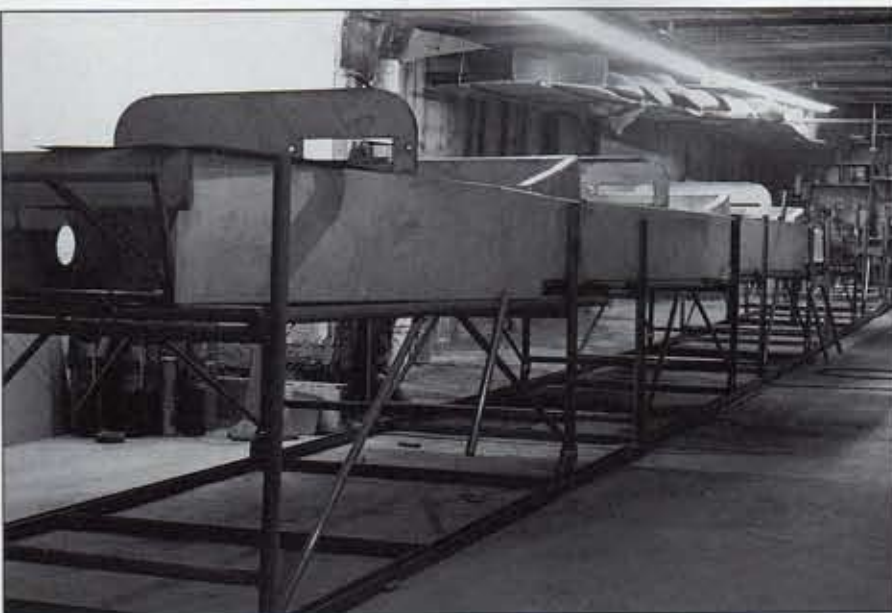
SIERRA S7

The model T of the kit car world

Henry Ford reputedly said "They can have it any colour they like as long as it's black." Richard Stewart's approach is almost as uncompromising as that, and as radical in its effect on kit car pricing. This is a whole new approach to the industry, and nobody else is doing anything quite like it.

YOU CAN HAVE RED, BLUE OR GREEN GRP wings and nosecone for your S7, but that's your lot. This seems mean, but it actually shows you how the whole deal works. It wouldn't cost much more to allow lots more colours, but Robin Hood would have to buy in gelcoat dyes which would be used up more irregularly and more slowly, they'd have to stockpile many more finished sets of panels and pay upfront for the materials and labour to make them, and so on and so on. Thus you only get red, blue or green, but you get them very cheaply indeed. Henry Ford revolutionised the car

Below: S7 production line now takes over the old staff canteen! Right: Neat detail on monocoque - if using 5-speed 'box simply punch out the marked area.



industry with the Model T, but Robin Hood are unlikely to change the ways of the kit industry in the same way. Most kit car manufacturers like making hand-made cars, and are only interested in doing it their own particular way: this is fine, and is one of the main reasons why the kit car world is such fun.

Richard Stewart is as obsessive as any other kit man, but the bee in his particular bonnet (or the feather in his little green cap, if you like) is making cars that he is happy with as cheaply as is humanly possible.

Considering what you get in the kit, the price of the Sierra based S7 at £995 plus VAT is verging on the absurd. That's the launch price of the Zintex finished kit, held for a limited time until the full costings are done, but Richard seems confident that the final price when full production gets going can be kept close to that. The green and yellow car photographed was carefully costed as it was built, just to prove that the whole thing could genuinely be done for peanuts.

The kit was £995, and this included everything you need except for the donor. This actually means everything: stuff like mods to propshaft and steering shaft, fog warning and reversing lamps, a leather Mounthey steering wheel, the exhaust system, a fastener pack, brake pipes, a tin



of glue and so on. Whenever you think, "Ha! Bet they haven't included a widge wosname!" They invariably have. Even drill bits.

It's difficult to believe that all this stuff can be included without being a pile of rubbish like the Made-in-Hong-Kong bumper kiddy toy packs you get for 99p at car boot sales, but Gina, whose mellifluous voice is the one you hear when you call, explained that they'd been hammering away at their suppliers for years to get the prices pared down to the bone. The steering wheels are a good example: I think we would all agree that Mounthey are good solid steering wheels, quite nicely bound in leather.

In Halfords, a Mounthey wheel will cost £30 or so. Okay, that means the trade price is maybe £20. Along come Robin Hood and say,

"Give me a price per hundred steering wheels, cash upfront. No, don't be silly, I want a *serious* discount, not 10p off. Call



me back when you've got a real price for me." Gina got a bit coy about the actual price they pay for the wheels, but I would guess they pay something like £10. Then they sell it back to us at maybe £11 as part of the Sierra kit. If you apply that technique to every tiny part of the whole car, you can see how it's possible to sell a whole pile of quality bits for less than £1000.

When the S7 monocoque was adapted to use the Sierra as a donor rather than the Cortina, a different set of rules came into play, with money not involved. The idea was now to do the best car possible with the Sierra mechanicals. The design options on the front suspension of the Cortina based cars are to some extent limited: if economy dictates that you use the Cortina subframe, the upper and lower arms are all done for you: the only option you can exercise is to reverse the subframe to put the ugly big lumps at the back where you can't see them, which has in fact just been done to the Cortina S7.

However, the Sierra throws open some new possibilities, as you can't use its front struts in a Sevenesque car anyway. Robin Hood had to make their own upper wishbone arrangements, with a blank sheet on the design. The result is an inboard suspension system, light and sexy, just like Formula 1. If you've got to change it anyway, you might as well improve the design while you're at it.

Richard organised the new kit into the general production schedule, and could then get back to the bit he liked best: trying to make a complete car for £2. The idea was that the Sierra demonstrator should be built by the factory just as if they were a second year engineering student with a demanding girlfriend, a fat overdraft and stingy parents.

The kit price is £995 for a start, with a further £174.12 in VAT to be given to the government so that they in turn can give it to Malaysian dam builders or European currency speculators. Next came the Sierra donor, bought at a local auction for

the princely sum of £152. This may seem excessive, and indeed Richard would probably agree that he was throwing his money about a bit that day, but it did include the auctioneers' premium, and they did get £41.43 back for the scrap shell. So far, we're at £1279.69.

Paint next, and the total for the green, the yellow, the primer and thinners, stonechip and so on came to £46.30. To be fair, Richard only had to pay for the materials, because he sprayed the car himself. It is a very easy car to spray, and quite small in area, but most of us would have to budget for a professional spray job. Or we could go for the shiny stainless steel body option for another £300, which would probably work out at about the same. Anyway, Richard sprayed the car himself, so it added £46.30 to the total. We won't bitch about the cost of the wet and dry paper.

Next, overhauling the donor parts: oil filter, brake pipes, exhaust mount, set of plug leads (what — all four of them?), pair of number plates. Total £46.41.

Lash out on some deluxe options here, and we add bonnet louvres at £40, a spare wheel cover at £20, and VAT, and we get another £70.50.

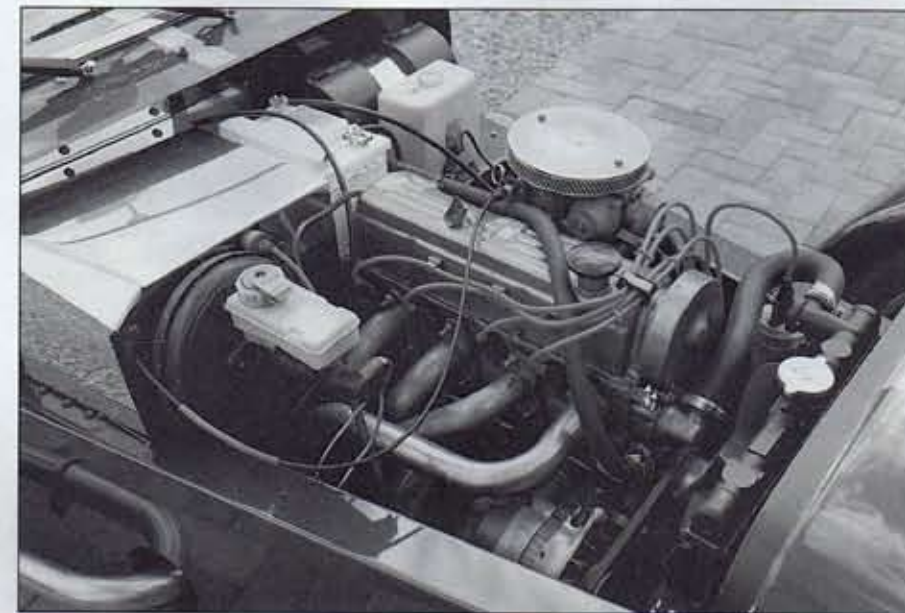
Finally another £20 for cable ties, tape, lubricants and so on (and the wet and dry?) and we finish up with a grand total of £1462.90.

That is an absurdly low price for a complete and drivable new sports car, but it's all down in black and white. There is a catch, however: "drivable" is a relative term. By buying the car at auction, Richard could hear the engine, but couldn't drive the car, and when it hit the road, he discovered that the gearbox was shot, and jumps out of gear like a bag of grasshoppers. The Sierra S7 does genuinely drive, however, and a replacement Ford gearbox won't break the bank.

Has the Sierra's time come as a



Above left: Look, no coil-overs! Above right: Simple Sierra interior. Heater controls and unit retained from donor. Below: Familiar Pinto block fits neatly.





THE ROBIN HOOD SUPPLEMENT

donor? At Robin Hood they believe it has. The Cortina still has lots of mileage in it, as it were, but it will tend to disappear as the bulk of those still on the road are scrapped. Mechanical parts will be available for a good long while, but body and other parts will soon be finished. At that point, within a surprisingly short period, the Cortinas will all be gone. When did you last see a Mk111 Cortina? Can you even remember what they look like?

The early Sierras are now rotten, and a lightly damaged Y registered model is scrap. The doors on my brother's F registered 1988 one have rotted through already, so it looks as though the Sierra

will be an increasingly promising donor as time goes on. The engines aren't particularly good quality, but they will do well enough, and the independent back end will be a distinct improvement over the old Cortina live axle. And "live" was certainly the word for it.

Given that you really ought to buy a more sensible donor for £400 or £500, rather than £152 for a real auction dog, you are still talking about a genuine on the road cost of well under £2000, and that has to be a serious bargain in anyone's book. Richard built the demonstrator for £1462.90 to prove a point, and to my mind he certainly succeeded in doing that.

SIERRA S7



THE ROBIN HOOD SUPPLEMENT

BUILDING THE ROBIN HOOD S7

In late 1992, *Which Kit?* embarked on one of its most successful build projects to date, constructing a Robin Hood S7. Ian Stent recounts the tale.

HAILED AS ONE OF THE CHEAPEST sevenesque type kits on the market, *Which Kit?* couldn't resist the temptation of trying its hand at building a Robin Hood S7. Stainless steel monocoque chassis and coloured gelcoat fibreglass panels resulted in some very pretty little chariots leaving the Nottinghamshire works. We'll have some of that, thought the team at *Which Kit?*, and set about sorting out the details with company boss, Richard Stewart. Along with building the Robin Hood, *Which Kit?* took the opportunity of trying out a complete donor package from Kit-Fit.

A well established company which assembles complete kit donor packages. Fully reconditioned donor parts, including a large number of new bits, would help not only help speed the build but also avoid all the nasty grubbing about under oily old Cortinas. Something the *Which Kit?* team is all in favour of!

Once the donor parts had arrived at the

factory, 'Jalopy' Jones was despatched up north to get stuck in and return with a completed car. Nothing could be easier.

The first aim with any build is usually to get the chassis to a rolling stage by assembling the front and rear suspension. The front wishbones are a simple bolt-on job into predrilled holes. The wishbone's exact position for and aft is finely tuned with washers and this means suspension geometry will have to be done professionally unless you feel confident enough to do it yourself. We set it up



roughly and had it fine tuned once up and running. Since we built our car Robin Hood has now redeveloped the wishbone design even further.

The wishbones and coil-overs are both supplied in Robin Hood's top spec kit. Completing the assembly is then the Cortina upright along with disc, caliper and hub. The upright was a reconditioned part whilst everything else was new and supplied in the Kit-Fit package. At the back the Cortina live axle is used along with its four radius arms. Robin Hood has designed its own fifth link which is designed to eliminate axle wind up, a common problem on Cortinas. It's basically an adjustable bar with a ball joint at one end, that bolts down onto the top of the differential housing, and a bracket at the other which bolts onto the rear bulkhead.

With the modifications done to the differential casing, the whole axle can then



be lifted up and the upper radius arms connected first. The axle is pretty heavy so the easiest way to lift and hold it in position is to use a trolley jack under the diff casing. The lower radius arms can then be connected and the standard Cortina springs sit on these. There's no fixed mounting point on the monocoque for the upper spring mounting cup and this is positioned by the builder. Once the springs appeared to be in the correct position, ie both approximately upright,

the cups were marked and a hole drilled down through the stainless steel and through the centre of the cup.

The rear assembly, as with any standard Cortina set-up, is held in place by the dampers which, when at maximum extension, will still not allow the spring to fall out of its supporting plates. Holes for the damper chassis mounting positions are pre-drilled. With the fifth link bolted to the bulkhead bracket the whole assembly can be lowered down off its stands and onto four wheels.

Et voila — the Robin Hood was already rolling. It's important the radius arms are not fully tightened until the car is down on its wheels because the bushes have a tendency to wind up if the locating bolts are tightened before being lowered. This will not only effect the car's handling but also destroy the bushes quite quickly.

Engine mounts are not supplied in the kit and must be cut from the donor car's subframe. Instructions are given for this procedure and new mounting holes must be drilled into the mounts so that they can be bolted onto the pre-drilled monocoque.

Before the engine and 'box can be fitted, the steering must be sorted and placed in its final position. The rack is straightforward but must have the steering arms extended by the factory on exchange. The steering shaft that goes from the rack to the main column is also

lengthened by Robin Hood. Fitting of the main column section, including stalks etc, is straightforward with clear instructions in the manual.

Attention could now be turned to the engine and 'box. These were both supplied fully reconditioned from Kit-Fit and the quality of the components appeared to be extremely good. With all the rubber mounts loosely attached to the engine and gearbox the whole lot was lifted with a hoist and moved over the engine bay. If you don't have a hoist, and not many of us do, then hiring one is cheap and extremely easy.

Because of the way in which the Robin Hood chassis is made, the gearbox actually fits inside the cockpit rather than in a bottomless central tunnel. With two people working on lowering and guiding everything into the engine bay, the engine mounts are the first to be located. The gearbox mounts remain loose until the shortened propshaft is connected up to both diff and gearbox. By using washers under the gearbox mounting, the angle between gearbox, propshaft and differential can be minimalised to help reduce stress. Once satisfied with the position, holes can be drilled down into the floor and the gearbox fixed permanently.

Next major area to deal with was the fitment of the pedal assembly, brake servo

and master cylinder. As with the Cortina donor car, the main pedal assembly locates the clutch and brake pedals whilst the accelerator is fitted separately. The main assembly is located onto the Robin Hood only by its lower mounting bolts, using holes already pre-drilled in the monocoque. It's then held firm by a locating bracket at the rear of the pedal assembly that bolts up onto the RH7 bulkhead. The accelerator pedal also has a stud pre-fitted to it and this can be used to mount the pedal straight onto the bulkhead in a suitable location. We've bent the pedal a little for a more satisfactory position.

Once we had fitted the pedal and master cylinder assembly we realised we couldn't fit the exhaust system without removing everything again — quick lesson learned. The stainless steel exhaust is an option available from Robin Hood and really looks the business.

It seems Darren was pretty concerned about getting cold in the winter, because the next thing he fitted was a Mini heater box along with its controls! Did I bother with such luxuries in our old Sylva Striker? Did I hell. Nearly froze to death a couple of times but that's what open top motoring's all about, isn't it? Mini heaters must be one of the most commonly used units in the kit industry and their availability in your local scrap yard

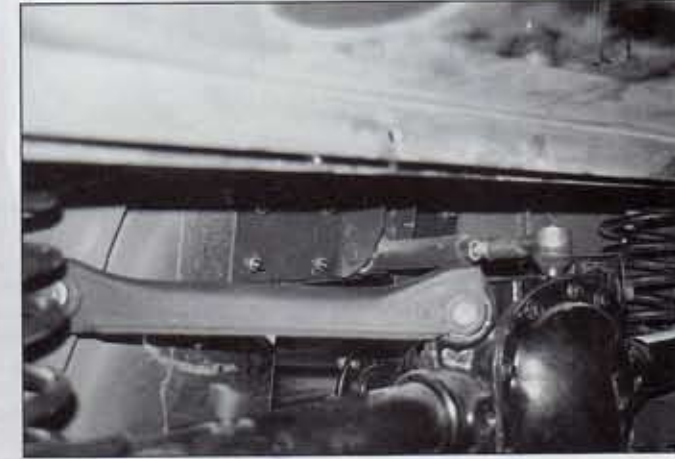
Kit-Fit donor parts ensured a tidy engine bay while stainless steel body looks amazing on a bright sunny day — just perfect.



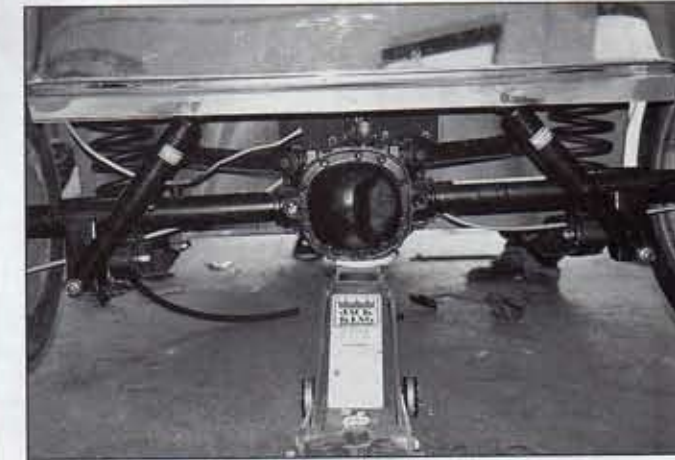
Above: Stainless monocoque was to prove immensely rigid on the road. We opted for the Robin Hood front suspension package. Below: Engine and gearbox being lifted in. Very quickly up to a rolling chassis.



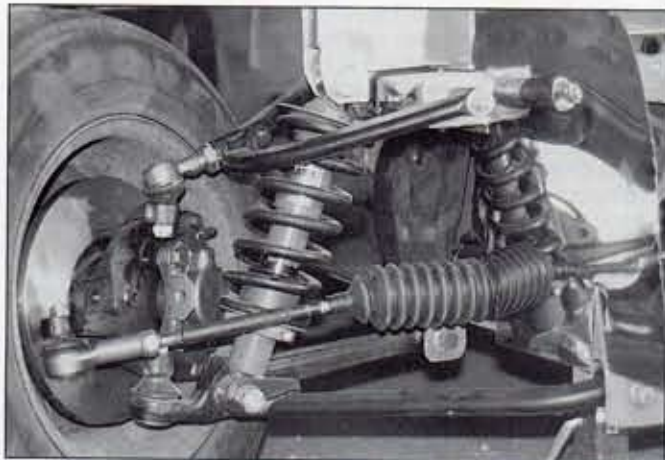
THE ROBIN HOOD SUPPLEMENT



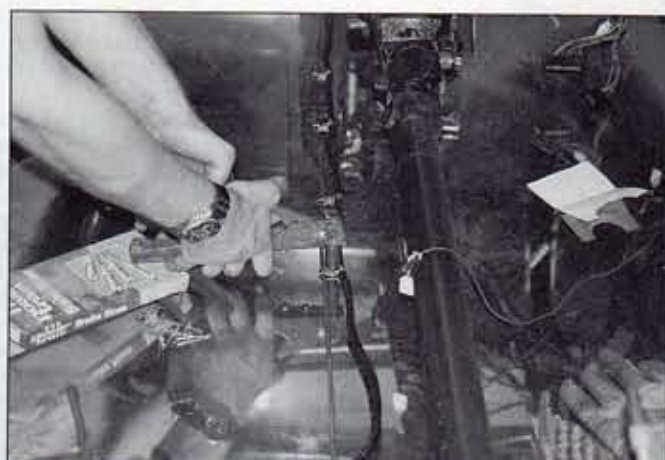
Above: Detail shot of the rear suspension and Robin Hood's ingenious fifth link which helps to stop axle wind-up. Below: Using a trolley jack is the easiest and safest way of fitting the rear suspension.



THE ROBIN HOOD SUPPLEMENT



Above: Completed front suspension with Cortina upright and brakes linked to Robin Hood's own wishbones. You can just see where the steering arm has been extended. Below: Propshaft runs inside the cockpit.



Above: Carefully fixing brake line and wiring loom to the floor and away from the propshaft. Central tunnel encloses everything. Below: The rolling chassis was very quickly completed.



combined with their compact nature will show you why.

Our heater was positioned high up in the passenger tunnel via two bolts — one going up into a crossmember under the dash and the other through the side of the heater box into a side monocoque box section.

Attention was next turned to fitting the Cortina wiring loom and brake lines. If you've removed the loom from your donor then don't forget to label everything copiously as you take it out. I guarantee you'll never remember what all the wires are for otherwise.

The brake lines will bend to the shape you want quite easily but be extremely careful not to kink or even flatten the tube slightly when going around corners. You can buy a special tool to help achieve neat corners but so long as you're careful it shouldn't be necessary. Where the brake lines are not going around bends you should try and make the pipe as straight as possible. This is more for aesthetic reasons than anything else but you'll really appreciate it when the car is finished — the longer you take the better result you'll get.

In the engine bay, both electrics and brake lines were positioned up under one of the main monocoque box sections that run down either side. Fuel and brake lines, along with the wiring

loom, then run inside the car, riveted to the floor with P-clips, and following the line of the central tunnel. It's absolutely vital here to keep everything well secured and away from the propshaft, so don't stint on the P-clips.

The central tunnel, like the rest of the car, is made of stainless steel. With all components (driveshaft etc) running inside the car rather than under it, the RH7 central tunnel encloses everything. Our central tunnel was supplied slightly over large and was easily trimmed using tin snips. The Cortina handbrake must then be fitted and this is best done by putting the tunnel in place, sitting in the driving position and finding the most comfortable position for the handbrake lever. What you must watch is that there is sufficient room to get the gearstick into second and fourth gear. The process for fitting the handbrake cable is a little complicated but clearly described in the manual.

Next major job appeared to be the fitting of the scuttle top but before this could be done we had to finalise some of the wiring behind the dash. The Cortina loom has all the connections for the standard instrument pod and this can be cunningly retained and used in the Robin Hood. With all relays etc mounted on chassis rails we could then look at fitting the scuttle top.

This used to be pre-formed by Robin Hood and offered in two forms. One had the lower edge folded over which meant the scuttle's position was finalised and any major modification was difficult. The second method left the bottom edges straight and allowed the builder to trim the scuttle for a more accurate fit to his own car. Neither were particularly easy and the company now fits the scuttle to the car prior to going out to the customer. That's a great improvement.

The exact position of the windscreen on the scuttle is best described in the build manual and if a hood is going to be used then it's vital to get this right. With the screen pillars fixed in position the windscreen and frame can be trial fitted. The pillars may well require a little bit of tweaking to match up neatly with the windscreen. Once we were happy with its position we drilled through the pillars and carefully into the windscreen aluminum frame. Be really careful here not to damage the edge of the glass.

Sikaflex was used to seal the windscreen base. In order to get a neat finish we used masking tape in the same way as you would mask an area to be painted. The Sikaflex was then applied over the area and smoothed flat with a piece of card. Once happy with the finish the masking tape is quickly removed to leave a neat black line. The Sikaflex

cures quite quickly and once this has happened any excess can always be trimmed away. It's important you don't touch it before it has cured otherwise you'll just make a mess.

Windscreen wipers could then be positioned. The RH7 uses the wiper mechanism from the Mini and this needs to be shortened in order to reposition the wiper arms. Kit-Fit supplied the motor and did the modification for us prior to collection.

From previous experience it's always the finishing jobs, that should only take a day, that drag on for weeks. Not so for Darren, though, no sir. He bowled up to Nottingham for a second session with Robin Hood and ended up nearly driving the damn thing back home.

With all the wiring under the scuttle in place Darren decided the first job ought to be sorting out the dashboard with its instruments. A simple plywood dash blank was supplied in the kit and the builder must decide where to mount the instruments and then check they don't foul anything behind the dash. The dash is now supplied in metal as part of the scuttle although the way we fitted ours is still a worthwhile alternative. Kit-Fit supplied us with a complete package for the Robin Hood which included a Cortina Ghia instrument pod. As the Cortina wiring loom has been used, with all its standard

plugs, it made sense to try and incorporate as much of the donor components as possible.

The Cortina instrument pod has to first be modified so that it will sit flat against the back of the wooden dashboard. This is done quite easily with a hacksaw but will then require a piece of flat Perspex to cover where the old curved Perspex was. The aim here is to hide the fact that we're using the Ford clocks and this can be done by carefully cutting out the dash blank so that it only shows the round faces of the dash pod behind.

With the help of Robin Hood's trimmer, Roy, the relevant size holes were cut out using a pillar drill and hole cutting tool (surprisingly enough!). The latter can be mounted to any normal drill although a pretty steady hand will be required for a neat finish. As well as the Cortina instrument pod we decided to have the added luxury of some aftermarket gauges for oil pressure, water temperature and volt meter. These we mounted behind the steering wheel in the line of sight of the driver.

Once the holes were all cut it was time to trim the dash. Don't rush is the name of the game here and a useful hint is to let the glue nearly go off before placing the two surfaces together. With the trimming complete, the instrument pod is positioned and set in place with some of that magic Sikaflex. Finally the dash itself is selftapped into

place on the car. Column mounted switches are a real boon and on the RH7 there's plenty of room in which to simply bolt these onto the column.

Now attention could be turned to the really fun part; fitting the GRP body panels. First on were the front wings. Mounting brackets are supplied in the kit and these fit into the top front cross member. On our Deluxe Kit both are made of different diameter round tube and one fits snugly into the other. Final positioning of these stays is done with the wings in place and the tube is then drilled and bolted to secure it in its correct position.

The GRP wings, as with all the panels, are supplied with a colour gelcoat finish and the quality of these panels seems excellent. First job was to drill five equally spaced holes down the joining face of each wing and then, following the build manual instructions, one wing can be mounted temporarily onto the body with self tappers. It's absolutely vital that both wings are mounted in the same position and at the same angle and this is far more easily achieved with at least two people doing the job. Once happy with the overall positioning, the wings can be more permanently fixed using bolts and large washers to help spread the pressure.

Fitting the nose cone is quite straightforward with all exposed edges being covered with neat push-over edge



Above: Cutting out the holes in the dashboard using a neat hole cutting saw. A very useful and quite cheap piece of kit. Below: Modified Cortina instrument pod is neatly disguised behind the dash.



Above: Trimming the dash with foam padding and then vinyl. Edges were stapled into place. Below: Sorting out the hood support rail positions. Cord holds everything in place and can be easily adjusted.



trim. Lining up the nose, as with the wings, is terribly important if the car is to look right. Once you've trial fitted it, stand well back and re-check that it looks OK.

The final piece of GRP bodywork is the rear boot and wheelarch area. This is a one-piece moulding which needed only marginal trimming before it could be trial fitted onto the rolling monocoque. The important point here is to make sure that the rear wheels are sitting in the centre of the wheelarch and not too far forward or back. Again, standing back and looking from a distance helps to get this correct. The first mounting points are along the back of the luggage department and then there are further mounting brackets supplied that are used along the sides. Where bolts are visible, as many of these are, it is always worth using stainless ones. Don't forget that you'll need stainless washers as well because both will go rusty in no time at all if you don't.

In order to improve the look of the rear end we have introduced some imaginary seam lines that make it seem like the wheelarches are separate to the boot section. Robin Hood did this for us in the following way. A rubber bead strip is first fixed to the leading bottom edge on the wing with a small rivet. It's then stretched back over the wheelarch and fixed again down at the rear of the bodywork. If you bear in mind that you are trying to make it look as though the wheelarch is separate to the body then the position of the seam should be fairly obvious.

You may just get away with these two rivets but Robin Hood used a couple more just for safety. The beading will eventually be held in place by our old friend, Sikaflex, so the next job is to mask off the area on either side of the beading whilst leaving just enough for the Sikaflex to meet the body surface. Once happy with that, the Sikaflex is applied and smoothed into shape. The masking tape is quickly removed to leave a neat edge and the Sikaflex can then dry.

Well, now was the moment of truth. The brakes had been bled, there was oil in the engine, water in the radiator and power in the battery, but would the little beggar go?

Pump the throttle, twist the key and, after a second or two's hesitation the 1600 Pinto was up and running. Out goes the oil pressure warning light, out goes the alternator warning light — what more could we have asked for? Robin Hood's boss, Richard, takes the car for a cautionary drive around the factory buildings to soon return and report no major hiccups.

The final trimming is quite straightforward and doesn't really require the carpet to be edged or vinyl to be stitched anywhere. Of course, there's nothing to stop you going that route, and carpet suppliers such as D & M Middleton offer an edging service once you have cut your carpets to size. Vinyl has been used on some of the body/chassis sections and links up well with the covered dash. We made use of Robin Hood's in-house trimming facilities and stitched up a few edges. It certainly adds a professional touch.

It's always worth remembering that certain interior panels may have to be removed at a later date to check wiring behind the dash or gain access to the propshaft, for example, and it's here that you must think carefully about how the carpet will cover certain parts in order to make later removal as hassle-free as possible.

The seats we've used are Robin Hood's own, again made in-house, and are perfectly suited to the sevenesque look. There are no official mounting points and the seat pad and back just slot neatly into their natural positions.

Choosing wheels and tyres for a kit car, but ought not to be, a bit of an afterthought. Seven type cars generally look best with a spoked-type wheel and Robin Hood's own demonstrator looks terrific with its replica Minilites. There are lots of wheel suppliers that advertise in all sorts of magazines but we headed for Davey Automotive. Company boss, Malcolm Davey, currently owns a Ginetta G31 and has previously built a Merlin and Eagle, so he really knows his stuff when it comes to kits. That's extremely useful when it comes to sorting out tricky

things like wheel offsets. His company can obtain two different types of Minilite replica and we've plumped for the Allycat variety.

Our Robin Hood certainly looked a treat. With glinting stainless steel, louvred bonnet and bright red nose and wings, the S7 will convince most passers-by of its classic origins — it really looks the part. The new front wishbone arrangement is also much neater than the heavyweight Cortina wishbones used on Robin Hood's other models.

The bright red 3-point harnesses add to the sporting image of the Robin Hood interior and the wide shoulder padding certainly makes them quite comfortable to wear. Supplied by Libra Automotive, they have been specially modified to suit the S7 and can be thoroughly recommended.

Right, now was the time of reckoning. The 1600cc OHC engine fired into life without a moment's hesitation, the short gearstick snicked into first and we were off. The driving position is fine, being a typical straight-legged, arms outstretched affair. The short gearstick is topped by a lovely aluminium gearknob and the gearchange appears firm and precise.

Our reconditioned 1600cc OHC engine is lovely and quiet, without any of the mechanical rattles often common amongst this breed. In action the unit did appear a little strangled and, on consultation with Kit-Fit boss, John Frogatt, it will need a fair degree of running-in before it really comes to life. John is clearly a mine of information about the various Ford donors and is more than happy to discuss customers' requirements.

On the move the S7 provides a more compliant ride than found on many similar street tearaways. The suspension soaks up most of the bumps whilst the seat cushions the driver from the worst. Body roll is minimal and we did many miles in the little car to show etc before it was sold on six months later to make room for our next project.

Lasting impressions of our car are certainly very favourable. Compliant ride, good hood and doors, and a general competence in all departments led us to the conclusion that the S7 is definitely one of the more practical sevenesque kits when it comes to everyday use.

As a build project the Robin Hood proved largely hassle-free and was supported by a massive build manual. With the use of excellent donor parts and a well equipped workshop, the S7 had been built pretty quickly but, nevertheless, still probably took around 150 hours. Home builders should therefore expect to take a little longer (obviously we've not had to refurbish any donor parts).

Whilst we may not have taken the cheapest route to completion, the sums certainly showed how one of these roadsters can be built on a very tight budget indeed and that, along with super looks, is where the Robin Hood scores so highly. The build of our S7 has been largely trouble free and yielded a great little roadster that was easy and fun to drive without requiring super high insurance rates. A perfect scenario for the young enthusiast.



ROBIN HOOD'S Merry Men

Sorry, couldn't resist it. What sort of people build and drive the S7? We hid behind a mighty Sherwood oak and then jumped out and ambushed one or two of them.

THE FIRST WAS AN AMIABLE ENTHUSIAST called Chris Hind, who has a kitcar builder's dream of a garage by the side of his house, with three Robin Hood cars parked in it.

Three could be considered excessive, but there's a story behind them. The first was the most standard looking one, which Chris built from an earlier Triumph Dolomite based S7 kit. This was smaller

and narrower than later cars, and looks quite similar to the original Lotus design, which is why he liked it.

As he was local, he got into the habit of dropping by on the odd Saturday to check what he was doing against the company demonstrators. He didn't upset Richard by turning up during the week when the factory is closed to visitors, and the two got to be friends.

Top: Chris Hind poses with his three different Robin Hoods. Below: S6 was his second build.

Below: Completed without any major problems at all, our Robin Hood S7 was rolled out of the workshop on its slave Cortina wheels. The wheels don't look too bad at all and show how a budget kit could easily use the donor wheels.



ROBIN HOOD'S Merry Men



Left: Triumph suspension of early S7.
Below: Cute looking 'barrel' end of S6.

Above: Three different cars make an impressive display.
Below: Chevette based Cheven is utterly unique and built using an 'Engineers' Kit'.
Right: Chevette engine installed. Below right: Triumph engine in this early S7.



ROBIN HOOD'S Merry Men

A periodical factory clearout involved getting rid of a partly finished kit which had sat gathering dust in a corner for some time: this was in fact the prototype Robin Hood S6, also known as the Litigation Special. Since the beginning of time, or at least when the last genuine Lotus Seven rolled off the production line, the writs for alleged copyright infringement have been flying about like confetti at a wedding.

Richard Stewart's first reaction to the writ that plopped onto the mat was to redesign his car so that it didn't really look like a Seven at all, and the result of that was the S6. Then, more characteristically, he decided to hell with it, he wouldn't be bullied, he'd just take it to the High Court and see who won. The litigation spluttered to a halt, and the new car never got finished.

When the S6 emerged again during a factory clearout, it was actually quite a pretty car: it seemed a shame just to leave it half done, so Richard offered it to Chris Hind, to see if he'd like to finish it off and put it on the road. Hence the second Robin Hood filling up the garage.

Still Pinto based, the S6 is a sharper and more modern design, with a more rakish cockpit and a simple but effective single curved rear end, in a distinctive Smartie tube shape. It could be resurrected some day, who knows? (This one is now for sale to allow a bit more room in Chris' garage, and he's asking £4250 ono for it)

Chris now had two cars in the garage, and Richard, as ever, was thinking about

People's College in Nottingham is currently building not one but two S7s as a teaching aid.



something new. This was the idea that is now known as the Engineers' kit, which is just a set of pre-cut and folded panels, not even welded together but just supplied flat.

The trouble with flat pack stuff is that you really need to be quite skilful and to have a good grasp of carpentry and engineering techniques to be able to assemble a wardrobe that will stay up. Would the same apply to a flat pack car? Chris was a good test bed for the idea, as he was generally competent at building cars, but was still very much an amateur.

The project also involved experimenting with a new donor, in this case the Vauxhall Chevette. This of course creates the Robin Hood Cheven. The Chevette is actually a good donor for a small kit car: cheap, plentiful and rear wheel drive. Chris got stuck into the resultant bag of bits and shortly afterwards wheeled out into the sunlight the neat looking little blue car. The perforated Dunlop-style steel wheels are actually standard on some models of Chevette, so it's worth a bit of scrapyard rooting to get hold of a set.

Further food for thought is that you could also squeeze in a Blydenstein prepared Vauxhall 2.3 litre OHC four, which was General Motors' answer to the success of Ford in motorsport in the Seventies. Would that give a respectable performance? I should coco. Would the chassis be able to hack it? Well, if it can cope with a 5.3 litre V12, it could probably manage two Vauxhall engines.

Chris managed to get the Cheven about 85% complete before he felt the need to weld anything, but he feels that the whole car could pretty well be completely bolted together, with only a few things like gearlever shortening needing any welding: that sort of thing can be done by a local garage or tyre shop for the price of a few cans of Scrumpy.

Welding is a nuisance, in some ways. If



you're new at it, or of you're crap at it, you really need a seriously expensive MIG machine to get any decent results. If you're good at it you could manage okay with a cheapo crap welder, but by then you would probably own a serious machine already. Life's just not fair, is it? Anyway, let's just say that with Robin Hood's kits, you can avoid welding if you want to.

Chris' wife Janet didn't give him a hard time at all during the three builds, and cheerfully held widgets, provided tea and repaired his knuckles throughout. The only time she did come near to doing him any damage was after he'd been spraying springs in the kitchen, and her hard afternoon's baking resulted in some distinctly Hammerite flavoured cakes. However, all she did was make him eat them, which seems very fair. The cakes, that is, not the springs.

Leaving Chris to cram his collection back into the garage, we went to the People's College in Nottingham, where they use Robin Hood's kit cars as a teaching aid.

The College operates on the principle of being open to absolutely anyone, and they aim to offer a way out of the inner city decay of central Nottingham for anyone who wants to take it. They offer a one-year motor engineering course, loosely based on a City and Guilds qualification, with the idea that the student emerges at the end with commercially saleable skills.

However, one of the problems of teaching under these circumstances is getting your students over the experience of school, which they generally didn't enjoy much, and motivating them to keep coming is quite a challenge. Building a pair of S7s has worked very well: Dave Bryant at the College said that because the same group were building the cars, they felt they had some ownership of it. Neither of the cars would be the most gorgeous ever when they were finished, but they were doing a very good job as a focus for the course teaching.

Drawing diagrams on blackboards to explain the function of a front wishbone to someone who isn't particularly academic, and who goes blank when sat down at a desk, is hard going. However, when you can put a wishbone in the same person's hand, give them a spanner and show them where it goes and why, that is not only much easier to grasp, it's a lot more interesting too.

From inner city unemployment problems to someone who's been employed by the same company for thirty years, and who

last year took advantage of an enlightened company policy of giving people with twenty-five years' service six months' paid leave. Some of them sit and watch telly, gaining nothing, but most people apparently get stuck in and do whatever it is they always wanted to do, and come back refreshed, invigorated and full of energy: a good deal all round, for the company and for the individual.

Anyway, when Malcolm Holloway-Vine got his six months of time out, he and his wife shot off to Australia for a couple of months, then came back to get stuck into building a car. They'd originally planned to



build a replica Porsche Speedster, but while the basic kits are reasonable, by the time they'd added all the replica Porsche bits that are needed to do a seriously good job, the projected budget had reached £10,000 and was still climbing. The other problem was that Malcolm wasn't convinced that the result would be much fun to drive: after all, it is still basically a VW Beetle.

In the end, they decided to go to Oz for a bit, replace the old 240Z Datsun with a Toyota Supra for general use, and buy a lower budget kit car just to be used for pure fun. The Robin Hood fitted the bill, as the total bill for the completed car came to £3,300. No shortage of fun either, as the donor engine was out of an RS2000 Escort, freshly rebuilt with a full race cam. Malcolm's son had just had the engine expensively rebuilt when the Escort shell went into terminal crumble mode and left the mechanicals on the garage floor looking for a new home.

Malcolm went for the budget Zintex monocoque, and put a shiny stainless bonnet on. The Zintex option means the car is built from mild steel sheet, electrically coated with a thin layer of zinc. This provides a good key for paint, pretty good protection against rust, and the zinc just burns off when you weld up the monocoque. Robin Hood originally tried hot dip galvanising with the usual mixture of lead and zinc, but if the temperature is high enough to make the process effective, the sheet metal just buckles. With a tubular spaceframe, you can usually get away with it, but a monocoque won't have it.

This is where the stainless steel came in to begin with, as Richard was trying to make a sheet steel car that wouldn't rust. Ordinary stainless isn't much use for car bodies, as it's very hard and brittle, and tends to fatigue and fracture. The cure is firstly to use a type of stainless steel that has a little flexibility in it, and secondly to make it thick enough to cut out pretty well all the flexing.

Of course, specialised metallurgy doesn't come cheap, even buying five hundred sheets at a time. If you then want to offer a very low budget body, you have to go back to using mild steel and coat it with zinc and then with paint. The downside being that the budget S7 will theoretically rust, in twenty or thirty years or so.

Malcolm's car is very pretty indeed; apart from making a seriously good job of putting the kit together in the first place, he has obviously spent hundreds of hours in the garage, pottering about to great purpose with bits of billet aluminium, carving out things like demister vents and so on. The current task is finishing off the look of the Cortina instruments. If you hack the Cortina pod to pieces, you can rearrange the dials behind circular holes in the dash, where they look pretty good.

Most people are satisfied with turning the dash material over into the holes, then gluing it to the back of the dash. That looks fine on a budget kit. However, Malcolm has just discovered that some paint tin lids are just the right diameter to provide free bezels, so he's been



cutting out the flat bits and sanding down the resulting rims to fit the holes in his dash. When he's done that, the interior will be finished.

The paint job he did himself, and he's not at all happy with it: the top layer's been rubbed through at one point. Perhaps it was just the light, but I couldn't see anything wrong with it at all. But then my Midge is still in the hand painted that'll-do-for-the-moment finish it got five years ago, so I probably wouldn't make a good concours judge.



Malcolm Holloway-Vine used Robin Hood's Zintex bodyshell and used an RS2000 for the donor. End result speaks for itself. A really excellent customer build-up.



APPENDIX Inside Story

The Robin Hood company outlines some of the most important features of its various models and gives you some basic facts and figures about the operation, its products and how to get further information by visiting the factory and arranging a test drive.

THE NEW SIERRA 7

For some considerable time RHE have been working and developing to use the Ford Sierra as a donor vehicle. Only now that prices of Sierra donor vehicles have reached an affordable level and that development has terminated have Robin Hood Engineering decided to launch the new Sierra 7.

There are many advantages and a few disadvantages over the Cortina based kits which have until now dominated production at the factory. The main disadvantages are the McPherson struts. Unfortunately kit car manufacturers have been spoilt by having available the excellent stub axle from the Cortina. Unlike the previous Ford McPherson struts, the Sierra's telescopic unit unbolts, leaving a stub axle similar to the Cortina's. Onto this stub axle RHE add an adaptor which takes the ball joint common to all Robin Hood Engineering's cars. The lower track control arm is retained together with the anti roll bar, and these form the lower wishbone.

The original front subframe is utilised. It is neater than the Cortina's and is simply trimmed. Added to it is a supplementary subframe with top tubular wishbones which are complimented with coil over shock absorbers which at the time of writing are manufactured by Spax (only the best for RHE customers!). The Spax shock absorbers are easily adjustable in both height and rating. The whole front suspension on the Sierra 7, even though it is a low budget car, looks very neat and is definitely in keeping with the spirit of Seven motoring.

New style engine mountings have been designed for the Sierra 7, and these easily adjust to locate the engine accurately. A stainless, performance, four branch exhaust manifold has been specially made for RHE and is now included in all Sierra and Cortina based kits. It is supplied so that exhaust gases are disposed of more efficiently, and together with the stainless steel silencer the exhaust note is pure music!

The performance from the standard engine is good, particularly the two-litre. With the manifold, a cam and carburettor added, more BHP's can be squeezed out!!

Although designed for the Sierra, all bodies now have a special 'knock out' for the Sierra 5-speed gearbox (it sits a little further back). The propshaft is modified, along with the steering shaft, by RHE in all kits.

The rear subframe is easily fitted without modification. Unfortunately two small sections protrude just in front of the rear wings so a pair of 'nerf panels' (no doubt someone will write if we have spelt it

wrong) are supplied. These make a good job of hiding these areas and can be painted to match the car or left in stainless steel. It is possible that in the future a modification will be available from RHE to the Sierras trailing arms. Standard springs and shock absorbers are used at the rear and are quite acceptable. Spax units are available at a little extra cost if required.

All fuel tanks are manufactured from stainless steel and hold about eight gallons. The neck and sender are used from the Sierra — clever holes are pre-cut in the rear luggage compartment floor for the neck and sender and a hole is also cut in the rear panel for the neck. Holes for the safety harnesses are also pre-cut. Only the tunnel is not pre-fitted to the body/chassis until it is top braced and does give extra central strength.

When viewing the body/chassis unit carefully, all agree that you do not need a degree in mechanical engineering to assess the strength of it. Occupants feel very safe surrounded by the 1.5mm zintex steel or stainless steel, while the petrol

The new Sierra 7 kit is an inexpensive package loaded with components; the following are supplied in the kit:

- A body/ chassis unit in zinc coated steel.
- A zinc coated steel bonnet.
- Two self-coloured rear wings.
- Self-coloured front cycle wings.
- One self-coloured nose cone.
- One aluminium windscreen frame.
- Toughened windscreen glass.
- Pair of windscreen pillars.
- Adjustable front coil-over shock absorbers.
- Top front suspension wishbones and subframe.
- Front suspension joints.
- Stainless steel exhaust system.
- Performance exhaust manifold.
- Two chrome headlamp casings.
- Two sealed beam units.
- Two rear lights with tapered plinths.
- One number plate lamp.
- Two wing repeater lamps.
- Two front flasher lamps.
- Two rear fog lamps.
- Two reversing lamps.
- Modification to propshaft.
- Modification of steering shaft.
- Pair of engine mounts.
- Stainless steel fuel tank.
- Copper fuel pipe.
- Fuel filler cap (lockable).
- Set of metal brake pipes.
- Radiator.
- 11" Mountney leather rimmed steering wheel.
- Steering wheel boss.
- Pair of safety harnesses.
- Pair of bucket seats.
- Dashboard covering material and padding.
- Scuttle edge finishing strip.
- Tunnel carpet.
- Luggage compartment carpet.
- Pair of carpeted boards for cockpit floor.
- Side cockpit edge finisher.
- Cockpit side inner panel material.
- Tin of glue.
- Front wing stays.
- One nose cone badge.
- One nose cone grille.
- Boot infill panels.
- Stainless steel pedal box cover.
- Nose cone infill panels.
- Spring seats.
- Set of four bonnet catches.
- Seat support bar.
- One large roll of vinyl tape
- Joining strips.
- Drill bits.
- Brackets.
- Rear wing piping.
- Pair of rear wing stone guards and beading.
- Spare wheel bolt.
- Nose cone fixing brackets.
- Bonnet edge strip.
- Demister vents.
- Tube of silicone sealant.
- One general fastener pack.
- Metal offcuts.
- Build manual.

tank is separate from the cockpit and is also encased by 1.5mm thick steel. It is also reassuring to know that the same thickness of steel is underneath you so that, God forbid, if you were unlucky enough to hit a piece of scrap or sharp boulder, you would be safe and the offending article would not penetrate the floor as it could do with timber, aluminium or GRP.

Fire is also a fear of many kit car drivers. With only a limited amount of GRP (glass reinforced plastic is highly inflammable) on the Robin Hood, fire is less of a danger than on all-GRP cars. Accident damage is easily rectified on this style of vehicle with usually only localised damage to one of the wings or the nose cone. Robin Hood charge about £50 each to replace them.

More serious damage to the stainless steel is also easily rectified as the body is in many sections and each section fairly easy to change (definitely within the capabilities of the builder if he has a MIG welding set). If the stainless steel is not too badly damaged it may be beaten out and a cosmetic thin gauge panel fitted over the top — cost again about £50 each. Many insurers offer parts only cover knowing that the builders will repair the damage themselves and only pay out for parts used. Usually a discounted premium is also a benefit of this type of insurance.

Many more apertures have been cut in the Sierra body/chassis unit and the dash has pre-cut holes for the instruments, heater control switches and even a radio. Holes are cut in the bulkhead for the Sierra's heater and blower unit. This fits in with a little modification high up in the scuttle in the passenger side, and the control panel falls conveniently to hand positioned in the centre of the dash.

To simplify the build the donor's instrument cluster is used. This is fitted behind the dashboard giving the impression of round gauges rather than a rectangular pod, the main multiplug connector at the back of the instrument cluster plugging simply back into the wiring loom. It is even possible to use the Sierra's wiper motor, arms and blades — again, the holes are already positioned for their installation and pilot holes are also in the scuttle for the correct position of the windscreen pillars.

The new Sierra 7 kit offers an inexpensive route to owning a Seven type sports car. Robin Hood Engineering have cleverly utilised many of the Ford Sierra's components enabling it to be built on a budget. The front suspension is the result of much development. It retains the donor's lower track control arms and anti roll bar and is supplemented with Robin Hood Engineering's own top tubular wishbone with inboard adjustable, coil over shock absorbers. With independent rear suspension roadholding is excellent and the ride is smooth and pleasant.

CNC controlled plasma machinery precisely cuts the apertures for instruments, switches, heater, pedals, fuel cap, etc. On the standard body/chassis unit a little more work is initially required; this involves only a few hours drilling and bolting.

THE DONOR CAR — Ford Sierras have been available since 1982, and it is the earlier ones that are coming up at the lowest prices. Development work for the Sierra 7 has utilised the '82 to '86 Ford Sierra with the 1600cc engine, and these are the most suitable donor vehicles. Components required are the engine, back axle assembly, battery, stubaxles, brakes, propshaft, steering shaft and column, steering column controls, fuel tank sender, heater, handbrake, instruments, wiring loom, pedals, servo, wiper unit, possibly the road wheels and tyres, and other bits and pieces. The components from a Ford Sierra together with our kit are sufficient for you to get your Sierra 7 on the road!

THE LOW KIT PRICE — Robin Hood Engineering have always offered value for money kits. Purchasing all components and materials in bulk enables us to pass on the savings to the customer. The introduction of a new production line has increased our manufacturing output, and it is intended that these kits will sell in volume again reducing the cost to the customer. Costings are currently being carried out, and the kit price will be announced after the 23rd April.

THE BODY/CHASSIS UNIT — This is monocoque in construction, built to a similar proven strengthened specification to our Cortina based body/chassis units. The standard body/chassis unit is manufactured from 1.5mm thick zinc coated steel. The zinc coating abates rusting. This type of steel is intended to be painted and accepts paint perfectly, or it is possible to have the body/chassis unit manufactured in 1.6mm thick mirror-like stainless steel.

THE GRP AND TRIM COLOUR — The GRP (four wings and nose cone) are all supplied self colour, either Signal Red or British Racing Green. The interior trim is supplied in a dark grey which goes well with both the red and green GRP.

THE CORTINA BASED S7

For the last five years, Robin Hood Engineering have developed the S7 into a near perfect, easy build, recycled Ford Cortina based, Seven styled sports car kit. Mark 4 and 5 Cortinas are plentiful and inexpensive, so a Robin Hood S7 can be built on a limited budget. Recently many improvements have been made, the main one being the front subframe mounting. Low cost has always been possible by using the Ford Cortina's front subframe (PAB kits only) when cleaned and painted, and with the addition of driving lamps over the front members the appearance has been acceptable. Enthusiasts who have driven the S7 agree that the handling is excellent and far better than expected.

The up and out members that terminate at the bumpstops accept the front wing

brackets and do not look out of place, but we have never been too happy with the front forward members that are covered with the driving lamps; these cannot be removed as they accept the tie bars and adjust the caster angle. The chassis now in production (WB series) solves this problem as the front subframe is now fitted backwards with the front protruding members pointing backwards into the engine compartment and picking up on the engine mounting brackets. Obviously the lower front wishbones are interchanged and the steering rack mounting brackets are supplied. A much stronger, cleaner front end is achieved.

Numerous other improvements have also been made, the most important being the multi-hole steel dashboard which is fitted together with the scuttle panel (which builders reported difficulties with in the past). Rear shock absorber turrets are now fitted together with the rear panel and luggage compartment sides. As you are probably aware, the one-piece GRP rear panel has been discontinued in preference to separate rear wings which we consider to be cosmetically better and obviously easier to replace in the event of an accident.

CORTINA PACKAGES — Much information is given in the literature available from Robin Hood Engineering. Check that you have the current information, study it carefully and you will spot the differences between the Cortina kits alone. Generally speaking with the Cortina range (Zintex, Plus and Deluxe), there is less builder participation than with our new Sierra kit as such items as the windscreen are already assembled and there is less bolting together to be done. The GRP components and bonnet are fitted to the Plus and Deluxe kits, while the latter also has the front suspension, windscreen and hood fitted. You must assess each package carefully and decide yourself which suits you best. The information is all there just for you to decipher. There is definitely a glut of Cortinas at the moment which usually seem to disappear off the road almost overnight, and within the next couple of years many Cortinas will be crushed.

As a bonus, all Cortina kits supplied in the future will include the performance manifold. In the Zintex kit the seats will come assembled but only in the colour schemes as supplied in the Sierra kit. Any queries can be directed at Robin Hood Engineering whose sales lines are open six days a week.

Described below are the main details of each of the three different versions of our best-selling kit. Again, we stress that only ONE donor vehicle is required for you to be able to complete building your Robin Hood S7.

ZINTEX KIT AT £1685 + VAT — This is the most basic kit that we offer. The zintex (zinc coated mild steel) is intended to be painted by the builder, usually the same colour as the self-coloured wings and nose cone which are supplied. The body/chassis unit is supplied in 1.5mm thick zintex steel and is of monocoque

construction. Cycle-type front wings are supplied as standard in this kit. The Zintex kit includes:



Above: Contents of Zintex Cortina kit.
Below: Zintex body/chassis unit.



- One steel body/chassis unit.
- Set of four self-coloured wings.
- One self-coloured nose cone.
- Complete set of lamps.
- Assembled windscreen and pillars.
- Stainless steel fuel tank.
- Bonnet.
- Stainless steel exhaust system.
- Springs and shock absorbers.
- Miscellaneous brackets, catches, pipings, panels, tape, bars, etc. etc.
- Fifth link for the rear axle.
- Pair of seats.
- Side panel and dashboard material.
- Cockpit and luggage compartment carpet.
- Rear wing stone guards and beading.
- Heater blow unit.
- Modifications to prop and steering shaft.
- Engine mounting plates.
- General fastener pack.

N.B. For the full Zintex kit listing ask for our free information pack.

STAINLESS STEEL PLUS KIT AT £2450 + VAT — The body/chassis unit supplied in the Plus Kit is manufactured from 1.6mm thick, mirror-like stainless



steel. This is cosmetically attractive and does not require painting. Again the GRP components are supplied self-coloured. The front wings supplied are the long flowing type, and these components are all fitted to the body/chassis unit. In addition to the parts listed for the Zintex kit, the Plus kit also includes:



Contents of Cortina Plus kit.

- Fuel filler cap.
- Pair of vinyl bucket seats.
- Hood set including hood and sidescreens.
- Full, zipped tonneau cover and fixings.
- Set of dashboard instruments.
- Pair of wiper arms and blades.
- Spare wheel cover.
- Pair of safety harnesses.
- 11" Mountney leather rimmed steering wheel.
- Pair of side mirrors.
- Set of metal brake pipes.
- Electric cooling fan.

N.B. For the full Plus kit listing ask for our free information pack.

DELUXE KIT AT £3250 + VAT — This is our top-of-the-range kit. The body/chassis unit is again supplied in 1.6mm thick, mirror-like stainless steel but is fully welded at the factory (the Zintex and Plus kits require additional bolting together). An adjustable front suspension system with pre-assembled and painted top and bottom wishbones, springs and shock absorbers is fitted. Also fitted are a steering rack, roll bar, windscreen and hood. This is a very comprehensive kit requiring only a Ford Cortina donor vehicle to complete the build. In addition to the parts listed for the Zintex and Plus kits, the Deluxe kit also includes:

- An adjustable front suspension system.
- A reconditioned steering rack.
- Roll over bar.
- Pair of grey leather bucket seats.
- Leather handbrake and gearlever gaitors.
- Tunnel top and side panels to match seats.

N.B. For full Deluxe kit listing ask for our free information pack.

IT IS EASY TO CALCULATE THE TOTAL COST OF YOUR BUILD

ONE KIT
+
ONE DONOR CAR =
ON THE ROAD!!

THE ENGINEER'S PACKAGE

When looking around the kit car show, occasionally one sees a kit car which is outstanding. Outstanding not because it is a showstopper but because it has been built from what we would consider a poor kit. In such cases, it is obvious to all that the builder has skills greater than the average kit builder; he may even be a professional, be able to weld, spray or carry out work which would normally be entrusted to a specialist. When speaking to these people, they openly admit that they have enjoyed the challenge of something a 'little difficult'. They are the type of person who would perhaps buy a jigsaw that is all sea and sky or buy three different ones and mix them altogether.

A special RHE package is now available for these skilled builders; the S7 Engineers Package has been specially compiled for the enthusiast who wants maximum participation. Chris Hind built his 'Cheven' (Chevette based Seven!) using such a package. Virtually any rear wheel drive car can be used as a donor.

The Engineers Package consists of all the pre-cut and pre-folded monocoque sections to make the body/chassis unit. Additional parts to complete can be negotiated and perhaps even second quality GRP may be acceptable in order to keep the cost down. The overall size of this body/chassis unit is smaller than the current series and more in keeping with the dimensions of the original Sevens but, if required, the standard body/chassis unit could easily be made wider. It has the traditional wrap-around rear panel in stainless steel and the rest is supplied in sections. On the Cheven, Chris Hind predominantly bolted the sections together similarly to our Part Assembled Bodies but we would consider that a MIG welder and the ability to use it to a reasonable standard is a must with this package. The price has been fixed at a realistic £300 plus VAT and this low initial outlay, together with a donor vehicle, will keep any enthusiast busy for quite a while!

THE ENGINEERS PACKAGE —
ANOTHER INNOVATIVE,
COST CONSCIOUS IDEA FROM RHE.

WHICH KIT?

Many will now be faced with the dilemma of which Robin Hood kit to order — a Sierra Kit or a Cortina Kit. Each have their own benefits.

How much do you really want to, or can afford to, spend on this toy? Set the final finished cost of the car, or the amount you have to spend on it, now, and choose a package which suits you financially. You

may own or have easy access to either a Sierra or Cortina donor vehicle, and this may decide for you which kit is best or at least can be started quickest.

Generally, there is more work involved in the Sierra based kits as the screen is not assembled and there is additional drilling and bolting compared to the Cortina based kits. Choosing a mild steel body may not necessarily work out cheaper in the long run. If you are unable to paint it yourself and have to pay to have it professionally painted, this cost could easily creep towards the £300 mark, making the additional charge of £300 for a stainless steel body/chassis unit a very reasonable option.

The Super Z Package at only £120 not only gives you louvres and contrasting seat piping, you are also supplied with the bonnet and scuttle panel (the area under the windscreen and up to the dash) in stainless steel. When painting a Zintex bodied S7, it is the scuttle and bonnet that have to be painted to a high standard. With them in stainless steel, obviously they do not require painting. With the GRP not requiring painting and the bonnet and scuttle in stainless steel, the sides which are left only require a little attention and are most suitable to be painted by an amateur. Full instructions are in the build manual covering this.

To return to the choice of donor, although the Sierra will cost you more initially, you do get the independent rear suspension. This normally improves both roadholding and comfort, but remember these are already very good in the Cortina based S7. Obviously the five-speed gearbox which comes as standard with most Sierras is an advantage, but remember it can be added to the Cortina too! Optional extras offered by RHE are available to make the build easier, possibly quicker and, mainly, individual! Three Cortina based kits exist: THE ZINTEX, THE PLUS and THE DELUXE. Covered elsewhere in this supplement, all three kits are carefully explained and the parts included in each kit listed along with accessories, options, etc. The kit prices are unlikely to change as they have been carefully costed out over a period of time.

On the other hand, the Sierra Package is very new and has not yet been costed out. The prices quoted have been calculated carefully and are what RHE would like to charge for the kit. However, prices or specifications could change without notice to a more realistic (more expensive!) price. As with all RHE packages, whichever kit you order and place a deposit for, the price will be fixed and is guaranteed not to change no matter what the circumstances are. The deposit of only £50 (absolute peanuts as deposits go!) fixes the price. Only one spec is available priced at £995 plus VAT (possibly subject to change, so telephone prior to ordering). The kit together with a donor vehicle will get you on the road!

WHY STAINLESS STEEL?

Well why not? One thing that Richard Stewart has in common with John Delorean is that they both believe in the qualities that stainless steel has to offer. Surely it is only a matter of time before mainstream motor manufacturers realise the benefits and what they have been missing out on.

Over the last twenty years, metallurgists and scientists have been working continuously to improve the quality and properties of the steel which we use. The performance of stainless steel is well proven and no other material can completely match stainless steel for its durability, versatility and formability. Add to these its aesthetic qualities, ease of fabrication and resistance to corrosion and you have an almost perfect and definitely superior material.

As already stated, an important characteristic of stainless steel is its ability to resist corrosive attack by the atmosphere, water and from acids, salts and alkalis in solutions of varying strengths. This corrosive resistance is due to the high chromium content of the steel and the presence of a thin, dense, self-healing chromium rich oxide layer on the metal surface acting as a barrier between the metal and the environment.

It is also true to say that stainless steel did have a reputation for being brittle. However, with today's technology applied to steels, mills are able to advise and recommend a particular type of stainless which is most suitable to the application. Obviously, for applications where stressing is likely a more durable, softer material is supplied rather than a very hard metal which may be prone to cracking if in constant movement.

All in all, the advantages of stainless steel far outweigh any disadvantages there may be and once again Robin Hood Engineering have done it first!

TO Q OR NOT TO Q

When deciding between the many different makes of kits on offer, the scales are often tipped in the favour of RHE because of the non-Q registration numbers that are often possible with the S7's. Due to the large number of components utilised in the S7 from the sole donor vehicle (be it a Cortina or a Sierra), this often attracts the donor vehicle's registration. Kits using RHE's own double adjustable suspension may still be marked with a Q plate. A complex and secret points system is used by Local Vehicle Licensing Offices in determining what does and what doesn't get a Q plate and we know that front suspension should be used from the donor for that registration number to be kept. Unfortunately, with a Q plate, a personal number cannot be transferred to replace it.

ENGINE POSITION

Take a look at the weight distribution of the S7. Unlike other Seven styled cars, the engine sits well back and is centrally placed. This is possible because of the extra width of the bodies; all our bodies are wide bodies at no extra cost! There are no interruptions to the bonnet line (even on the V12!), no air scoops or bulges, just real louvres. Ground clearance without reducing the sump is about 4".

WEATHER EQUIPMENT

Not subscribing to the belief that only wimps need hoods, Robin Hood Engineering have constantly improved the weather gear available for the S7. Admitting that theirs will never be as good as that which is available on modern production cars, it is as good as any other Sevens! It does a pretty good job of protecting the S7-ists and their passengers from the elements. Several different materials are available at standard and deluxe prices for both hoods and tonneau covers. The hoods are supplied with a two-piece hood frame, pair of sidescreens, fasteners and storage bag. The hood frame is fixed to the car and the hood cover is kept in the bag together with the solid, acrylic sidescreens, which fold in half for easy storage and lift off the windscreen pillars on split hinges.

The full tonneau cover reaches from the top of the dashboard right to the back of the car. It has a central zip and so can be left on the car whilst driving. Weather equipment is supplied in the Cortina based Plus and Deluxe kits and can be bought as extras for the Cortina Zintex and Sierra based kits. The hood can be erected in less than one minute if you are caught out in a rain shower, provided of course you have remembered to take it with you in the first place!

TRANSPORTING YOUR S7 KIT

A Transit Luton van is best to collect your kit. Smaller vans can be used even if you can't close the rear doors! The kit's body length with the nose cone fitted is 11'6" and without the nose cone about 10'. Width without the wings is 4' or 5'2" if the adjustable front suspension is fitted (Deluxe kit). If a packing case had to be



made, it would need to be 12' x 3' x 4', and everything would go into this case.

At a real push, you could put an S7 kit on an estate car roof rack with most of the other items inside the car. Most types of trailer are also suitable for collecting kits. If required, Robin Hood Engineering can arrange delivery at 60p per mile on a round trip, and two kits may be transported to the same area for the price of one. Telephone Robin Hood for a quote.

COLLECTING YOUR S7 KIT FROM THE FACTORY

Low kit cost is maintained by low administration costs. Collection day is always Saturday. All collectors are required to arrive at Robin Hood Engineering at 9.30am. After registering with Robin Hood Engineering, owners can meet other S7-ists and are offered free membership to the Robin Hood Owners Club. They will be given an introductory talk on assembling their S7 kits. The whole build will be covered and refreshments will be served at half time!

The Sierra kit and Cortina Zintex kit are supplied without the GRP fitted. The body/chassis units are tub-like so all the other components fit conveniently inside. It is in this form that owners receive their kits, on a four-wheeled trolley that can be taken right up to the collection vehicle. Collection is designed to be quick and simple but collectors should allow plenty of time as exact collection times cannot be guaranteed. Allow the whole day and enjoy your trip to Nottingham, perhaps bringing the family and visiting some of the many attractions in the city — there's Nottingham Castle, Tales of Robin Hood, American Adventure, Nottingham caves and many museums to interest all. Inexpensive hotel accommodation is usually available at the weekends. For information on accommodation and attractions, contact Nottingham 470661.

THE ROBIN HOOD OWNERS CLUB AND REGISTER

Founded in September 1993 by John Trickett and Michael Jebb, the club was immediately deluged with applications for membership. At that time there was also in existence a register of owners known as the Robin Hood Register run by Ian Cairns of Stoke on Trent. The first time both factions met was at the 1993 Donington Show and after a short discussion it was decided to amalgamate the two clubs and form RHOCAR. Ian Cairns became the Chairman, John Trickett the Secretary and Mick Jebb Treasurer.

Currently, RHOCAR has more than 140

members and is still growing rapidly at the rate of about four members per week.

Richard Stewart has now pledged to offer a year's free membership of the club to all purchasers of new kits and this is expected to ensure that the growth of the club continues. Membership of the club entitles car owners to 10% discount on their insurance and discounts from many other accessory suppliers. Robin Hood Engineering also provides members with the chance to buy various items on special offers which may occur from time to time.

A monthly newsletter is produced by John Trickett and is never short of helpful hints, articles about member's cars, adverts, stories, new lines from RHE and general chit chat. Club competitions are held at all of the major shows with prizes for best build, best interior, most innovative idea etc. Recently RHOCAR has started to appoint area secretaries who will be responsible for members residing within about 60 miles of their base. These area secretaries will organise local meets and arrange a presence at smaller local shows together with

providing a source of news and comment for the magazine.

Club events for the forthcoming season are now being planned and already there is a strong interest in the RHOCAR outing to Le Mans with about ten cars booked already. With the largest turn-out of cars on a club stand at Donington and the only outside stand at Bingley, a large turn-out of members is expected at Stoneleigh, Peterborough and possibly Newark, although this clashes with Le Mans.

A list of members who are willing to provide assistance to fellow RH owners in distress or in need of advice is being compiled and should prove a source of comfort to those of us who spend a proportion of their time with engine failure on the M42 etc.

Although the club is nothing to do with Robin Hood Engineering, it is the only club recognised by the company and as such enjoys excellent relations with Richard Stewart. This relationship makes it easy for members to approach the company through the club secretary who will arbitrate if (perish the thought) there were any complaints to sort out.

DIRECTIONS

Most visitors to Robin Hood Engineering will travel via the M1. Come off at Junction 26, set your trip to zero as you leave the motorway and take the A610 towards Nottingham:

ON THE LEFT	MILEAGE	ON THE RIGHT
	0.3	MAJOR ISLAND, FOLLOW A610 TO NOTTINGHAM
Gateway Hotel	1.2	ISLAND, STRAIGHT ON A610
Commodore Rooms	2.1	TRAFFIC LIGHTS
Newcastle Arms	2.2	Wheelhouse Used Cars
	2.5	RING ROAD, CONTINUE STRAIGHT ON
Mill Cafe/Wheatsheaf Pub	2.8	
Tote Bookmakers ahead	3.2	'Y' JUNCTION, TURN LEFT TOWARDS A60
	3.6	TRAFFIC LIGHTS, Forest Hotel
Stage Hotel	4.1	DOUBLE ISLANDS, STRAIGHT ON AT 1ST, LEFT AT 2ND.
	4.3	TRAFFIC LIGHTS, Moat House Hotel
Grosvenor Hotel	4.8	See Sherwood at bottom of hill
	5.0	TURN RIGHT, Fancy Dress Hire Shop
TURN LEFT, Mansfield St	5.1	RHE IS UP HERE ON THE RIGHT HAND SIDE.

From the North, come down the A1 follow the signs for Nottingham (A614). At the island junction of the A614 and A60 set your trip to zero:

ON THE LEFT	MILEAGE	ON THE RIGHT
Little Chef	0.0	
	1.3	TRAFFIC LIGHTS, Hammonds Rover
Home Ales Brewery	1.6	
B&Q and Comet	1.8	Grove Pub
	2.0	RING ROAD GO STRAIGHT ON, Vale Pub
Woodthorpe Park	2.5	
Skoda Dealers	2.7	Sherwood Manor Pub
Winchester St, TURN LEFT	2.8	
Turn immediately right into Mansfield Street, RHE is up here on the left hand side.		

For further information please send SAE to:

ROBIN HOOD ENGINEERING, 64-74 MANSFIELD STREET,
SHERWOOD, NOTTINGHAM NG5 4BN. TEL: 0602 608371 FAX: 0602 608906