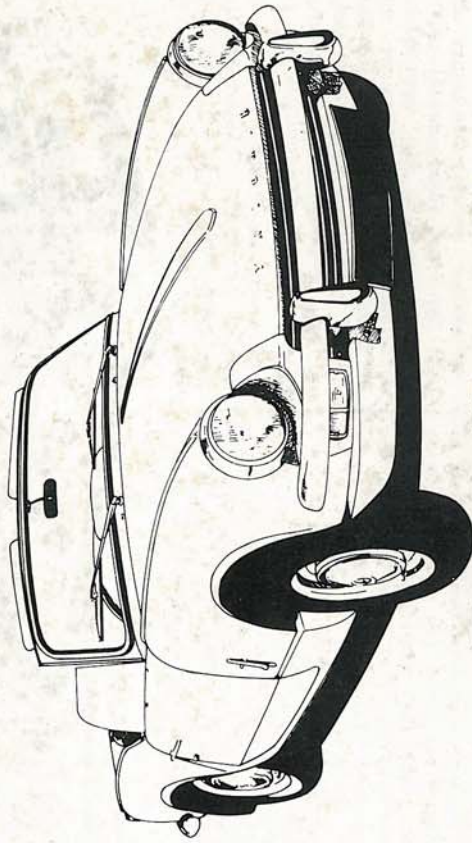


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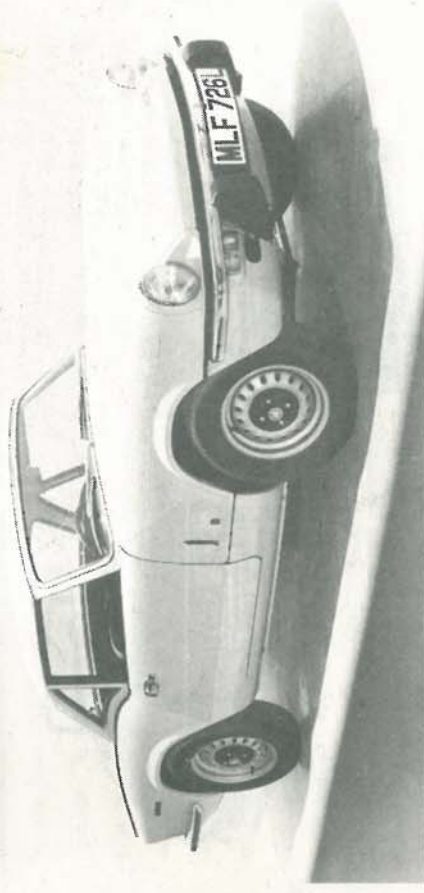
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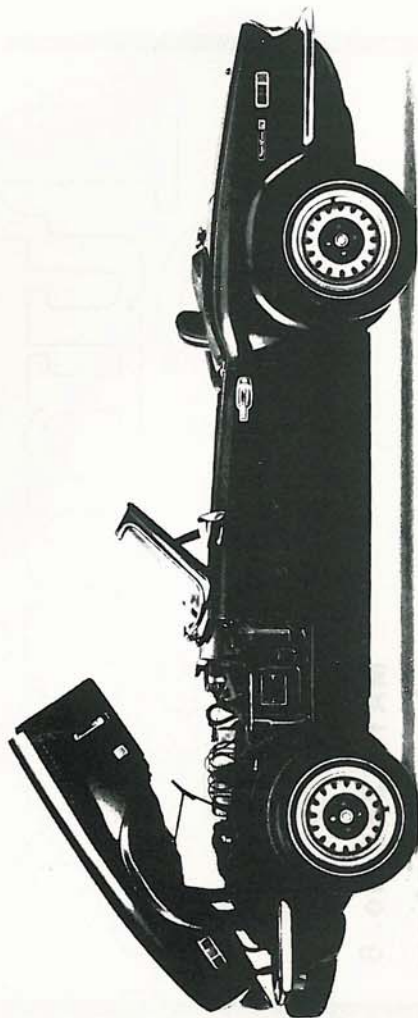
Turning Circle

**MAY 1985 No. 8
Incorporating
The Courier**



**TRIUMPH SPITFIRE
MKIV & 1500**





Sports Car Club of America drivers call it a champion. (Typical American understatement.)

In the SCCA National Championships last year, the Mark III Spitfire took first, second and third in its class.

Champion indeed! That's what the English would call a bit of all right.

But we didn't rest on our laurels. We rad-



ically reworked the 1970 champion to make it work even better for 1971. On our new Mark IV, we strengthened the engine bearings, designed a new close ratio all-synchro gearbox and modified the suspension for improved balance and road holding.

And while we were doing things for the



inside, Ferrari body designer Michelotti did a lot for the outside.

As far as we can tell, the car is now—to use an American term—'A-OK' by anybody's standards. You try it at your Triumph dealer. The new improved champion for 1971

Triumph Spitfire

For the name of your nearest Triumph dealer,

call 800-631-1971 toll free.

In New Jersey, call 800-962-2803.

British Leyland Motors, Inc., Leona, N. J. 07605.

TURNING CIRCLE
Editor: W. E. SUNDERLAND



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If you are reading this magazine and you are not a member of the *Triumph Sports Six Club*, but would like to join, send a large S.A.E. to:
THE MEMBERSHIP SECRETARY 24 PRINCE RUPERT AVE. DESBOROUGH
NORTHANTS NN14 2PH

EDITORIAL

I would like to welcome members to Turning Circle Number 8, which refers directly to the late Spitfire, namely the MKIV/1500. This reflects the age when the true, affordable sports-car was declining fast.

Although this is all now history, the facts remain: the Triumph Spitfire was one of the most successful sports-cars ever built, with a reputation for good looks and driving fun. It is perhaps significant that the Scimitar SSI, launched last month, was compared with the Spitfire!! The market is wide open for Reliant, as only Lotus seem to be following Reliant with a new, open-top sports-car late in 1986. It is interesting because the 'giants' have turned their backs on the mass-produced sports-cars and the aforementioned companies who have taken advantage of this gap in the market, thankfully responding to public demand.

Obviously production numbers will be small as compared with the late '60s and early '70s; even so it will help to keep an identity as the mass-produced sports-saloons of today basically look all the same.

Most Spitfires were exported, mainly to the U.S.A., where the market of fuel emission control killed the British sports-car industry. Luckily a fair amount went

to Europe, where now there are a good number of clubs catering for the Spitfire. One such is the Triumph Spitfire Club of Holland: they hold an annual event in late August, where some 300 MKIV/1500 Spitfires meet (see picture below). Worldwide through the TSSC we will continue to promote the Spitfire.

We have good news too in that the TSSC is buzzing with Spitfires, owners of which are joining every day. I won't go as far as to say it's a cult but certainly people realize what marvellous fun they are!

As you read through various members' experiences in this magazine, I hope you will agree that the Spitfire is a car which commands the utmost respect, along with the many other first-class products Standard-Triumph manufactured.

Our thanks must go to all those who have spent time and trouble in compiling articles for this magazine.

BILL SUNDERLAND
EDITOR

P.S. If after reading this Turning Circle you feel inclined to purchase a Spitfire, the two Brooklands books published (Spitfire 1962 - 80 and Spitfire 1962 - 82) give a wealth of useful information and much interesting reading.



MOVING ON

The Spitfire provides all the fun of top-down, toe-down driving and today still remains a firm favourite within the T.S.S.C. With more and more Spitfires joining by the day, the Spitfire is now the most popular car in the Club!!

It is probably true that rain or shine the Spitfire gives you more fun per mile and per pound than almost anything else on wheels.

The most important engineering change to the MKIV was in respect of its' rear suspension, which adopted a new development of the swing-axle system, where the transverse leaf spring was allowed to pivot on top of the differential casing. This effectively eliminated the rear roll stiffness and also reduced wheel camber changes to an absolute minimum.

It provided a great improvement to the cars' handling behaviour, although we are told by Graham Robson that Spen King still managed to turn over a development car whilst exploring its' new road-holding limits!

The other major improvement was to the gearbox as the MKIV inherited at long last the all-synchronesh installation from the Toledo.

Whilst the car now handled better and provided the driver with a fully usable gearbox, the engine became stangled by emission control items and was in fact only marginally quicker than the original MK1 car in 1962. Triumphs accordingly countered by introducing the Spitfire 1500 and this engine was also fitted to the M.G. Midget, much to the dismay of our friends at Abingdon! A Triumph-powered M.G.!

The BHP went up from 61 (MKIV) to 71 with the 1500 and the 0 - 60 time was reduced accordingly by a full three seconds. The Spitfire 1500 was also a true 100 mph sports-car but maintained its' fantastic record for economy (around 47 mpg at a steady 50 mph).

If you are wondering which one to buy (a MKIV or a 1500) well, it's a very difficult choice. The 1500 is faster and slightly more economical but many enthusiasts prefer the classic 1296cc engine, which was, of course,

Whilst the Triumph Sports Six Club owes its' origins to the Herald it owes its' racing breeding to the Spitfire.

The Le Mans and Rally Spitfires of the early 1960's, under the control of Harry Webster and Graham Robson, were magic.

M.G. at Abingdon continually told the world that Midgets and Spitfires were invincible, but the real truth was that they only managed to beat the Spitfire once in 1965 at Sebring! On every other occasion, including Le Mans twice and all of the Rallies, the Spitfires beat the Midgets and Sprites every time.

Naturally the 'Works' Spitfire programme was very definitely an ego trip, not only for Harry Webster, but also for all the engineers and it provided a great morale boost for the Triumph factory.

The Herald, the Vitesse and the GT6 in America also had their successes, but none were as great as the Spitfires.

It was on this background that the MK4 and the 1500 were developed.

The Spitfire has been one of Britain's most popular sports-cars, and quite rightly too. The MK4 introduced the 'corporate', distinctive rear end, which was also mirrored in the Stag and GT6 MK111. The flared wheelarches and the more modern bonnet line provided it with a 'big-striding', urgent look' to quote the official Triumph publication.

the one that proved itself in competition. For the Alpine Rally in 1965, prototype cars were entered, using 1296cc engines, which pushed out a mighty 117 bhp at 7,000 rpm. The result; two finished first and second in the overall prototype category, after the more favoured Porsches and Alfas had dropped out!

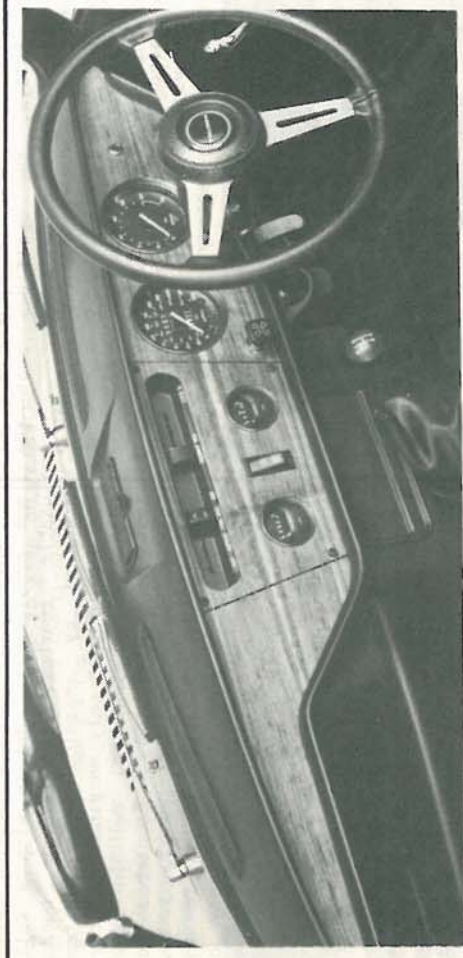
So there it is, two great Spitfires a sports-car that is a credit to its' pedigree and its' racing heritage. Go out and buy some real fun today. **DRIVE A SPITFIRE.**

JOHN M GRIFFITHS
PRESIDENT

PRODUCTION FIGURES

SPITFIRE	M.G. MIDGET	AUSTIN HEALEY/SPRITE
Spitfire MK1	1962/65 45753 MARK 1	MK1 48999 (Frogeye)
		9601 (1098cc) MK11 19285 (948cc)
Spitfire MK11	1965/67 37409 MARK 11	MK11 11215 (1098cc)
Spitfire MK111	1967/70 65320 MARK 111	MK111 25905
Spitfire MK1V	1970/74 70021	MK1V 21282
Spitfire 1500	1974/80 57956 MG 1500	
	276459	229881
		126686

90% OF WHICH WERE EXPORTED
MAINLY TO THE U.S.A.!



INTERIOR SPITFIRE IV/1500

JOHN O'GROATS TO LANDS END IN A MK1V

Some of you will have heard of this run, which took place in 1983. At the time we promised a report for The Courier which we never got around to writing, so it can appear here instead.

When you get right down to it, it was a Car & Car Conversions magazine which caused it all. Several years ago they did John O'Groats to Land's End in a Lotus Seven, which I thought seemed a bit of fun, and I happened to re-read the magazine a few days before a Club meeting, in December 1982. At this meeting, held on the wettest, roughest night of the year, the few of us who braved the elements discussed events for the following summer.

Being a relatively new member, I was slightly apprehensive to announce that I was going to drive from John O'Groats to Land's End in a day, as my way of celebrating the 21st birthday of the Spitfire. I was going to drive my newly acquired MK1V and what did everyone else think of the idea? No one said anything as the idea sank in, and then they all started asking awkward questions: how long would it take? When would I do it? What would it cost? Was I serious? As I had only really come up with the idea some 30 seconds before, I was answering "I don't know" rather a lot. But everyone was very enthusiastic, and I was soon to have a co-driver in the large German shape of Tim Frenzel, a GT6 owning South Wales member.

Preparation of the car took somewhat longer than I had expected. I had planned a general tidy-up and respray but, on starting this, I found that the car had had a rear, nearside collision that had caused a lot of rust around the inner wheelarch area, extending into the sill. Everything took a bit longer than was hoped for, with the result that I was changing the engine the night before we left, and I didn't finish until midnight!

We planned our run for a Monday. This meant that we could drive up to John O'Groats over the weekend, driving as far as Perth on the Saturday and then driving the last couple of hundred miles up to John O'Groats on the Sunday. A weekend early in September was chosen, the first week after the schools had gone back, so as to miss any holiday traffic, but still early enough to hope for good weather.

With the car loaded with plenty of spares (but not the right kind!), we set off at about 10am on Saturday, picking up the M5 and heading North. In the pictures you will see that we had fitted the hard-top to the car. The prospect of 800+ miles open topped was tempting, but looking on the dark side of things we decided that if we were to have any accidents we would prefer the hardtop.

We were pleasantly surprised to find ourselves in Scotland by 3pm, though the journey up the M5 and M6 was relatively

boring, the only sport being fighting off juggernauts. Scotland itself pleasantly surprised us as well, neither of us having visited it before, with a lot of wide, open roads and some great motoring. For some reason we had expected Scotland's roads to be narrow, winding things, crawling up and down mountains and around lochs, but the main roads were extremely good.

From Carlisle we headed towards Edinburgh, though by this time it was becoming apparent that all was not well with our transport. Increasingly we were suffering from misfiring which proved difficult to locate. A new set of points cured it temporarily, but then it returned worse than before.

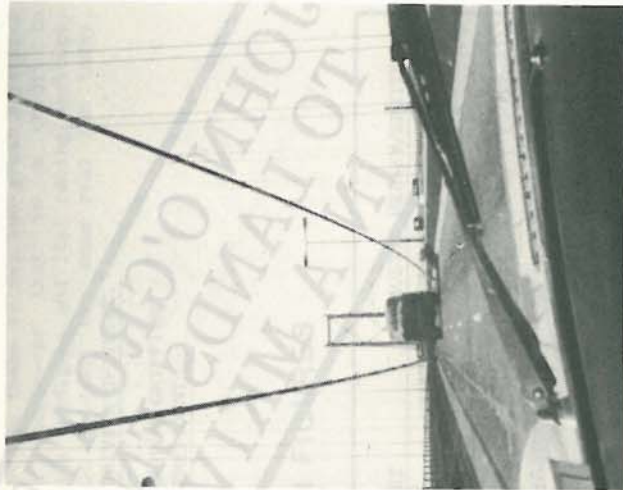
Edinburgh was reached and passed, the Forth road bridge was crossed and we then had a short burst up the M90 to Perth. Just out of Perth we came to an abrupt halt while accelerating away from a roundabout. However, knowing the symptoms, I had solved the problem in about 30 seconds; the low tension wire from the coil to the points having come adrift.

A few miles North of Perth we left the main A9 to find somewhere to have bed and breakfast. We had a wander down to the local pub and then an early night. At breakfast a fellow guest gave us a useful short cut to follow which was to save us over 20 miles on the journey, although the road turned out to be exactly like our preconceived ideas of Scottish roads - narrow, winding and steep!

After breakfast we stripped the carbs and fuel pump, still desperately trying to locate our misfire. To no avail, as we were later to find out that the distributor was badly worn, causing the points gap to change while the engine was running. Of course, I had no spare distributor in the boot-full of everything else, so we had to live with the misfire, which came in at certain revs which we duly tried to avoid.

The rest of the journey North was uneventful. Only in the last 20 miles did the road get slow, with a lot of hairpins as the road followed the twists and turns of the coastline, and at about 3.30pm on the Sunday afternoon we arrived at John O'Groats.

We stayed at the John O'Groats hotel, where there were records of previous Land's End to John O'Groats travellers and where the staff seemed quite used to the



RETURN SOUTH OVER THE FORTH ROAD BRIDGE

idea of people coming there just to start the journey South. We were told that we weren't going to break any records, and were served the best steak that I have ever eaten.

Wake up. Look at the clock. 4.25am. Turn over. Think. 4.25am. QUICK! WAKE UP! It's nearly 4.30am! The alarm, set for 4.00am had failed to go off. We were out of the hotel and into the car within ten minutes.

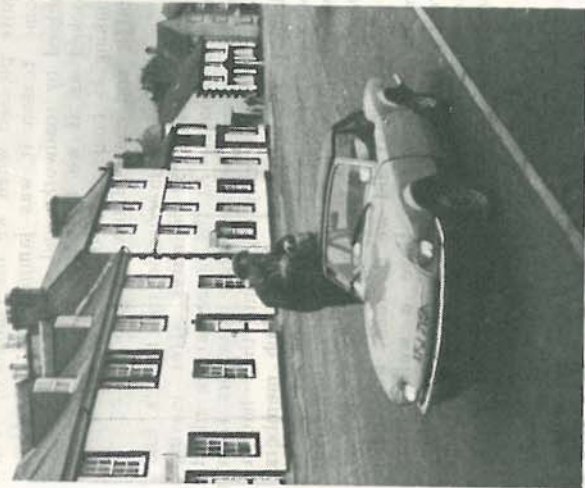
The first stint of driving was mine, and I tackled the first 300 miles to Edinburgh. The hairpins of the coastal road were no easier in the dark, and at one point we nearly ran into a herd of deer strolling down the road, and for the first 20 miles we only averaged 40 mph, the slowest part of the whole trip.

At Inverness, still quite early, we had to venture into the town centre to get petrol, as evidently this was the only 24 hour opening garage North of Edinburgh on our road. We re-fuelled and headed back onto the A9 and South.

Edinburgh was arrived at at the same time as several other people, as by this time it was 9.30am - the tail-end of the rush-hour. Little time was lost, however, although we did refuel again. Fuel consumption worked out at something over 30mpg, though we didn't keep precise records. In all, petrol cost us about £110 for the whole trip.

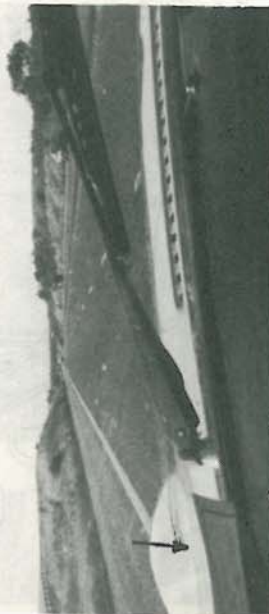
I don't remember the next stage of the trip as I was asleep. I never thought that sleep could be possible in a noisy, cramped, fast-moving Spitfire, but it was, the reclining seats making it almost comfortable (I must have been REALLY tired!).

Onto the M6 again, and soon we swapped places again, as well as topping up with petrol. This stage of the journey from Carlisle to Exeter on the motorway was mostly a question of fighting boredom and tiredness. A steady 70 mph or so was kept up with the occasional stop for petrol/refreshment/driver change. The motorway can be mesmerizing, and after 600 miles you begin to feel yourself being hypnotised by the never ending grey ribbon of road in front of you. Time to change drivers again.



CO-DRIVER TIM LOOKING FOR HIS LUNCH!

OUT ON THE OPEN ROAD COMPLETE WITH RENEWAL FORM TO TSSC



About every half hour or so we would work out our average speed. On the motorway we slowly increased our average as the 70 mph mileage began to compensate for our slow start and our several stops, on the way. By the end of the motorway it had gone up to over 55 mph, and by Land's End had only fallen slightly to about 54 mph - our average for the whole journey.

After Exeter we were on the last leg. We were held up around Plymouth by roadworks and traffic, but then had a good run as far as Penzance. By this time we would see the possibility of a sub-16 hour time for the trip, and began to put our foot down a bit. Originally we had thought along the lines of 17 - 18 hours for the trip, working on an average speed of about 50 mph-ish, so we were getting

quite pleased when we hit Penzance. For some reason it was jammed with traffic, helped by roadworks and traffic lights. It looked as if we had lost our chance of making 16 hours, but then we cleared the traffic and charged towards Land's End.

We pulled up outside the Land's End hotel 15 hours 52 minutes after leaving John O'Groats. At the hotel bar we added our names to the book that travellers from John O'Groats may sign and then had a drink. We met some local Club members who had specifically come along to see if we had made it, which was very thoughtful of them, particularly (for us) as we had.

And what did we do then, after 856 miles of driving? Have a well earned rest? Not a bit of it. We had something to eat and then drove the 250 miles home to South Wales. After dropping my co-

NIGHT DIMMING RELAY

Some of you, while working on the rear wiring loom of your MKIV Spitfire, will have come across a yellow box sprouting wires on the nearside inner rear wing. This is the night dimming relay, which by detecting the operation of the tail lights dims the brake lights and indicators, so as to prevent dazzle to following drivers at night.

Now we all make notes of where things go before we take them apart, **DON'T WE!** But what happens if we pull all the wires off and then lose our notes? Do not fear, the relay is rewired thus:-

Connect the red wire to terminal W1

Connect the black wire to terminal W2

Connect the green/purple wires to terminals 1 and 4. They may be fitted either way around.

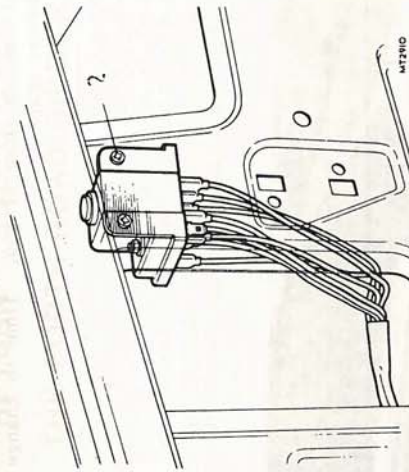
Of the remaining four wires, two are green/white and two are green/red. These operate the rear indicator lights, and it is important that each pair is fitted correctly. Run a slave wire from the positive side of the battery and touch each wire in turn. Two of them will light the rear indicators.

driver off I returned home 22 hours and 1,100 miles after leaving John O'Groats. Not a bad days driving I think you'll agree, and since then the odd 200 - 300 mile trip has seemed no distance at all.

All in all it was great fun, and considering that we didn't particularly hurry and made several unnecessary stops, I think it could be done quite a bit quicker, around 14 hours without speeding. I intend to do it again in 1987 (25th Spitfire birthday), so I'll let you know how it goes then.

P.S. We made £250 for Charity.

JOHN REESE



Of these two wires, join the green/red one to terminal 6, and the green/white wire to terminal 5. The last two wires are the supply from the indicator stalk for the indicators. The green/red one is connected to terminal 3, and the green/white one to terminal 2. Everything should now work as it is supposed to.

JOHN REESE

BUILDING A NEW SPITFIRE 1500



The story starts in early December 1981, when I was looking through Practical Classics, I came across an advertisement for John Hill's MG Centre (believe it or not) for Spitfire body shells which he had brought for re-sale. He had apparently bought about 25.

The advert told of how the last list price £700 (which amazed me knowing the price of various panels) was to be undercut considerably. I rang John Hill to find out the price, it was £575 + V.A.T., a total of £661.25 - a bargain I thought. Mr. Hill stressed the point that they were selling like hot cakes and he only had a few left, which I later found out was a little white lie, because in October 1982 he still had 5 left.

After half a day's thought I figured I could build a really nice Spitfire for between £1200 - £1500 **BOY** did I have a lot to learn.

I rang John Hill to leave a deposit and asked him how it could be transported. He explained how they come on Skis as used on the production line and could be loaded onto a long flat-bed transit.

On the 29th December 1981 I set off with one Transit and two friends to Redditch. When we arrived there was snow on the ground and also on the bodies, which were left outside. There were 13 bodies left for picking up! I was given the pick which was fortunate seeing as some were missing bonnets, doors and 1/4 valences. After choosing mine we loaded up which took no time at all and we were back on the road home.

The following week work commenced by separating the chassis from the body. Two coats of Hammerite paint were applied to the chassis, then Waxoyl was injected into the rails.



The next job was to roll the body carefully onto its side, and then apply a thick coat of David Browns Zinc 182 to the underside of the floor pan and arches, then three coats of Spectra Underguard giving a professional finish. The car was then rolled back onto the floor pan and Zinc 182 applied to the inside and surrounding interior. Now that the weather proofing was complete I then set about building a rolling chassis.

A donor car was bought and off this I stripped the front suspension which was sand blasted and re-painted. New bushes and joints were used on assembly to the new chassis.

Spax adjustables were fitted to give an adjustable ride. The steering rack was overhauled and fitted.

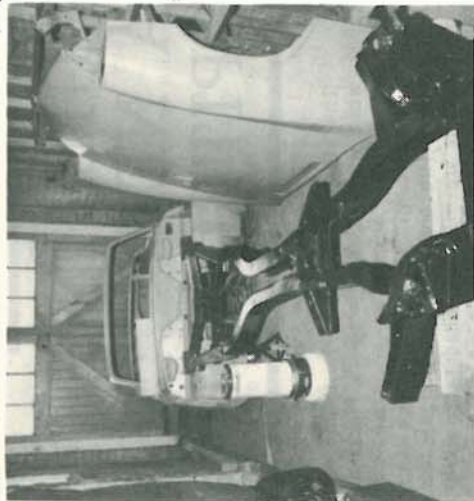
A 1977 1500cc Spitfire was located at a local breakers, from which I took a Diff, Half Shafts, Leaf Spring, Engine, Overdrive Box and Door Mechanism.

The engine was stripped down for inspection, to find it was in very good condition and the bores standard size. This was probably because it was an overdrive model and had not been over-revved. Having said this, end-float was .008" which was in tolerance but being an engineer by trade I thought I could improve on this by fitting .006" shims thus making end-float .002" and save having to grind the crank unnecessarily. The engine was fitted with standard rings, new shells, main and big ends, new cam-shaft sprocket and timing chain.

The cylinder head was decoked and ground, valve seats recut and new valves fitted with new guides and springs.

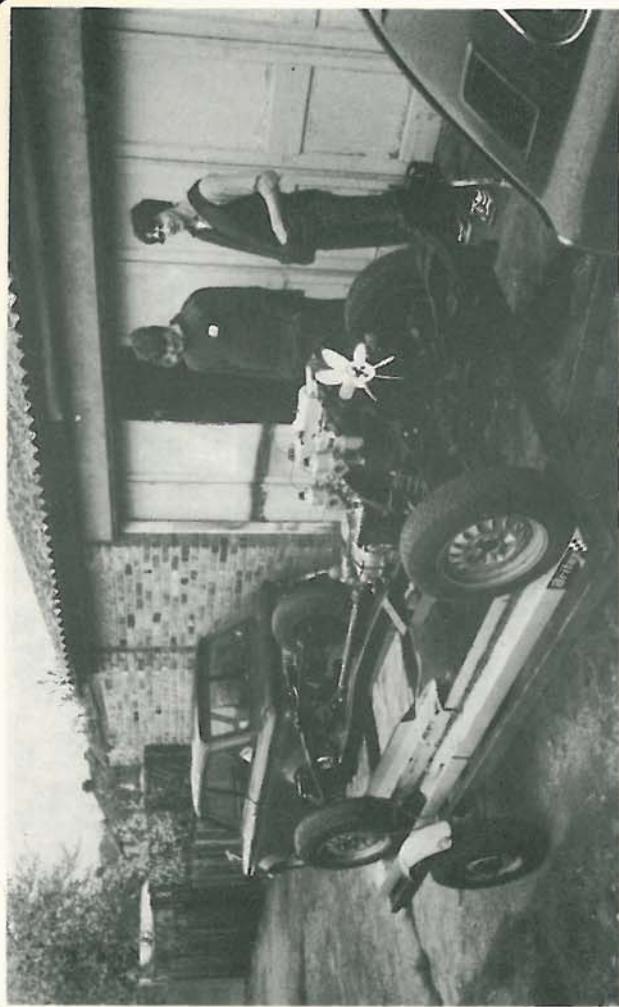
The whole lot was assembled with the gearbox and painted matt-black.

Meanwhile, the half-shafts and leaf spring were stripped, reconditioned and painted. The prop-shaft proved to be quite a problem because although the constant velocity joint was OK, the rubber gaiter was split. The only way round this was to take it to a prop-shaft specialist who fitted a new joint complete with new gaiter. The Diff was now checked and painted. The whole rear-end was now fitted to the chassis and I had a complete rolling chassis.



Next was to fit engine, gearbox and overdrive, phew this was very heavy! To get this far had taken 10 months.

At this time John Hills were advertising new carbs for £60, which were duly bought, what a mistake! The carbs turned out to be vaguely based on the very last carbs fitted, because of the waxstat jets and odd shaped dash pots. I rang Mr. Hill about these so called Spitfire 1500cc carbs. He assured me these were correct. I consulted B.G.Carbs of Hillingdon, who said he had never seen this variety before. He suggested they had been made up out of new individual spares.



Well, Mr. Hill was right! They did fit after plugging all the fuel pipe lines on top of the float chamber, drilling air bleed holes and shortening linkages, which were never there when I received them. Thanks Mr. Hill for your D.I.Y. carb kit, I am only glad to have access to a machine shop as I am an engineer and can rectify these problems! I wonder how many other people had these problems???

It was about this time I met another T.S.S.C. member Sheridan Russell, who was also building a Spitfire from the ground up. (This was pictured on the front of November 1984 edition of the Courier). We obviously had a lot of notes to compare, which was invaluable.

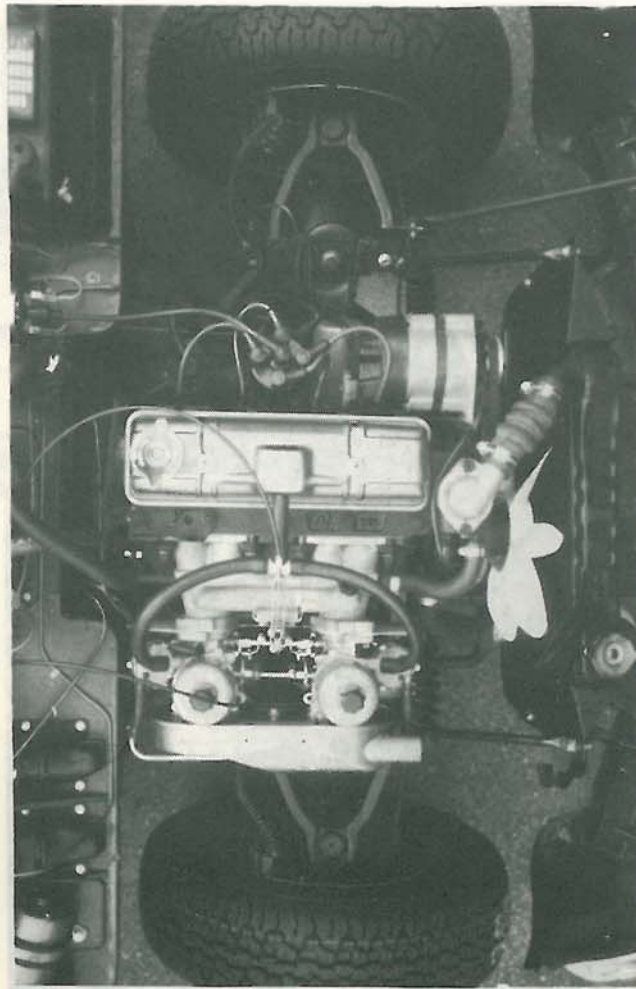
I took about 6 months off to read up on spraying and find somewhere to spray, because my own garage is only 6ft wide. Another important thing I had to think about was what colour? The main consideration was to keep the colour standard, because I always find cars with odd colours look out of place and somehow look strange. I had a choice of seven colours which would go with the '1977' spec. I considered them all at great length, White would have been nice but it shows the dirt too quickly and not to mention in years to come the dreaded Rust.

In the end it was a toss up between Brooklands Green and Russet Brown. The thing that finally made me pick Russet Brown was that if I had chosen Green and had an accident, I would have blamed it on Green being an unlucky colour.

The problem of the garage was solved by being able to rent a double garage for a month. The body was put on the rolling chassis and trailered around to be sprayed. Here it was separated and put on tressels and the bonnet hung from rafters. A compressor and gun was hired for a week, in which time two coats of Zinc 182, two coats of filler primer (which was rubbed back) then two coats of Russet Brown (then rubbed back) and three more coats of Russet Brown were applied. This time the body was put on the chassis for real, ensuring the packing kit was put in between body and chassis.

The next 10 months were spent rubbing down the paint to a good finish using 1000 grade paper. Part of the reason it took 10 months was because it was during winter and too cold for laborious jobs.

By this time I was getting worried about time because I had booked a ticket for the 2nd International Spitfire Weekend, which was only 5½ months away. The next job was to protect the paint work. I used



about 15 litres of Waxoyl inside and out. On the paint I used Liquid Diamond Polymer Sealant, which I can thoroughly recommend.

The fitting out could now be started. The first job was to put in the tank and run the fuel line. The loom was put in which was easier than expected. The one thing which must go in first behind the dash is the wiper rack. Another tricky job is putting the vinyl on the inner wheel arch; anyone who has done this will know what I mean. A carpet was bought from Spitfires UK and fitted - another good buy. Everything else inside was quite straightforward, but one job which has to be the worst is fitting the chrome strip around the front of the windscreen.

A new exhaust was bought, painted and fitted; getting it to hang right was not easy. The bumpers were bought new and fitted. Next was the wheels, which I wanted to be standard. They were 4½ J's which were sand blasted and painted Fiat Silver and fitted with Firestone S2-11 175 x 70 x 13's.

At long last M.O.T. day had arrived after 2 years and 8 months. I stood outside and watched the tester as he raised the ramp and looked underneath and was a little surprised that, in fact, he didn't even try any joints for wear.

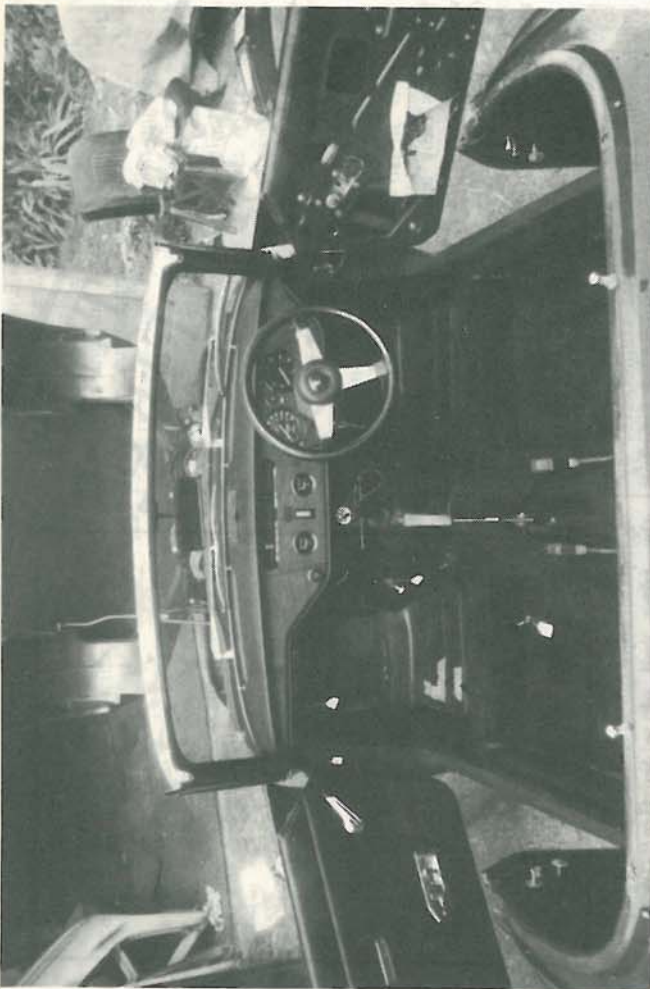
Well of course it passed and that gave me three weeks for a shakedown before the 2nd International Spitfire Weekend.

In this time a Tan hood was fitted to a recon. frame. After 700 miles and an oil change I was set for the trip, which included the previous week touring N.W. Europe.

When I arrived I naturally entered the car for concours up against very stiff opposition. At the prize presentation I was totally surprised when my name was called out for 1st prize, it made those 2 years 8 months of work, in a sometimes freezing garage grazing my knuckles, all worth while.

In all the total cost was £3,395. Some people may say, why bother when I could have bought one of the last built at Canley for that? Well my answer to that is, that I have the satisfaction of knowing my car was not a Monday Morning car, and that every nut and bolt was assembled by me. Another point is that I would not have met so many nice members of the T.S.S.C. and gained so much knowledge.

PAT MCCARRON



A DREAM COME TRUE



SPRING TIME FOR SPITFIRES

Triumph's baby sports car went reasonably well, but it and its six-cylinder cousin, the GT6, suffered from crude independent rear suspension. Ted Connolly and Ian Ward tell how to improve both ends.

For nearly twenty years, the Spitfire gave sterling service as a cheap sportster for the masses. It outlived the Spridget, which eventually became its stablemate, by quite a few years and acquired a faithful following along the way.

It was no dragster, but it offered wind-in-the-hair excitement and with its Herald-based backbone suffered less critically than others from the corrosion bug. The biggest drawback came with the rear suspension. Triumph did much better than most in that they equipped the Spitfire with its six-cylinder cousin, the GT6, with an independent rear end, but this was taken straight from the Herald and really was not man enough to cope with the rigours of spirited cornering.

The problems arose because of a tendency for the suspension to jack up under pressure, allowing the wheels to tuck under and causing a sudden loss of adhesion. Of course a large camber change is a feature of this kind of set-up, but it is quite possible to prevent the antics that the Spitfire is partial to.

Wishbone suspension for the rear

To be fair to Triumph, the MK11 GT6 was given a bottom wishbone and this, combined with an extra UJ in the drive shafts, cured the habit: camber changes were minimised, so tuck-in was eliminated. Also Spitfires from Mark IV onwards had a modification made to the transverse leaf

spring. The central fixing, on the final drive housing was altered so that only the main leaf was fixed rigidly; the others were given limited freedom to pivot, which reduced roll stiffness without actually weakening the spring.

In the 1960s and '70s there were plenty of specialists dealing in Triumph modification. At the forefront of development was Sid Hurrell's SAH concern and now Sid's son Terry is almost alone, with his Triumph-Tune organisation, in catering properly for the small cars. As we saw in 'Sports Tune' (July/August), Terry was weaned on the marque and his own Spitfire combines 110bhp with excellent road manners.

Terry gave us a comprehensive picture of how the DIY enthusiast can doctor his suspension to stick the car firmly to the road. Obviously the first move is to bring the rear into order. In standard trim, camber is set somewhere around neutral, but the actual angle varies considerably with ride height, so it is difficult to find an average standard setting. The whole point about swing axles is that for every degree of angle change on the drive shafts there will be a degree of camber change.

The simplest way of preventing jacking is to lower the suspension; this has the combined effect of moving the centre of gravity and the roll centre down and introducing a definite degree of negative camber (where the wheel tops point towards the middle of the car). In this condition it will be very difficult for the body to lift far enough to induce a change to positive camber and a consequent sudden loss of grip.

TriumphTune sell an exchange spring, for around £38, which is lowered and retempered and should give around 3 or 4 degrees of static negative. The effect is achieved by dismantling the nest of springs, heating them so that they can be bent and then retempering them by heating and quenching.

As a car ages, the springs sag and achieve much the same result, but their rate is also reduced, so the suspension becomes too soft and the car spends much of its life on the bump stops. Also for those who do not want to lash out on a reset spring, it is possible to remove a leaf but this, too, makes things overly soft and is best reserved for lightweight kit cars. Which leaf should come out depends

on the car, but it is likely to be one of the smaller ones.

The swing-spring of the Mark IV Spitfire and the very last GT6s (the wishbone arrangement was dropped to keep costs down, but the new system was markedly inferior) can be fitted in a straight swap to the earlier models. This certainly offers much improved handling over the rigidly mounted item, but is softer in roll and thus gives less precision than the lower, tougher type. If you wish, you can have an exchange swing spring from TriumphTune for about £50, which is a significant saving over dealer prices.

If you have a MK11 or III GT6, with the wishbone suspension, you won't have the same pressing need to make changes. However, the car will still benefit from a certain amount of lowering and there is no reason not to fit the TriumphTune modified spring.

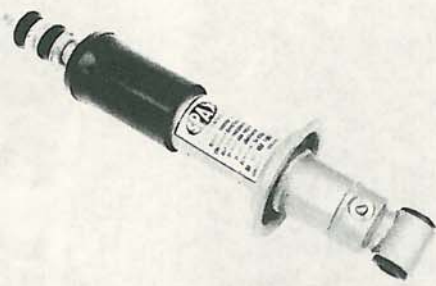
The actual procedure is the same in each case. Start by jacking up the back and supporting it firmly on axle stands. Ramps are no good because you will have to remove the wheels, but make sure of the car's absolute stability, because you may have to use levers later on.

Turning over a new leaf

The centre of the spring is clamped to the final drive housing by either four or six studs and access to these can be gained through a panel under the carpet behind the seats. Undo all the nuts, but leave two of them loosely in place for the moment.

Now move to the outside and remove the through-bolts which fix the spring to the uprights. The nuts on these - and those on the diff - may require liberal applications of penetrating fluid to free them; if so give the fluid plenty of time to work.

Once you've tapped the bolts out and this will be made easier if you take up the spring tension with a lever - you can remove the remaining diff fixings and pull the spring out. You will notice that it has a dowel peg which locates in the axle casing. If this comes out, keep it safe and remember to refit it correctly, otherwise the casing may be broken. Fitting the new spring is a simple reversal of the above procedure, but you may have to persevere with plenty of leverage to line the spring ends up with the uprights.



A Spax adjustable telescopic damper for the front end of a Spitfire/GT6. These come with all necessary mounting rubbers and can be combined with uprated springs as desired.



Gass-filled dampers, like this adjustable Spax rear damper, can be firm yet smooth in operation. Plenty of manufacturers make uprated units for front or rear.

It is a good idea to smear the new spring liberally with grease to keep it well lubricated and prolong its life.

With the GT6 lower wishbone set-up, you may have more trouble actually refitting the spring, because the rubber drive-shaft couplings restrict suspension movement. However, patience will win in the end.

Whatever you do to the spring, a decent set of dampers will help. If you have lowered the ride height a great deal, you will have trouble with the existing dampers closing up on the bumps. TriumphTune will supply suitable items and Terry Hurrell favours Konis or adjustable Spax units - if you use these, try starting with setting number 6. For fast-road or competition purposes, Terry recommends Spax gas dampers; these are firm but they are smoother in operation. They cost around £46 per pair.



Terry Hurrell's 110 bhp Spitfire is equipped with 5½J x 13 alloy wheels, shod with 205/60VR. 13 Goodrich tyres. These fit without any problems of fouling.

The Mark II GT6 was equipped with an adjustable tie rod on each side. These can be substituted for the fixed-length items and they will provide a limited amount of toe-in adjustment (from 0 to 3/32 in) so that you can set the handling to suit you. The greater the toe-in, the more the understeer.

You can buy a rear anti-roll bar from TriumphTune to fit any of these models, although none was ever used as standard. Kits cost £45 and can be specified with extra stiff bushes for competition work. However, it is not advisable to fit a rear bar, without stiffening the front one, as this will induce excessive oversteer.

On the subject of bushes, while you have the rear end in peices you might as well change all the Metalastik bushes, which are found in the spring ends and the tie bar eyes, as well as the lower end of the dampers. The hub casting pivots on the uprights by means of needle roller bearings. These are long-lived, but check that there is no appreciable play between the two parts.

Finally, cast an eye over the Hardy-Spicer coupling on the inner end of the drive shaft. This is subjected to substantial stress and any wear will affect handling. On a later GT6, check the outer rubber joint, too, and think about replacing the wishbone bushes.

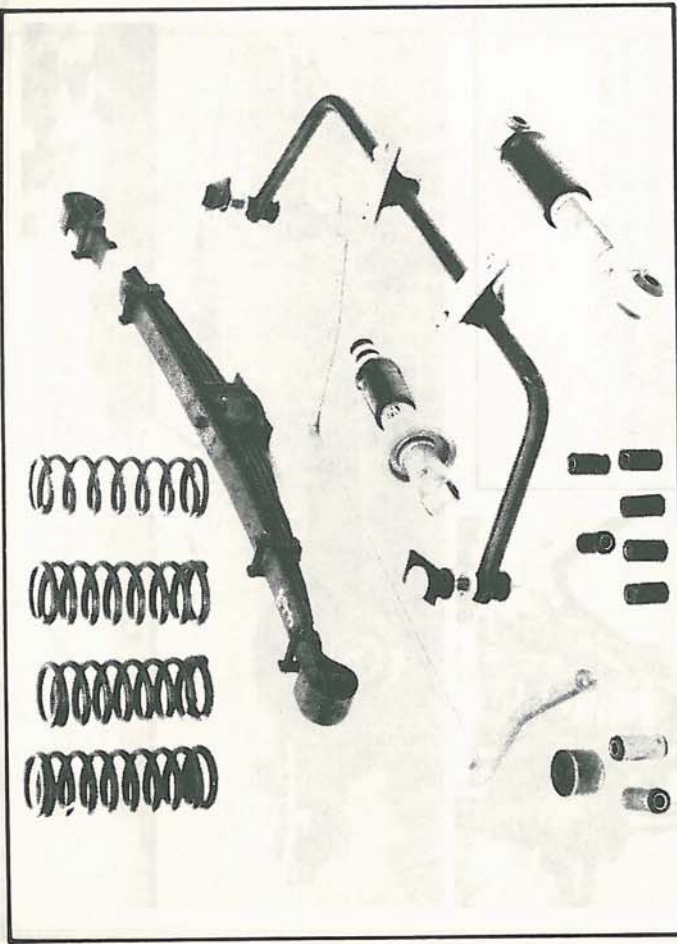
If you want to be really adventurous, you could fit the wishbone suspension to Spitfires and early - or very late - GT6s. You would need new hub carriers, drive shafts, rubber doughnuts and wishbones, which are all available from Triumph dealers. However, this is the easy part: you would also have to make up a bracket suitable for mounting each wishbone on to the chassis and this would have to be welded in to place.

For racing purposes, lowered swing-axle suspension creates problems, as it would for modern wide, low-profile road tyres. The snag is that these and racing covers are made to cope with only minimal camber changes and they need to have their tread flat on the road. There is little that can be done to solve this problem, short of making the wishbone modification, but it would help to lower the suspension without introducing too much negative camber and this is possible if difficult.

The method is to raise the final drive in the chassis, which you can do by removing its mounting rubbers and cutting off the cups in which they usually sit. The chassis holes for the front mountings will have to be moved by a corresponding amount. No task for an amateur, this, and not worth contemplating unless you are determined.

Ubiquitous front end layout

The front suspension set-up is one of the most highly respected and commonly borrowed that there is. All or part of this double-wishbone arrangement has been seen on countless kit-cars and small-run production cars like the Elan.



TriumphTune specialise in Triumph parts; the rear anti-roll bar kit is the one with the additional rubbers, bolts etc; the right-hand coil spring is a down-rated unit for kit use.

It requires no changes except to up-rate the springs and dampers, possibly together with the anti-roll bar and the bushes. It is possible to fit uprated springs and dampers separately, but you'd be making work to do this, because changing either means partially stripping the whole suspension. The two parts make up a unit and in fact are not at all easy to assemble or dismantle, because of the pre-load on the spring.

Suspension tuners often talk in terms of percentage increases in spring rates, but the Triumphs can do with much more than a gentle uprating. For example, the Mark III Spitfire's front springs are rated at 150 lb/in but TriumphTune will supply springs with ratings of up to 480 lb/in - although these are obviously intended for competition purposes.

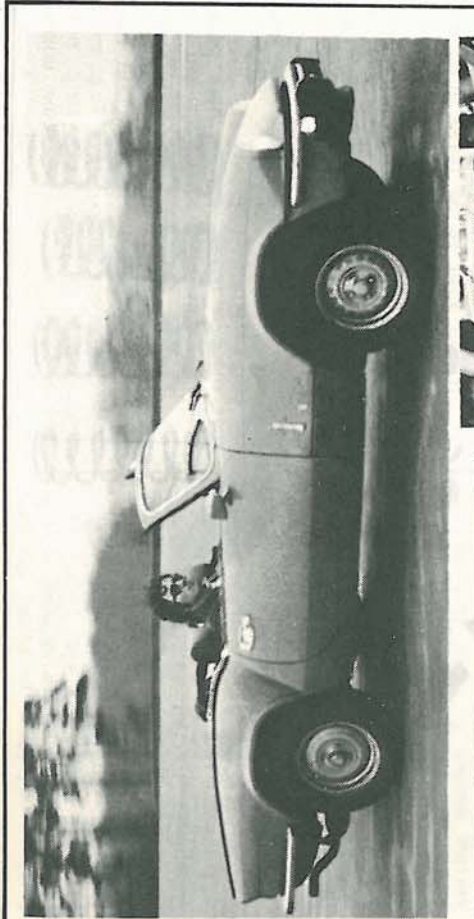
As for lowering, the Mark III spring has a fitted length of 7.5 inches and you can buy uprated items with equivalent

lengths of 7.25, 7.0 and 6.85 inches. Spacers are available for fine tuning. Bear in mind that the inclination of the spring/damper means that a ¼ inch reduction in length actually reduces the ride height by about 2/3 inch.

Fit adjustable dampers

As at the rear, Terry Hurrell recommends Spax adjustable gas dampers - this time set to number 8. These cost £28.50 each, while the uprated springs - and Terry suggests a setting of 330 lb/in for all road Spitfires, with a greater rate for the heavier-engined GT6 - at around £13 each.

Removing and replacing the spring/damper units is simple - mainly because access is so good with the lift-up front-end. Jack the relevant side up and support it solidly on an axle stand, with the wheel removed.



Loosen the nut and bolt which hold the upright to the lower wishbone and remove the bolt slightly inboard of this which passes through the lower end of the damper. You will probably find it an advantage to raise the opposite wheel to stop the anti-roll bar from forcing the wishbone upwards against the spring, but even so you will have to hold the assembly down in order to ease removal of the bolt.

Take off the three nuts and washers which fix the top of the spring/damper and lower the unit away from the car.

If you intend to separate the two parts, you must use spring compressors before you remove the central nuts which hold the assembly together, otherwise the spring will act like a gun.

Reverse the procedure for reassembly, using a drift to lever the bottom wishbone back into line with the damper. As at the back, it is worth taking the opportunity to change all the bushes and the lower trunnion parts, which are notorious for rapid wear. Extra tough bushes are available at between 70p and £1.35 each.

Don't forget that if you do lower the suspension, or even just fit new standard springs, you must have the steering alignment readjusted. Any change in ride height will alter to-in.

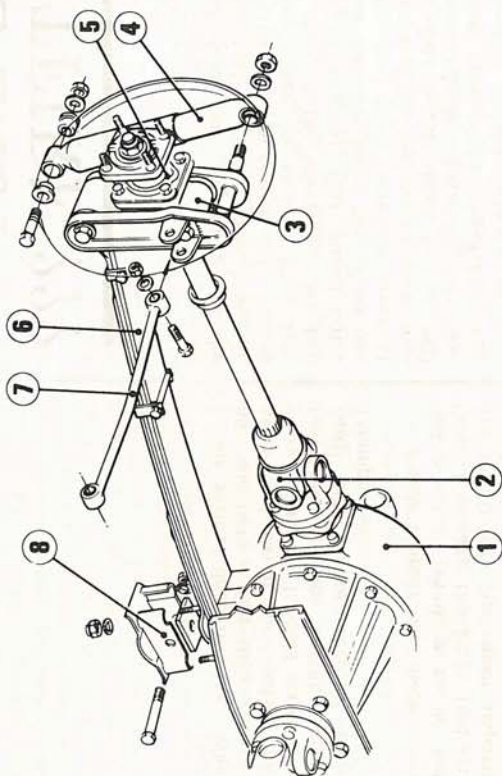


As the rear suspension droops, the wheels take on positive camber, which can cause trouble (top). Simple front suspension is effective and very easy to get at (above).

A thicker anti-roll bar, if combined with a rear bar, will improve steering response and predictability. TriumphTune offer a 1 inch bar, which costs around £45.

You can alter the camber setting of a Spitfire or GT6. The lower wishbone brackets are bolted to the chassis and shims can - and already may - be inserted under them to induce negative camber. These are available from Triumph dealers and should only be used in equal quantity under each arm of each wishbone, lest castor be changed. Once again, if you do this you will have to have the steering alignment adjusted.

PIVOTED-SPRING SWING-AXLE SUSPENSION



- 1 Final drive
- 2 Universal joint
- 3 Hub carrier pivot
- 4 Telescopic damper

- 5 Hub carrier
- 6 Leaf spring
- 7 Tie rod
- 8 Swing spring mounting

One final front suspension tip worth pointing out is that the lower trunnions should be filled with EP90 hypoid oil and not grease. Grease works at first, but it soon wears off the threads of the trunnion, which then becomes stiff and is soon useless.

As for wide wheels and tyres, the two models will take up to 6-inch wide rims depending on the amount of inset and offset. Terry's car is equipped with 205/60VR-13 rubber on 5½J alloy wheels, which fit without trouble.

If you are in doubt, here, load the car full of people and luggage, then check the clearances above and around the wheels and tyres. Then you can work out how much bigger these can go in each direction without fouling bodywork or suspension. Don't forget to make one of your checks with the steering on full lock. The tight circle can cause problems here.

With the sort of changes that we have run through you can turn your Spitfire or GT6 into a grippy and nimble machine and, of course, you can make similarly worthwhile improvements to Herald and Vitesse saloons, and all for a very reasonable outlay. Add a smaller steering wheel and you will have the sporting feel that you want.

Thanks go to TriumphTune, who can be found at 22-28 Manor Road, Richmond, Surrey TW9 1BY, tel: 01-948 6666.

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THE LAST SPITFIRE ???

"Look! Look sir madam", said the very earnest traffic cop. "See how the Volvo has crumpled the engine bay, leaving the passenger cage in tact. It's right what they show in the adverts". We had to pretend to look at that stupid Volvo that had run into our boot; but as no one was hurt we were much more concerned at the large creases at the top of each rear wheel-arch that spelt doom to a 1971 Spitfire IV. Gloom, doom it was hissing with rain, the hard-top had 'popped' free - its rear window out they pulled it onto a transporter and took it away.

I expected that the car would be an Insurance write-off but that evening I was already reluctant to let it go. I went and taped in the rear window and made it weather-tight that night. By persistent badgering of the brokers, I managed to contact the Insurance Assessor to confirm a 'write-off' (and to 'bull' up the price) and also got permission to bring it home. That just needed a 7lb sledge and a friend to steer it 15 miles. Irony - I started it up and drove it into my garage!

So there it was, a white 130J with overdrive, 53,000 miles on the clock and known to be very quick. Written-off value £800, offered to me at £125. You just have to do something with that! What to do with the back end? A kit? not keen. Repair? the local B.L. stores delights in running up estimates for £800 for panels and bits (not labour) - when I said "enough!". I hunted for a front end crashed car and found an 'N', which was as rusty as most 'Ns'. Back to the B.L. man. "What sort of price for a bare body-shell?". "Sorry sir, can only do you a body complete with bonnet, doors, boot the lot". "Don't be daft," I said (thinking of around £1,600 ish). "I'll check the price sir it's £735 list plus VAT".

I took several deep breaths. Why had they not said before that they were giving them away and saved me looking all over at rusty wrecks? I could have a completely rust-free car for £1,000. That was in April 1983; there were 12 body sets at Triumph.

I didn't order one there and then, as I had a lot of thinking to do before that. Could I manage the job? Had I the space? The facilities? And most important - the time? I built the 2 HP compressor unit, the bits of which had been around for years, and rigged up a spray gun; practiced on the wreck I had bought in the rain on a dark night which was my wife's 'temporary' transport following the Spitfires' demise. I kept an eye on the body-set stock - it seemed stable. Time - would I make time? The last re-build I did was in 1960, when I spent (as a single man) 19 months rebuilding a 1936 Morris '8' tourer. My mind was made up for a mid-August start to have it done by Christmas!

I placed the order "Ten days, sir. That'll mean it will be here in the last week of August", said the B.L. man. I stripped the old chassis to virgin, bare plate. Transport etch, black Hammerite, black Waxoyl and it really was better than new. New shocks, brake pipes - all ready. Then came the 'phone call "Please come and see us sir". "Where is it then?" I asked and the reply "There are none left sir, they are showing on the computer, but there aren't any". "@@\$\$!" I said ever so politely. "They have got some sub-standard ones which we could let you have at £100 less than we agreed". "Hah, well" I vacillated, thinking of extra discounts, "How many are there?" "Four" was the reply. The sale was made - this was no time for niceties as now I needed that body.

Again ten days stretched to four weeks. All those warm, still days of September and then October came and went good for gardening, but that hadn't been planned. Then it came - and on a chassis!!! (no one knew about that!). With all the hinges, bonnet catches etc., absolutely complete except the front centre valance (later the air-dam). Damage quite negligible and a worthwhile £100 spent. There were countless coats of primer - four different colours and a real joy to behold.

Spraying commenced and continued through November. 6 KW of gas heater warmed the double garage. Turn them off - spray a few minutes, open the door and down goes the temperature. Start again. Not too bad for the underside and the interior which was all silver/grey Hammerite; but those six top coats! It's amazing what masses of elbow-grease can achieve, and the finish is now called 'classic, hand-rubbed'. Finishing materials cost about £170 (definitely over the budget).

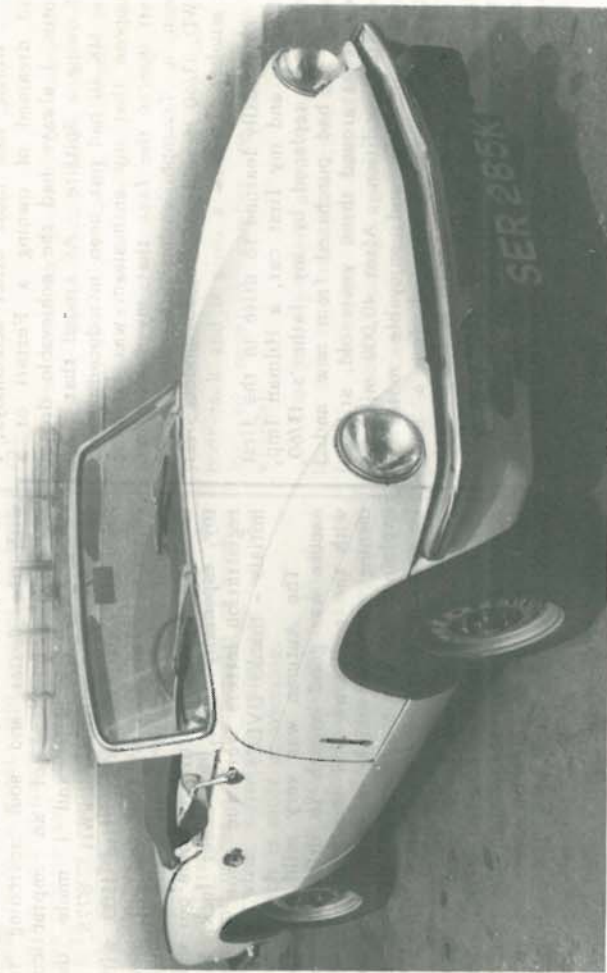
What to do about that brand new chassis? Have an 'A' registered Spitfire and pay car tax on my efforts? Or an 'original' '71? The latter won. I re-sold a wooden dash I had collected and plumbed

for 'original specification' as close as practical. Much grime was removed, everything made 'as new' as possible during assembly. Anything metallic was coated in Waxoyl - the wax brush being used probably as much as the spanners. Anyone stripping this down in 2000 should find it easy! I was lucky with second-hand parts, and obtained all the expensive rear-end trim this way.

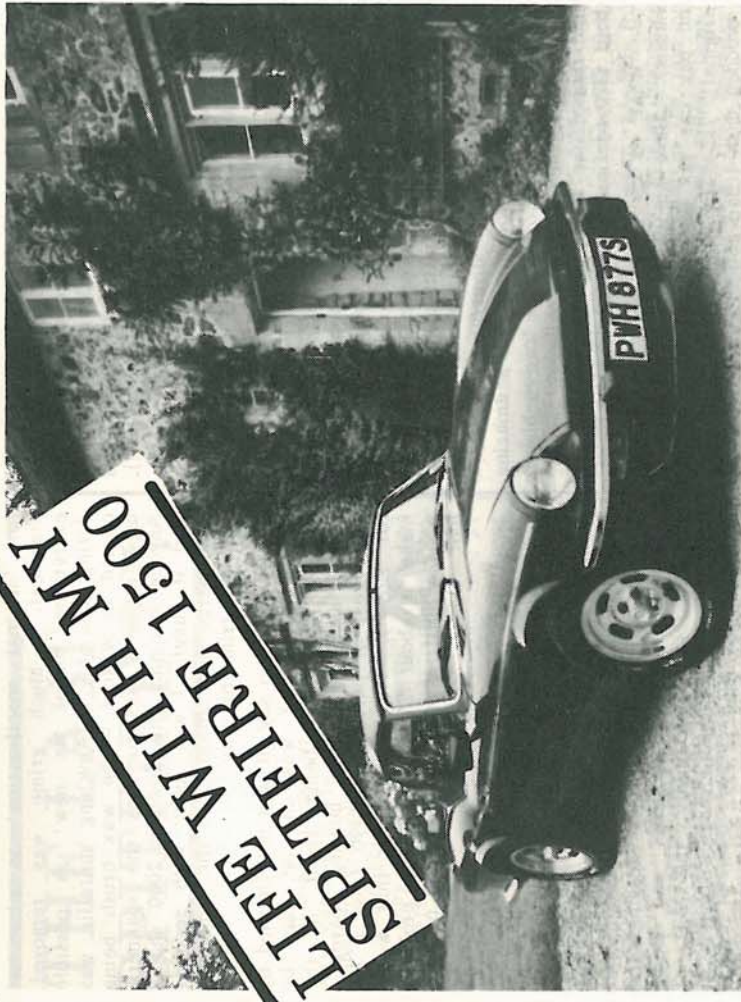
Needless to say, it was not finished by Christmas, but it was on the road by Easter, 470 hours being spent in the garage and many more hunting spares. Total cost of parts was £1,190 (less a bit for 'sales'). At garage rates that would make it about £7,000, which is probably what a Spitfire would be if still in production.

Was it worth it? Well, my wife won't drive it now (says it's unlucky); the kids can't get reasonable comprehensive insurance; I have a Company Astra SR so it is not used much. But it just might be the last Spitfire ever built (anyone know of a body leaving the factory after October 1983 and being completed?). And finally, the M.D. of that B.L. dealership thoroughly tested it, and did value it at £2,350.

DAVID DEW, C. ENG.
KINGS LYNN



LIFE WITH MY SPITFIRE 1500



Whilst, like most other schoolboys, I had dreamed of owning a Ferrari or a Lotus, I always had the achievable dream of owning a Spitfire. At around that time the MK III had just been introduced, and I suppose that my enthusiasm was in some part due to the fact that my father had been a Triumph enthusiast, owing 1300 FWD, 13/60 Herald and Toledo models over a number of years.

I actually learned to drive in the first of these and my first car, a Hilman Imp, was soon replaced by my father's 13/60, which he had purchased from new and I bought at around three years old, still in beautiful condition. After 40,000 miles of totally reliable and enjoyable motoring, RWH 724J was exchanged for a non-Triumph, a 1600 GT Capri, a boy-racer's dream. I often wonder if RWH 724J is still around and would love to hear of anyone who has owned it, or better still, presently owns it or knows of its whereabouts.

My dream was finally realised in October 1977 when, after much haggling with the dealer and soul searching to justify the purchase of an impractical two-seater, my wife and I made the decision to purchase PWH 877S, a Flamenco red Triumph Spitfire 1500 with overdrive. This was my first and only new car and it is hard to describe the excitement and pleasure in driving home our new toy, especially since, by sheer luck, the registration letters were the same as my initials - thanks DVLC!

The Autumn was very mild and any excuse was good enough to drive the car with the top down and the enjoyment of owning such a vehicle cannot easily be explained to a non-enthusiast but has to be experienced.

The bubble soon burst, however, when the car was first washed, the boot-lid was a slightly different shade than the rest of the car and, on closer inspection, was found to be 'second-hand'. My annoyance and frustration on finding this cannot be described without recourse to bad language

and when coupled with the multitude of other faults, some cylinder head bolts only finger tight, I began to wonder what had been done at the pre-delivery inspection, if anything. No wonder B.L. had such a bad name.

At first the garage wouldn't believe that the boot-lid wasn't new but eventually they would obtain another and fit it as soon as possible.

Many 'phone calls over the three months later a new boot-lid was ready and I left the car for it to be fitted. On collection, I was reasonably satisfied with the colour match and since by now most, if not all, of the other faults had been rectified, I began to enjoy my motoring. It wasn't until about 18 months later that rust began to appear on the boot-lid and old paint was revealed underneath. You've guessed it - they'd fitted another second-hand boot-lid! By now the garage had changed dealership and ownership and I reluctantly put it down to experience.

I have always been a believer in improving a car rather than keeping it completely original, since many original parts are there because of cost limits, rather than because they are the most effective. Accordingly, I changed the original wheels and tyres, which gave very little grip, for 5 1/4" Appliance dish mags, fitted with 175/70 Avon Turbo steel radials. These made a great improvement in both traction and cornering, the car being far more precise and stable. Incidentally, the 175/70 tyres required the lip on the rear arch to be dressed back slightly and 185/70's were far too large to fit my car but will fit earlier models with the shorter drive-shafts but have the disadvantage of loss of traction and aquaplaning in the wet, and increase in the amount of camber change when cornering especially at the rear, which is most undesirable.

I also took the opportunity to fit Spax adjustable shock-absorbers to the front and rear and, after some experimenting with the settings, they proved to be a great improvement over the standard items, and can be further adjusted to compensate for wear or whenever extra weight is being carried at the rear.

For added passenger safety I had a roll-over bar fitted, one of the aerodynamic Aleysbars, which is both attractive and functional and makes a useful grandstand seat on sunny days.

Other additions include, a wooden glove-box lid to match the dashboard, a burglar alarm, an adaptation to the rear parcel shelf enabling the fitting of good quality speakers which also creates hidden storage space similar to that of the GT6 and goodies such as a rocker cover, etc.

My latest acquisition has been a factory hard-top, bought for £65 after over three years searching for one at a sensible price in my area. The purchase was very desirable because just one year after buying the car, I lost the use of my lock-up garage and the car sits outside in all weathers, and I considered that the hard-top would make the car more secure and snug in winter.

I decided to de-rust the hardtop and spray it to match the car, but since it was November, I had to use the kitchen as a spray booth. Unfortunately, the room wasn't hot enough and the paint bloomed so I had to do it again. It's amazing where paint dust gets to during spraying and I'm lucky to have a very understanding wife who decided a long time ago that, since I'm incurable, she'll have to humour me, and anyway, Linda enjoys driving the car almost as much as me.

After all this, the rust came back after six months - doesn't it always - and I had the hard-top covered in black vinyl, which looks great and is also very practical.

One recurring problem has been the number of back exhaust boxes that I've gone through, most being smashed by protruding rocks when spectating at various motor racing tracks, or when taking the kitchen sink on holiday (it's amazing what you can cram in, especially if you use a boot-rack and it gives a whole new meaning to negative camber on the rear wheels).

The other problem about the standard box is that it is very restrictive and so I fitted a twin-pipe Peco box, after considering but deciding against the S.A.H. version because of cost and availability and after being very satisfied with the Peco box that I had on my 13/60. Fitting was fairly straightforward using the standard pipes, but the mounting bracket is rather weak at the weld and mine snapped after just one week, but Peco were quick to send me a replacement, which I had strengthened.

The box is a bit noisy on the motorway but it really does sound nice although I'm not sure if the neighbours would agree.

Apart from routine and regular servicing, no mechanical problems occurred until the clutch master-cylinder started to leak at 20,000 miles. This is rebuilt with new rubbers every 15,000 to 18,000 miles, as this is when leaking usually occurs. Although there is no visible damage to the bore, a new cylinder has been purchased and will be fitted next time.

Other failures have been few and include the alternator at 30,000 miles and the petrol pump at 50,000 miles.

At 72,000 miles, I decided that the clutch must be due for replacement and, with the help of a friend and his garage (thanks Nigel), I set about what was supposed to be a four-hour job. It actually took us nearly three days, because we just couldn't get the box to mate up with the engine. For anyone who hasn't tried or is laughing to themselves, an overdrive box is very heavy and we had already spent three days in a cold garage - it was late November and sub-zero most of the time.

In the end the box and engine mated together but in the process we had bent the engine back-plate, and this was to cause problems later.

I drove the car the 35 miles home, but the clutch wasn't releasing properly. The entire hydraulic system was bled but with little improvement. The only answer was double-declutching, but after two months, the clutch plate gave up the unequal struggle and split in two.

I entrusted its replacement to my local garage, only the third time that I'd not done a job myself, but although they could find nothing wrong, the new clutch action did not feel much better and that also split in two after eight months. The third clutch does seem better and I'm keeping my fingers crossed. I've since learned that the most likely cause is a distorted back-plate, however slight, and I would like to hear of other people's experiences, as I'm sure that I can't be the only one to suffer from this problem.

I get a great deal of satisfaction from doing all my own mechanical work and, apart from the clutch, the car has only

been into a garage on two other occasions for repairs; once for the fitting of new track-rod ends and trunions, caused when a suspension rubber failed and allowed the front suspension rubber to float - exciting at speed; and once when a rear U.J. failed when on holiday.

When I purchased the car, I was only travelling about 15 miles a day and the car was always treated well, constantly cleaned and well serviced but a change of work-places resulted in a daily journey of 84 miles, and this, combined with less spare time, meant that the car wasn't getting the attention it needed to maintain that showroom look. The car had been rustproofed but rust was beginning to be a problem in the usual areas, but especially in both the front valances and after very protracted correspondence, I managed to get them replaced on the rustproofing guarantee, but after that experience, I would hesitate to recommend any of the present professional (?) systems to anybody. Since then I have been a firm believer in Waxoyl and this, if applied regularly, is the best rust-preventor and retarder that I have found, even if it is a bit smelly for a day or two.

In the summer of 1983 I decided that the paintwork had gone too far and some rust was beginning to show and so a re-spray was in order. This was entrusted to a small, back-street firm whose work I had seen and was satisfied with, but it turned into something of a marathon.

I had asked for a new door-skin to be fitted on the driver's side, but after the old one had been cut off, the new skin was found to be one inch too short in length. Two others from different suppliers and one re-pressing later, the panel was still half an inch too short, so the lesson is beware of purchasing door-skins! The answer was to fit an unused door from an American spec. Spitfire, complete with cross beam, in case of vehicle impact, to meet American safety laws. This cost me £25 and, although rather heavy, is an improvement on the safety side and inspires confidence.

At the same time as the re-spray, various items of trim and some minor body parts were replaced including the bonnet tubes, sill end-plates and strengthening plates were fitted under the bonnet to hinge mountings. All these are the





common rust spots which shouldn't have occurred after the professional rust-proofing treatment and the amount of care I had lavished on the car.

The job took about six weeks to complete because of various delays, but I was so pleased with my 'new' car, that it was well worth the wait.

I think that any owner would agree that the design isn't perfect and some faults cannot be cured. One of the most annoying is the method of bonnet location and fastening which requires regular adjustment as it is most disconcerting to see the bonnet moving around when at speed or hitting a bump in the road. It is also rare to see a Spitfire without stress cracks around the bonnet clips. These can be avoided by not using the clips as handles when lifting or lowering the bonnet but I, like most others, found out too late.

Most owners are wise to keep a spare exhaust gasket and studs ready, since these often only last twelve months and go at the most inconvenient time.

Access to the gearbox filler and clutch slave-cylinder is very difficult but can be much improved by cutting inspection holes in the transmission cover as described in the excellent article in the December Courier by David Herriman on clutch replacement.

Despite completely rebuilding the braking system, I have never been happy with the feel or initial response of the brakes and this goes for other Spitfires I've known.

Before resorting to a servo, I've acquired a larger bore master-cylinder which may reduce pedal travel at the expense of heavier pedal pressure but that's a job for summer.

Another item for attention is to fit skims between the front suspension wishbone and chassis mountings to give negative camber (1 to 1½°) and I would like to hear from anyone who has done this and whether it was worthwhile.

I have recently had a chance to compare the Spitfire against its main rival, having rebuilt an M.G. Midget, in partnership with a friend, for competition use. While the M.G. may be the more suitable for this purpose, it is worse in almost every respect as a road car, and I'm sure that I chose the right car as everyday transport, although many M.G. owners may disagree.

The car has now completed over 75,000 miles and is still used as my daily transport. It still draws admiring glances and I can never foresee ever parting with it. At some stage in the future, either because of major mechanical problems or for financial reasons, it may come off-the-road but my intention is then to take the opportunity to completely rebuild it and keep it as a fun-car. Until then it will continue to be driven and used as it was intended.

It has been very reliable, economical to run and has provided us with a great deal of pleasure and enabled us to meet and make friends with many people who we otherwise wouldn't have met. It may not compare, in practical or even performance terms, with many of the modern saloon cars but it has character and is great fun to drive.

What better reason can there be for owning a car?

**PAUL HURST
HORWICH, LANCs.**

BUYING SECONDHAND SPITFIRE IV/1500



When the Triumph Spitfire finally disappeared from B.L.'s price lists at the end of 1981, it had been around for a long time. It was one of several models which had been studiously ignored by B.L. for some years, and which had not substantially been improved since the mid-1970s. Its design was pure early-1960s, and it competed head-on with the B.L. Sprite/Midget, which was of similar vintage, so it was no wonder that it was overshadowed by cars like the Fiat X1/9 in later years. The Spitfire, in fact, had been on sale since the end of 1962, during which time nearly 312,000 cars had been built and sold.

In this Buying Secondhand feature, it's quite impossible to survey all the five main derivatives. Fortunately, however, the MKIV model, introduced at the end of 1970, not only had a re-styled body shell, but much-improved rear suspension and an all-synchromesh gearbox, so it is surely logical to look merely at the Spitfires of the 1970s and 1980s? They stand out as Triumph's last truly successful sports car (the TR7, at best, was only a qualified success), and throughout their life they had to compete with the B.L./MG Midget models which, after 1974, even shared the same engine and transmission as well.

Defining the pedigree

The Spitfire, in the first place, was derived from the Triumph Herald saloon car's layout. All MKIVs and 1500s built from 1970 to 1980, shared the same box-section backbone chassis frame, with all-independent suspension, front-wheel disc brakes, and sporting four-cylinder engines. All had the same pressed-steel body shell,

which featured a massive lift-up bonnet/-front wings assembly giving unrivalled access to the engine bay and front suspension.

All were, therefore, two-seater sports cars, having doors with wind-up windows, optional hardtops, and rather limited luggage accommodation. All had bodies entirely separate from the chassis, and bolted to it.

Early Spitfires had controversial, barely adequate, roadholding, because, they had simple, high-pivot, swing axle rear suspensions, but from the start-up of MKIV production (and, therefore, the beginning of this survey) the rear suspension was modified to the swing-spring layout, which reduced the roll-stiffness and the tendency to 'tuck-in' the rear wheels. Handling, thereafter, became acceptable, even if the ride was somewhat hard and rattly.

Engines

The same basic engine was used throughout - the long-stroke, but reliable and high-revving four-cylinder overhead-valve Standard-Triumph unit, which had its origins in the 1950s, with the Standard 8hp saloons. For the MKIV Spitfire, it measured 1,296 c.c. (the same size as used in the Toledo and other Triumph saloons), and with twin SU carburetors it produced 63 bhp. This, in fact, was not at all a high specific output, and was one which had been somewhat compromised by the anti-emission requirements of the US market.

For the Spitfire 1500, announced towards the end of 1974, the engine was enlarged to 1,493 c.c., by retaining the same cylinder bore but having a longer stroke than before. This final engine (a size also used in the 1500TC saloons of the period) was altogether more lusty than before, produced 71 bhp (DIN) and endowed the Spitfire 1500 with a 100 mph top speed.

Both engines are extremely well-known by Triumph dealers, and they have a good long-life reputation, in spite of only having three crankshaft main bearings.

Transmissions

Spitfires 1, 2 and 3 had all used the original type of Triumph small-car gearbox in which first gear was unsynchronised, but for the MKIV a new type of box, with the MKIV a new type of box, with synchronesh on all forward gears, was standardised. In many ways it was the same basic gearbox (but with different ratios) as that used on the GT6/Vitesse 2-litre models, also like that of the Toledo/1500TC saloons, and certain elements of it were used in the layout of the forthcoming BL Marina saloon, due for launch in 1971.

The 1500 of 1974/1975 used still basically the same gearbox, but was equipped with a Marina-style single-rail selector shift mechanism, which made it common not only with the Marina, but with the MG Midget as well.

Throughout the period under survey, the Spitfire was always optionally available with Laycock overdrive (D-Type at first, LH-type from the start-up of 1974 model-year cars late in 1973); this, when fitted, was operated by a lever on the gearlever knob itself, and could be used to gear up top and third gears. Fuel economy benefited noticeably, and a good proportion of all Spitfires built had this feature. It is not too difficult to upgrade a non-overdrive Spitfire, if the owner is determined enough. Overdrive, incidentally, was never available on the rival MG Midget sports car.

ENGINE AVAILABILITY

Engine	1,296c.c.	1,493c.c.
Power (DIN bhp)	63	71
Spitfire MKIV	1970-1974	-
Spitfire 1500	-	1975-1980

SPECIFICATION & PERFORMANCE

	MKIV	1500
Tested in Autocar of	1,296c.c.	1,493c.c.
	11.3.71	1.3.75
Specification		
Engine size (c.c.)	1,296c.c.	1,493c.c.
Engine power (DIN bhp)	63	71
Car length	12ft 5in	12ft 5in
width	4ft 10in	4ft 10in
height	3ft 9in	3ft 9in
Boot capacity (cu ft)	7.0	7.0
Turning circle (kerbs)	26ft 3ins	26ft 3ins
Unladen weight (lb)	1,717	1,780
Max payload (lb)	513	538

Performance

Mean maximum speed (mph)	90	100
Acceleration (sec):		
0-30mph	4.8	3.8
0-40mph	7.3	6.3
0-50mph	11.0	8.8
0-60mph	16.2	13.2
0-70mph	22.9	18.1
0-80mph	33.3	25.3
0-90mph	-	38.7
Standing ¼m (sec)	20.6	19.1
Consumption:		
Overall mpg	32.1	29.2
Typical mpg:		
easy driving	42	38
average	36	32
hard driving	29	27
Mpg at steady 70 mph	33.5/37.7	33.1/37.0*
Fuel grade	4-star	4-star
Oil consumption (mpp)	2,000	Nil

*in optional overdrive top gear.

Chassis changes

In the period of the Spitfire IV and 1500, these were very limited. However, it is worth noting that there was a two-inch increase in rear track (to 'commensurate' with the last type of GT6) from the beginning of 1973, which made the road-holding even better, and that in mid-1973 the centre-lock wire-spoke wheel option was dropped. The addition of a front under-bumper spoiler for 1974 also counts as a chassis change, for it trimmed the handling a little.

Body and trim changes

During the life of the MK IV and 1500 models, there were no major style changes, for the change from MK3 to MKIV had involved a complete reskin of the body shell, featuring the introduction of a sharply cut-off tail. The MKIV had a smoothly profiled bonnet with seams turned in (on previous Spitfires they had turned outwards), with big black bumper under-riders, recessed door handles, and a neat new fascia layout, with speedometer and rev-counter ahead of the driver's eyes. There was an optional metal hardtop, with rather angular lines - this, too, was new for the MKIV.

For 1973 (announced in February), the MKIV received reclining seats, and head restraints, re-styled instruments, a wooden faced instead of matt-black instrument panel, and a smaller steering wheel. As already stated, an under-bumper front spoiler was added at the end of the year.

When the 1500 was introduced at the end of 1974, it was immediately obvious by its badging, but there were no other obvious differences. In the spring of 1977, however, the car was given TR7-type steering column switchgear, and new seats, but that was all.

Performance, availability, service

There's no doubt at all that the 1500 was a much faster car than the MKIV, and

CHASSIS IDENTIFICATION

November 1970: MKIV version of Spitfire announced, replacing MK 3 basic design, with backbone chassis and all-independent suspension, already on sale since 1962. MKIV with re-skinned body style, new shape of hardtop, and revised 'swing-spring' rear suspension, plus all-synchromesh gearbox. Engine as before, 1,296 c.c.

Opening chassis number:

February 1973: MKIV revisions, including wider rear tracks, new seats and trim, and wooden fascia panel. From:

December 1973: Front under-bumper spoiler added to specification from:

December 1974: Mk IV replaced by new 1500 derivative. Last Mk IV built at:

1500 with same chassis/suspension/body style but with enlarged 1,493 c.c. engine, plus revised 'single-rail' gearbox. From:

January 1976: Laminated windscreen now standard from:

March 1977: Further decorative revisions, including steering wheel and column control changes, and new-style seats. From:

August 1980: Spitfire 1500 finally discontinued, at Chassis No:

this version would get our vote every time. Not only faster (a 100 mph top speed instead of 90 mph), but just as economical to drive. Our advice would be to buy a 1500, preferably one with the optional overdrive. Wire-spoke wheels look nice if well-kept, but perhaps they aren't worth the trouble, and in any case they are not available on 1500s. The hardtop, on the other hand, was desirable, and it turned the sports car into a snug little closed coupe.

Fewer Spitfires than might have been expected were sold in the UK, for nearly 80% of all cars built went overseas. About 35,000 Spitfires were delivered in the UK during the 1970, and a proportion of these will inevitably have been scrapped by now. They are already beginning to take on the aura of a minor 'classic' car, which means that many are still in excellent condition, belying their age, but that some owners have an inflated idea of what their cars may be worth.

Service should still be no problem for although all the main mechanical components are now out of production, the last Spitfires of all were not built until August 1980. Parts and service expertise, for the moment, should still be available from the Triumph dealer network, which numbered nearly 1,500 at the time of writing.

Chassis Number

00003

50001

60001

64995

75001

81880

100001

..9898

THE FIRST TIME AROUND

My 1978 Spitfire 1500 has just completed its first time around the KM counter (100,000km). It is a good opportunity to think back to how it all began.

It began some 18 years ago when I ordered by first Spitfire, a new MKIV. Unfortunately the insurance wanted such a fantastic amount that I had to cancel my order. Some years later as a young married man my wife and I decided to buy a Spitfire. We bought a secondhand MKIV in British Racing Green. We only kept the car for one year as we had so much trouble with it and getting parts at that time was a big problem. I sold the Spitfire and bought 2 VW Beetles, I wanted something reliable. Alas I missed my Spitfire. The Spitfire bug had bitten, I had caught the disease to which there is no known cure.

It took until 1980 before I plucked up enough courage to buy another Spitfire. I need a reliable car as I have to drive 130km a day to work. After travelling the country from Maastricht to Amsterdam I came across 64 UK 09 quite near here. It was a 1978, one lady driver, 18000km, hardtop and for me a very important overdrive. I handed in my VW Golf and a couple of thousand and I became a Spitfire driver once again.

I fitted a new set of Continental Steel radial tyres, an electronic ignition I took off the Golf and an Alarm unit. (I have had a car stolen before and I know what it is like). I had my new toy just 3 weeks, when one Sunday an old guy with a VW Beetle decided to alter its design by suddenly blocking the road in front of me. Three weeks and many problems later



I got my Spitfire back. It now had many new parts including a new bonnet, bumper 1/4 valance, lights, radiator and a straightened chassis. The cost of the damage including Solicitor, hire car, towing truck etc., etc., some f 10000. Luckily the other insurance paid up. During the next two years I fitted an oil cooler, kenlowe fan, wire wheels, new rear shockers, new



clutch plate, wooden rim steering wheel and 4 additional gauges. In 1982 I joined the Triumph Spitfire Club and really started to enjoy the car and the Club activities. At the end of 1982 I was out of work, so for the first time I had no need to drive my car in the winter. At 67000km and with noisy big ends I decided to recondition the engine. I had the crankshaft reground, fitted new bearings, valve springs and guides, timing chain, piston rings, clutch cover, front trunnion bushes and H4 headlights.

In 1983 after the Donnington trip I had to fit new Universal joints at the rear, a new water pump and a diff oil seal. A Renault R5 radiator was fitted, which did away with the cooling problems. In the autumn of 1983 I bought an old Mini so that I wouldn't have to use my car on the salty winter roads. By now the Spitfire bug had also bitten Renate, my wife, who wanted a MKIII. In November it was off to England to pick the MKIII which I had bought per telephone (this is another story which I will tell at a later date). During the winter of 83/84 I did various jobs to my Spitfire. I modified the bellhousing to stop oil leaking through onto the clutch (see article in.....Clubkrant). I derusted the sills and bulkhead, sprayed the parts and waxoyled the whole car. An electric fuel pump was fitted and new seals in the front calipers. The gearbox cover was also modified so that I could check the gearbox oil from inside the car (again see.....).



1984 saw the car back in England again for the MOTEC meeting where I bought a reconditioned Diff (mine leaks and is noisy) and new jets and needles. The car is now a lot more economical so it was worth sending the money on the carb bits.

This year the car has run extremely well (touch wood) and I've only had to change the exhaust manifold to pipe gasket (as it must be the 5th time, I can now do the job in 30 mins).

At the time of writing this the car has done 109 000km and I'm still on the same tyres I bought 18000km. This winter I shall change the Diff, repair the park-switch on the wiper motor and fit a new rubber stopper to the top of the tank, as its split and the car smells of petrol. I will also fit new trunnion bushes to the rear before they get too bad. The front shockers are still original so I suppose they will need doing next year. In the future I am going to uprate the braking system to GT6 standard (I already have a servo). One day I hope to fit a bigger engine, a GT6 or even bigger. Watch this space for the next time around.

DAVID HERRIMAN
HOLLAND

BUYING? WHAT TO LOOK FOR

Your first problem is to find cars for sale. Most of those which remain, in good condition, have been snapped up by the 'classic car' brigade. Bearing in mind that the supply of new Spitfires in this country was rather limited, it might be difficult to find a great number of examples from which to choose. In this case, we do not really recommend looking to B.L. dealers for the cars, as very few seem to be there. Look to the specialised motor traders and sports car dealerships instead, especially those specifically concentrating on Triumphs.

None of the cars should have been sold for business use, and any which nominally were would probably have been bought with 'perk' usage, or weekend mileage, almost entirely in mind (1). In any case, it is our experience that many Spitfires have covered relatively low mileages as 'evenings and weekends' cars, and this could be an important buying point (2).

Mechanical

The good news and the bad news is that Spitfires had a separate chassis frame; good news because it makes the car simple, and bad news because it can be distorted. Look first for signs of accident damage to the front corners (3), which may also be telltailed by a badly fitting bonnet (4). The frame can corrode under the line of the drive shafts (5), but this never seems to be an MOT 'fail' problem.

There are several front suspension/steering points to watch, as most bearings can and do wear. Treat the anti-roll bar/frame mounting rubbers (6), the steering rack/frame mounting rubbers (7), the front suspension nylon bushes (8), and the front trunnions (9) as consumables, which fortunately are cheaply and easily renewed. Front wishbones, too, might have been distorted in minor kerbing accident, and may have affected the geometry (10).

At the rear, some owners forget that there is a grease point to the rear hubs, which often seems to have been ignored (11), and may have affected the condition of the hub axle shaft. The damper bushes at the rear, and the front seem to wear readily, and may cause a rattly ride, and lack of effect (12). One critical point with all Spitfires, even these late models, is the ride height. If the car is riding too high, the rear wheels may exhibit positive camber (13) which is undesirable, and is due to an incorrectly made rear leaf spring. Also at the rear, the forward fixing of the radius arms (direct to the body shell - 14) may be suspect if corrosion has taken place. You may also find that the handbrake cables have rusted up due to lack of use (15), on some neglected cars.

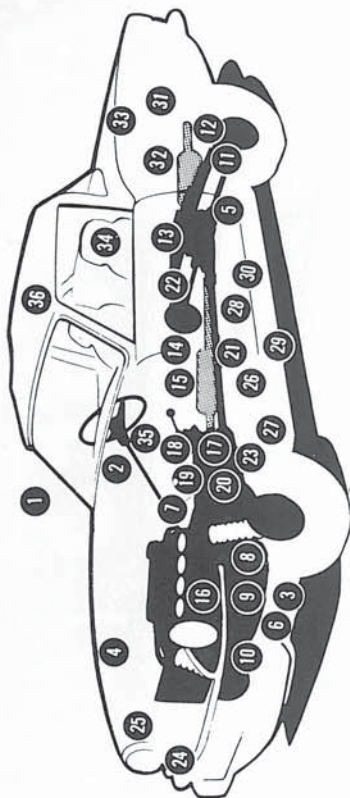
Few Spitfires have seriously been used for competitions, and the standard engines last well, though noisy valve gear often warns of wear, and a hard life (16). We think the 1493cc unit is more desirable than the MKIV's 1296cc version, as it is considerably more torquey, but both are cheap to rebuild, and very simple in layout.

Gearboxes are adequately strong, but lose second and third gear synchronism after a time (17). Some boxes, too, suffer from jumping out of reverse gear (18), which can only be cured by a complete box rebuild. The selector linkage may have got sloppy (19), and the overdrive engagement (if overdrive is fitted) may have become slow (20).

Final drives may become noisy (21), which is not terminal, but worn universal joints to the drive shafts (22) are not only annoying, but will need rapid replacement. The whole drive line, incidentally, is considered rather 'leaky' - so try to find a car which looks dry underneath, and does not spot the garage floor (23).

Body Trim

On ageing Spitfires, the body shell is the major problem area. Look first at the bonnet, not only for a good fit, but for rust around the side/indicator lamp cutouts (24), at the seams atop the wings and near the headlamps (25), and around the bonnet catch depressions behind each front wheelarch (26). Really bad cars suffer corrosion around the joint of the inner wheel arch pressing to the main pressing (27).



Look for the condition of the body floor (28), and the sills (29), which are major stress-carrying members. The doors themselves seem to rust from the welded joints at the bottom (30). Water leaks into the boot sometimes occur, so look for rust around inner wheel arches (31) and on the floor itself (32). The rear edge of the boot lids sometimes suffers under the chrome strip (33). We have already mentioned the pickup point to the rear suspension radius arm (14).

In the main, the quality of the interior is 'cheap and cheerful', so don't be at all surprised to find wear on the carpets, or deterioration of the trim pads, and the seats. We prefer Spitfires with reclining front seats (34), available from 1973, but all cars have the same type of hood.

Among the extras, overdrive is obviously desirable (35), and we also like the detachable hardtop (36), but we do not believe there is any advantage, other than in looks in having wire-spoke wheels.

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