



'T' REGISTER NEWS

THE MAGAZINE OF THE MG CAR CLUB T REGISTER

NO. 13 JANUARY 2014



Another TD comes home

Peter Sprot's recently imported gem back from the States

A Message from the Chairman of the MG Car Club 'T' Register - Geoff Matthews

Firstly I should like to take this opportunity to wish all you T-Typers a very happy and prosperous New Year from your hard working committee and seconded members of the T Register.

I am pleased to report that the Register is in good shape and committed to building on the success of our 50th Year celebrations in 2013.

Now that the days are already getting longer and hopefully the prospect of warmer weather is round the corner, time to check out the 'T' and prepare for this year's events.

An important one for me will be the annual Rebuild lectures at Gaydon again being meticulously organised by Alan Wakefield and immediately followed by the T Register AGM.

We do look forward to receipt of nominations to join us on the committee, some of our current team have been with us for some time and it is always encouraging to welcome new blood and dare I say younger members to carry on the good work achieved to date. Do give me or the Secretary a call to register your interest or find out how you can get on board and join in the fun.

Having been very much involved in a house move over the last few months I certainly intend to get back this year into an MG competition mood and try my luck at hill climbs and sprints again. Our competition secretary has also again been busy putting together a programme of racing venues and deserves our support at some of these events this coming year.

I look forward to seeing many of you over the coming months.

All the best, Geoff

TRN JANUARY 2014

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EDITORIAL

With the festive season now well and truly behind us time to think positively about this year's T Register activities and hopefully get those jobs done on the car before the weather improves and we have no excuses but to be there.

Last time maybe I bored you a little with my own TF problems and our exploits on the Autumn Tour but suffice to say that having got the car back to my place I soon set to work to find out what went wrong.

The root cause proved to be a certain lack of water in the block having discovered that a fine spray was being forced out under pressure when the engine was running causing overheating and the inevitable result of the popping out of another core plug.

The removal of the front end gear i.e. the laborious task of taking out the radiator and hoses on the TF together with fan and water pump etc, revealed the truth of the matter.

The engine stabiliser rod with its washers and rubber grommets is bolted to the chassis at one end through a bracket fixed to the sub frame whilst the other end is secured through another bracket which in turn is held in place by 2 of the 4 bolts and studs holding the water pump.

For whatever reason, maybe due to age or maybe even by over tensioning of the tie rod, this top bracket sheared at the water pump end which was not discernible until all the gear was removed. This had the effect of allowing the block too much latitude and placed stress on one of the remaining bolts holding the remnant of the bracket and the water pump. In consequence the thread in the block was stripped, the bolt became loose and guess what this bolt goes through into the water jacket.

You get the picture, a regular spray of water emanating from the block through this loose bolt, result no water, overheating, blown coreplug.



An important part of fixing any problem is discovering the cause. After drilling and re-threading the block using a helicoil insert, fixing a new stabilizer rod bracket, refixing the water pump, carefully and attentively fitting the tie rod (this time tensioned in accordance with the book of words), refitting all the fan gear and the radiator and wrestling with the hoses (!), all now seems to be well. No more leaks, just a long test run remains.....

Most of the regular T Type annual events for this year are now in place and details appear later in this edition, for more details see Safety Fast or our website at www.tregister.org

So no excuse and hope to see many of you there at some of these events during the year.

A good tale follows of one man's quest to own a T Type, it is still fascinating to hear of this insane yearning that still exists to get your hands on a T Type and shows no sign of let up and even indeed much younger souls are now being smitten.

Until the next time, drive safely

John Ward

COVER STORY

My First Classic Car

Peter Sprot

I was at a classic car gathering with Graham a friend of mine and I was saying that I'd like a classic car but I don't have a clue of what to get. His reply was simple and profound. "You'll know it when you see it". He was right but I first had to narrow the field if only to what I could afford.

I've been a restorer and rider of classic motorcycles for over twenty years. You can see the fruits of my labour on my website www.petersmachines.com. So I have a clear idea of what I like and don't like and for ten of those years I've had another friend Brian who I rate as an engine whisperer and walking encyclopedia, and where I find a problem by a process of elimination Brian just goes straight to it.

This could be that for my working life I've worked in an office and he has had a successful garage. Brian's now retired and his hobby is buying interesting and rare classic cars and the odd motorcycle then turning them into concours winners.

I'm also a bit of a photographer and over the years have collected photos of hundreds of classic cars and nowhere near as many bikes. Looking at the pictures I thought that if I owned a classic car then perhaps it would be an interesting investment as well as a new learning curve and with Brian's guidance I would be sure to get a good car.

So the process began of what to get and it was really interesting to have him looking through the many magazines that he regularly buys and with me scouring the internet looking for the best buy.

I started looking at several of the usual sites including ebay and then carandclassic.co.uk which proved to be by far the better of the two for variety and it isn't an auction site.

Whenever Brian found a car he'd phone me and within seconds I found it on the internet often with more photos and information. Whenever I found a car I liked I would take my computer tablet to Brian and we would discuss the merits and if it was considered good value he would take over and phone the owner as his knowledge of cars is truly encyclopedic and I don't use the term lightly.

My first foray into going to actually see cars was a 1935 Morris eight which belongs to a friend from whom I'd bought a Vincent motorcycle in 2004. The Morris had been in a garden under a tarp since the 1960's and we immediately agreed that although restorable it would cost more than it would be worth at the end and take many months if not years to complete so we politely walked away. The next car I found was a 1930 Morris ten 'Tourer' which after travelling 120 miles to see it, we realised that the photos had led us to believe that it was much better than it actually was.

Going back to the internet I decided that I needed to narrow my search and decide what kind of car I really wanted rather than just looking for a bargain, should it be from a period, should it have a large engine or a small one, should it have a hard top or a soft top and should it be rare or plentiful?

After quite a lot of thought and discussion the decision was that it should have a small engine, it will be pre 1960, there will be enough in circulation to justify a good spares backup and a thriving supportive club and I wanted it to be running and roadworthy. I didn't mind if it needs a bit of work as long as the price reflects it. I considered a couple of BSA cars and a couple of Singers but both

were a bit rare and at the wrong end of my budget.

Eventually I stumbled across the MG T series cars of which there are many and a good spares backup and good clubs. It ticked all the boxes; what is more I liked the look of them and Brian gave an immediate 'thumbs up' having had several of them himself over the years.

So the hunt began with the three of us going to an auction, Brian, Graham and me. I found it fascinating to watch and listen to them as they looked at and in their own way assessed the cars. They would call each other and point out some detail on a car which was clever or wrong or different or just nice.

From that day I learned two really simple and invaluable tips when looking for a classic car. Tip one: open the door, do you have to lift it to close it. Tip two: move the steering wheel, does it have excessive play. If it fails either of these tests don't bother looking under the bonnet. There was an MGTC at that auction and it failed both tests resoundingly. However we lifted the bonnet anyway, only to have our fears confirmed that it was absolute rubbish. The car had clearly been poorly resprayed to look good in the catalogue and that was all. A few weeks later we went to another auction preview in which there was a very nice MGTD which passed all the tests and really was a good car, but as it was left hand drive I decided not to bid.

Feeling a bit despondent I went back to the internet and started looking on other sites and found myself back on eBay, the USA site. It was here that I found what appeared to be a very nice car. It was a green 1950 TD right hand drive in what looked like perfect condition, but having learned from experience I was saying to myself that you should never buy a car without seeing it in the flesh and hopefully also hearing it and maybe even driving it.

With those words ringing loudly in my ears I set off on my 1955 G80 Matchless to Brian's place with my computer tablet in my pocket to show him what I'd found. The first thing I told him was it is being sold by a dealer which I knew we were trying to avoid, then I said "it's on eBay and it's been there for a couple of weeks with a 'buy it now price' and it hasn't sold", a quick glance at Brian told me that if we were to give the car points out of ten then this one would be starting way below zero.

But then I showed Brian the photos of which there were 191 and he began to realise why I had gone against what we agreed to be way outside our remit. Every photo showed the car to be nothing less than perfect with many close ups and engine shots, even photos showing underneath and to finish, a few photos of invoices for the complete engine and body rebuild of 5000 miles ago.

We agreed that it is worth a call to the seller so that night I phoned the dealer in Phoenix Arizona who confirmed that it been fully restored five thousand miles ago, he said it runs very well and has no rust or mechanical issues so I crossed my fingers and bought it..... there and then!

This impulsive act of buying it now proved to be the start of a long journey for the car and an interesting learning curve for me. The advert had said that the seller will help with export and he told me he sells most of his classic cars to mainland Europe. I asked him to get me a quotation and he said he does not include any mark-up and would have the quote come direct to me.

The cost came to \$1100 for the shipping \$300 to get it the 600 miles to the port and \$450 for insurance. We agreed that the easiest way for me to pay was to add all this to the cost of the car and pay the dealer. My bank wanted what I considered an extortionate fee and moreover quoted a miserable exchange rate to transfer the money so I used a third party money

transfer company, it worked very well saving me hundreds of pounds this way.

The following morning I received an email from the dealer which had three videos attached. He said that he thought I might like to hear the car. The first video was him walking around the car and zooming in on different areas while he talked. The second showed the bonnet up and him holding the exhaust manifold to show the engine was cold then starting the engine and turning the camera to the rear as he revved showing no smoke. The third was him going for a ride. All three made me feel I had made the right choice but only time would tell that I was correct.

Nearly three weeks passed before the car left the dealer to go to the Schumacher freight warehouse in Long Beach California with the dealer saying it should only wait a few days before shipping. I waited a week then contacted Schumacher who explained that because I had opted for consolidated freight it would go in with other vehicles. While I waited I was sent an email explaining the procedure which said I would get an email when it has been processed and another when it has been put in the container and another when it had been loaded onto a ship and the bill of lading two days after it sailed.

None of these arrived without me asking for them. I only found out, when I phoned after two weeks to find out which ship it was on, that the other vehicles a Porsche and two motorcycles would not arrive at the freight premises for five weeks. I asked if it was inside a warehouse or in a car park, they assured me it was inside and sent me photos of it boxed in with many other cars waiting for shipping.

They suggested I contact Schumacher UK who would act as agent when the car reached Thamesport in England. I phoned and was shocked to hear that the money I had paid so

far was only part of the cost of shipping and for them to clear it through customs and have it unloaded in a secure warehouse in Chatham would cost another £450. I knew 5% VAT would be payable on all costs incurred but I naively thought the \$1100 was all I would have to pay for sea freight.

While I waited for it to begin the sea journey I had another look at the photos and saw that on one photo showing the front of the car it had a badge bar with three badges, one of which said Rocky Mountain T Register. So I googled it and found that it had a web site. I sent a picture asking the Chairman if he recognised the car and he was kind enough to forward it to his members and within a few hours I had an email from the last owner a man called Ben.

Several emails then exchanged between us one of which included his phone number so I called him and we talked for quite a long time during which he told me he is a retired lecturer in automotive engineering and he has had the car for ten years. He then gave me the contact number of Gary who he bought it from in 2003. Gary had owned it since 1988 so I phoned him and he sent me several pictures and told me stories of when he owned the car. Ben told me that the only reason he sold the MG is to make room for a Triumph TR3 project otherwise he would have kept it. He also told me it won a prize just last year in the Colorado British Classics show which had 500 vehicles beating 17 other T series MG's in its class.

So now I am confident it is a good car and my only worry is that it might get damaged in transit. Ben and I have become friends and I have offered him a place to stay and a ride in his car on the correct side of the road.

When the time came for shipping I began watching the port of Long Beach using the website www.marinetraffic.com and about four days after the shipping date saw a container

ship called 'London Express' leave Long Beach. I emailed Schumacher who until then had not sent any of the promised emails and they confirmed it is on London Express with the destination of London, then on to mainland Europe.

The ship was heading south and took 6 days to reach the Panama Canal where I could see 50 ships at each end. I thought it would take forever to get its turn and go through until I realised that these ships are all lying off awaiting instructions and it went straight in taking 10 hours to get through. It docked at the far end of the canal at what looks on Googlemap like a freight terminal the size of the town next to it which strangely enough is called Colon. After 24 hours it left and posted its destination as Savannah which is on the border of Georgia and South Carolina USA. Calculating its speed I guessed it would take about 4 days to get there and I was correct. I knew the estimated arrival date of the 24th in London so I knew it must be going to at least one other port or maybe two.

While I waited for this I took the time to rearrange my garage at home to make room for the car. I now had six motorcycles in one bay and an empty bay next to it and a Manx Norton in my office. I also took the time to join the MG Owners Club and then the MG Car Club. Then I started looking for books to learn about the car, its history and its engine, as I intend to do any mechanical work myself. I found many books second hand on the internet sites from places like World of Books and Better World Books.

I was correct about it stopping more times before it started to cross the Atlantic, it stopped at New York and to my surprise headed north to Nova Scotia Canada before turning east and setting its destination but not to London as I expected but to Rotterdam and then for what would be the final leg of its journey arriving at Thamesport London one

day earlier than I had been told which seemed like weeks ago.

An email confirming its arrival came from the UK agent but also saying they are not available on Wednesdays, Thursdays, or Fridays after 1pm. I phoned leaving a message to return my call. It wasn't. On about my fifth attempt to call them the phone was answered by a not very helpful person who said it would take between 5 and 10 working days to clear customs because they had so many arriving on that ship. I couldn't help but wondering if they meant my working days or theirs.

Then came two emails with many attachments and when reading through them all I got the impression several were outdated attachments which were contradicted by others. Totally confused I decided to fill in the ones needing to be returned and just wait as I thought pestering them would get me nowhere. I did ask that they reply confirming that my signed documents had been received knowing that they wouldn't and I was not disappointed. I waited a week before phoning only to hear that they didn't have the documents and it was only when I said I'd sent them twice that they looked in their junk mail and found them. To their credit things happened quite quickly after that, I immediately paid the invoice which came within an hour and phoned to make sure they knew I had paid.

It took a few days to organise a car transporter to take Brian and me to Chatham docks to collect the car. I was somewhat surprised on entering the huge shed to find it filthy with many cars; some good, some rubbish, haphazardly parked amongst piles of wood and pallets of goods. I'm glad I spotted my car quickly because a few minutes later Brian shouted 'Come and have a look at this Peter, I think you've got the wrong car'. I walked around the back of a container to find another Green MG, this was a TF which to

describe it as a barn find would be paying it far too high a compliment.



The other import at the dockside.....

Whose is this one?.....

We loaded my car without issue and left the dock in the rain thinking, this is the first time the car has got wet in more than 20 years. As we pulled up at the first traffic light some 20 yards from the dock gate a policeman on a motorcycle pulled up alongside and looked at the car then at us in the cab, he pointed to the car then gave a big 'thumbs up' and a wave before driving off. We were off to a good start.

Arriving home without incident we pushed the car into my garage and I put the battery on charge and gave the car a good clean removing over four months of dust accumulated in warehouses and the container. The engine started easily once the battery was charged and Brian listened carefully concluding that it sounds very nice.

For me the next hurdle began with me going online to download the V55/5 document as the notes given to me by the MG Car Club DVLA expert. I wish I had checked out the web site earlier as I realised that you can only apply for the document online and I now must wait for it to be posted back. With the help of the club expert the car was issued with a

certificate of verification which has proved very useful. The V55/5 was posted along with the certificate and the customs and excise NOVA vehicle entry document, my driving licence, a copy of a household bill and photos of the car and the brass plate confirming all the numbers together with a cheque for £55.

I then waited nearly two weeks only to learn that the documents had been rejected by the DVLA because the HMRC customs had wrongly transposed the engine and chassis numbers on their computer system. Rather than just call them to correct it I felt it was down to me to get the HMRC to correct their mistake which they readily did when I sent them a copy of the MG Car Club verification certificate. Once I received notification that the error was corrected I re-submitted everything to the DVLA and waited once again.

A week after re-submitting the documents the number 872 YUY along with a tax disk was issued and at last I could notify the insurance company and drive the car.

My first drive was to the local village petrol station, I felt as if I was drifting across the road a bit and crunching a couple of gears both of which were problems with me not the car. The car was admired by three people at the pump two of whom laughed as I used the dip stick to see how much fuel was in the tank.

An hour later a friend came to my house in his 1935 Wolseley Hornet special and we set off to our first classic car meeting which was only about 4 miles from home, David followed, my gear changes and my ability to stop were improving by the mile while my wife who was my first passenger was clearly enjoying her first ride in a classic car laughing and squealing as if she was on a fairground ride. The car ran perfect and I was driving it so much better already and then I put it away as it began to rain and now six days later have not used it because the weather has been

rainy and foggy and the roads are very muddy.

Do I have any regrets? None at all, however I do realise that I have been very lucky and there are many times in my tale when it all could have gone horribly wrong. Would I do it again? Yes I would and I would once again do everything I can to make sure that the car I am buying is as good as I expect before committing myself.



Peter and new TD in festive spirits.....

FORTHCOMING EVENTS

THE INTERNATIONAL MG SPARES DAY

SUNDAY 2ND MARCH 2014

First on the agenda is the **International MG Show & Spares Day** at the National Agricultural Centre Stoneleigh Warwickshire CV8 2LG. A departure this time in that we will be sharing the event with the Triumph's and their Stags and Spitfires.

The T Register will of course be present, there will be the usual stand manned by the members, your opportunity to buy regalia items, talk technical and as always perchance to buy and sell those much sought after T Type spares. If you wish to sell, make sure the items are clearly marked or labeled with your name and contact details together with

the price required. Look out for the T Register banner and go along and say hello.

Any specific enquiries contact Peter Cole on 01243 267234. To get a discount and to save you queuing at the door you can book your tickets direct with the organisers on line at www.mgandtriumphsparesday.co.uk

THE 34TH T REGISTER REBUILD SEMINARS

SATURDAY 22ND MARCH 2014

Next up is the very successful annual **Rebuild Seminars** on **Saturday March 22nd**, now in its 34th year, see all the details in the January issue of *Safety Fast*, **including an application form**. As usual a great line up of knowledgeable T Type enthusiasts willing to pass on their wealth of experience gained on owning, driving and rebuilding these cars, and on top of this being fed and watered for the day.

The Rebuild programme will close at approximately 5.00pm to be followed shortly thereafter by the **2014 MGCC T Register Annual General Meeting**.

This is your chance to come along and listen to reports from the various officers on the committee, hear of proposals to maintain and promote the continued well being of the Register and be given the opportunity to cast your vote in the election of the officers and committee for the coming year.

So every reason to be there and if this event is as good as last year, definitely not one to be missed.

Incidentally whilst on this subject if anyone wishes to obtain CD or DVD copies of the presentations given last year, go to the T Register website at www.tregister.org click on; [Regalia](#) and then; [CD's & DVD's](#).

REBUILD SEMINAR PROGRAMME & TIMETABLE

DELEGATE REGISTRATION AND MORNING REFRESHMENTS (FROM 9.00) – RECEPTION AREA

WELCOME/INTRODUCTION/HOUSEKEEPING – ALAN WAKEFIELD – LECTURE ROOM 3

“BACK TO BASICS” – BRINGING BEGINNERS AND EXPERTS TOGETHER!

STREAM - A	LECTURE ROOM	TIME	STREAM - B	LECTURE ROOM
A1 “MG MIDGET T-SERIES THE INSIDE STORY” <i>Graham Robson</i>	1	10.00-11.15	B1 “TD-TF STEERING & SUSPENSION REBUILD” <i>Barrie Jones</i>	2
<i>Tea/Coffee/ Biscuits</i>	<i>Reception</i>	11.15-11.45	<i>Tea/Coffee/ Biscuits</i>	<i>Reception</i>
A2 “WHEN ONLY THE BEST IS GOOD ENOUGH” <i>Alastair Naylor</i> <i>(Naylor Bros Restorations)</i>	1	11.45-12.45	B2 TD/TF – TECHNICAL FORUM <i>Panel Members :-</i> <i>Ian Ailes, Bob Marshall,</i> <i>Barrie Jones</i>	2
<i>LUNCH - Café & Balcony Area</i>		13.00-14.15	<i>LUNCH - Café & Balcony Area</i>	
A3 TA/TB/TC – TECHNICAL FORUM <i>Panel members;- Roger Furneaux, Brian Rainbow, Eric Worpe, Paul Ireland</i>	1	14.15-15.15	B3 “RESTORATIVE REMINISCENCES” or “TRIED & TESTED TIPS FOR T TYPERS” <i>Bob Marshall</i>	2
<i>Tea/Coffee/ Biscuits</i>	<i>Reception</i>	15.15-15.45	<i>Tea/Coffee/ Biscuits</i>	<i>Reception</i>
A4 “T-TYPE SU CARBS REBUILDING/MODIFYING/ TUNING” <i>Paul Ireland</i>	1	15.45-16.45	B4 “INSTRUMENTAL TO T-TYPES” <i>Tim Ingle</i> <i>(Speedograph Richfield)</i>	2
T REGISTER AGM	1	17.00-18.00		

THE THRUXTON EASTER REVIVAL

SATURDAY & SUNDAY 19TH APRIL

Still in a Springtime mode and hopefully by now the sunshine will have brought out all your cars from their winter hibernation, we have been extended an invitation by the Abingdon Centre to join with them at the **Thrupton Easter Revival Meeting** on the **Saturday 19th and Sunday 20th of April**. The circuit is at Andover in Hampshire SP11 8PW. This 2 day race meeting is also being supported by the Midget and MGB Registers where there will be free access and parking and off track activities. More details and information later but if you fancy watching some motor sport together with MG socialising seems the place to be over the Easter weekend.

THE T REGISTER T PARTY

SUNDAY 27TH JULY

Moving on now to high summer and a return to The Shuttleworth Aeroplane Museum at Biggleswade for the **T Register T Party on Sunday July 27th**. Following last year's very successful gathering we are in the process of concluding arrangements on similar terms as last year and hoping for a glorious day of sunshine and nostalgia and of course - picnics

THE 2014 T REGISTER AUTUMN TOUR

The 2014 Autumn Tour will be staged in Lincolnshire, based in the delightful location of Woodhall Spa on the edge of the Lincolnshire Wolds some 14 miles south of the majestic cathedral city of Lincoln. **The dates will be Friday September 5th to Monday the 8th 2014**. This has proved to be a popular choice of venue and at present all the spaces have been taken up but you can leave your name with me, John Ward and go on a waiting list in case of cancellations.



BROWN & GAMMONS

Investing in keeping MGs on the road

We embarked on a re-engineering programme 5 years ago in order to address the difficulties many MG owners encounter when trying to replace parts that are no longer available or of inferior quality. All the parts are manufactured in the UK and machined from superior quality materials in order that they last longer and in many cases improve the driveability of the car.

We haven't stopped here though. We currently have many projects on the go so watch out for more parts coming soon. We do stock a comprehensive range for all T Series aiming to keep the cars on the road and working as they should. Whether it be mechanical, body or trim we will make every endeavour to help. Our workshops are fully experienced in all MGs but particularly T Series with many total rebuilds to our credit over the past 36+ years of our business. Whether it be a rebuild or just a part or technical advice, contact us.

Ron Gammons was a founder member of the T Register back in 1963 and has owned, raced and loved T Series throughout. Malcolm Gammons cut his racing teeth on the family TC and then built his racing TF. Contact the winners!

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or MG TD/TF
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2014 COMPETITION NEWS

Jonathan Harmer

T Register Competition Secretary

A good deal of effort has been going on in the close season behind the scenes to give us the sort of racing and competition that we enjoy.

We can now confirm the dates for race days at the following circuits.

MG Silverstone Saturday 29th March on the National Circuit, the Triple M's are making a major effort to promote this event so we can expect a good turn out and we are racing with them along with the VSCC who have also been invited.

MG 90 Silverstone Saturday or Sunday 21st/22nd June on the Grand Prix Circuit, this will be an Iconic Race where we will be joined by the Fiscar Flyers so a good turnout is expected.

MG Donnington Sunday 3rd August this seems to be everyone's favourite circuit, the final details are still to be confirmed but all being well the Fiscar Flyers will be joining us so a good day out is promised.

MG Snetterton Sunday 5th October, this is the traditional relay race in which we came First and second two years ago and last year's was also great fun with a good turnout.



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In the April 2012 Edition we featured an excellent in depth article by John Saunders on the fitting of a Lucas 25D4 distributor with vacuum advance in conjunction with the XPAG. John has been hard at work again on another aspect of performance related matters by getting to grips with the SU.

TUNING THE SU CARBURETTOR ON THE T SERIES MG

By John Saunders

January 2014

For a correctly set-up H2 carburettor there are only 2 ways to adjust its performance.

These are :

- The selection of the needle profile.
- The use of a lighter or heavier piston spring or alternatively piston weight.

I have devised and used a practical method by which either or both of these objectives can be realised to achieve better engine power and flexibility and an improved fuel economy.

(1) Needle profile

For the SU carburettor recall that the diameter of the needle at each piston position from closed (Posn.1) to fully open (Posn.9), in one eighth inch travel increments, determines the area of the annular space between it and the 90 thou.ins jet orifice. In operation, because of the highly turbulent flow through this annulus, the weight of petrol passed to mix with incoming air is precisely determined at each piston position by the annulus cross section area.

The exact weight is difficult to establish but once a starting point needle profile is chosen (for instance by the car manufacturer) then for tuning purposes all that is required is a reliable method to quantify the difference between the original profile and any proposed new needle. At any position, obviously, a wider needle will give weaker fuel/air mixture and a narrower one a richer mixture.

My method is first to express the needle to jet annular area as to what I call an "area index", A_x where x is the needle position i.e.:-

$$A_x = (\text{jet orifice area}) - (\text{needle diameter } D_x \text{ at position } x)^2 \\ = (\pi/4) \times [0.090^2 - D_x^2]$$

Note – The diameter D_x in inches is that taken from the SU needle chart booklet (Ref.1)

Simplifying, by using whole numbers and ignoring the constant $\pi/4$ factor:

$$\text{Area index } A_x = [810 - (D_x^2/1000)]$$

For example Posn.5 on the standard TC or TD needle, which is an ES, with diameter 0.0770 inches would give:

$$A_{5e} = [810 - (770^2/1000)] = [810 - 593] = \underline{217}$$

Note – Of course a decimal number value (e.g. 0.217) could be used as the index but I prefer the larger whole number for simplicity's sake.

The values of Aes derived at all nine positions can be compared with similar values from an alternative needle as the area indices accurately reflect the comparative rate of petrol flow for each needle. For example Don Jackson's suggested leaner EU needle for the TC and TD, with diameter 0.0785 inches at Posn.5 (Ref2) would give:

$$A_{eu} = [810 - (785^2/1000)] = [810 - 616] = \underline{194}$$

Thus the ES needle at Posn.5 is richer than Don Jackson's recommended EU needle by:

Area richness ratio (ARR) = $217/194 = 1.119$ or 11.9% richer, expressed another way the EU needle is 11.9% leaner than the ES needle at Posn.5

In a similar manner the EU leanness can be calculated at all 9 positions.

Area index for ES needle:-

Posn.	1	2	3	4	5	6	7	8	9
Aes	17.9	87.5	141	186	217	240	250	262	277

and the area index for the EU needle:-

Posn.	1	2	3	4	5	6	7	8	9
A _{eu}	18	87.5	129	162	194	217	240	255	262

The area richness ratio (ARR) for Aes/A_{eu} is then:-

ARR (es/eu)	1.0	1.0	1.093	1.148	1.119	1.106	1.042	1.027	1.057
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Thus the % lean of EU compared with ES is:-

Posn.	1	2	3	4	5	6	7	8	9
% lean	0	0	9.3	14.8	11.9	10.6	4.2	2.7	5.7

This method gives a more accurate estimate of the leanness of the EU needle than a simple comparison of the needle diameters which is subject to a square law variation.

Note – The % lean figures derived above for positions 3,4 and 5 can provide an estimate of the improvement in miles per gallon achievable at moderate speeds with the needle change, i.e. an average of about 12% or (say) 29 mpg to 32.5 mpg.

In theory the use of a leaner needle than ES could also be coupled with a lighter piston spring to weaken the mixture further but the standard blue spring is the lightest available. However by returning to the origins of the SU carburettor a weighted piston, as used initially, could be used instead, see section 2 below.

(2) Piston weight

The standard blue piston spring for the TC and TD exerts the following down force on the piston at each needle position:-

Posn.	1	2	3	4	5	6	7	8	9
Force (g)	112	117	122	127	132	137	142	147	152

Added to the weight of the aluminium piston and needle (on my car 107g) this gives a total down force of:-

Posn.	1	2	3	4	5	6	7	8	9
T/force (g)	219	224	229	234	239	244	249	254	259

The mean force over positions 1 to 9 = 239g

A piston with a total weight of 239g would thus on average equal that of the blue spring plus piston but slightly richer at positions 1 to 3 and leaner at positions 7 to 9.

Two colleagues have weighted pistons with no dampers or springs, one with a TA at 200g (HV3 carbs) and the other a TD (H2 carbs) at 165g. These are the extremes of weights I have encountered on T-series cars. Don Jackson (Ref.2) mentions an 8.1/2 oz (241g) piston but with no car specified.

On my TC I have tried various weights from 230g to 165g but I find that a total of 175g (107g piston with 68g weight) suits my need at present. My carbs are HS2 but the practical difference between H2 and HS2 types is minimal.

The effect of a change in piston weight on the carburettor richness/leanness is related to the square root of the weight ratio:-

Weight ratio richness ratio (WRR) = square root (heavier wt./lighter wt.)

Thus the average weight ratio (WRR) for the standard TC versus mine is:-

WRR = square root (239/175) = 1.169, i.e. 16.9% rich or my TC is 16.9% lean versus standard.

Note that the use of a different weight can provide a sensitive method to richen or lean any particular needle if experience shows that a current one is not optimum. For example if one finds that a specific needle is too lean for a particular car then a piston weight of for example 175g could be raised by increasing the additional weight from 68g to say 75g. This would then richen the carburettor at all positions by square root $(107+75/175) = 1.02$ or 2%. This is a much smaller change than could be obtained by a different needle selection and of course could be used either way to richen or lean the carburettors as required by the addition or subtraction of weight.

The use of a weighted piston within the range 165g to 230g or more makes redundant the damper fitting on the standard carburettor. The momentary richness required for acceleration is accomplished by the inertia of the heavier piston as in the original SU design.

To digress for a moment:-

On the question of how to fix the additional weight to an aluminium piston I have avoided drilling it by using a 1.1/2 inch length of steel tube of about 1 inch diameter. I have slit it lengthwise and opened it out slightly to be a snug fit in the cylindrical cavity around the central steel bearing rod. I have drilled 2 small radial holes close to the tube top edge in which I use wire ties to anchor an accurately weighted strip of lead (solder would do) wound around the tube top. The whole assembly weight is of course the 68g which I need.

(3) Needle profile and piston weight changes combined

The needle profile change can be used together with a piston weight. For example, an EU needle leaner than Es with an area richness ratio (ARR) of 1.19 can be coupled with a 175g piston leaner than a blue spring giving an average weight richness ratio (WRR) of 1.169. Thus the leanness ratio at Posn.5 becomes $1.119 \times 1.169 = 1.308$. The carburettor is then leaner than standard by around 30.8%, see Table 1 below. I have run successfully for some time with this combination on my own car giving 35 to 36 mpg around town and 45 mpg on longer runs. The car is still powerful (70mph plus) and very flexible and starting is no problem.

(4) Conclusion

To sum up, I have devised a method to adjust the richness or leanness of the SU 1.1/4 inch diameter carburettor for the T-series TC including the TA (HV3), TB, TC and TD (H2) or the HS2 in my case, but not the 1.1/2 inch (H4) of the TF. The method in principle could be used for most SU carburettors including the Y Type or the MGA and MGB.

Don Jackson's opinion (Ref.2) is that the standard ES needle for the T- series is "far too rich" and the EU is better. My experience supports this and I am still experimenting at the time of writing with my own TC. Ultimately the results obtained by using the method are dependent on the practical judgement and skill of the driver regarding the improvements in car performance and economy to be made. The average MG owner is sensitive to the response of his vehicle in tests on the road and can decide by experience how to get the best from his car. The tuning method I have suggested can be applied as an aid in his endeavour.

Table 1 – Calculation Results, ES w/blue spring cf. EU w/175g piston

Posn.	1	2	3	4	5	6	7	8	9
Aes	17.9	87.5	141	186	217	240	250	262	277
Aeu	17.9	87.5	129	162	194	217	240	255	262
ARR (es/eu)	1.0	1.0	1.093	1.148	1.119	1.106	1.042	1.027	1.057
WRR (note1)	1.119	1.131	1.144	1.156	1.169	1.181	1.193	1.205	1.217
WRRxARR	1.119	1.131	1.250	1.327	1.308	1.306	1.243	1.238	1.286
% Lean	11.9	13.1	25.0	32.7	30.8	30.6	24.3	23.8	28.6

(EU cf. ES)

Note WRR = Square root (107g + blue spring force at posn. / 175g)

References

1. "Carburettor Needle Profile Charts Nov. 1996" -- Burlen Fuel Systems, Salisbury, Wilts
2. "Your SU Companion, Hints & Tips for MG Owners" – Donald Jackson, Panache Press, Burnley 1994.

Editors note

I am sure many of you will find this study totally absorbing and I for one find that the meticulous detail and in depth study of some of these articles written by our members are quite mind blowing.

John has asked me to tell you that if anyone wishes to debate or comment on any points raised in the above just channel any points through to me and I will pass on all the relevant details and set up a dialogue

JW.



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