



Dear Members,

As winter morphs into spring and the daffodils begin to appear, even lockdown starts to feel better. And when everyone has had their vaccinations and we slowly emerge from social restrictions, we shall look forward to a return of 'Covid19-free' activities later in the year. In the meantime I am sure you are still finding plenty to do in the virtual world and preparing your cars for the first run out of 2021.

Please don't forget we are still looking for a new member on the committee to fulfil the role of club treasurer when Andrew B steps down. This is not an onerous task and should only require a few hours per month. Please contact Trevor E if you would like more details.

## Introduction of E10 Petrol as the standard for fuel across the UK

### Article based on the Talbot Owners club magazine Issue 105 - July/August 2020

The UK Government is planning to introduce petrol containing 10% ethanol (alcohol) by the end of 2021. This is referred to as E10.

**Question** – why add ethanol to petrol in the first place? Government policy to reduce carbon emissions from vehicles is the reason. The carbon in the ethanol comes from renewable sources. It is a by-product of the sugar industry. When running on E10 a petrol engine still emits the same amount of carbon into the atmosphere. However, only 90% of it comes from fossil fuel. E10 effectively reduces the carbon load by 10%.

Modern petrol is both physically and chemically different from classic petrol. Physical differences include a lower boiling point. Chemical differences include the addition of ethanol. Both of these alter the way a classic engine runs on modern fuel.

Some interesting research has been done at Manchester University by Dr Paul Ireland. Paul has owned an MG TC since 1967, and when reports of poor running and difficult starting emerged in the MG community after the introduction of E5, he decided to do some research into these problems. This was done as a student project at Manchester University using an MG engine in a test cell which allowed the engine to be fully instrumented and repeatedly run in the same way using different fuels. The MG engine is a long stroke engine with bath tub combustion chambers and a compression ratio of 7.25:1 so it is quite comparable with a Talbot engine. Instrumentation included a dynamometer, air fuel ratio meters, temperature meters, vacuum gauges and exhaust gas monitors. The main findings of the research are given below. The problems associated with ethanol blended petrol fall into two categories:

- A. Its effect on the fuel system
- B. Its effect on the running of the engine.

## **Effect on the fuel system**

It can rot non metallic components such as rubber hoses, seals, diaphragms and plastic floats. These problems may be overstated. When E5 was introduced, Dr Paul Ireland forgot to change the petrol diaphragm for several years, and when he finally got round to changing it, the old one was still in perfect condition. Petrol diaphragms prior to a certain age may have been ethanol proof. Whatever the reasons it was fairly easy to cope with these problems by changing to ethanol proof components.

Ethanol absorbs water which forms an acidic layer under the petrol which corrodes metal. Any water in the fuel system leading to acid being formed is a real problem – so don't fill up in the rain ! This acid attacks solder, brass and aluminium. Clean petrol filters and the carburettor float chamber on a regular basis. Consider coating the inside of the petrol tank with an ethanol resistant coating. How much water is absorbed from the atmosphere if your car stands over winter is debatable; remedies range from brimming your tank to totally draining the fuel system. Tales of petrol going off in a few weeks are probably exaggerated; many people have happily started their cars after a winter layup with no fuel issues.

## **Effect on running of the engine**

Dr Paul Ireland identified two main problems with modern petrol: one he called the 'Hot restart problem' and other is cyclic variation during the combustion process.

### **Hot restart problem**

Some MG owners found it was difficult to restart engines after stopping to refuel. This is caused by modern petrol being much more volatile than classic petrol so that the lower fractions boil in the float chamber after the engine has stopped. This doesn't happen during normal running as the flow of petrol through the float chamber keeps everything relatively cool. Surprisingly. The heat source when the engine stopped wasn't the obvious one of the exhaust manifold situated right under the carburettors but the inlet manifold; it was deduced that, when stopped, at least one inlet was open, allowing hot gasses to pass into the inlet manifold, heating it up and thus heating the carburettor float chamber.

Ensure that the fuel pipe from the pump to the carburettor always runs upwards as this will allow any vapour that forms to rise up to the carburettor and escape; don't have any part of the pipe running downwards, otherwise you run the risk of vapour locks. The usual hints about keeping fuel lines away from hot engine parts and lowering under bonnet temperature by insulating the exhaust apply (though wrapping the exhaust may lead to rapid corrosion of the down pipe). Check the radiator is in good condition and have it flow checked.

### **Cyclic variation**

After the spark plug fires, the mixture burns in three phases. Initially a very small fireball of burning mixture is created between the spark plug's electrodes. Then turbulence mixes the burning gases with the unburnt mixture causing the temperature and pressure to rise. Finally the high temperature causes any remaining liquid petrol to vaporise and burn. The speed at which the whole burn progresses depends on many factors which vary from cycle to cycle for each cylinder. The result of all this is that the crank angle at which peak pressure occurs varies from cycle to cycle for the same cylinder. It is as if the ignition timing is being advanced and retarded very quickly and randomly. This phenomenon is known as cyclic variation and it appears to be worse with modern petrol compared to classic petrol.

Dr Paul Ireland found a high degree of cyclic variability particularly when running below 3000 rpm. Above this speed, the turbulence is much greater leading to less variability. Fortunately, by the choice of fuel, and by tuning the carburettor and distributor, it is possible to mitigate this effect.

### **Choice of fuel**

Dr Paul Ireland tested 11 different types of fuel. Petrol containing ethanol reduced the cyclic variability leading to increased power and better petrol consumption. The best overall performance was given by Super Grade containing ethanol, followed by Sunoco Optima 98 and then E10. Fuels without ethanol ranked poorly.

### **Tuning the carburettor**

Ethanol contains oxygen, so ethanol blended petrol will cause an engine tuned to run on normal petrol to run weak. Assuming the jets in your carburettor are giving you the correct air fuel ratio, then the only other variable that can be easily altered is the height of the petrol in the float chamber. Modern petrol has a different density to classic petrol, and it is highly likely that your fuel pump pressure and needle valve size are not optimum, so it is well worth checking your petrol level. If you buy a replacement float, check it weighs the same as the original float.

### **Tuning the Ignition**

The Manchester tests showed that the standard ignition advance was too retarded by about 5 degrees up to around 3000 rpm and, while these results apply to the XPAG engine, experience has shown it is applicable to other vintage engines. Unfortunately advancing the ignition by 5 degrees results in the ignition being too advanced above 3000 rpm – the only solution is to fit different springs or a programmable ‘magic box’. Advancing the ignition a few degrees could help, but make sure you are not pinking. The tests showed that fitting a vacuum advance was the single best improvement that could be made. Tests showed that a sports coil or enhanced electronic ignition system offers no running or power advantages as long as a spark is formed, no matter how weak, the combustion process will be triggered. The only practical benefit of systems to improve the spark energy is to reduce misfiring and this will not occur if your ignition system is in good condition and regularly maintained. There are no points to service in an electronic ignition system, but they cannot be fixed by the roadside should they fail.

If you want to know more, read ‘Classic Engines, Modern Fuel. The problems, the Solutions’ by Paul Ireland, published by Veloce Publishing ISBN 978-1-787115-90-3.

<https://classicenginesmodernfuel.org.uk/>

A summary of the research has been published in the magazine ‘Totally T-type2’. This is an excellent technical publication that is well worth reading. It is available online for free at :

<https://ttypes.org/ttt2/>

## **IRC Virtual Rally – 7th Feb, organised by Richard Long & Peter Christie on behalf of the ATDC**

This round of the IRC Championship was held as a virtual rally with 8 navigation sections that then required you to find the answers to several questions using Google Streetview once you got to the end of each section. The event took place around the Hereford and Leominster area.

A grand total of 45 entries were received with Novices and Experts class. The navigation was varied from tulip diagrams to circular herringbones where the start was not shown, to more simple spot heights and grid lines sections. I am pleased to say that at least one crew got every answer correct so at least it proved it was doable ! There were some questions that proved a little more difficult to find - for example in Dymock - the colour doors of the old school house mainly appeared red but if you look back from the entrance to The Willows they are blue - obviously painted between the two different Streetview scans. This caught many people out. There was a good ATDC representation which was most encouraging with Peter Winney finishing 12th, Andy Ranson in 13th and Trevor Edwards in 15th place overall. ATDC came second overall in the IRC championship behind Riley which is an excellent result.

It looks like these virtual type events are going to be a regular feature in the future especially since they attract larger entries and also with the situation unclear on how Covid will affect future events it means that rallies can continue although in a different format.

Richard Long

## Drive it Day Sunday 25<sup>th</sup> April 2021

Our attention has been drawn to the following initiative recently announced by the FBHVC (*Federation of British Historic Vehicles Clubs*), of which the NHAEG is, of course, a member. This year it is sponsoring the NSPCC Childline Appeal and is inviting the purchase of a plaque which can be displayed on vehicles being exercised out and about on *Drive It Day* which, this year, is scheduled for Sunday 25th April.

We cannot possibly guess what restrictions may still be in force at that time but can only hope that they will have been lifted sufficiently for us to mark D.I.D with a Club run somewhere, something which, unfortunately, we had to cancel last year. If this proves not to be permissible then we can, surely, each venture out individually, in our historic vehicles for a bit of 'essential shopping'.

If you would like to purchase a plaque, proceeds going to such a worthy cause, then please go to <http://www.driveitday.co.uk>. The cost is £10.00 and the item is reported to be of very good quality.



## Don't drive your car in Lockdown

We all know that classic cars like to go wrong when left alone in the garage for months on end. Things that should move rust up solid, fluids tend to escape from where they should not, and electrical connectors no longer connect. To avoid this a member from another club decided to take his car out for a run. This is a warning to all classic car owners especially in the Winchester area which illustrates that police are being very strict at the moment on non-essential journeys.

"A friend of a friend last month was out with his wife for a short drive in Winchester to exercise his old Land Rover which had not moved for a while and was stopped by the police and they were each fined £200 for being out without a lawful excuse. "

What more can be said. This time the lockdown means lockdown!

Instead of an altercation with the local constabulary you may be tempted therefore to start the car in the garage. After a long rest my B series engine has a special feature which empties the inverted oil filter via a poorly designed non return valve. It is therefore necessary to prime the oil pressure before starting by either not using the choke or disconnecting the LT circuit and cranking the engine to build up some oil pressure. However, before firing up take heed of the following report.

There have been tragic deaths of classic car enthusiasts who have used inflatable car shelters such as 'Carcoon', 'Airchamber' or 'Cair-o-port' to name only three. In one particular case, the owner was reversing his car into one of these frame supported type storage tents and was very quickly overcome by the exhaust fumes. His partner went to assist and was also overcome but despite this, managed to crawl out and raise the alarm before then trying again to assist her partner where she was then overcome a second time.

It is patently obvious that a car should NOT be reversed into one of these tents under its own engine power and similar precautions should also be taken with a garage, particularly those which are integral to the house which are likely to be better insulated / sealed. Exhaust fumes can quickly reach harmful concentrations, particularly from cold or intermittently run engines when run indoors without exhaust ventilation. The fumes are made up of chemical pathogens including: carbon monoxide, hydrocarbons (benzene) and sulphur dioxide. These can have immediate severe consequences on your health, and can also take effect over a longer period of exposure. It is no secret that carbon monoxide can lead to suffocation and if you are working on your car in a confined space, you must make sure it is well ventilated.

## Queries of the Month

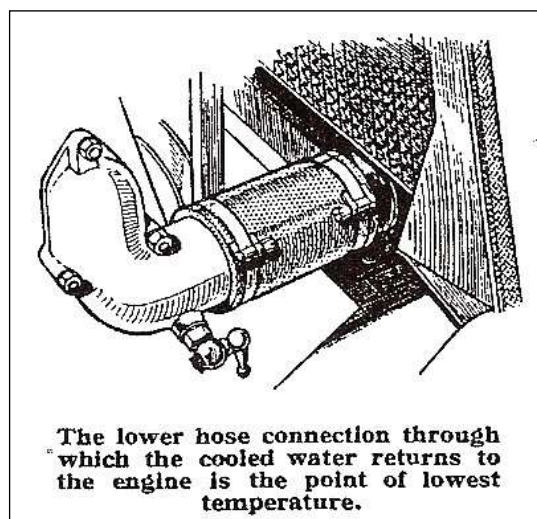
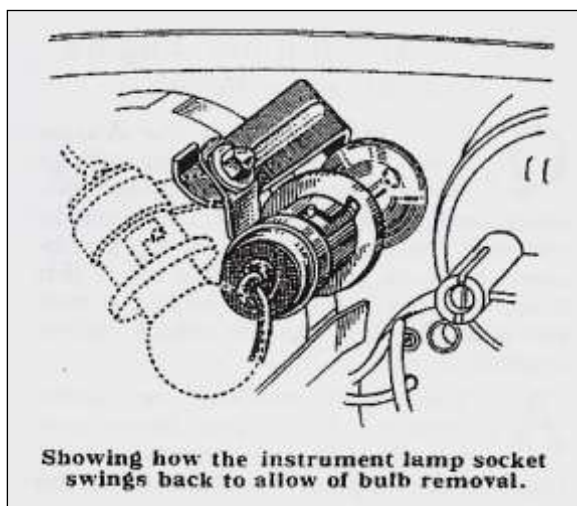
Some more "Queries of the Month", these originally appeared in "The Austin Magazine & Advocate" during the 1930s and 1940s. This month's selection consists of: No 475 Freezing (March 1933) and No 538 Instrument Panel (November 1933).

### No475 – Freezing

**Q.** *I have seen from time to time in the Magazine various useful instructions as to the precautions against freezing, but have not seen any mention of what should be done if, through oversight or neglect, the cooling water does freeze. How am I to know if it has frozen? Your advice on this point is awaited with interest.*

**A.** The first symptom of a freeze-up is, strange to say, steam issuing from the radiator cap after the engine has run a short time. This is simply due to the water above the cylinder-head not being able to circulate, thus being quickly converted to steam. To thaw the ice in the cooling system takes time. Warm water (not hot) can be added so far as possible through the radiator filler or poured down the radiator front, and once the circulation of the water has been restored, the remaining ice will quickly melt as the engine warms up. The coldest point will be the lower hose connection, through which the cooled water re-enters the engine from the radiator. Freezing often occurs first at this point and it is sometimes possible to dislodge the ice in the connection by

squeezing it, to restore the circulation. In the event of a really bad freeze-up, it is important to examine the engine and radiator for any damage that the ice may have caused, which may not be evident until the system has been thawed. Damage, as with water pipes in the house, occurs in freezing, but is sometimes only evident (alas!) when the thaw takes place. Apart from the numerous anti-freezing precautions we have suggested, it is important to keep cold draughts way from the radiator when the car is garaged. A cold draught through a badly fitting garage door will easily cause freezing whilst the general temperature of the garage is relatively safe.



#### No 538 – Instrument Panel – Austin Ten-Four

**Q.** *My new Ten-Four, I find differs from previous car in having an illuminated instrument panel. Recently, I noticed in "The Austin Magazine" particulars as to how to reach the panel lights on the Sixteen in the event of these failing. May I take it that the same instruments apply in respect of the panel of my new car? I should like your advice on this point so that I can readily renew the bulb in case of a failure, or use the panel light as a spare for the rear or side-lamp, if it is of the correct size for these.*

**A.** The construction of the illuminated instrument panel on the latest Ten-Four model differs from that on the Austin Sixteen, dealt with in our issue for last April, the lamps which illuminate the instruments having a different form of mounting.

Actually, they are much easier of access, and can be readily located beside the speedometer and clock. Each lamp socket is mounted on a pivoting arm which swings back away from the panel, so the bulb can be removed without difficulty in the normal manner for a bayonet type mounting. As you assume, the bulb is suitable for the side lamps or the rear lamp, and its designation is B.A.S.10S.

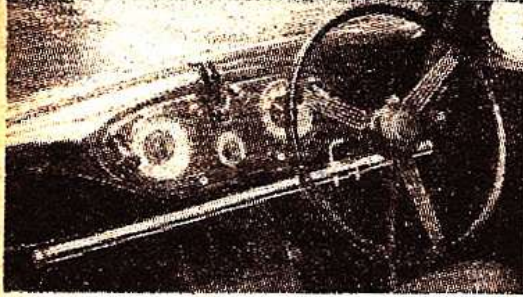
***The "Queries of the Month" are reproduced with the kind permission of the Austin Ten Drivers Club (ATDC)***

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Some magazine advertisements from the 1950s, time to pop down to your local "Halford Cycle Co., Ltd" and get ready for the winter:



DRIVE IN COMFORT THIS WINTER



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“Masterpiece”  
CAR HEATER NOW

**44/6** Complete  
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Over 20,000 satisfied customers is the finest testimonial to the efficiency of the “MASTERPIECE” CAR HEATER. It is \* A hot water heater \* Non-electrical \* Suitable for cars with or without water pump \* Controlled by driver at will \* A “MASTERPIECE” production.

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Masterpiece Works, Park Road, Aston, BIRMINGHAM 6

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Covering every need where a gentle consistent warmth and protection against frost are of paramount importance, Desmo Paraffin Heaters are robust in construction, safe and economical in use. They have many practical uses in and around the home, with a particular appeal to motorists, poultry keepers, spinners, horticulturists, etc. Desmo Paraffin Heaters are obtainable from Garages, Ironmongers, Hardware Dealers and all branches of Halfords.



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Retail Price 19/6



No. 1248.  
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Retail Price 16/6

See our Exhibit at the Motor Show, Earls Court, STAND No. 349

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Telephone : Kingswinford 3487/2/3  
LONDON SHOWROOMS : 220 SHAFTESBURY AVENUE, LONDON, W.C.1.  
(near the Princess Theatre) Telephone : TITMole Bar 1994/5

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“EIGHT-DAY” MODEL No. H365  
The ideal heater for protecting your car radiator even under the worst frost conditions. This handy heater will burn for EIGHT DAYS on one filling of only 1½ pints of paraffin without any further attention. Finished in blue and gold enamel. Price 18/-.

with  
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HEATERS



“DUALETTE” MODEL  
Primarily constructed for placing under your car between the radiator and sump, this invaluable heater burns for 200 hrs. on one filling of only 4 pints of paraffin. The work adjustment is made outside without removing the safety cover. Finished in blue and gold enamel. Price 24/-.

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From all good ironmongers and Halford’s branches.  
**JAMES NEALE & SONS LTD.**, GRAHAM STREET, BIRMINGHAM 1  
London Depot : 95 Finsbury Rd., S.W.1. Leeds Depot : West Mill, Harmer St., Kirkstall Rd.

(or how to set fire to your car and burn your garage down ! )

Andy Ranson

## Events – All dates subject to Change !

Drive it Day     Sunday 25<sup>th</sup> April 2021

Hartley Witney Festival – 12th June 2021

This will combine the following events:

Procession / Classic Cars / Arena Events / Stalls / Catering / Animal Farm / Morris Dancers etc

If you wish to show your car, please contact:

Trevor Mulford (01252) 620435 or by email [trevormulford1942@gmail.com](mailto:trevormulford1942@gmail.com)

Classic Car & Restoration Show

11-13<sup>th</sup> June, NEC, Birmingham

The Austin 7 Centenary Celebration & Rally

This is due to take place between 19th-24th July 2022 at the Fire Service college, Moreton-in-Marsh, Gloucestershire. As provided in the magazine of the Scottish Austin Seven Club. For more information, please visit [www.a7centenary.com](http://www.a7centenary.com)

Basingstoke Festival of Transport – 22<sup>nd</sup> Aug 2021 (**New date**)

The Basingstoke Festival of Transport will be held at the War Memorial Park, Basingstoke, RG21 4AG. Parking is available at Old Common, London Road (use RG21 4BY and follow the parking signs) for £2.

NHAEG is organising a parking area for club members and those wishing to attend should complete the Car Club Registration Form which may be obtained from

Trevor Mulford (01252) 620435 or by email [trevormulford1942@gmail.com](mailto:trevormulford1942@gmail.com)

The Beaulieu 2021 International Autojumble.

The autojumble planned for the 15-16<sup>th</sup> May is now **CANCELLED**

The event planned for 4-5<sup>th</sup> September is still on schedule.

Stay safe

NHAEG Committee