

MGTC Restoration

or

The Quest for the Perfect Bacon Sandwich

By Geoff Broad

I had an idea that post retirement I would travel the country in an attempt to find the Perfect Bacon Sandwich (PBS). This would involve sampling many potential PBSs in towns, villages and roadside vans in the length and breadth of the UK.



I needed a much loftier and less fattening excuse to disguise this rather mundane but never the less worthwhile task. What could involve such travel to obscure locations identified from Egon Ronays Greasy Spoon Guide?

Then I hit on it! I would buy the remains of an MG TC and rebuild it. This would involve much travel to find missing parts, deliver parts to powder coaters, rechromers and other specialists. Joy, the potential for eating the PBS was unlimited.

I spent December 2011 negotiating with my better half to relocate the ju.. sorry valuable items stored in the garage. To force the issue a bit I took delivery of 23 boxes of rusty bits, a rusty chassis and rusty body panels. The ash frame wasn't rusty but was wood wormy and some of it made from pine.



Don't let the picture fool you, this was the sellers ploy to get me to think it was a real car by propping up body work and laying out other components roughly where they might go. On reflection MG might have used this technique to build the cars originally.

This is what it should look like, one day.



My MG TC was built in on the 16th of September 1946, the same day that at his factory in Italy, Enzo Ferrari produced his first V 12 engine. The TC is chassis number 1388 which makes it an early car after production started again following WW 2. As the phone number of the Abingdon factory was 250, MG chassis numbers always started at 251 –so it was the 1138th TC produced.

The registration plate says EFH 411 but as this car was off the road before the DVLA computerised and before SORNs were thought of, Swansea has no record of it.

Actually they have – they micro fished the old paper records but deny it to save time looking. I need to hope that in two? year's time when I plan to be finished, they will still have the number available. I can get it as soon as the car is MOTed and inspected by a man from Ipswich who has a letter from the MG club saying that it probably is an MG – oh well!

Mistake Number 1

I knew with absolute certainty that I would need a set of Whitworth taps and dies and got one from e bay only to find that the car has all BSF threads except for the engine which has metric threads.



Why metric? The Hotchkiss company of France, who were makers of the famous machine gun, hurriedly transferred production to England during World War I when it looked as if their factory near Paris was going to be overrun by the Germans. Consequently, a factory was erected at Gosford Street, Coventry, and both machines and key staff were brought over to England so that production could start as soon as possible.

At the end of the War in 1918, the factory suddenly became short of work so Hotchkiss agreed to manufacture engines and gearboxes, for Morris Motors Ltd. After some negotiations, Morris bought the Hotchkiss plant and premises for £349,423 (about £15 million at 2009 values) in January 1923 and the business was renamed Morris Engines Ltd.

Spot the starter motor.



Can it be the same one?

This after I drove it and the dynamo to a lovely couple in Nottingham who for not much money and seven days returned it looking like – ta da! So what has a couple of months achieved?



Chassis after

Whilst the chassis was being cleaned and powder coated I have worked out what I have and what is missing, sent parts to specialists and sorted out suspension and axle components ready to start building up to a rolling chassis



Chassis before

What of the famous Quest? I can report early success, if you are in Southend, drive a couple of miles down the coast to Milly's Deli. 9 out of 10! 90, Leigh Road Leigh-on-Sea SS9 1BU 01702 474373



In March as I finished the first article in this series Millys Deli was leading in the quest for the PBS and work had started on the renovation of MG TC 1388.

Writing this at the beginning of June I can report good news and bad news. On health grounds I have declared Milly the winner of the PBS and opened a new, less artery threatening category of coffee and cakes. The good news is that the restoration of the MG has made progress.



Very early on I sent some key items to specialist restorers which have now been returned. These include the twin SU carburetors, distributor and various parts for chroming and others for blasting/powder coating.

I also felt that it was important to make an honest assessment of my skills and my strengths and weaknesses. I could then concentrate on those tasks that used these skills and use specialists for work I felt unable to complete satisfactorily. As a result I have been writing a lot of cheques and become expert in accepting deliveries from Parcel Force, TNT et al. I can wield a spanner and have therefore built up the chassis with front and rear springs, differential and brakes.

One of the renovators golden rules is not to throw anything away, however odd or



unlikely the item looks. I found a threaded tube about 18 inches long that looked more like a piece of central heating pipe than a vital MG part. I nearly threw it away. I kept it to comply with the golden rule and what a good job I did! I find I have a rare double spare wheel carrier on which earlier owners used to carry two smaller wheels for trials use to and from events. I am now the envy of my new found friends on the world wide MG forum. We discuss items as varied as king pin thrust washers and half shaft design. I hope I will be able to afford a **whole** shaft for my car.

I have made two important decisions after a lot of discussion with other MG owners and restorers. The first is to fit a five speed gearbox to allow more relaxed driving on modern roads and the second to buy a new metal skinned ash body tub. When I first considered rebuilding a car of this era the only thing I was certain I could handle myself was that I could make an ash frame. Could I weld – no, did I own a metal turning lathe – no, did I understand car electrics – no. Could I make things out of wood – YES! However – yes a very big however, I find that the only part of the car that it is not, absolutely not recommended for a first time amateur restorer to attempt is ... you guessed it ... the ash frame and skinning.

So I have found two highly recommended specialists, one to build the ash frame and one to skin it. The downside to my decision other than cost is that these guys are so in demand that delivery was 12 months.

Not all is lost. I have the old wood wormy tub and I plan to practice a tub rebuild knowing that the quality of the outcome will not impact the look of the MG. If against all the odds I make one of the world's best tubs I can all ways sell one on e bay – guess which one?



At this early stage I am also having to thinking about final body colour. Before I can rebuild the radiator/cowl/slats I need to decide on the body colour because the slats



match the trim and the trim/ body combinations were only available from the factory as follows:

Cream body with green or red trim, blue body with beige trim, red body with beige or red trim, green body with green or beige trim and finally black body with any of the three trim colours.

I have carefully scraped away some of the light blue paint from an old body part, (the MGs, not mine), and it seems that the original colour or at least the colour last time it had a bare metal re spray was a mid blue.



See pic Everyone on the forum says don't worry about what the factory did, paint it the colour you like. One member in the US has a tartan MG! A Stuart tartan might be OK but can you imagine a McDonald! I am leaning towards red with beige trim so beige slats it is.

I have also fallen into a trap that I was warned about by old hands very early on. This is the 'I already have one of these but this looks a better one' trap. I have currently two petrol tanks and several radiator badges, e bay beckons. So having bolted most of the bits to the chassis and whilst waiting for the body tub I will now concentrate on rebuilding the engine.



Another milestone, the 100th rubber glove used! I understand that the average renovation uses over 500 gloves.

Finally and having awarded the PBS to Millys I have an early and possibly unbeatable contender for the PC&C prize (perfect coffee and cake). I have been using a body shop in Royston and Brown and Gammons in Baldock so my top of the PC&C list is ... 'Teacake', 8 Meldreth Road, Shepreth SG8 6PS, Tel 07565 567023 run by Christine and Maurice Prove. Try it.



At the end of June I got a man (who was walking past the house on his way to post a letter) and a neighbour to lift the chassis off the dolly and on to some slave wheels. It has started to look like a car!



Then with some shock I realised that apart from a front hub washer I was waiting for from Brown and Gammons the chassis was about finished. I could start on the engine. But could I? Was I fooling myself about finishing the chassis just to get my torque wrench out? So, I tidied up the garage and rearranged it to suit an engine rebuild. Rather surprisingly no lost chassis parts emerged from under benches or behind empty coffee mugs.

Having made a solemn promise to Dave Orange not to start on the engine until I was ready to rebuild the whole thing I now realised I was suffering from restorers block. I resisted touching the engine for so long I couldn't now start it. Help was at hand in

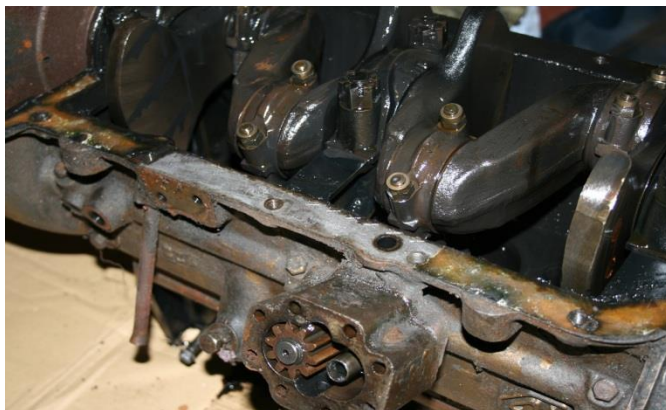
the form of the BBC and Richard the Second, towards the end of the play a basket of severed heads is upended and the heads roll all over the Kings shiny palace floor.

Right, if they could get a few heads off I could to, so I did. Whilst waiting for my epiphany courtesy of the BBC I did a few fill in jobs including the rebuilding of the SU petrol pump.

I am sure that most of us started our motoring in cars that issued a manic ticking when the ignition was turned on. Reassuringly the ticking gradually reduced in frequency as the carburetor bowls filled.

As many of you know SU stands for Skinners Union and the company was started by the two Skinner brothers. One of the brothers got fed up with cars and went off to find another soul mate who turned out to be a Mr Lilley, and Lilley and Skinner was formed. It seems appropriate that when you hit your SU pump with the heel of your shoe to get it started you may be using two Skinner brothers products.

So what next? The head is off, crank pistons and camshaft out and the block off to be chemically cleaned. After close inspection I plumped for +20 thou pistons, a light



regrind on the crankshaft to +30 thou and a new rocker shaft. Oh yes and a lead free head conversion. We may be adding so many chemicals to the fuel to counter lead free petrol, Ethanol and other old car part destroyers that petrol itself may become the additive.

My plan is to rebuild the engine, add the 5 speed gearbox conversion from Hi Gear in Derby (which by the way is a superb piece of engineering) and drop the two into the chassis by the end of September.



It turns out by the way that buying Whitworth tools was not a mistake after all. Although the engine thread form is metric the bolt heads are Whitworth!

My culinary challenge having move from bacon sandwiches via coffee and cakes has now settled on cream teas. Scones are not easy to make well, the often are spongy or biscuity, so my search continues without any real

contenders. I had a really good scone at the M40 services at Beaconsfield but it seems perverse to include a service station as a contender. I will keep on eating.

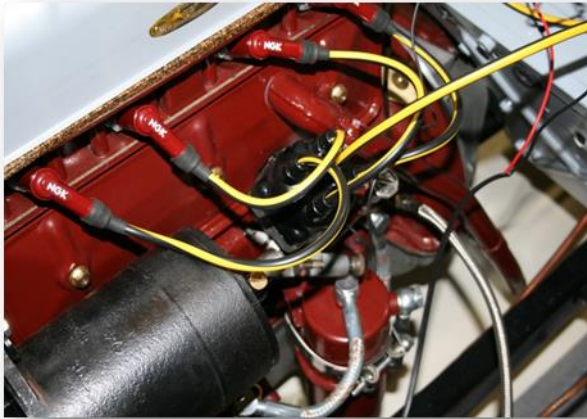


Well the engine is finished and in the chassis – thanks Bob.

The XPAG engine is about as simple as engines get and was a joy to work on. I ended up with +20 thou on the bores and pistons and + 30 thou on the crankshaft. I replaced big end shells and bought new bearing shells for the crankshaft. After the block was caustic dipped new core plugs were popped in with a tap of a hammer and the head was converted to run on lead free petrol although what the implications are with Ethanol I wait to find out.

XPAG engines are notorious for leaking oil, in fact one man in the MG club has fabricated a full length tray that is permanently mounted under the engine and gearbox and once a week he





removes the drain plug and tips the oil back in the top. I therefore took the opportunity to fit a modern lip seal on the rear crankshaft bearing instead of the cork seal that looked to me more like a piece of liquorice string.

Early post war XPAG engines were painted a muddy greeny brown colour allegedly as a result of mixing together tins of camouflage paint left

over from the war. Later the blocks were painted the instantly recognisable and attractive MG maroon. In spite of the originality issue I decide to spray mine maroon. Good news and bad. The aerosol tin was faulty and together with the fine spray it also intermittently spat out

great gobs of paint at high speed in random directions. The good news is that by some miracle these stray ejaculations missed the engine block completely. The bad news is that the inside of my garage looked like a rehearsal scene from Macbeth; I hope a SOCO team doesn't turn up.



To avoid having to pull all the body work off, if I had forgotten to put in some vital engine component, I rigged up a

temporary petrol supply (a copper pipe dangling in a petrol can) and fired the XPAG up.

Can I say that again please. I fired it up. On the third turn it sprang into life – it was a miracle, not only did it run but with good oil pressure and water temperature.

I then began to notice that shelves previously groaning with disassembled MG parts began to look worryingly empty and my box of empty plastic storage bags began to grow again as nuts bolts and washers were returned to their, (hopefully) original places. Panic set in, what was happening? Had I finished the project without even realising it ?

Phew! No. I had forgotten all the refurbished items that were too precious to sit in the garage and had been stored in wardrobes, sock and underwear draws and other seldom visited safe havens. Half an hour later I had a to do list to take me through to Easter.

So what next? The scuttle and firewall are back from the painters, the early TCs had this item painted the famous camouflage mix and it suited me this time to comply. I still haven't completely decided on body colour although I am leaning towards a two tone blue, Oxford blue wings and Cambridge blue main body, not an original colour but I have seen a couple of 1930s cars in this livery recently and they look stunning.

With the scuttle on I have bolted on the fuel pump, coil and regulator and most importantly the chassis and engine id plate, it is now officially TC 1388 although it always was.

I was prompted by a comment on the MG forum to reflect on the reasons for rebuilding a 60 year old car. I asked the forum, rather philosophically I thought, if the choice of a particular body colour affected popularity. I received a reply in about a micro second to the effect that if I was concerned about value I was 'doing it for the wrong reasons'. So what are the right reasons? Or may be just the reasons. Here are a few I thought off,

I am interested in playing with old cars

I am preserving the countries motoring heritage for future generations

I want a MG/Riley/Aston Martin but can't afford a running example

It keeps me from having to Hoover, wash up, decorate the bedroom etc

I plan to make a financial killing when it's complete

Most hobbies cost money, think of the cost of drinks to darts players. Many however don't provide the long term pleasure of classic car ownership. Darts players for example wake up with a hangover and puncture wounds in their feet. The other important issue in the current climate of low interest rates is the appreciating asset element of MGs and other classic cars. Please emphasise this last point when you next meet my wife.

Finally by some quirk of fate my search for a period lead acid battery pointed me to a firm called Lincoln just round the corner from Millie's! in Liegh on Sea, so tea and buns, they were just as good as her bacon sandwiches.



I have had a period of relative frustration. With the engine in the chassis and tested there have been many small tidying up jobs but the two major items next on the list were the ash framed tub and the fitting of the wiring loom.

The ash framed tub and metal skinning I ordered from a specialist. He was/is regarded as the best in the field to handle the multiple curves of the TCs tub, he still uses an English wheel. His popularity resulted in a quoted delivery of twelve months which meant I should have taken delivery a few months ago. I



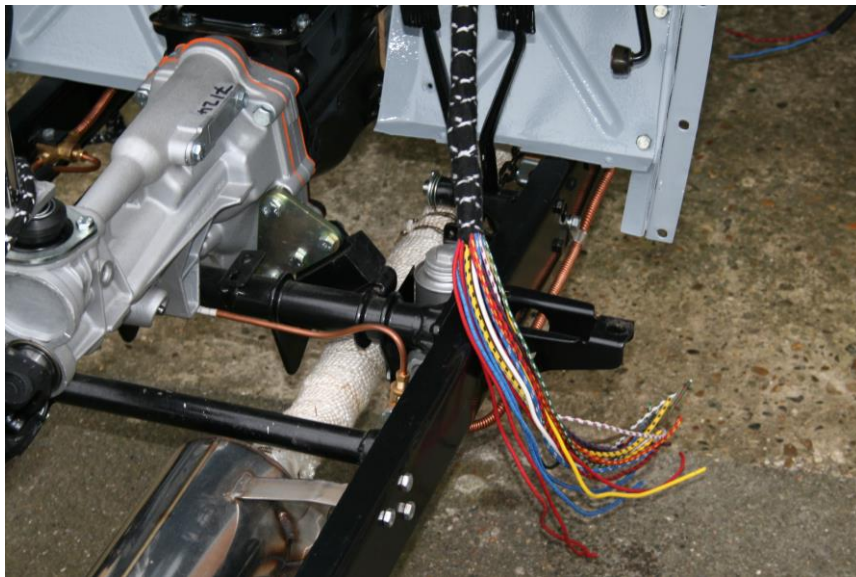
ordered the tub only two months after taking delivery of the MG project and in retrospect I might have been hasty in ordering a new one. Over the last 12 months I have spoken to many amateur restorers who have successfully

replaced rotten ash and re skinned tubs, so if I was to make the decision now I think I might have attempted to repair the old tub.

The late arrival of the tub delays the fitting of the rest of the body panels, the painting, and then the internal trim. With the TC you start working from the back of the car to get the metalwork that sits on the chassis looking correct. So first the tub, then rear wings, then front wings, bonnet and running boards. As you go you pack, adjust, gently push and if really necessary trim metal. The MG Abingdon 1940s mythology says that at the end of the production line a man (he is always referred to as Fred or Bert)

wielded a pair of tin snips to finally trim the bonnet to shape. For me all this is yet to come.

The wiring loom I ordered early in the project and so it was to hand. With the help of Bob Barnard (thanks Bob) I ran the loom around the chassis and through various grommets in the scuttle and firewall. With aching fingers and strained wrists from all the pushing and pulling I felt that a career as a gynaecologist might be a possibility. Sadly when I rang the supplier of the loom to check on some wiring colours the owner had died and the business had been closed. I do wonder about many of the specialists working in the classic car area and how these, often one man businesses, will carry on when the owners retire.



The second and more challenging aspect of the loom fitting was to identify individual wires and wire up regulator, coil, fuel pump, dynamo etc. a multimeter is essential as is a wiring diagram. The colour coding from the 1940s has long been abandoned and I found I was better off just working through the wires of the right length with the meter and then marking the wires for lights and horns for later when the body work is fitted. The car now starts by turning the ignition key and pulling the starter

switch! One or two problems emerged, the dynamo doesn't seem to charge although it might be the ammeter and the fuel pump immediately failed due to it seems a poor diaphragm from SU.



The second area of frustration turned out to be the clutch. After wiring in all the electrics that we could, the friend who had helped me (who had let me help him) had the idea of a quick drive around the village, sorry, I meant on the drive. We would sit on a couple of old wine boxes and behave just like the books show the restorers in the US and Australia do. Although the car is taxed and insured and has a registration number (see below) I am sure the local police would have not been amused.

What we found (probably luckily) was that the clutch would not disengage. My friend then asked a strange question - had I put the clutch plate round the correct way? In all my years of playing around with old cars I had never known there was a right and wrong way round! So each time I did it in the past I had a 50:50 chance of success but not this time. So... It's off with the gearbox and bell housing, luckily not a major job without the body on; the late delivery of the tub may have been a blessing in disguise.

A major success of the last few months has been my negotiations with the DVLA to get the car registered. The car was taken off the road before Swansea computerised and therefore as

far as they were concerned the car did not exist in spite of the pair of battered number plates showing EFH 411 that came with the boxes of bits.

The DVLA rule to retain an original registration is that I had to have some form of documentary evidence, an old tax disc or MOT certificate. I had none. I came close, EFH is a Gloucester registration and the county archives had the original records of the EFH series...except for five, 409 to 413. My logic was to show DVLA the records and registration dates for the cars either side of 411 and prove that they matched the build dates of my car. Bureaucracy is a wonderful thing until you have to deal with it and having heard a number of horror stories of Q plates being issued so I spent a morning in Ipswich and finally and gratefully accepted 473 YUR



For anyone approaching the same task the absolutely key document was the confirmation letter from the relevant car club, in this case the T register of the MG club, that the car was what I said it was. As soon as the DVLA at Ipswich read this letter the path became much smoother. The other piece of luck has been the change to MOT rules as I did not have to wait until the car was finished before going through this process.

I cannot add anything to the Quest as I am writing this beside a swimming pool in Portugal and I am over eating the wonderful custard tarts the Portuguese make.

I (to be truthful, three specialists) have made major steps forward. The skinned tub finally arrived and after the wings/bonnet and other minor panels were fettled and fitted the tub and panels have been painted.

The ash framed tub and metal skinning I ordered from a specialist with a delivery of 12 months. I visited him and discovered he was building a batch of four MG TC tubs and that I was number two in the production line. So slowly and inexorably delivery was getting closer.

By then I had completed every little tidying up job I could think of and without the tub I couldn't move forward. Then I had a surprise telephone call from the tub man. The customer who was first in line had had a death in the family and as a consequence didn't want his tub till much later. Would I like to pick his tub up immediately? Without thinking I said 'That's great news' meaning the prospect of an early tub. The tub man unfortunately thought I was referring to the death and I nearly lost the tub due to insensitivity.

However on the two weeks later Bob Barnard and I picked up the tub from Surrey and it has turned out to be as good a piece of craftsmanship as I had hoped for. It was great to get it home safely and in the garage ready for the next phase of the renovation.



The position of the tub on the chassis in the fore and aft direction is critical for both rear wing wheel clearance and bonnet fit, so this occupied me for ages as I could get one correct but not both at the same time. Clearly everything that fits on the tub needs to be trial fitted before the whole thing is dismantled and individual body parts are sent off to be painted. I hated drilling holes through my new tub! These trial fittings included the windscreen, door locks, fuel tank straps and side screen mounting points.



The front wings which were I think originals with some repairs, needed to be matched precisely to the new tub and the old chassis. The TCs sweeping front wings define the front of the car and a mismatch between them and/or poor fitting are instantly detrimental to the look of the car. So...a specialist panel beater was lined up to do this work. This was the result.





So then I contacted my preferred paint shop in Royston but, you've guessed it. He was so busy he wasn't available to start the work until much later. After some months of anguish over the choice of body colour for the TC, and discussion with friends, fellow club members and my wife I finally went for a two tone blue. Dark blue wings/running boards and front apron and the



main body light blue. It's not an original standard factory TC colour but I like it and it looks very stylish.

I couldn't wait for the job to be finished so went over to Royston and took these work in progress pics.

Whilst waiting for the panels to come back I spent periods making up a new dash from a plywood blank, a sheet of pre glued veneer and then tacking a chrome edging strip around the outer edge.

So what's left? Very carefully fitting the tub and panels back on to the rolling chassis, fitting and wiring the lights, floorboards, seats, dashboard and internal trim. My guess is a test drive to

check all is well some time in the next three months and and a final completion three months after that.

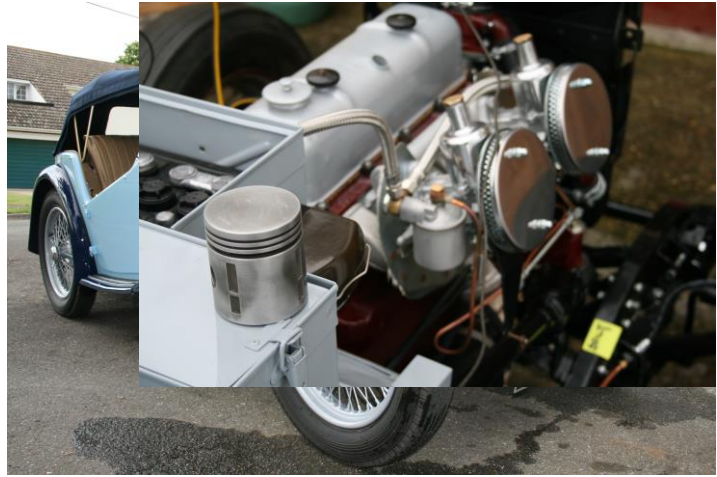
I can add another great contender to the Quest. After picking up the tub, Bob and I found an excellent café just outside Staines for a late breakfast.

Well, it's done!

The painted panels came back from the paint shop carefully wrapped in blankets. I assumed that as they had all been trial fitted it would be a simple and straightforward job to bolt them back in place. It wasn't. Even now I can't figure out why, perhaps flexing during transport, perhaps handling during painting. What I did notice though was just how heavy paint is, the panels were now all much heavier and more rigid.



After all the panels were on I concentrated on the seat fixing, the carpets and finally the hood and side screens. I had been warned by several MGers including



professionals that off the shelf hoods often looked like a bad fitting suit. I decided to use Bartons in Luton, they had a good reputation and they made an excellent job of all the weather gear including the side screens.

I made a big mistake in not drilling the holes in the doors, for the side screen ferrules, before the tub went to the paint shop. To do this after painting was stressful beyond belief.

The internal trim kit that I bought from Moss was a nightmare to fit, the best I can say is that it was a starting point and I had to modify every panel and every pre-cut piece of trim even resorting to learning how to use my wife's sewing machine. However it now looks good and has been worth the time and care put into it. The seats also from Moss were fine although I gave up on their TC seat runners and in the end used runners from an MG TF. Carpets were straightforward as was the final wiring of headlights

sidelights and horn.



So, a first outing to test everything worked and to find out the bits that didn't. First problem was a lack of power, the car started and ran but any throttle opening and it

sputtered to a stop. Low fuel, air lock in the petrol line, point, plugs, coil? All were checked without any improvement of the cars performance until a friend said, its obvious, it's the condenser, and it was. For some crazy reason TC condensers are soldered to the distributor back plate, not a roadside repair.

Next problem was a petrol leak from the gasket between the sender and the side of the petrol tank. The sender only serves to tell you have nearly run out of fuel as the TC has a low fuel warning light rather than a fuel gauge. My mistake was to leave the paint on the face of the petrol tank flange against which the gasket sits. The paint then dissolves through contact with the petrol and a leak starts between the two surfaces.

I had some problems with brakes not helped by having put the front shoes on back to front. The bigger issue (It happened on a test drive) was the spherical end on the master cylinder actuator rod falling out of the socket on the end of the brake pedal, adjustment and wiring the two together fixed it. Hooray for a good handbrake. Final issue was lack of battery charging which was tracked down to a combination of reversed connection to the regulator and insufficient earthing of the centre metal instrument panel in which the ammeter sits.

So now I have the best part of 100 miles of trouble free motoring under my belt. The TC is a joy to drive, eager, responsive and when the new brakes shoes are bedded will be happy to stop. I am really pleased with the 5 speed gearbox, the engine revs so willingly with plenty of torque that on today's roads another gear is almost essential.

Although the car doesn't need an MOT I thought it would be useful to put it in for one just as an independent check on steering

and brakes. I also need a professional review of tracking and toe in as these are set up by eye only at the moment.

The two and a half year rebuild process has been really enjoyable, I have met some interesting people, been supported and encouraged and have learnt an awful lot. The search for the bacon sandwich is over but perhaps I can continue enjoying fry ups working on the Singer Le Mans.