

Roadholder

Post-War
Trials

Bad To The
Bone

Stop The
Leaks

The Magazine of the

Norton
OWNERS
CLUB

No. 410 February 2022

When Is A Gimmick Not A Gimmick?

Graham Moag

I have been campaigning a 350 cammy Norton for almost 10 years with great joy, a selection of Gold Star pistons and periods of deafness - if I run too long on the open mega!



It isn't a matching numbers, factory-correct bike, but, it is a matching numbers '54 International in a state of 'Manxism'. It is a developing and progressing series of modifications and the impact on running has led me to try a 'gimmick'. The engine is a 350 SOHC, with a bronze skull '39 head, reputedly from the works department via Francis Beart's workshop. It is running on a GP2 carb, open mega and has lightened flywheels, a shortened barrel and uses a Gold Star piston. In reality, it uses a lot of Gold Star pistons – number three is in her at present, and therein lies the problem.

Already I may have caused major offence to some Norton owners who regard what I am doing as complete sacrilege, but the result is an outstanding, adrenaline-fuelled experience that guarantees a smile every time. There is no greater pleasure for cammy owners running on 'R', than riding up a road, turning, and riding back down so they can smell themselves!

My problems originated in the barrel, with a piston that holed itself just beneath the spark plug. I agonised over the timing and repeated checking to prove to myself that it was not over-advanced. I visited the GP2 and replaced and refurbished everything that I could find. It is still a little rich

as I am terrified of lean running. I put up with a slightly sooty plug and a bit of rich running to calm my fears. I replaced the +0.020 Gold Star piston, concluding it was a failure that was caused

by a weakness in the piston.

The replacement was an identical NOS piston and the engine was running again very quickly.

Roll forward 1,000 miles and an almost identical failure occurred with a holed piston that looked exactly like the first. The first two pistons are sitting beside each other in the image. At this stage it was essential to work out what was going wrong and

what could be done to prevent it happening for a third time. I felt I needed to do two things to make a difference. The first was to reduce the compression ratio from 10:1, to just over 9:1. The second was to use a different profile of piston so that the plug electrode was further from the piston crown and less likely to hot spot on the shoulder of the piston crown.

I used a lower compression version of the Gold Star piston and altered the shoulder profile a little to reduce the compression a little more. The photograph shows the reduction at the edge of the shoulder on the current piston versus a standard low compression version. The impact was noticeable when the engine started. The



Holed pistons

compression was less aggressive at starting but there was no perceptible loss of power or torque. The engine always fired well but had a tendency to kick-back if too much advance was applied at starting. This was unchanged. Too little advance and she seemed to labour to fire, too much and she just bounced back at your ankle.

Enter the 'gimmick'

At the recent Stafford show I took a few minutes with Alan Graham as he showed me how his 'Spitfire' ignition device operated. The potted version of the demonstration was that instead of



Standard and L-C piston

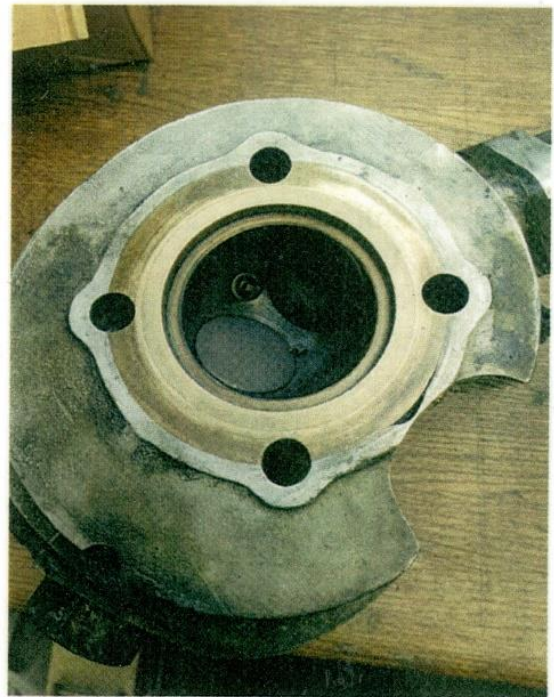
one aggressive, erosive spark, the device splits it into four or five sparks, the first of which fired at the same moment as the original single spark. The subsequent 'shower' of little sparks flew from the electrode milliseconds later. All fine and dandy, but what does it matter?

To put it simply, he explained that the shower



Standard and modified L-C piston

of sparks mops up unburnt pockets of vapour. As I watched the demonstration, I was thinking about my cammy Norton. The final demonstration was of a completely flooded plug. A normal ignition feed to the plug resulted in the fuel eventually



Bronze SOHC skull

igniting and burning like a birthday candle. The same plug was flooded and when the Spitfire device was connected a far bigger and more incandescent flame burned from the upturned flooded plug. It was clear to see little flares from the side of the main flame as pockets of escaping vapour were ignited. A less aggressive single spark effect and a better flame propagation seemed like my Norton tuning wish-list was filled!

I returned home, cut my HT lead in half, and fitted the little black lozenge. I switched the fuel tap on and kicked her over. I had ridden the bike the week before and travelled about 90 miles.



The 'Gimmick'

I hadn't cleaned the plug, refuelled her or even wiped her down. Absolutely nothing had been touched since the last outing.

To my amazement she fired sweetly, fired evenly and almost ticked over. I could hold the throttle open a fraction and she bonked at 900 revs. I'd never done 900 revs before as she was so 'blappy', she needed 1,500+ revs to keep going.

At the weekend I went out with my pals here in Northern Ireland. Being followed by an immaculate low-mileage VFR750, I rose to the challenge and urged her on. Smooth, strong and never missing a beat is all I can say. Pulling hard at 4,000rpm and still accelerating strongly, she didn't hesitate to impress. Previously she would have been troublesome to hold on the mega but now she just wanted to go. She could be rolled off and on again without the normal mixture/firing confusion in the engine. Everything seemed a lot cleaner in terms of the burn and the engine lifted from a standing start without the normal inconsistent running until she found her feet. Less dragging the clutch and much more control. She just wanted to rev-out. Performance was a lot more impressive.

What of the gimmick?

The device itself is a small black plastic lozenge. It contains three aluminium discs. The spark circles the discs, splits, and exits. It doesn't increase the load on the coil or the magneto and won't have a detrimental impact on the ignition circuitry. I don't think there is a gap in the device but rather the spark is altered by the energy pulse spinning round the discs. The lack of gap means the load is unaltered. It is clear to see that each little spark in the shower of sparks looks

like a fraction of the single big spark. This didn't concern me that they were too small as I have observed the spark generated from the new BTH self-generating mags and also Japanese CDI units. They are almost invisible at kicking speeds.

The idea was apparently developed by Rolls Royce and was used in the Merlin engine for maritime purposes. It was never fitted to the aero Merlin. The main vessel types to benefit were the fast MTB's at the end of the war. The marine engines needed to run up and down the rev range and accelerate cleanly.

I can only share my own experience about the device. I don't regard it as a gimmick, but I do regard it as something which should be used for specific reasons, not a cure-all for bad running. In my opinion it is not relevant to a modern engine with any form of electronic engine management.

It is entirely relevant to machines where unburnt fuel vapour might be contributing to a loss of peak performance. It is also relevant if aggressive spark erosion of plug terminals is evident. I would use it in side-valve engines where compression is lower and vapour combustion could be optimised. I would use it in anything where starting could be improved. Some older carbs and racing set-ups can be fraught with

**"YOUR CARE
AND ATTENTION
DESERVES
OUR CARE AND
ATTENTION,
WHATEVER WAY
YOU LOOK AT IT"**

We share your biking passion, call now for our best cover

0800 954 0140

carolenash.com

Six Wheel | Multi-Bike | Off Road | Custom | Future Classic | Classic | Vintage

UK opening hours: Mon - Fri 8am - 8pm, Sat 9am - 5pm, Sun 10am - 4pm.

Carole Nash Motorcycle Insurance: As with all insurances, terms and conditions apply. Carole Nash Insurance Consultants Ltd is authorised and regulated by the Financial Conduct Authority, firm reference no. 307243. Carole Nash is a trading style of Carole Nash Insurance Consultants Ltd, registered in England and Wales no. 2600841.



CAROLE NASH
The care it deserves



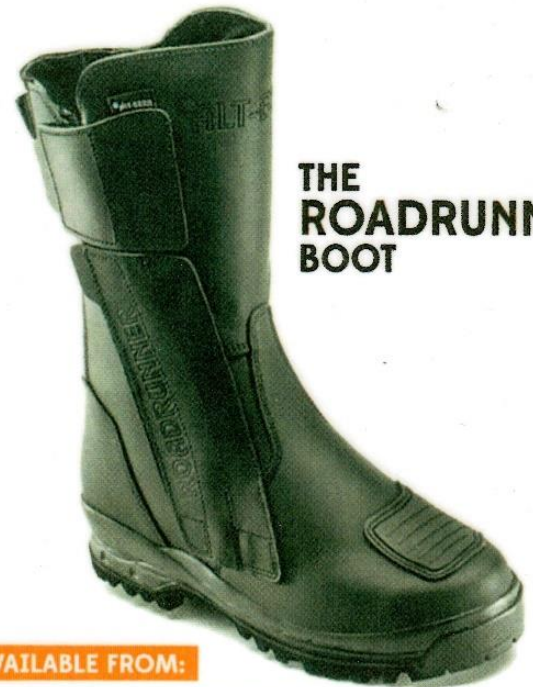
idiosyncrasies at start-up and low speeds. My friend is going to try it in his Velo KTT as he has a bad ankle and can't run and bump anymore. He has fitted a kickstart, but the racing carb that is fitted is tricky at low starting speeds. Velo's are good starters, their owners are sometimes bad kickers! If successful, it will get reported. I will use it in my Scotts, particularly if they tend to try and spit back through the transfer ports.

To sum up, I am a born sceptic, a Norton addict and of course imagine myself to be the living embodiment of Stanley Woods, with a sideways glance at Rex McCandless. The Spitfire device has transformed my cammy 350. I don't know what it would do to your favourite 'headache', but I will be using more of them as necessary. My friends who know my Norton are all convinced as well, after they saw what it did to my bike. My renewed enthusiasm has got me thinking that I might replace the mega with a straight pipe and start experimenting with the length. That might improve the tractability a little more ...

ALTBERG®

BOOTMAKERS Est. 1989

YORKSHIRE • ENGLAND



THE ROADRUNNER BOOT

AVAILABLE FROM:

THE ALTBERG FACTORY SHOP | www.altberg.co.uk
Unit 2B Racecourse Road, Gallowfields Trading Estate,
Richmond, North Yorkshire DL10 4TG Tel: 01748 826922

SILVERMANS LONDON | www.silvermans.co.uk
422-426 Mile End Rd, London E1 4PE Tel: 020 7790 0900

Where Are They Now?

If the reg. does appear on the DVLA website it will be marked thus: (plus other info if available) or: if it is not displayed. Note that if the reg. is not displayed this could mean that the vehicle has been exported.

Also included a past photo so we are looking for the same guy. He was, and may still be, the owner.



Hey guys I'm chasing the owner of this Manx.

Please contact: Dave Baring
+610403868138
plymouth_cuda@bigpond.com
(Australia)

