Lagondaforum: Igniton set up for my M45 engne

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Written by Andrew Cheyne at Mar 18, 2017 12:33 pm

I am trying to improve the ignition side of my car and would welcome any advice or experience of members to get my car up the hills that little bit quicker.

Existing set up:

My car is a Lagonda special with the M45/314 engine in a 3.5 litre chassis.

The original distributor (probably a Rotax DF6 4) had been replaced with a Lucas Type DK6A - 0 unit before I purchased the car. This unit has an integral 17 degree auto advance and retard mechanism.

The magneto is (I believe) original and is a BTH CE – 6 unit with no auto advance and retard mechanism.

Additionally there is a manual advance and retard linkage where one lever, on the steering boss, advances and retards both the distributor and the magneto together.

Some questions:

1. Is the Lucas DK6A-0 distributor the best distributor to be using?
2. Should I consider fitting an auto advance and retard unit to the BTH CE – 6 magneto to match the advance and retard characteristics of the distributor?
3. It is sensible to have the timing of both the distributor and the magneto locked together via the manual linkage, if the distributor has an auto A/R capability and the magneto side does not?

I would welcome any/all advice/thoughts, Do's/Don't's etc.

If it would be easier to talk rather than reply via the Forum, please call me on 01590 677 900 and I will return your call. Any time but between 1800 and 2000 any evening would be perfect for me.

I am looking forward to hearing from you.

Andrew Cheyne

Re: Igniton set up for my M45 engne

Written by bruffsup at Mar 18, 2017 7:33 pm

Please post your findings so all us far flung enthusiasts can learn something too ! Thanks, Barry

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Re: Igniton set up for my M45 engne

Written by h14 at Mar 19, 2017 7:15 pm

Hi Andrew,

My LG6 ignition is by a Vertex magneto and Lucas coil/distributor. In my case, the distributor is a DM6A for which Lucas state a range of 18-20 degrees. It does have a vacuum capsule, which is not connected/operational. The Vertex magneto, which I am told is correct and probably original, has timings advance marked as 0 degrees at 500rpm, 7 degrees at 700rpm, and 14 degrees at 1730rpm. My understanding is that the "rpm" referred to on the data plate is magneto rpm, not crankshaft rpm. Hence these would translate as 1000, 1400, and 3460 crankshaft rpm.

Unless you fitted the DK6A, it might be worth removing its baseplate to see if the advance/retard bob weights and springs are still fitted. If they are, your easiest option might be to remove those and find a way of locking the mechanism so that ignition timing does not vary. Then, at least you have

two ignition systems firing at the same point (ideally I understand, with a 2 degree variance between the two systems). The downside is that you will loose the automatic advance, but then as original, you would be driving without that anyway.

Your present set-up must involve a very large variance in ignition firing, depending on engine speed, if the automaticadvance / retard is functioning. You would certainly need to check that, if connected together, that full advance on the column control, plus full centrifugal advance, does not exceed your desired maximum advance. I believe current thinking is 28-30 degrees BTDC.

A separate automatic advance/retard fitting for the magneto would be preferable; but I doubt such items are available?

If it is practicable to separate the linkage between the magneto and the distributor (it is separable on the LG6, Meadows Sanction 4 engine), my "easiest option" recommendation would be to do that. Have the distributor fixed, and set it so that it fires either at 28-30 degrees at say 3500rpm, OR if you don't regularly stretch your engine that far, at whatever maximum advance you wish for your favoured touring rpm. I would then set the column control advance to achieve up to that setting. With that set up, I would run mainly on the distributor, and just switch in the magneto for stretches where your engine speed is fairly constant.

Ideally you need to replicate the original ignition set-up, and play with the advance/retard lever as necessary, or convert to an ignition arrangement where both automatic advance / retard settings match. Of course, there is no problem running on one ignition system only (which, as my magneto hardly works, is exactly what I'm doing), however you will get more complete burning of the mixture with a twin ignition system. When both systems were working on my car, the idle speed increased 50rpm when the second system was switched in.
Laurence

Re: Igniton set up for my M45 engne
Written by Colin M34 at Mar 19, 2017 7:36 pm

Hi Guys

I concur with Laurence's comments. I removed the bob weights on my M45 distributor and then invested in two timing lights so I could synchronise the magneto and coil ignition.

Having the idle speed change when one of the ignition systems is switched off is well understood. I believe in aviation this is called the "mag drop" and is the last thing you check before taking off in a light aircraft.

Colin M34

Re: Igniton set up for my M45 engne
Written by Andrew Cheyne at Apr 09, 2017 9:37 am

Many thanks for your helpful replies.

I am setting off on the track of replacing my existing BTH magneto with a BTH mag that I have my eye on, which has an integral Advance and Retard mechanism.

Your comments, and those of others I have spoken to, see the advantages in keeping the two timing systems in synch (as far as possible).

This approach will also avoid me having have to separate the existing two manual advance and retard linkages that are already in place.

The snag, of course, is that I will have to modify (or cast up a replacement) aluminium casting that carries the BTH mag as the replacement unit will be a an inch or so longer than the current one... This should keep me busy for a bit.

Meanwhile many thanks again for your helpful suggestions.

Andrew Cheyne
