Totally T-Type2

#### **ISSUE 21 - DECEMBER 2013**

'Penelope' (TD10607) has changed hands after 51 years with the previous owner.





The Old Vicarage is a Grade II listed residence, parts of which are believed to date back over 300 years and provides B&B accommodation with views from all rooms. The guest house is situated in the Yorkshire Dales National Park, in the heart of 'Herriot Country", 3 miles from Leyburn and 4 miles from Aysgarth Falls.

Web: http://www.oldvicaragewestwitton.co.uk Tel: 01969 622108

Grant and Barbara Humphreys own a 1954 TF and welcome all makes of classic cars, especially MGs.



The definitive guide to online MG auctions

The MG AuctionWatch website offers an up-to-date, real-time list of the latest online **MG auctions**, organised by MG model and category.

Specially-crafted searches for Lucas Parts, Smiths/Jaeger Gauges, Moss Parts, and MG cars and parts for sale in your local area help you get the most out of  $eBay^{TM}$ .

### www.mgauctionwatch.com

# THE EDITOR John James

Welcome to Issue 21, December 2013.

2013 has been another good year for TTT 2 and the website <u>www.ttypes.org</u> I'll report more fully in the February 2014 edition (due out around  $15^{th}$  January) as I'm typing this on  $29^{th}$  October and the year has still a couple of months to go. However, I can report that donations to date amount to a staggering £2,145.

Subscriptions are due from those of you who receive a 'hard' copy of the magazine and you should find a subscription renewal letter in the envelope. I've decided to keep subscriptions the same as last year, which means that we are running at the same subscription level as was set when the magazine first came out in August 2010. The subscription asked for would not be commercially viable but we are not running a commercial enterprise; there are more important things in life than money!

Following the successful Tour of Rutland in September we have organised another one in 2014. However, all 39 rooms available in the Shanklin Hotel on the Isle of Wight are already fully booked and we are running a reserve list. Those for whom a booking is assured and those on the reserve list were notified by e-mail on 21<sup>st</sup> October. The next communication will be sent out in January 2014 when the Tour organising will start in earnest.

The 2014 Tour has a truly International flavour with participants from Australia (two entries), Germany and France.

Looking ahead to 2015 the likely Tour venue is North Yorkshire.

The 'tried and tested' "MG International Show and Spares Day" held at Stoneleigh Park in February has morphed into the "International MG & Triumph Spares Day". More space (Halls 1, 2 and 3) is being provided to accommodate the increased number of stands and the show has moved to a March date (Sunday 3<sup>rd</sup> March). I hope to be in attendance and sharing a stand in our usual 'pitch' with Brian Rainbow (as we have done for the past umpteen years). Unfortunately my assistant, who was a great help to me at this year's Show will be in the Far East on the date in question so I will have to cope.

We managed, at relatively short notice, to find a TC for a photo 'shoot' which was to have taken place on 29<sup>th</sup> October in London. In the event it was cancelled and it has been rescheduled for 11<sup>th</sup> November in Eastbourne. Thanks must go to Paul Ireland for being so accommodating.

Next on the agenda are a couple of road signs which might raise a laugh or two:

#### **Signs of the Times**



Acknowledgement must go to Don Harmer of the South Eastern MG T Register Ltd (SEMGTR) for allowing me to reproduce the left filter/no left turn sign which was featured in October's *mgTalk*.

The next sign was created by a frustrated resident of Melksham, Wiltshire (UK) and was featured in a local newspaper.



So fed up was this resident with road works in the area that he altered a 'Men at Work' sign to show one of the contractors taking a break for a cup of tea and a cigarette. 'Men at Work' therefore became 'Men at Rest'.

October's editorial mentioned the trip to Bollezeele and the three nights stay at the Hostellerie Saint-Louis <u>www.hostelleriesaintlouis.com</u>

The organisers, Peter Cole and Gillian Smith have been in touch to let you know that there are still a few places available. Just to recap, the plan is to arrive on Tuesday 20th May in time for a welcome reception and dinner then leave on Friday 23rd May after Breakfast. The price per room (2 people) for the 3 days Dinner, Bed and Breakfast package is expected to be in the region of 400 to 472 Euros depending on room choice (Single occupancy rates are available).

More information is available from Peter and Gillian at <u>peter.cole11(at)btopenworld.com</u> {substitute @ for (at)} 01420 85434; 07800950333

10 Princess Drive, ALTON, Hants GU34 1QS.

#### Windscreen Wiper Motor – Type CWX

In *Totally T-Type 2*, Issue 20 - October 2013, Ian Linton wrote an article "New life for old wiper motor" that provided details on dismantling and cleaning a T-Type wiper motor.

This article continues the story by describing how to carry out repair or replacement of some of the parts that can fail.

The MG T-Types (TA to TD) all had the Lucas CWX "Screenwiper" (original Lucas part number 732480), referred to in the Lucas "Equipment and Spare Parts " publication No. CE468 dated 1949. In those days the parts for the CWX wiper included, motor, brush set, armature, as well as blades and linkage attachments. The TF used a completely different Lucas wiper motor designated WT614.



# Photo 1 - The familiar view of the Lucas CWX windscreen wiper motor as seen by the passenger!

It is probably true to say that the windscreen wiper motors, mounted on the top rail of the screen, demand very little attention until something goes wrong! It is at this point, normally when it is raining, that it becomes the focus of attention and one is aware of a slight feeling of guilt that it had worked faithfully for many years without even so much as a drop of oil.

Following a summer club drive, during which it rained, my wiper motor came to a complete halt and I needed the help of my passenger, giving the occasional manual twist of the chrome handle, to maintain some forward vision! The approach of the car's annual safety check prompted me to investigate and get serious about resolving the issue.

I found that one of two (sacrificial) pins on the main drive shaft spindle (P in exploded view – see later comment) had come adrift and possibly damaged the field coil or the armature coil. I replaced the pin in the shaft (with a home made replacement!) and the motor ran without load, (i.e. no wipers attached to the drive shaft.) but came to a stop when asked to drive the wipers.

In the first instance I checked to see about the availability of replacements from the regular T-Type suppliers, or the possibility of a repair from the likes of John Marks of Vintage Restorations in Tunbridge Wells, but John is no longer able to help with the wiper motor repairs.

John Hargreaves will overhaul wiper motors (as reported in October's *Totally T-Type 2*) but some repairs can still be carried out by the technically minded owner.

The T-Type suppliers may still "show" the wiper on their parts lists but most now record the item as NLA (No longer available). NTG Services has recently announced a "Wiper Motor Reconditioned Original \* Exchange \*" and this is a useful service and hassle free if you prepared to pay the price.

For those wanting to look into any problems, the Workshop Manuals offer advice on a number of things to check, but if the fault is a damaged field coil or armature winding, one needs to consider dismantling the assembly for further investigation and repair.

Start by removing the motor from the windscreen top rail. This is accomplished by unscrewing the nuts on stud G (see exploded diagram). The rear cover can now be removed as follows. Remove the chrome crank starting handle from the rear of the unit by unscrewing the hidden screw that is set into the crank. Next remove the two screws, one on each side of the rear cover (K), and gently pull the cover away from the front casting. The complete motor assembly is now exposed.

As a point of interest, the front of the cast housing holds the gears and crank, and is separately accessed by removing two screws holding the front plate, which also has the drive shaft protruding through it.

The windscreen wiper "exploded" drawing referred to previously is taken from the LUCAS Technical Services series of documents published as part of the Overseas Technical Correspondence Course.

**Ed's Note:** The LUCAS Technical Services series of documents, referred to above, is available on the TTT 2 website under 'Publications'.

The drive pin in the spindle is classified as "sacrificial" should things become jammed in the motor or gearbox.

The Brushes, held within the Brush gear assembly (F), can also wear over a very long period. The Armature (E) and the Field Coils (O) are quite fragile and care is needed if the assembly is dismantled.





SPINDLE

The drive spindle is shown above with the "soft iron" sacrificial pin identified. If this pin is broken it is best to identify the cause before replacing. The original pin can be replaced with a small soft metal "panel pin", or similar, that must be a tight press fit into the spindle.

With the wiper motor cover removed it is now possible see the field coil windings on each side with the armature that rotates in the centre.



Photo 2 – view from rear of motor after cover removed.

At the rear of the motor *(see photo 2)* is the brush holder assembly with the brass on/off switch contacts just above the back of the centre of the armature.

Remove the brushes by prising aside the small spring and locating into the park slot.

This brush holder with on/off switch assembly is removed by unsoldering the two black wires (on the *left in photo 2*) and unscrewing two set-screws.

It should be noted that the armature is now free to drop out!

I decided it was necessary to carry out a "continuity" check of both armature and field coil windings in the hope of identifying my fault.

With the brush-holder removed, as detailed above, the armature is free to be extracted away from the (front) gearbox and field coil assembly.



Photo 3 – the armature, having been extracted away from the (front) gearbox and field coil assembly.

The armature should be inspected for signs of excessive wear or damage. It is likely that the commutator will have some signs of wear but this may not be significant enough to warrant replacement.

Of equal interest, if the motor has stopped working, is the integrity of the three armature windings. My reading varied from 5.8 ohms to 6.2 ohms, but as long as a similar reading is obtained this should be fine, taking into account the age of the original armature.

If the armature is badly worn or the coils are damaged a replacement may be the only solution.

I found a break in one of the armature coil windings that would account for my wiper motor failing. Although this item is typically classified as "not available" from most parts suppliers, it is still possible to purchase a new armature (with new brushes) from "Complete Automobilist, Vintage Supplies Ltd" in Norfolk. <u>www.completeautomobilist.com</u> Phone. +44 (0)1692 406465.

The Lucas wiper motor has a long history so be sure to clearly identify your version before placing an order, as a number of different armatures are available.

I should add that this armature comes with two new brushes and although I believe these brushes last a long time it is worth replacing these at the same time.

Having removed the brush holder assembly and armature it is worth taking a moment to look at the two field coils. The two field coil assemblies are held in the main cast housing with four set screws. If it is found necessary to remove this assembly from the gearbox, the two wires in the terminal blocks need to be detached.



Photo 4 – the two field coils

Check the integrity of the field coils with an ammeter. Each of the coils has a resistance in the region of 8 or 9 ohms with a combined total of 18.5 ohms, in my case. However the most important

thing is the overall integrity of the windings and any "open" circuit will quickly show up.

If a failure in one of these two windings is identified it will be necessary (in the absence of the availability of complete assemblies – as mentioned previously) to find a way to repair or "rewind" a new field coil.

A repair is an option for the field coil if it has suffered some "contact" damage with the armature, (or a loose drive shaft "soft iron pin" as in my case!). The coil is typically, but not always, covered and protected with a fine linen "bandage", wrapped tightly around the wires. If the linen covering is damaged, along with the wire, it is possible to remove the bandage, and expose the wire coil to identify any break in the outer windings. Once identified the two damaged open circuit ends of wire may be cleaned and a short length of shellac removed to enable soldering. The ends should be dipped in soldering flux before resoldering. It might be necessary to "insert" a very short length of fine wire between the break as the coil is typically very tightly wrapped. Once the solder repair is complete, test for the correct 8 ohm resistance of the affected coil, and then re-tape the coil with linen insulation as before.

Re-assembly is relatively straightforward, locate the armature shaft into the main assembly and ensure a good clean interference free fit into its bearing in the gear box.

**Note.** If the armature has had to be replaced, check that the new item runs clear of the gear box and, if in doubt, use small "washers" as shims on the shaft to achieve the necessary clearance for free running. (A number of different armatures are available from The Complete Automobilist so ensure you have the correct one for your wiper motor if you have had to replace it.)

Reposition the armature field coil assembly, complete with brush assembly, on the main casting and attach the 4 set screws that hold the unit in place. Re-attach the two connecting wires back into the connector block located on the gearbox. The flat brass holding plate, on the back of the brush gear, should be just touching the armature rotor shaft and can be adjusted (by careful bending) to hold the shaft correctly in place.

With the brush assembly centred correctly, reintroduce brushes and springs. Ensure a clean free fit so that the brushes move under the pressure of the springs (that locate into a groove at the top of the brushes) and maintain good electrical contact with the commutator.

If all looks good, and the commutator runs freely, it's time to re-attach the back cover and connect the chrome parking handle with its chrome headed screw. For a "test run" of the wipers I sprayed the screen with a slightly soapy solution of water and moved the handle into the run position. As the wipers were not under any great load they swept the screen in their usual (slightly ponderous) but effective way.

With a new armature and repaired field winding I hope I will not have to worry about this interesting Lucas device for some time to come!

#### Jonathan Goddard

Ed's note: We still have copies of Jonathan's book

### Practical M.G.TD Maintenance Update and Innovation



The book is available to order from the T-Shop at £6.99+postage, from this link: <u>http://goo.gl/7mEkz</u>

#### **DISCLAIMER BY THE EDITOR**

'Totally T-Type 2' is produced *totally* on a voluntary basis and is available on the website <u>www.ttypes.org</u> on a *totally* FREE basis. Its primary purpose is to help T-Type owners through articles of a technical nature and point them in the direction of recommended service and spares suppliers.

Articles are published in good faith but neither I nor the authors can accept responsibility or legal liability and in respect of contents, liability is expressly disclaimed.

Before doing anything that could affect the safety of your car seek professional advice.

#### **JOHN JAMES, EDITOR TTT 2**

## A brief history of attempts to design reliable XPAG/XPEG twin cam engines.

M.G. had a brief flirtation with a double overhead camshaft engine in the MGA Twin Cam. Introduced in 1957 and intended as the competition version of the MGA, the new engine had teething problems, amongst which was an alarming propensity to melt pistons! The culprit was found to be the 10:1 compression ratio so it was reduced to 8:1. However, due no doubt to prospective customers' concerns about reliability, sales of "the competition version" were not very good, accounting for a fraction of the 100,000 or so MGAs produced, and it may well have been an expensive lesson for the Factory.

Prior to the introduction of the MGA Twin Cam, there were four known private (as opposed to the Factory) initiatives aimed at perfecting an XPAG based twin cam engine. The driving imperative for the first, the **Uihlein Twin Cam** was to build a car which would restore the competitiveness of the XPAG in racing against European machinery (The OSCA, Maseratis and others) in the 1.5 litre class.

#### The Uihlein Twin-Cam

The 1953 issue of *Speed Age* featured on its front cover the David V. Uihlein Special with the banner headline "Uihlein's 130 mph MG".

Under the sleek aluminium body built on a modified TD chassis there was an XPAG (TD bottom end) with a hemispherical combustion chamber head with dual overhead camshafts. This engine was said to produce 90 b.h.p.

The design and construction had taken two years but on its initial testing at a sports car event in Illinois the Special was reported to have retired with minor mechanical trouble.

Uihlein's ambition to go into commercial production with the engine modifications was never realised for it seems that the car's performance was disappointing. Against this background the project was allowed to 'wither on the vine' albeit Uihlein, who was an avid collector of antique automobiles, is reported to have kept the car in his collection.

He died in 2010.

#### The Runyan Twin Cam

Dale Runyan was another M.G. *aficionado* who had designs on making an XPAG twin cam engine available to T-Series owners. Runyan realised that development of such an engine would be an expensive business so he formed an association with Norman Timbs and William Zimmerman; these two gentlemen were known to Runyan through his upholstery business, Timbs being chief engineer of Halibrand Engineering and Zimmerman being the pattern maker for Meyer-Drake-Offenhauser. Development from first drawings to prototype took just over 5 years and the engine was featured in an article in *Hot Rod* magazine in March1956.

According to the article, the engine produced 80 b.h.p. at 5,000 r.p.m. on a dynamometer and a potential 110 b.h.p. was thought possible at 6,500 r.p.m. using larger carbs.

For whatever reason, the engine was never run again and it was destined to become an exhibit.

A possible explanation for not proceeding with the project might have been that after 20 minutes running time on the dyno the engine suffered a failure and there was a reluctance to throw good money after bad, especially now that the MGA was in production.

The engine, together with all drawings, patterns, tooling and spare castings was sold to Louis Schulte, who, three decades later entrusted the lot on loan to Carl Cederstrand.

And there the story ends.....or rather, it has had new life breathed into it .....but that's a story still to be told.....

#### The Ken Miles Twin Cam

This engine was built using one of the Factory 1500 competition blocks made for the EX179 record attempt in 1954. According to *Road & Track* magazine, it was designed and built by Ken Miles a notable West Coast racer who campaigned his TD based Specials ('R1' and 'R2' – 'The Flying Shingle') with great success in the mid-fifties. The twin cam engine had been fitted for the 1956 racing season but it ran a rod bearing (no.3) and caught fire during testing.

The engine 'went to ground' for twenty years but was discovered in 1977 in a hangar near Los Angeles airport. It was purchased by Chris Nowlan, who was Moss Motors Product Development Manager at the time.

The engine changed hands again when Chris Nowlan sold it to Don Martine. At the time both Chris and Don tried to persuade the then current owner of 'R2' to purchase the engine so that it could be re-united with the car, but without success.

Don then sourced a period racing chassis to house the engine and purchased an ex-race TC chassis.

The car which is described as '1947 MGTC DOHC Race Car' on Don Martine's website <u>http://www.martineinnmotorsports.com</u> was restored in the 1980s using a body made from small steel tubing with an aluminium skin attached by cap screws.

It had some notable racing successes in the 1980s and this DOHC/XPAG has proved to be the most reliable of the four attempts to design a twin cam XPAG/XPEG. The intention is to race it again.

#### The Puma Twin Cam

PUMA, an acronym for Purdy-Mueller Associates, was the name given to this head. It was built by two Southern California men, Rudy Mueller and Hatton Purdy (PUMA = **PU**rdy **M**ueller **A**ssociates. They may well have seen the Speed Age article about "Uihlein's 130 mph MG" and probably thought that they could also manufacture a twin cam head for the XPAG/XPEG. Rudy was a pattern maker by trade and his 'shop' worked on Offenhauser engine parts. Hatton was a machinist with some racing experience. The plan was to fit the engine to a TD, race it, to prove its credentials and then (as Uihlein had wanted to do) market the head commercially. Unfortunately, it didn't work out because the casting alloy was porous and water leaked into no. 4 cylinder. Only one engine was produced.

This engine was acquired by Lawrie Alexander in 1983 and was fitted to his TD Special (chassis no. TD6183) only to find that it leaked water just about everywhere! The cracks and pin-holes in the casting were welded up and the engine reinstalled.

The car was taken on a 3,000 plus 'test drive' to the 1984 GoF in Victoria, British Columbia. It was reported to have run well, albeit when climbing steep hills the oil in the head flooded the rear valves, with the result that much smoke was emitted out the back.

The engine was then removed from TD6183 and some modifications carried out (notably the fitment of an external rear oil return to overcome the flooding of the rear valves). It was then fitted to Lawrie's race car and entered in the Historic Races at Monterey. Unfortunately, the engine ran a con rod bearing and overheated, cracking the head.

Attempts to have the head welded were unsuccessful – no further work was done on the engine.

It was acquired by Chris Nowlan and has since crossed 'the pond' and is now in the UK.

#### Ed's Note:

I've put this article together using various sources and to the best of my knowledge it records reasonably accurately the separate attempts to develop a twin cam XPAG/XPEG engine. However, if anybody out there has any further information (or has corrections to make) I'd be pleased to hear from them at <u>ji(at)octagon.fsbusiness.co.uk</u> {substitute @ for (at)}.

My reference to "a story still to be told" regarding the Runyan Twin Cam is work in progress (for me) and I hope to be able to bring this to fruition in the not too distant future.

## The Saga of TC 4332

#### Chapter 5

We last reported on Les Hancock's rebuild in June (Issue 18). At the time he had reached the rolling chassis stage and his closing remark made in the article was "It should be easier from here up, I wish!"

Read on to find out whether it was in fact easier!

Now having a rolling chassis I was able to bring the engine, still with gearbox attached, into the rear of the garage. My original intention was to simply clean the engine and repaint it in a dark grey as it was originally. I separated the engine and gearbox and decided to check the engine to ensure all was well; no point I thought having already spent so much money - more about that later - to reinstall the engine with possible future problems. I was very pleased I made the decision to check the engine ....... as you will read further on!

I carefully dismantled the engine, removing the head, the sump and firstly inspected the camshaft. The lobes were heavily pitted, as were the camshaft followers, typical of parts receiving limited lubrication. I decided to remove the camshaft for better inspection and measurement. The middle bearing was removed and it was here I received a shock - the bearing had been installed the wrong way around, the locking screw being located in the oil way. The oil from the gallery was therefore meeting a dead end. It says something for the sturdiness of the XPAG that it has probably run in this condition for many miles, relying on oil sprayed principally from the con rod bearings.

I could not remove the rear camshaft bearing and therefore had to remove the rear camshaft core plug. I was then able to push the bearing out. I withdrew the camshaft through the front bearing, which I also removed using a "Brummagem Screwdriver" (a hammer).

I set the camshaft in the vice secured by the centre bearing which is in two halves, held between two softwood blocks. I then, checked the lift on each lobe using a digital micrometer. The rocker ratio was measured at approximately 1.42:1; the lift at the lobe was multiplied by this value, hopefully showing the valve lift. The valve lifts varied between 7.01mm and 7.56mm. This gave between 87% and 94% of the quoted value of 8.03mm.

Due to its worn condition and the centre bearing I decided to replace the camshaft - again flashing pound signs! - and obtained a fast road camshaft from Peter Edney along with the front, rear and middle bearings. I also purchased a single new follower with modifications to provide better lubrication to follower base and the camshaft. I

checked its dimensions and weight, all being very close to the originals, this may seem pernickety but I have become suspicious of all replacement parts.

#### Quite rightly so! Ed.

The pistons were removed, followed by the crankshaft. The bores were measured using a digital micrometer at four locations corresponding to north, south, east, and west. All bores varied between 67.44mm and 67.97mm indicating an oversize of 0.060" giving a capacity of 1300cc approximately. I decided to replace only the piston rings. A later cleaning of the piston heads revealed 67.98mm stamped on them confirming the micrometer measurements.

The main crankshaft journals were measured at ten locations, all three averaging a value of 51.47mm, indicating a grind of 0.5mm or 0.020", this figure being confirmed on the removed main bearing shells. These were generally in good condition although some had locally pitted surfaces. I decided to replace only the bearing shells.

The con rod journals were measured in the same manner as the mains and these averaged at between 44.94mm and 44.96mm, indicating standard journals (45mm). I thought it odd that the con rod journals were standard, whilst the mains were +0.020". the engine may have run a main bearing in the past. I decided to replace the con rod bearing shells.

The head was inspected and it was noted that the rockers had noticeably worn tips at valve) and some lateral movement was noted between the rockers and the rocker shaft. The head had not been prepared for unleaded fuel so it was decided to send the head for conversion and general refurbishment. New valves and guides were fitted, along with a new rocker shaft, the original being badly worn and showed signs of oil starvation. The rocker arms were re-bushed and re-metalled; the head is now ready for fitting.

The engine block was taken to the local engine shop at Salford Priors in South Warwickshire and cleaned, much muck coming out of the waterways. The new camshaft arrived with new bearing set and a new rear camshaft core plug. The plug was inserted followed by the camshaft front and rear bearings, extreme care being taken to ensure the oilways were aligned. The camshaft followed with the split centre bearing, all went well and the locking screws tightened.

With the camshaft came new main crankshaft bearing shells at +0.020", together with new standard con rod bearing shells. The next problem was about to rear its head. On trying to fit the centre crankshaft thrust bearing shells they would

not locate onto the crankshaft bearing, clearly being oversize.

Contact was made with the supplier who advised it was necessary to file the thrust faces of the shells until they located onto the crankshaft. This was duly done and the crankshaft inserted.

At this point the rear crankshaft oil thrower cover was located onto the locating pins and lightly tightened. Having read of the problems with this seal so well laid out by Eric Worpe, I checked the side clearances and found that the gap to the crankshaft on one side was 0.002" and on the other 0.006", a clearance of 0.003/.004 being recommended.

Careful filling of the pin holes in the aluminium cover enabled the cover to be eased to give 0.003"/0.004" each side and the cover tightened. The crankshaft bearing caps were placed and the nuts torqued to 85Nm - this immediately locked the crankshaft solid.

I felt I was starting to get out of my depth at this point and took the engine and the crankshaft problem to the engine shop. They called me later to confirm the problem and advised they thought that either the bearings were oversize or that the thrust face radius was incorrect, they would check and advise me and here the matter rests at present.

The TC being late 1947 had a firewall (scuttle) and foot ramp originally painted light grey. After several emails with John James he advised his scuttle and foot ramp were a pale green. Mike Sherrell suggests that the original light grey colour does with age show a significant green hue, but suggests that the original colour was a light grey, light aircraft grey being a good match. A sample was obtained and the battery box lid sprayed as a test, as described the colour was a light grey with a noticeable green hue.

The scuttle and foot ramp had all unnecessary holes filled, were straightened and sprayed light aircraft grey, the transformation being a revelation. The foot ramp and scuttle were joined and are now ready for bolting to the body tub.

Due to the cost of the TC so far I have had to slow down and budget my expenditure, spending fixed amounts each month, to say I have become disillusioned at times is an understatement, but the moods pass and I am determined to finish the car.

Leslie Hancock Lestc4332(at)hotmail.co.uk {substitute @ for (at)}.

#### Ed's Note:

Les is in need of an oil pump for his engine. Advertising for one has not borne fruit to date. If you can help, please e-mail him.

## MG T-Type Steering Column bush replacement

#### Jonathan Goddard

The MG TA through all the on going T-Types, up to and including the MGA, used an upper column bush made of felt.

On my TD's recent Garage "vehicle safety check" it was noted that the steering column had play in the upper felt bush that fits between the steering tube and the column shaft. The worn bush exhibits a certain amount of movement at the top end of the column, most easily detected by griping the steering wheel and applying up and down pressure on the column axis.

With movement in this bearing a new felt bush is required.

To remove the steering wheel on the TD release the central MG boss assembly, after withdrawing one small securing screw to one side of the boss, and pulling the boss away from the wheel. If you have a Brooklands steering wheel the boss (centre piece three screws) will need to be removed to give access to the central column.

With the top of the central column now exposed a large 1<sup>1</sup>/<sub>8</sub>"socket is required to remove the holding nut with large washer below. With the wheel now "free" pull firmly on the wheel rim noting that a metal key (steering shaft to wheel) holds the wheel in alignment with the shaft. (Part No. 6 in the Steering assembly diagram).

Behind the steering wheel, on the column itself is the large spring cover (No.7), a spacer (No.8) and chrome cap (No. 9) and its chrome clamp (No.10) Removing these items exposes the steering column (tube end) with the steering shaft running inside.



#### Photo 1 - At the top of the exposed upper end of the column is the bush (Felt) that wraps around the shaft inside the column itself.

It is necessary to "pick" out this old felt from the end of the column. This is best done with a piece of wire (paperclip?) or a small thin screwdriver. Be sure to withdraw all the felt as it can be dry and liable to disintegrate depending on age.



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Photo 2 - The New and Old felt bushes show why replacement was necessary!

The upper felt bush is identified as No.14 (it is worth noting that item No.35 is the bottom felt bush).

Coating the felt bush in grease is relatively straightforward provided you can acquire the required graphite grease itself!

My local motorists centre was unable to help and even the very good "traditional" hardware store did not have this special type of grease.

My alternative was to purchase graphite powder and add this to the small amount of standard motorists (bearing) type grease.



#### Photo 3 - The Workshop Manuals say that the inner face of the felt should be coated in Graphite Grease to provide the necessary lubrication between column and shaft.

Mix the required small quantity of grease (two level teaspoons full should suffice) with a liberal quantity of graphite powder and stir well to create a heavy Graphite grease constituency. Do not add so much powder so that the resulting constituency is dry.

Spread this graphite grease liberally over the new felt. Position the "wrap" of felt, grease innermost,

around the steering shaft immediately above the outer column. I found it difficult to encourage the felt to fit in this tight gap but with patience and perseverance it can be persuaded.

By the time the felt has been forced into its allotted space there is very little room for any further grease so make sure you start with plenty. The job of fitting the felt into the tube is difficult because the stated objective is to end up with virtually no movement, laterally between the two!

Re-fit steering wheel in the reverse order to that employed when dismantling.

If you noticed movement before starting this task you certainly should not on completion. A very satisfactory "feel" of a tight but fluid steering wheel movement is the reward for a few hours work.

#### Jonathan Goddard



Mention was made in Issue 14 of the file of correspondence between Bill Thomson and Björn-Eric Lindh which Björn-Eric kindly sent me. It makes fascinating reading so I thought I'd publish a few extracts:

<u>February 18<sup>th</sup> 1964</u> (*Bill says*) "I've just bought a 1250 TF and doing a bit to it, and also bought a very dodgy M-type with a genuine back and a 4-speed 'box with alloy front housing. It's not all there (perhaps I am not also for buying it!).....

<u>December 18<sup>th</sup> 1965</u> (*Bill says*) "Price for reconditioned parts as follows:

Pressure plate £3.14.0, Clutch plate £2.16.0 Clutch thrust 18/8..... Starters and dynamos cost about £7 exchange each."

<u>March 9<sup>th</sup> 1967</u> (Bill says) ""Sorry I do not write often but I never seem to catch up with the terrific amount of writing that I have to do. Do you know that in three days I dealt with 68 letters in England and eleven for abroad, this in addition to all the other work? So you can guess that I am beginning to dislike my typewriter."

Throughout the correspondence Bill "shines through the pages" as a real gentleman. Not always in the best of health he struggled on and provided a much needed service. I never met him, more's the pity!

## Front Cover - 'Penelope'



'Penelope' outside Willington Hall situated in Willington, Tarporley, Cheshire.

Penelope' was manufactured on 27<sup>th</sup> September 1951. Her chassis number, TD10607, indicates that she arrived on the scene just over a third of the way through TD production and her engine number XPAG/TD2/10952 signifies that she was fitted with the larger 8" clutch.

According to the DVLA record, 'Penelope' was first registered in London on 11<sup>th</sup> October 1957 – the gap between the date of production and the date of registration might be explained by time spent outside of the UK?

This lovely MG red TD was looked after by three owners before entering the long term ownership of Mike and Liz Jones in 1962.

Loved, treasured and cared for in the way that a true MG thoroughbred would expect; 'Ready to Go' anywhere, TD 10607 has graced the highways and byways of UK and Europe for the past 51 years in the ownership of Mike and Liz.

Mike vividly recalls collecting his new born daughter in the car and ever since, 'Penelope' has grown up with the Jones family.

Earlier this year Mike went into hospital for an operation and whilst convalescing he and Liz, after much soul searching, reluctantly decided that the time had come to pass Penelope on to another like minded family.

I hope Mike (who doesn't know that Penelope is being featured in this issue of TTT 2 until he receives a couple of complimentary printed copies) won't mind me reproducing part of an e-mail he sent me earlier this year. "After 51 years it was a hard call to make, but one that comes to us all eventually. We were inundated with enquiries, all MG owners - MG TFs (the real TF!) supercharged J2, BGT, Y-type, GTV8, TC; one chap even rang from Germany! The first to ring was a chap from a few miles away (TF owner) ringing on behalf of his best friend who was working in Calgary that week (oil engineer). The chap had been looking for a "good original TD" for a long time and Penelope sounded perfect. I told him I would hold her until his friend came back to the UK, to which he informed me it would be at the end of the week. Saturday duly arrived and the chap came with his wife, son and grandson and was also accompanied by his friend and his wife all of them huge MG enthusiasts and very knowledgeable.

He took one look at Penelope and before I had even started her up he said "Please may I have her? She is just what I have been waiting all this time for". His son and grandson were equally enthralled as was everyone else. I took him for a really good drive along our local empty 'A' roads and he was just enthralled at her handling and that wonderful blast from the straight through exhaust. He only lives 20 miles away just a few miles away from his friend. He came a week last Saturday to collect her, plus 14 boxes of spares, many new, plus the original Laystall head that I had had reconditioned by Oselli some years back but never fitted. 'Penelope' will stay in the family and be passed down to son and grandson."

**Ed's Note:** Although I have never had the pleasure of meeting 'Penelope' I feel that I know her quite well. I have corresponded with Mike and Liz over the years and met them at Silverstone and we will continue our friendship.

Many of us worry about the future of our cars and what will become of them when we are too old to drive them. Wouldn't it be good if, when the time comes, we could have the same reassurance as Mike and Liz have had in finding a caring owner?

Finally a note about Willington Hall where 'Penelope' was photographed (the photograph on this page).

Built as a country house in 1829 for Major W. Tomkinson, Willington Hall is in the parish of Willington, Cheshire. It was extended in 1878 but reduced in size in the 1950s and has since been used as a hotel. It was designated by English Heritage as a Grade II listed building in 1958.

The hotel used to be run by Mr Richard Tomkinson, who was a great grandson of the first owner.

Nowadays the hotel is run by the Begbie family, who have carried out restoration work to the hotel and gardens. <u>http://www.willingtonhall.co.uk</u>

Alas, not large enough for a base for a TTT 2 Tour!

## Keeping it on the straight and narrow – Aspects that affect TA/TB/TC steering.

Eric Worpe delivered a superb presentation at the MGCC 'T' Register's 'Rebuild' seminar earlier this year. Eric used flip charts to aid his presentation and I have been working with him to 'flesh out' the flip chart notes to produce a series of articles for inclusion in TTT 2.

Eric divided up his presentation into seven headings which he termed as "Seven Deadly Sins". We have so far covered the first two 'Deadly Sins' i.e.

CHASSIS - is it true? - Issue 19 (August).

FRONT AXLE GEOMETRY – Issue 20 (October)

In this issue we'll look in depth at the third 'Deadly Sin' :

#### **FRONT SPRINGS**

Springs absorb road shocks and allow the wheels to follow the irregular contour of the road whilst controlling the degree of deflection of the chassis. However, a balance needs to be considered between a highly absorbent suspension system that allows considerable deflection of the springs and a minimal absorbent system that transfers most of the road undulations to the chassis. The latter case might just seem familiar to anyone with a TA/B/C.

A soft or absorbent suspension system gives a poor "roll stiffness" prompting instability and oversteer. Hard suspensions compromise road holding by upsetting the even distribution of the vehicle's weight amongst all four wheels.

The TA/B/C models have quite hard suspension systems but the chassis is able to flex, thus helping to compensate for the limitations of the suspension.

Springs normally have a "constant rate" (deflection v force) according to *Hook's Law*. However, with multiple leaf springs with leaves of various lengths, an increase in the spring rate occurs as the deflection intensifies. This is quite a desirable feature as it allows the spring to offer a soft ride to small deflections whilst avoiding being overstretched by large deflection forces.

As the laminated spring set deflects, the leaves try to slide over each other but are subjected to friction. Although this has a beneficial damping effect, it does result in a harder ride and increased wear. Unlike some modern leaf springs, which have anti-friction features, the TA/B/C springs rely on occasional lubrication. The life and effectiveness of the lubrication can be improved by using a mixture of graphite and silicon grease. Silicon grease is immiscible with water and thus does not emulsify but it's a poor lubricant. However, by suspending graphite in the silicon grease, good lubrication is achieved that's resistant to being washed away. Graphite is very messy so wear old clothes and gloves when assembling the spring leaves.

Most new springs have the ends of the leaves chopped off square. Original spring leaves had their ends tapered and chamfered to prevent the ends digging in to adjacent leaves. Judicious use of an angle grinder could help form an original profile after the springs have been dismantled.

**Ed's Note:** Please see Issue 1 (August 2010) for a comprehensive article on front springs which covers spring lubrication and tapering/chamfering.



Photo 1 – an after market PA/PB spring with its leaves chopped off square.



Photo 2 – an original TC front spring with its leaves tapered and chamfered.

Note: The clips are formed from the bottom upwards (and bent over the top leaf) on original TC springs. They are formed from the top on the PA/PB springs and 'closed' at the bottom with tubular rollers and nuts/bolts.

New springs are made from EN45, a low to medium carbon–silicon-manganese alloy, (C = 0.5%, Si = 2%, Mn = 0.9%). The chosen heat treatment renders the steel somewhat softer that the usual spring steel to help reduce breakages. This can result in the springs "settling" resulting in the "bump stops" limiting the spring's excursion and producing an even harsher ride.

Old springs can be reset if not too badly worn, but this is not inexpensive as the springs, after dismantling are taken to red heat at about 800° C, re-arced and then quenched in oil. The springs then have to be tempered by heating to around 300 C to stress relieve and then quenched again.

**Ed's Note:** An article in the most recent MG Octagon Car Club *Bulletin* casts doubts on the effectiveness of re-tempering and re-setting springs. According to the specialist (presumably a

spring maker), who gave the advice contained in a letter on which the article was based, those who re-temper springs will not give a guarantee as to the expected life of the springs. There are some facts in support of the advice which need to be validated and we are in the process of doing this.

Modern front springs seem to suffer from poor quality control, the front eye being badly formed and consequently a loose fit on the pin.



Photo 3 – comparison of 'eyes' at the front of the spring; the spring on the left is an aftermarket PA/PB front spring; the one on the right is an original TC front spring. Although perhaps difficult to spot, the 'eye' of the spring on the left is slightly out of round, whereas the one on the right is perfectly round.

A rolled up strip of 7 thou. bronze shim can be used to "pack out" the eye using between 2 to 4 turns. Suitable shim is available from Noggin End Metals, <u>www.nogginend.com</u> at approx. £2-50 a pack. (see item under 'Bits and Pieces').

Fortunately the larger eyes for the shackle rubbers on the front springs of the TC are more reliably formed. The rubber bushes soon seem to deteriorate, worsening an already spongy feel to the steering when compared with the TA and TB.

Polybushes, available from the MG Octagon Car Club <u>www.mgoctagoncarclub.com</u> and NTG Services <u>http://www.mgbits.com</u> as well as from John James (Editor) <u>jj(at)octagon.fsbusiness.co.uk</u> {substitute @ for (at)} can make a real improvement without introducing any significant harshness to the suspension thanks to the ability of the shackles to swing whilst accommodating horizontal displacements of the leaf springs.

The rear location of the front springs needs to be robust, so check for side play in the bronze trunnions (TA/TB) or lozenging of the shackles (TC) when the steering wheel is forcefully oscillated.

If you are ordering new springs it might be possible to specify the front eye to be made 5/8 inches diameter. Bronze bushes (SAE 660) need to be made up to give an interference fit of some 20 thou. in the front eyes. The centre bore should be partially drilled out on a lathe to say 12mm dia. before the bush is pressed in to the spring's eye. The spring should then be set up on a milling table so that the final drilling/reaming out to  $\frac{1}{2}$  inch can be achieved such that the bush's bore is truly at right angles to the spring's body. This may seem a bit OTT, but many spring eyes are "out of true" by several degrees.

Each spring leaf has a dimple and corresponding nodule on the reverse side. These are used to interlock the leaves together and fix the location of the spring set to the front axle. Check that the top leafs' nodules are the same distance from the front eye and have not been worn down. Clamping the spring's leaves firmly together is essential to allow the spring's dimples and nodules to lock together and in the correct position to the front axle. The the locating mechanism forces on are considerable, especially when braking.

It's prudent to check the tightness of the clamping bolts securing the front axle to the spring set and clamp plates occasionally. The weight of the car should be kept on the front axle as jacking up the chassis and allowing the wheel to hang would increase the spring's curvature. Compressing the spring's curvature between the clamp plates by tightening individual clamp bolts is not advisable.



#### Figure 1 – text as indicated on drawing

Far better to allow the weight of the car to reduce the spring's curvature between the clamp plates before tightening the clamp bolts. Any looseness of the spring to axle clamp mechanism would allow the forces on the front suspension to wear down the locating mechanism, don't leave it to chance that someone else has got it right.

**Ed's Note:** Thank you Eric for a most interesting and thought provoking article; the next issue will feature Kingpins (worn bushes, axle eyes & loose cotter pins) – is there no end to this misery????!!!!!

## **Bits and Pieces**

#### **Brass Petrol Filter**

The following has been received from Mick Pay:

I decided to make up a petrol filter for my TA as I was getting sediment in the pump and float chambers and as it will probably get worse due to ethanol I decided I must do something. I bought a cheap chrome filter from eBay with connections for push on rubber pipe but didn't think it would look good in my TA engine compartment, so I made up the No.1 model as the picture of it fitted shows, using the 100 micron filter and other bits from the chrome one. It caused quite a bit of interest, so I now make them to order, No. 2 model, not only for T-Types but any older car.



New petrol filter number 1 shown fitted.

I have just made one for a 1907 vehicle (can't recall the make) it is to be fitted on the dash board, I think there is a petrol tap up there. Any one interested I am sure John will pass on my email or phone number, prices are around £48 including p&p Variable due to price of brass. The filter comes with 1/4 bsp female threads in the ends and copper pipe couplings can be supplied.



New petrol filter number 2.

..... and, whilst we are on the subject of brass, there's more from Mick:

#### Brass Spare Plug Holder



A few years ago a friend of mine made me up a brass spare plug holder very similar to the bakelite ones that can be bought as replicas of those used years ago. Again it caused a fair amount of interest so I decided to make some myself, and they seem to be catching on well. I now make them to order the price is around £43 for a 4 plug model including postage variable due again to the price of brass. Plugs are not supplied.

And there's yet more!!!

#### TC Rev Counter Gearbox

A friend of mine with a TC had a broken gear box on the rev counter drive, and remembering an article I had seen a few years ago I think it was by Bob Butson on how he had repaired a similar unit I thought I would have a go. The TC unit in question was cracked and when I took it apart it just fell to bits due to deterioration of the aluminium, the gears were OK and so was the back, the side facing the dynamo, so I set to work and made the larger side, as I call it the front.



"Before" - with badly cracked casing

First of all I had to super glue the bits together to get a more accurate idea of the sizes and position of the fixing holes. The aluminium was turned up as pattern and the whole thing bolted together, it has been working now on the car for some months now with no problem.



"After" - now expertly repaired

I could possibly repair these for less than half the cost of a new one, subject to the condition of the gears and cable connections etc. but I would have to look at it to decide.

#### Mick Pay (TA2073 'Primrose')

#### **Noggin End Metals**

Reference was made to this company in Eric

Worpe's article on front leaf springs. Eric has since e-mailed me to say that the bronze shim pack mentioned in his article was not included on the company's website when he wrote the article but by the time you read this it should have been included. He also suggested that the shim pack is worth investing in now for use in the future.

www.nogginend.com

#### **REAR SPRINGS FOR TD & TF**

Further to the item in the previous issue of TTT 2 the TD springs have sold well and at the time of writing just one pair remains from the six pairs which were commissioned. The TF springs have not sold quite so well and at the time of writing there are two pairs remaining.

Just to recap, the price is £105 plus VAT per spring, plus delivery. The transaction will be directly between the motor spring supplier (Brost Forge, LONDON N7) and the buyer. My involvement has been to arrange for the batches to be made, and to advise the spring maker of orders received by me. I have no pecuniary interest in the transactions.

When I have cleared the decks from the TD & TF little venture I intend (subject to demand) to organise another batch of TC rear springs and also a batch of TA/TB rear springs. The price is likely to be around £110 plus VAT per spring and expressions of interest will be welcomed.



Mike (with TD) & Paul (with MGA) outside our lpswich premises

NTG Motor Services Ltd 282-284 Bramford Road Ipswich IP1 4AY Tel: +44(0)1473 406031/2 Fax: +44(0)1473 743133 sales@mgbits.com

British Motor Heritage Approved - founded 1966

#### **NEW EBAY CARS/PARTS FINDER**

We're pleased to announce the launch of a new tool for the ttypes.org website: a cars/parts finder for MG T-Series items on eBay provided by MGAuctionWatch. The application allows parts items to be searched and sorted by TA/B/C and TD/TF and by over a dozen different categories, making it much easier to sift through the daily selection of 'T' parts on eBay.

The application currently works with eBay UK, USA and Australia but it is hoped that it will be expanded in the coming weeks to also help members in Belgium, Canada, France, Germany, the Netherlands and Switzerland.

You can try out the new tool by visiting the following link: <u>http://parts.ttypes.org</u>

#### THE GREEN SPARK PLUG COMPANY

A reader reports a very good experience when dealing with The Green Spark Plug Company, they supplied a set of Champion L82C plugs for his TC at a total cost of £10.33 including postage and a delivery time of 2 days. Great service!

http://www.gsparkplug.com/shop

#### TRAGIC ACCIDENT IN BUENOS AIRES



Marco Di Paolo e-mailed this photograph of a crashed TC. The accident occurred at the inauguration of the "Autodromo de la ciudad de Buenos Aires" (the motor racing circuit in Buenos Aires) in 1952. The driver, Felix Martinez was killed.

The photo was published in the Magazine "Coche a la vista" from April 1952. This magazine is still in publication.

Marco tells me that he is hoping to come over for the Goodwood Revival next year – one good reason why I should make an effort to attend!

#### **A CAUTIONARY TALE**

Here at TTT 2 we get a tremendous 'buzz' from helping people and we find that a little bit of advice or a nod in the right direction is handsomely repaid, usually in the form of an expression of gratitude, but sometimes by way of a donation. When we received an e-mail from the other side of the world about problems with a UK supplier we immediately sprang into action.

The supplier took an order at the end of March for goods to the value of £606.35 and our subscriber's credit card was debited on 3<sup>rd</sup> April. Delivery was not made as promised. Delivery was then promised in a couple of weeks. Again, delivery was not made as promised. Subsequently, various delivery dates were promised, but none were met.

Finally, at the beginning of August, the supplier advised that one of the main parts ordered would be available in one week but the price had increased from £250 to £450. Exasperated by now, particularly at the 80% increase in one of the parts, our subscriber asked for his money back.

On August 7th our subscriber received an email promising a refund within 5/10 days. The refund was not received in this time frame as promised. Whilst previously all emails were responded to in a timely fashion, this was not now the case as emails sent in late August and again in early September were seemingly ignored.

Your Editor phoned the company on receipt of the subscriber's e-mail on 17<sup>th</sup> September, asking for help. There was no explanation or apology from the company but the refund was promised and I e-mailed our subscriber (an extract follows):

"By some miracle (which I'm sure wouldn't have happened if I hadn't said that you are a friend of mine and this has been going on for far too long) the lady who does the refunds is in tomorrow and your refund of £606.35 will be processed tomorrow.

Please give it a couple of days and let me know if your refund has been received. There's no way that you won't receive it as I have a big stick in reserve!"

True to their word (for once!) the company credited our reader's credit card account on 20<sup>th</sup> September and a few days later a £50 donation was received from our grateful subscriber.

Whilst the majority of traders are honest in their dealings it pays to use *bona fide* suppliers. Those we list in our Parts Suppliers on the website are regarded as *bona fide* suppliers, who in the main, have been notified to us as such by our subscribers/members. Word soon gets around in the T-Type community about unsatisfactory service and more often than not we get to hear about it.

#### **ANOTHER YEAR PASSES!**

Whilst we have not reached the end of 2014 yet it almost feels like it with the supermarkets already playing Christmas carols. I've thoroughly enjoyed the past year and I'm well pleased with the continuing success of TTT 2 and ttypes.org which are a real force to be reckoned with ......bravo!!!!!



**Above**: Rolf Schmidt on his 1937 Raleigh All Weather model with Sylvia sitting in their TC. Rolf and Sylvia are coming on the Isle of Wight Tour. **Below:** Ian McGowan's beautiful water colour painting of TC2470 (HTC 382), which belonged to his Uncle. You can see more of his work and enquire about commissioning him to undertake a painting of your car at his website: <u>http://www.ianmcgowanart.com</u>





Two photographs submitted to us via the *MG T-Types* Facebook page at <u>http://www.facebook.com/mgttypes</u>. *Above*: Roger Gee sent us this wonderful shot circa 1947 of his mother, Iris, standing next to his father Edward's T-Type. TA0875 (CON 971) is still on the road in the UK and Roger would love to hear from the current owner – please get in touch with us at <u>http://ttypes.org/ttt2/contact</u> if you know who owns it. *Below*: Peter White in TD11812 'chauffering' a Very Important Passenger!

