TREGISTER

Totally T-Type

ISSUE 40 **JULY 2010**

Jonathon Goddard's superbly restored TD

www.tregister.org

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THE EDITORIAL

Well here we have it, my third edition of TTT. It is staggering to think I only took over this role in February and already we have passed the halfway point in the year and there is only one UK event left on the 'T' Register Calendar for 2010.

The last few weeks have been particularly hectic, the highlight being Silverstone ***Live.*** I especially enjoyed this year mainly due to my greater involvement in 'T' Register matters and being a part of the 'T' team.

Silverstone saw a dramatic change in the weather pattern in the UK and ever since, there have been long and regular hot sunny periods, not good news for gardeners or lawns and proving difficult for me to be confined to my den to scribble these words for TTT.

It was great to meet some overseas members at Silverstone particularly from the States and 'down under', including regular contributors to TTT, good to know that there is no dimming the enthusiasm and dedication of you guys.

Don Harmer, my counterpart Editor from Atlanta, continues to send me **The Southeastern MG T Register Magazine 'mgTalk'.** There seems to be no lack of social events and activity in this part of the world, people often travelling hundreds of miles to attend, but we know that they are used to big distances over the pond.

On the same theme, do not forget the big one, **The Southeast British Car Festival at Dillard, Georgia on September 24th to 26th 2010.** Contact Larry Norton at the Peachtree MG Registry for more details and information, on email mgbnut1973@yahoo.com

I have now more or less got through all the backlog of articles that John James kindly passed on to me when I took over in February. I am extremely grateful to all of you who have continued to provide interesting and informative feature articles that enable TTT to continue and thrive. Carry on chaps! We do need you.

On the administrative front, I am aware by receipt of your emails that there have been a few hiccups in the subscriptions and distribution department. Hopefully all those queries have been sorted, I know that Chris Sundt and Roger Wilson have been working tirelessly to try and regularise the list of subscribers. It is proposed by the end of this year to give notice to you all that subscriptions are due on a certain date and to advise on the available methods of payment.

I put a note in the July issue of "Safety Fast" to the effect that next year's **European Event of the Year (EEotY)** will be held in Belgium at the Spa-Francorchamps Circuit and that some 'T' Types had expressed an interest in attending and perhaps travelling "en convoi". To date there have been 4 of you that have expressed an interest and I will make a list of names and contacts and advise of any developments at a later date. If anybody else is interested or would like to be involved in the organisation of same, let me know.

Finally, do not forget the statement from the Secretary last time that the Register is looking for new committee members due to certain long serving officers and members standing down either by choice or by necessity. The AGM is not until March next year but we are all very conscious how time flies by. Get your nominations or names put forward and advise David Butler or Chris Sundt as soon as possible.

John Ward
Editor

FRONT COVER

Featured on the front cover is a superb picture of Jonathon Goddard's immaculate TD, OFO 972, chassis number 589, the 338th car to be built on January 30th 1950.

Like many thousands of TD's this car was exported to the States but was discovered in the UK and purchased by Jonathon as a complete shell and a box of bits in 1992.

He then spent many years fully restoring this car until it looks and drives superbly. Following an inspection by the Vehicle Registration Authority, a UK registration plate was issued on 18 December 1995.

The car has featured in earlier books and magazines but Jonathon has now set about describing in his own book full details of the restoration process together with original ideas and innovations that were built into the project as it developed.

'T' REGISTER NEWS AND EVENTS

PAST EVENTS

Silverstone *Live* 2010

Once again a great event for 'T' Types. The Friday evening natter amidst the 'The Specials' is proving to be a very popular part of the weekend, views, opinions and comments being exchanged with UK and overseas members alike. Graham Brown, Peter Cole and helpers organised and manned the bar. Keith Hodder, aided and abetted by

Stewart Penfound collected together the 'T' Type Specials for a super display during the whole weekend.

The 'T' Register paddock at noon on Saturday, note the brollies to keep off the sun!!

I was on car park duty on the Saturday morning and by 11.00am the 'T' Register allocated area was full, even the designated overspill location was full to capacity by 12.00 noon

FORTHCOMING EVENTS

2010 AUTUMN TOUR TO LLANDRINDOD WELLS

The ever popular Autumn Tour this year is to Mid Wales based in LLandrindod Wells on Friday 10th September to Monday 13th. Graham and Sue Brown have organized this event for us, ably assisted by Brian Rainbow. There are 60 cars entered and the event is fully booked, but contact them for last minute cancellations.

AUTUMN TOUR 2011

As reported last time, next year's Autumn Tour will be based at the Coniston Hotel, Skipton, North Yorkshire over the weekend 9th to 11th September 2011. Grant and Barbara Humphreys are organizing this event which will be based in a hotel in the heart of the Yorkshire Dales. The hotel deposit has been paid and bookings can now be taken. You can enquire about the hotel on www.theconistonhotel.com or to book, contact Grant and Barbara on grant.chumphreys@btinternet.com

SKILLS WORKSHOP 2011

It was agreed at the last 'T' Register committee meeting that we should organise another hands on Skills Workshop at the Oxford and Cherwell Valley Motor College at Bicester. This is probably going to be in October 2011 but details and information later when a firm date is fixed.

We seem to have drifted into a regular series of events in our calendar year, I am sure it would be more than welcomed if there were any of you out there who could come up with a new agenda of ideas to continue to improve our commitment and enthusiasm for the marque.

John Ward

Editor

Another information packed article from the learned pen of Bob Butson

THE MG TA WATERPUMP

When nearing the completion of the engine of TA 0844 I was faced with what to do about restoring the water pump. I had heard of certain modifications which incorporated modern internals but could find no details. Any advice I had received pointed towards having it professionally restored. I then decided on an "as original" restoration using the best components of two pumps acquired over the years but I would still have to make a few parts

Disassembly

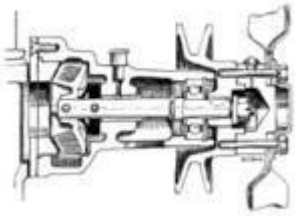


Photo 1

The drawing shows the complete pump including the flip top oil pot or oiler. Very early pumps were fitted with a Stauffer greaser using hub grease, this was changed at engine number MPJG 1018 to a flip top oiler using engine oil. **Photo 1** shows the components of the pump from the impellor to the oilite bush and also on the right those from the internal circlip to the front.

It should be noted that there is a pin through the shaft which drives the graphite seal on the impellor side of the rear oilite bearing. Because of this pin the shaft cannot be pressed out from the rear. A circlip, which holds the

front bearing grease seal, is located around the shaft at about one third of its length from the front. The shaft cannot be pressed out from the front unless this is removed. Removing the circlip is not an easy task. If the circlip is removed pressing the shaft out from the front will push out the oilite bush because of the shoulder on the shaft. Try the following procedure first:

Remove the split pin, castle nut washer, pulley and woodruff key. Clean the rust and old gasket material from the backing plate to reveal two countersunk screws which hold it to the body. The screws were removed by soaking and much persuasion, and both backing plates were badly corroded and were unusable. Set into the back of the pump body is a circular donut, shaped on its inside to complement the impellor shape and having a lip on its outer edge. This lip fits a groove in the body. The donut is an easy fit and will only be held in by corrosion. Next clean out all the old grease and dirt from the drip cavity to reveal the circlip around the shaft which holds the front bearing seal.

Press the shaft from the front of the body until the circlip around the shaft almost touches the oilite bush, the impellor will emerge from the back sufficiently to drift out the pin fixing it to the shaft and enabling its removal. Remove the spring, its brass pressure ring, the plastic shaft seal and the graphite seal and its driving pin.

If the impellor cannot be removed because of corrosion, remove the circlip. Press the shaft further from the front through the front bearing. The shaft with attached impellor, the components associated with the graphite seal and the oilite bush will be moved further towards the rear of the pump. Pressing the shaft further will push the oilite bush clear of its housing enabling the shaft to be withdrawn. The impellor can now be removed taking care not to damage the graphite seal or its associated plastic shaft seal and spring. Now remove the circlip holding the front bearing and press it out from the rear using a suitable drift.

Note that although both shafts were the same length the distance from the end of the shaft to the impellor pin hole was slightly different. Both impellors were the same but the donut ring flanges were of different thickness therefore the depth of the groove in the body for the donut was not exactly the same for each body.

Restoration.

The shaft with the least wear, about one thou in the oilite bush area and which was also an interference to fit into a new front bearing, came from the body with the least wear. The associated impellor and donut ring were also in usable condition. The other shaft was very worn in both bearing areas, I will make another for the spare pump. Of the graphite seals one had cracking around the driving pin area and was worn down to the outside copper ring, the other was intact but loose in its copper ring. I repaired the cracked one with Devcon A Steel, faced it in the lathe, machined off the first 2mms of copper and filed the driving pin slot to shape. The loose graphite seal I fixed to its copper ring with JB Weld. I also had two intact springs, one brass spring pressure washer, one plastic shaft seal intact and one without its spring. The other body was worn where the front bearing fits. Obviously it had seized, the whole bearing had been rotating. Both bodies had pitting on the graphite seal contact surface. A friend who had access to a spark erosion machine faced this surface on both bodies. In the best body, I plugged the oil hole with brass and tapped it to screw in a small flip top cup oiler. I made a back plate from one eighth thick steel sheet and purchased new screws, bearings and bushes. I made new graphite seal driving pins from phosphor bronze and stainless steel pins for the impellor. I will use a standard ball bearing and the three felt washers as shown, which I have cut from flat pieces using sharpened tube ends.

I now had enough parts to build a working pump and, with a little more effort, a spare.

Assembly.

If a remanufactured shaft is used check the shoulder length and the shaft length from the shoulder to the impellor retaining pin hole, compared with the original. These dimensions are critical as they affect the impellor to donut spacing.

Temporarily fit the impellor to the shaft and check that it spins true.

I believe that the pump originally had three felt washers to seal the front bearing. This was lubricated using gear oil pumped from the nipple on the extension piece via the hole in the pulley and the hole in the front dished washer. I think that grease can be used. The felt washers each side of the bearing may not be necessary if a sealed bearing is fitted.

First press the oilite bush into the body from the rear until about 0.5mm below the graphite seal face, then drill a one sixteenth of an inch hole through it via the oil hole.

Lightly grease the inside of the body just to the rear of the front bearing housing and smear oil inside the oilite bush. Fit the small circlip into its groove on the shaft followed by the flat washer with its projecting tag in the slot on the increased diameter of the shoulder. Felt washer number 3 is next, followed by the dished washer and felt washer number 2. Having greased the front bearing, press it a little way onto the shaft and insert the assembly into the body. Press the bearing fully into its housing and fit its retaining circlip. Do not allow the circlip on the shaft to contact the oilite bush. The shaft should now project enough beyond the rear of the body to fit the impellor and sealing components.

The correct location of the shaft in the body is determined by the fixed front bearing and the shoulder on the shaft pressing on the dished washer and the front bearing centre. The shaft is drawn through the front bearing by the castle nut against the pulley.

The problem on assembly is that the graphite seal driving pin is a sliding fit into the shaft and cannot be guaranteed to stay in position with an equal amount projecting each side of the shaft. Also the spring pressure will not allow the driving pin to remain in the slot in the graphite seal when fitting the impellor to the shaft. Without some means of locating the graphite seal and its pin whilst the impellor is being fitted it is impossible to press the shaft fully into the body. I used the following method:

Cut a ten inch length of thin stranded picture wire and arrange around the impellor end of the shaft. Insert the graphite seal driving pin and place the graphite seal on the shaft. Twist the wire ends together using a backplate screw as an anchor until the graphite seal reaches the correct position with the driving pin in the groove. **See photo 2**

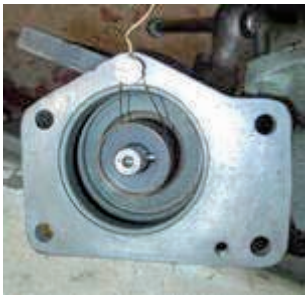


Photo 2

On the shaft assemble the plastic shaft seal, brass pressure washer, spring, and impellor and retaining pin as shown in **photo 3** below.

Photo 3

The impellor pin end can now be spread. Press the shaft in from the impellor end, first looking into the drip cavity to make sure that the projection on the flat washer is still in the groove on the shoulder. The wire should unravel slowly as the shaft is pressed in. When fully home gently pull out the wire, grease the front bearing, fit felt washer number 1, its dished washer, the pulley without its key, washer and castlenut. Tighten the nut to draw the shaft fully into position. Remove the castlenut and pulley, place a one sixteenth drill, shaft first, into the hole in the dished washer. Move the dished washer around so that it coincides with the grease hole in the pulley. Fit the pulley to the shaft with its key and with the drill through the hole in the pulley. Remove the drill. There is now a passage for greasing through to the bearing. All that remains is the washer castlenut and split pin.

Put the donut ring into position and screw on the backplate. Check that the impellor does not foul the donut by rotating the shaft. If all is well, unscrew, seal the back plate with a thin paper gasket and screw in the oiler. I used a thin film of Wellseal around the donut.

I have yet to try this pump as I have not reached the stage in the restoration of my TA when I can start the engine. There may be modern equivalents to the graphite seal and shaft seal which may improve reliability. If I can find any they will be incorporated in a spare pump and I will update this article.

I am indebted to Bill Davis, www.billdavis.org/MGTA/ for the drawing and to members of the mg-tabc group at www.yahoogroups.com for their advice.

Any correspondence to robbut@onetel.com

TD, TF and Y TYPE FRONT SUSPENSION

As most TD and TF owners will know, the independent front suspension on our cars was taken directly from the Y type, which had been introduced in 1947. Some changes were made, including fitting the twin leading shoe front braking system from the Morris Oxford series MO, reducing the wheel size from 16" to 15" (requiring shorter steering arms), and increasing the size of the shock absorbers (resulting in different bolt spacings). These changes were later adopted for the YB, which was also given a front anti-roll bar, unfortunately never fitted to a 'T' type. In addition, the coil spring wire diameter was reduced from the Y type 0.538" (spring free length 9.82") to the TD/TF 0.498" (free length 9.59").

However, as people may know, this system was originally designed at Cowley in 1938 by Alec Issigonis, assisted by the draughtsman Jack Daniels, in anticipation of being used in the car that would replace the current Morris 10 series 3. In fact the Morris 10/4 series M was launched in August 1938, and it had a new 1140cc XPJM engine, upon which the XPAG engine was based, but it still retained a conventional beam axle at the front. The management had decided that the IFS design "did not immediately realise the attractions it had on the drawing board", and was rather expensive, although I suspect that it was simply insufficiently developed by August 1938. An interesting point about the 10/4 series M is that the prototype was found to roll considerably when cornering, and this was resolved by fitting, at the front, a torsion anti-roll bar designed by Hubert Charles, also at Cowley. He had previously been head of design and development at MG Abingdon, and had been responsible for the MG R type, which had torsion bar independent suspension all round. The installation of the anti-roll bar was ingeniously designed so that it also prevented the front axle from twisting when braking.

Anyway, in 1938 Gerald Palmer joined the Morris Group drawing office at Cowley to take over MG design work, particularly for a new saloon designated the 'Y' type. The design work for the 'Y' type was already well advanced before Palmer's arrival and had been based, as he says in his autobiography, on the existing Morris 8 series E, although another account states that the basis was the new 10/4 series M. The initial design had also included the new IFS system, but as with the 10/4 series M, it was found necessary to change this to a conventional beam axle, together with the new anti-roll bar, although Palmer only mentions that the bar was fitted to absorb brake torque and reaction. In addition, he says that he incorporated proprietary cam and lever steering, as had been fitted to the 10/4 series M. A prototype 'Y' type was made in 1939, with the intention of launching the car at the 1940 Earls Court Motor Show, but WW2 prevented that from happening, and it was not until 1947 that the 'Y' type was released.

This proved rather fortunate, as by then any design or cost problems with the IFS system must have been resolved, as it was included on the new 'Y' type, together with rack and pinion steering, although the anti-roll bar was deleted. Gerald Palmer was probably not involved with this work, as he left the company in 1942, not returning until 1949. The front anti-roll bar was reintroduced for the YB, as already mentioned, when the rear panhard rod (see later) was deleted.

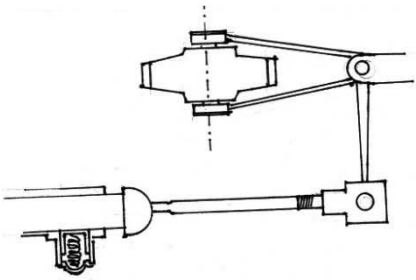
Anyway, what may not be generally known is that all Alec Issigonis' personal design notes are now kept by the British Motor Industry Heritage Trust at Gaydon, and can be viewed (or at least photocopied) by appointment. As a TD owner I had some interest in the design of the front suspension, and was curious as to why the swivel links (or trunnions or knuckle joints) were threaded onto the swivel pins (or kingpins). Thus I arranged to visit Gaydon to view the files that related to 1938 and 1939. These were contained in two box files, and constituted extensive hand written notes, initial sketches, calculations, and the results of considerable experimentation, all

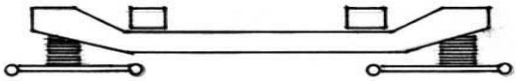
undertaken during the development of the IFS system. On a personal note, I was pleased to see that all the measurements and calculations used imperial dimensions. There were no detailed part or assembly drawings, which I assume would have been drawn by Jack Daniels, and would have been the property of Morris Motors Ltd.

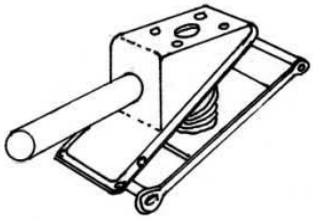
The notes state that the development work actually started in April 1937, with no records being kept until May 1938, although they do not say why the first year went undocumented. There are many notes on shock absorber noise, divided into hydraulic noise or knock and mechanical noise or knock, with many results from testing various hydraulic shock absorbers with five types of oil, although there is no indication of a final choice of design or supplier. There are also the results of extensive sound tests undertaken with a Morris 10, presumably the series 3, but they are mainly subjective, with no decibel measurements (in fact I am not sure that accurate sound measuring instruments were available at that time). Interestingly, Issigonis has a few sketches of rubber bonded to metal exhaust mounts, with comments stating how much they reduce the transmission of exhaust noise, and I would think this represents the first use of such mountings.

The notes then show his ideas for an independent front suspension, and I have included **three sketches (1, 2 and 3)** that are particularly relevant. Clearly shown is the use of coil springs, despite coil springs not being used anywhere else in the Morris range, although a similar system was already being used on the 1937 Vauxhall 10, and other cars from Europe. The sketches clearly show the design that was developed into the IFS on the Y, TD and TF. Also mentioned in the notes are reasons for including as many rubber mountings as possible, primarily to eliminate the need for lubrication and increase the life of the joints. He particularly mentions the inner ends of the suspension arms (or wishbones), and some sketches (not reproduced here) show his early ideas on the double bushes which were eventually

fitted in those positions. However, the sketches do not indicate clearly how the bushes would be fitted.





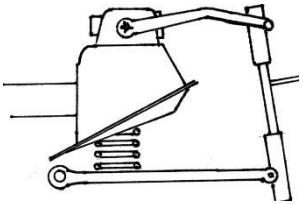


Sketches 1,2 and 3

The notes then continue by mentioning the need for rack and pinion steering to improve directional stability, and include a sketch similar to **number 4**, but without the spring loaded damper. Issigonis then discusses the need to eliminate, or at least reduce, gyroscopic kick (an interesting observation for that time), and **sketch 4 is shown**.

This is obviously similar to what appeared on our cars, but it must have been decided early on to move the spring loaded damper to the same end as the pinion shaft. Also mentioned is the need to reduce, if possible, all backlash in the steering system.

Sketch 4

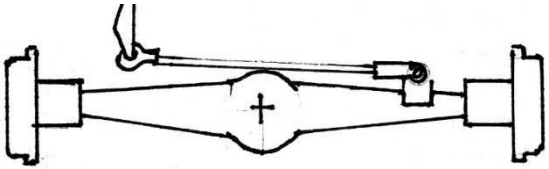


The point regarding the threaded swivel links and pins that I particularly wanted to resolve was actually covered in a rather verbose statement, as follows. "The greatest weakness from a wear point of view in the case of the conventional assembly is undoubtedly the thrust face carrying the weight of the car. The threaded type of bearing which we have adopted shows no such failings, since the thrust face is adequate. At the same time it should be noted that the effective friction radius of the threaded bearing as compared with the conventional construction is appreciably smaller, which has the effect of reducing cornering effort and this makes any form of ball or roller bearing to deal with this load unnecessary if lighter steering is required. Additionally the lubrication conditions due to the groove effect of the thread of the new arrangement are superior and adequately protected as against the conventional type of assembly".

However, there are no sketches of the threads, or any indication of any development work undertaken. In addition, there is no mention as to why the threads are handed as they are. I did read somewhere that the handedness was chosen so that when turning left, the left hand side goes down and the right hand side goes up, and vice versa when turning right, to counteract the outward roll of the car on the suspension.

The idea does have a small amount of logic to it, but as the steering only turns either way about 45° from straight ahead, the effect is minimal. Unfortunately, I didn't keep a copy of the article I read. It is interesting to note that Issigonis used a similar system on the Morris Minor, but reduced the sizes of the swivel pins and knuckle joints. As a result, the bottom threads wear through and the lower pans, and the car, drop to the floor. Issigonis did admit much later on that the threaded kingpins were not one of his best designs, but that they only go wrong when people do not look after them properly!

The notes then continue to explore the possibility of independent rear suspension, using coil springs instead of cart springs, and there are some fairly basic sketches showing the need for radius arms. These ideas do not seem to have been developed very far, and the Morris 10 series M retained a conventional cart sprung rear axle. However, the notes mention that the rear springs had been lengthened to give better comfort, and rubber bushes introduced at each end of the rear springs to reduce sound transmission. These, apparently, resulted in "poor lateral stability", which was only resolved by fitting a panhard rod, see **sketch 5**, which "transformed the whole feeling of the car".



Sketch 5

As far as I can determine, no Morris car used a panhard rod at that time, but the device had been invented some time earlier by the French car company "Panhard". The strange thing is that when the Morris 10 series M was released for production, the panhard rod was not included. As we know, the 'Y' type rear suspension was also a conventional cart sprung rear axle, but it did include a panhard rod.

This was not used on the TD or TF, and was not retained for the YB. I then checked the files for the years 1940 to 1947, but there is no mention of the 'Y' type or the TD, so it must be deduced that Issigonis was no longer involved in any MG suspension design work. He was probably totally engrossed in the design of the Morris Minor, the replacement for the Morris 8 series E, and which did include his IFS system, as already mentioned, but with torsion bars, and rack and pinion steering. He left the company in June 1952, not returning until December 1955.

TC Originality Alert:

MG TC GAS CAP TRIGGER

The TC gas tank continues to be one of those troublesome areas of restoration. Original tanks are in short supply, replacements are low quality, replacement caps are not available and many parts for original filler caps are non-existent. Now another gas tank component has surfaced on the TC "endangered species" list……. **the TC Gas Cap Trigger**

As always, it is prudent to first review the evolution of the parts and identify specific production changes made. Let's start with the pre-war trigger. It was different than what most owners expect to see today. It had the word "PRESS" on it instead of the "MG" logo. However, it is rarely understood that the majority of the TC production also used this "PRESS" trigger. That's right! The "PRESS" trigger was a holdover from the pre-war T-series and used continuously through about TC6000. That means 60% of TC's should have the "PRESS" trigger. The transition to the "MG" logo on the trigger was a mid-TC production change, one of many subtle changes in 1948. This follow-on "MG" logo trigger was then used throughout the remainder of the T-series production. However, there was one last production change to the trigger that has forced the "TC" trigger onto the endangered species list.

At the end of the TC production the gas tank filler was changed from a brass neck to steel neck filler. This steel neck filler was used throughout TD and TF production. The new filler neck had a different profile at its base resulting in a needed change to the trigger. "Feet" were added to the trigger as a mechanical stop to prevent the trigger from stopping on the painted top of the tank. This has created a problem for pre-TD owners. The later trigger does not work on the TABC tank.

I have discussed this problem directly with the manufacturer, who supplies this item for all major suppliers. (Moss included). The manufacturer was

not aware of the non-compatibility and had just completed a major production run of the later trigger. There is currently no effort to retool for the proper TABC trigger. (Note: It is commonly understood that the gap for replacement TC parts is filled with items that are common to the TD & TF. This is for obvious reasons. There is a higher demand for parts for the later type models. However, this "one size fits all" mentality does not always work. This issue with the trigger is a clear example.)

The solutions are limited to resolve this global shortfall. First, if you have a trigger, send it to the chrome shop and be happy you have one. An interim solution is to use the later trigger but you will have to cut the "feet" off of it. Finally, if you do not have a trigger and want to do it right, let me know. I am exploring the prospects of producing a small batch of both the TABC "PRESS" trigger and the TC "MG" trigger, to help those in need.

As always, I welcome comments. Please contact me directly to talk through any questions or issues you may need help in resolving. Doug@FromTheFrameUp.com

Replacing the rear axle pinion oil seal on the TD/TF

It can be difficult to spot a leaking differential oil seal on a T-Series car as there is usually so much oil blown back from the notorious engine rear main bearing leak that the whole of the underside gets rust proofed!. However a regular (1,000 mile) check of the rear axle oil level, accessed through the opening behind the seats on TD/TFs, may reveal an oil loss indicating that one or more of the axle seals is past its best as the sealing lips have hardened and worn. Less easy to spot is the fine spray of Hypoid 90 (GL-5) oil on the differential housing that escapes and gets thrown out by the rotating pinion.

When thinking about replacing the differential seal you may become concerned about the necessity to remove and replace the pinion nut and the risk of crushing the spacer (distance tube) inside thus destroying the crown wheel/pinion adjustment. The Workshop Manual is not much help here as it emphasises that all adjustments must be carried out by pre-measurement in conjunction with special gauges which can only be done with the axle removed from the car. Fear not, I am about to describe a simple way to replace the seal without the hassle and expense of going to those lengths.

At this point I have to say that the job is made both easier and safer with the car on a hoist or over a pit with the wheels on the ground. It should be possible to do it with the rear of the car raised as high as you can get it and the weight supported with proper stands under the chassis both sides. However, if you do not have the proper equipment to do the job safely, then best to get the job done by somebody who has.

New seals are readily available from a number of sources; I got mine from the Octagon Car Club for a very reasonable £2.30.

1. The first task is to mark the propeller shaft/pinion flanges so that they are replaced in the same relative position. Undo the four nuts/bolts and allow the prop. shaft to drop down and rest on the cross member.

2. This will reveal the pinion nut recessed in the pinion flange. The nut will probably be an 11/8th A/F plain nut although I did find a 15/16th A/F nyloc nut on my present TF and just to confuse matters the manual shows a castle nut in the illustration.

Now comes an important step.

3. Using an Automatic Centre Punch (spring-loaded) mark both the nut and the flange with datum punch marks precisely aligned to each other. Due to the limited access a nail punch and hammer is best avoided.

Photo 1

When you are satisfied that you can clearly see your punch marks on the nut and the flange (see photo 1) you can start to think about undoing the pinion nut. It will and should be very tight. Even with the handbrake hard on and the wheels touching the ground and chocked, you will probably require a 'special' tool to stop the pinion flange turning while you put effort into undoing the nut. In the manual the tool is described as a Bevel Pinion Flange Wrench number 18G34A but as these factory tools are a luxury not available to most of us, it is not too difficult to make one that does the job equally well out of a piece of sturdy angle iron (see photo 2).

Photo 2

Unless you have four hands I do not recommend trying to use two old nuts/bolts bolted through the flange and simply sticking a bar between them to stop the flange turning as I found that both hands were needed to undo the nut.

4. At this point have a paper and pen within reach. Bolt your specially made tool to the pinion flange with two old 5/16th nuts/bolts (not your prop. shaft coupling nuts/bolts please) and grip/wedge securely. Using a good quality socket and breaker bar apply pressure to start the nut unscrewing. It will be tight initially

5. Having started to loosen the nut count the exact number of turns required to remove it from the pinion shaft. It will be about 11 turns or so but the precise number of turns is required. Saying about 11 is not good enough, if it is 10 and 7/8ths turns or 11 and 1/4 turns write the precise number down now so you do not forget it as the nut has to go back in exactly the same position.

6. When the nut and plain washer behind it are removed, a sharp tap with a lead mallet on the rear of the flange will remove it to expose the leaking seal.

Clean around the diff. housing nose to remove the crud and then pry out the old seal avoiding damage to the pinion shaft.

7. Clean the shaft splines, seal face and housing surfaces where the seal fits. Now lightly oil the outer and inner diameters of the new seal and press/tap it squarely into place with a soft faced mallet finishing off with a block of wood to ensure its front face is flush with the nose of the housing.

8. Refit the flange, preferably in the position it came off and replace the pinion shaft washer.

9. Restart the nut and screw it on exactly the number of turns you wrote down when removing it. You may wish to put a dab of paint or marker pen on the outside of the socket so you can count how many turns you make. It will tighten up towards the final ¾ or ½ of a turn as the preload takes up but just continue until your centre punch marks align exactly. In this way you will not have disturbed the crushable spacer or the preload on the bearings.

10. Finally reconnect the propeller shaft, check the axle oil level and replenish with Hypoid 90 (GL-5) oil as necessary.

The writer has used this method to successfully change diff. seals on MGB and MGC axles so the application is wider than just TD/TFs. However I have no experience of TA-TC axles and cannot comment on them.

While you are working on the rear axle check that the small breather hole, located approximately about two inches from the differential casting on the top left hand side of the tubular housing is not blocked up with years of road grime/paint. If it is it can cause the axle to pressurise and place unnecessary strain on the oil seals.

Roy Miller 12 February 2010.

Bob Marshall has sent us some useful notes on Lucas Dynamos and Windscreen Wipers. (Follow up from Ian Linton's article on Old Wiper Motors Issue 38 Page 24!)

Notes on Lucas Dynamos (Generators)

Design Features

All Lucas generators were designed to fit in with the overall electrical load of different cars.

The driving speeds are generally arranged to enable maximum output of the machine to be available at an equivalent of 20 mph approx in top gear. Each generator is designed to work with a particular regulator or control box.

The *cutting in speed* - the speed at which charging of the battery commences - generally lies between 950 - 1200 rpm. The maximum safe turning speed for all types is 8500 rpm. The machines usually run at one and a quarter times engine speed. They are all plain shunt, two pole with lap wound armatures.

Dynamo Symbols

C - concentrically mounted armature

39 - 3.9 inches dia. Yoke

45 - 4.5 inches dia. yoke

5 - 5 inch dia. Yoke

P - long 32 pole type

V - ventilated type

S - special equipment

C39 Generator

Originally available as 6 & 12 volt with either fully enclosed (tractors & marine) or ventilated

Cutting in speed (for 12v) 1050 - 1200 rpm producing max of 11 amperes. Used where the overall electrical load on the vehicle does not exceed 9 amps.

C39PV

Ventilated version with vents in the end brackets and a fan thus the running temperature is reduced to obtain higher outputs of 17 amps at 2000 rpm approx with a cutting in speed of 1050-1200.

C39PV2

Increased ventilation over the C39PV incorporating an armature with a larger diameter commutator. Higher outputs are thus achieved at a safe temperature.

It provides for a maximum vehicle load of 16 amps. With a cutting in speed 1050-1200 rpm with 19 amps max. output at 2000 rpm.

Correct control box is RF95 and the RB106 as specified.

C45

These were available in 4 versions. This larger type enables lower cutting in speeds 900-1050 rpm producing a max output of 13 amps at 1350 rpm.

The control box to be used is the RF97 or the RB107 to the type specified.

The C45 was also available in ventilated form (C45 PV) when it had a max output of 20 amps at 1650 rpm with a cutting in speed of 900-1050.

Notes on Lubrication

Lucas recommended that the lubricator should be filled with a high melting point grease every 12000 miles. The ball races are (were) packed with HMP grease and should no further attention (but that was then).

Bedding Brushes to the Commutator

It is recommended that when fitting new brushes that they should be bedded by inserting a fine emery paper between the brush and the commutator face (with the abrasive side against the brush) and the commutation should be turned by hand in the normal direction of rotation. Remove the paper and blow out the dust

Notes on Lucas Windscreen Wipers

Model CW (as for TA,B,C D)

CW1 is for mounting at the top of the screen.

CW2 is for mounting at the bottom of the screen

CWX is for either of the above.

Normal wiping angle is either 130 or 150 degrees.

Safety Device

A small soft iron pin passing through the motor spindle forms the driving member. This pin will shear if for any reason the spindle is prevented from turning with the motor

Motor

Is a three pole armature running in a two pole shunt wound field. The armature is laminated iron core carrying three windings so forming the three magnetic poles. The two field coils are wound on laminated iron formers and connected in series.

Gearing

The drive is first taken up by the intermediate gear and transmitted by a pinion to the final gear. The connecting rod is pivoted eccentrically and converts the rotary motion into reciprocation.

Gearbox

Packed with Duckhams KEENAL Kg/25 grease on assembly. The spring ball lubricator is for the occasional oiling.

Model WR (TF)

Motor & Gearbox

A double reduction gear of approx 72 - 1 takes the drive from the motor armature to the cable. The first stage reduction of 13-1 is obtained by means of a worm cut on the end of the armature shaft. This worm drives a spur pinion which in turn drives the final drive gear at a ratio of 61-11". A crank pin and connecting rod transmit the drive to the cable.

The number of wipes should be approx 90-100 per minute.

Grease Duckhams KEENOL KG25.

The motor is an eccentric (one coil only on one side of the armature).

Bob Marshall 16th February 2010

In the May 2010 "Safety Fast" Newsletter, I told of a tale related by Alan Wakefield about braking problems experienced following his attendance at Rebuild 2010.

Here is another cautionary note, no. 4 in the series of T-Type tales by Colin Pamplin

As I drove home over the moors from MG Silverstone with an ever worsening rumble emanating from the engine bay, those oft quoted words "it will be something simple" sprung to mind.

The oil pressure was OK, the water temperature was fine, no vibration. To cut a long story short I made it home and the next day addressed the problem.

First thing, stethoscope onto the block (actually a large woodened handled screwdriver (definitely a rumble there, must be bearings!). Nothing for it, the engine has got to come out. At my age it was easier to do that than crawl under the thing to carry out an inspection with the sump off.

So with heavy heart off came the bonnet, the radiator, starter motor, dynamo and all the other bits that would enable the engine to be removed.

Then with the aid of my rusty trusty 60 year old chain hoist I hauled the XPAG out onto a couple of trestles, stripped off the sump, removed all the bearing caps and took out the crank. The journals looked fine as did the bearings. The small end pinch bolts were all tight and no slack in the pistons.

What the devil could it be? Maybe the gearbox, possibly the first motion shaft bearing? Someone had the bright idea of using an electric drill to drive the shaft by connecting the two together using a length of heater hose and a couple of jubilee clips, any excessive noise would be obvious.

Great idea, but as Jethro would have put it "what happened was the b……. drill was so noisy you couldn't hear yerself think let alone pick up any possible rumble from the gearbox".

In desperation out came the box. Crank and gearbox were put into the back of the modern and a two hundred odd mile trip up country to brother's place for a thorough inspection followed. Armed with clock gauges, micrometers and his full armoury of test gear, he set about the task of tracing the fault.

Some days later, a 'phone call, "better come and pick this lot up – there's nothing wrong with it – the crank's perfect and you won't get a better gearbox than that one, the guy that built it last time made a great job of it"

What could it be? Back in the west country I put the gearbox back in, reassembled the engine and started bolting on the ancilliaries, checking everything as I went along. I picked up the dynamo to check it and almost dropped it – the alloy drive pulley nearly came off in my hand – the nut had worked loose, the woodruff key was knackered and it was lucky the thing hadn't come off and gone into the radiator matrix.

So much for the bearing rumble!!!!

The moral of this tale of course is – "LOOK FOR THE SIMPLE THINGS FIRST"

Colin Pamplin 1947 TC

ED note. The hapless experience of others is so often a good way to learn, don't you think?

Back to the fuel debate and the addition of Ethanol in forecourt fuels

At **Rebuild** this year at the end of the session with Barrie Jones on SU carburettors, the question was raised and a useful discussion ensued on the potentially adverse effects of Ethanol in modern unleaded fuels on carburettors and ancillary components. This was based on an article in The Octagon Club Bulletin February 2010

As a consequence Alan Wakefield wrote to the Technical Information Services, Shell UK Oil Products Limited as follows;-

Can Shell UK please confirm that the Shell V-Power petrol product, available at retail forecourt locations, does NOT (currently?) contain Ethanol.? I have seen the following statement in a recent article published by/on behalf of the Federation of British Historic Vehicle Clubs (FBHVC):- "It is confirmed that Shell V-Power petrol is currently guaranteed not to contain ethanol".
Is this correct?

The article continues: "It is not an exchange product, being unique to Shell, so is under their control, unlike most other fuels sold at filling stations". Is V-Power therefore the only higher octane unleaded ethanol-free petrol available in the UK? How long is this non-ethanol blend of Shell petrol likely to continue? There is no indication of the constituent elements of the Shell V-Power product in the product Technical Data Sheets accessible via your Website, to either confirm, or deny, the above statements re Ethanol content. As a regular user of V-Power petrol in my 1950's classic sports car, (partly on the grounds of avoiding the alleged adverse effects of ethanol on older fuel system components and materials), I would like to be re-assured that I am indeed using a non ethanol blended product.

Shell replied thus;- The article you refer to by the FBHVC is incorrect.
V-Power does indeed contain Ethanol up to a maximum of 5%. Under the RTFO (Renewable Transport Fuel Obligation), fuel suppliers have to ensure that a certain percentage of their aggregate sales are made up of biofuels.

The current legislation has been in place since April 2008 and has meant that the requirement has been for 5% of ALL UK fuels sold on UK forecourts to come from a renewable source by 2010. Please note the 5% figure is a maximum figure - it does not mean all supplies will be at this level all of the time. The actual amount of Ethanol blended could be anything between 0-5% and will vary between forecourts / delivery's.

Alan Wakefield - April 2010

A stop for "some gateau at the chateau" on the 'T' Register Tour of the Ardennes 2008

And finally a few more tips from our TD/TF guru Barrie Jones in response to questions raised by Jeremy Evans recently.

Q Knocking sounds on the front suspension on the TF?

A Your knocking problem is probably one of the trunnion spacers. Originally the TF trunnions were made of bronze and they hammer slightly thinner over the years, especially if the big nut is not re-tightened occasionally. You may need to grind a few thou' off the spacer tube.
However, if you find an elongated hole in one of the lower wishbones, you may wish to delay mending it and buy the set of new MGB wishbones in preparation for fitting an anti roll bar. In the meantime, tighten those big nuts a bit more to stop the knock!

Q The TF clutch is giving hassle, it is very rough either in or out and not much between, started to use second to pull away to get a smooth take off and not shock the back axle too much.

A The clutch on the TF can be a little fierce. It is made worse if the rubber insulators underneath the engine and gearbox have gone soft. Also there is a stabilizer bar just underneath the water pump on the offside. If this is loose, or the rubbers missing or the bracket has snapped in the middle (quite common) then the engine will rock too much. The clutch actuating rods have several places where they can wear badly. I have an old clevis pin from my clutch rod in my 'black museum'. It looks more like a miniature crankshaft.

If all looks OK, then it sounds like a gear box out job to inspect the carbon thrust release bearing. It is not too difficult, once the floor boards are up. Check also the oilite bushes in the clutch release bell housing, they do wear. I have a few replacement bushes, so if you need a pair, let me know.

DISCLAIMER

Articles published in ***Totally T-Type*** are published in good faith, but the MGCC 'T' Register cannot be held responsible for their content. Always seek advice from a competent person before doing anything that could affect the safety of your car.

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