

VIRUSCAST 11 Eleventh Issue

Yesss!!!! The Eleventh Issue, no less!! Time we had a vaccine, or some magic jollop we could take to cure us if we got IT! (I have a very nice fuel additive that is supposed to stop knocks, recession, and all manner of ills!! Maybe I should offer it to Boris!!)

Zoom meeting

We had another of Simon's Zoom meetings. Among other things discussed were :

- Lithium batteries. Alan has learned all sorts of things about Lithium batteries – the hard way. I am hoping for a learned treatise from him on the subject. (Alan - - - - ??)
- 961 Nortons stopping production? Simon says the new Indian Norton Company does not have the 961 in its ongoing product list. Much discussion about who will supply the most unreliable 961 spares after that event. Well, with the real old bikes, we all have learned how to use – or avoid – unreliable spares. In fact most of us are experts on unreliable spares.
- Christmas party – sadly, almost certainly not.
- Simon suggested our own NOC e-bay, or exchange and mart: read on –

Our own NOC e-bay/exchange and mart/boot sale/jumble

Do you have a shed full of random and exciting bits that you keep holding onto, and which will surely come in handy some day, but have been there at least a quarter of a century, and have NOT come in useful? Well, how about using these august pages to offer them to members for however much cash/free beer/ free whisky/ free wine you can scrounge out of them! I have not yet dug in the bowels of my shed – there are quite a lot of odd bits – but I know I have a SLS front Dommi brake doing nothing, and also a cylinder head, which the bike has worn in the past – and, I keep telling myself, may be needed again, and never is. So I could possibly be persuaded to part with it – perhaps – if you plead enough. Has anyone else got any bits??

NOC Northumbria Grampian Branch-of-branch Branch meets again – with our 2 Honorary Aberdeen members, who get to be members for nothing, and Graham Orr (Graham, you have to do something really daft to become an honorary member). A nice Covid ride to Banochry (and back?). All were Nortons , and one red Atlas is Graham's recently acquired model, and the other is Bill's which has

ridden every road in Europe at least twice. (Campbell – I do not see the recently re-constructed Dommi 88???) . But how heartening to see again the faces we can no longer to admire across a pub table.



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Simon sent this extract from an old “Newsletter”

Lo! Fuzzy picture: Richard pulls ahead!



Having never been to a racing event, your scribe rode up to East Fortune one October weekend to find out what it was about, and to try to take photos. What I found out was that these people are mad! (5 were carried off in ambulances from the corner where I stood for 2 hours before lunch) Also, I found that photographing rapidly moving bikes with a telephoto is actually very difficult. Here is a fuzzy picture of Richard Johnston, number 182, pulling ahead to win his race on his Dommiracer.

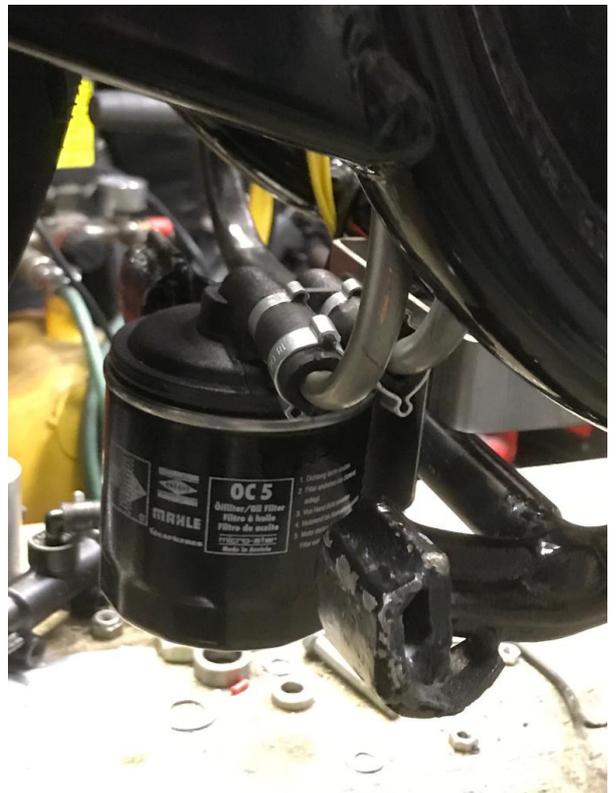
(I had been indulging in luddite photography, using the pa-in-law’s old Leica with a telephoto lens which I had just acquired from a second hand shop. Thus proving “anti-shake” technology was a good thing - seeing I had not got it. But Richard is now “Grounded”. To explain why, I could not resist adding the following picture from the 2013 rally)



- mind you, after the rally, Richard was back on the track -

Lots of pictures from Don of his Dominando project:

Don reports various issues he has run into. Recently he has been dealing with lubrication. The Commando pump delivers oil faster than the Dommi pump. But in his Dommi oil tank the oil returns via a very small hole to create back pressure, to divert some oil via a “branch from the return” to the rockers. The Commando engine has a different way of lubricating the rockers, so Don has been taking out this restriction in the oil tank, and in general accommodating the larger diameter Commando piping. Then there are issues with the fuel tank. Don also adds: “ *I’m at the stage where I need to hang stuff on a frame where there are no convenient brackets. So I need to fit essential items so then I can identify suitable spaces. More brackets to be designed and manufactured no doubt! The lubrication system is just awaiting the oil tank.*”





(I cannot wait to see your face, Don, the first time you have taken the bike out and got it covered in shite)

And here's an educational piece from Chairman Bob

Classic Motorcycle Electrics Manual by James Smith
ISBN 978 1 84797 995 7

Are family members asking you what you want for Christmas? Don't know what to ask for? Here's an idea. I was given this book as a present a couple of years ago. It's a great book and it was published in 2015 so is quite up to date on modern solutions to electrical problems on old bikes. Just think of LED lights and Gel batteries.

However the author's principal focus is on old mostly British motorcycle electrics. (He's into Matchless and some of the information in his book can be found on his website www.matchlessclueless.com). The book is quite comprehensive. The chapter on dynamos show how to identify the dynamo you've got or are looking for, with some very clear pictures. It also shows how to measure the output, to test the dynamos and to re-polarise it if necessary. There is a separate chapter on dynamo control boxes (which were always a mystery to me when I had my ES2). He also discusses modern electronic dynamos control boxes. There's a similar pile of information on alternator charging systems which explains how the alternator output was regulated with the old 3 wire single phase alternators where the output was changed depending on whether you had the lights set to Off, Pilot or Headlights. He also explains how Zener diode regulation works and how modern control boxes work.

It has a chapter on Electrical Theory which you could skip if you feel you know all that stuff but for most people a bit of revision never hurts.

The chapter on components includes useful information on switch maintenance which is hardly ever described in workshop manuals. Given that most of our switchgear is 40+ years old it's a safe bet that some of it could do with a little TLC.

There is a really good chapter on fault finding techniques. Often the problem is a poor connection somewhere but working out which connection is causing the problem can be quite tricky. It also covers rewiring, including wiring colours, soldering techniques, Magnetos and much more. All in all this is a really good book which is well illustrated and well written.

The list price was about £30 but as I write it's available on the internet at £22-£25. It's definitely worth having on your bookshelf.

Bob

And here's the fourth thrilling episode of Sean's 42 years of teething troubles with his Commando, this time explaining why he did not get to the Italian rally. Quite educational, this one.

The next saga kicks off the year before the Italian International rally - when I decide it might be a good excuse for a ride to Italy. So planning ahead I decide to address those things I ought to address before undertaking a long trip on a bike I still regard as cursed. One of these things was wheel alignment. I'd always set the chain tension/alignment accurately I assumed by using a vernier calliper on the adjusting bolt lengths. The weakness of this approach being that it assumed the swinging arm/frame fabrication was correct to begin with. If you really want to measure whether the front and rear wheel are in line take some

fishing line and 2 Axle stands and tension across the line of both tyres.

In didn't believe what I measured - so I took the tyres off the rims and clamped a piece of plate aluminium across both rims. I measured the rear wheel to 18mm out of line with the front wheel. The pictures illustrate you don't need verniers . It had to be sorted.

There is an interesting article out there on the Web entitled "The Worlds Straightest Commando" which runs through the elimination of some the sources of this sort of inaccuracy (Just Google it or goto

<http://www.vintagenet.us/phantom/wsc.html>) Without the engineering facilities to do some of dimensional checking on the frame I came across a guy advertising as "Parallel Engineering". He runs through the process on his website (<http://www.paralleleengineering.co.uk>) but in short amongst other things he add a series of eccentric bushes to the Commando frame on the front and rear Isolastic mounting points such that you can adjust out drilling/fabrication errors.



Set the frame in a jig, insert a dummy crankcase with the front isolastic unit, add your gearbox cradle and swing arm and then adjust each of these bushes to ensure perfect alignment with the headstock. Lock bushes in place and it's better than it ever left the factory. Rear isolastic bush is illustrated in the adjacent image.

What he found in my case was a major fabrication error in the swinging arm - putting some engineering blocks under an elongated spindle and



likewise through the rear axle slots found a 3mm twist - which would magnify itself to a rather more significant figure at the rim radii. I'm beginning to assume my bike was originally built on a Friday. Ebay provides a later model stiffer SA and my man adds a secondary (Kegler) clamping system to ensure all is very precise. Bike goes back together late winter and front and rear wheels now align perfectly. All in all a high quality engineering solution from an Engineer who knows what he is talking about.

So that solved I'd decided it was time to defeat the Bike's other 2 main weaknesses - brakes and wet sumping.

Brakes first - I'd already tried a few of the recommended improvements from the usual retailers - different callipers, bigger and fully floating discs - but with no ground-changing results - better but not much. There is so much chatter about this subject but one of the common themes in improving the performance is changing the hydraulic ratio via changing master cylinders or sleeving the existing ones down. What I wanted to know was whether there was any prospect of gaining a meaningful improvement in performance using the existing single disc and to do this theoretically rather than by further expensive experimentation. As I'm not an engineer this required some education - for those that are interested in the numbers this is a simple introduction to the principle of Hydraulic advantage; (https://www.grc.nasa.gov/WWW/k-12/WindTunnel/Activities/Pascals_principle.html or just Google NASA Pascals Principle) ...I'll leave the "its not Rocket Science" quip to others. So ignoring for now any differences in frictional material or area of frictional surfaces utilised, this provides a theoretical means of comparing various combinations of components in terms of Hydraulic advantage and mechanical advantage (Lever size/fulcrum points etc).

Version	Original Bike	Std Caliper Sleeve down MC to 13mm	AP Lock CP2696 Cal	SM's Setup Nissin MC	Adjustable AP 19mm	Adjustable AP 16mm	Grimica Assumed	Col. Norton Grimeca Single	Ducati 900SS Setup
	1	2	3	4	5	6	7	8	9
Master Cylinder Bore mm	15.9	13.0	15.9	14.0	15.8	11.9	13.0	13.0	16.0
Area	197.93	132.73	197.93	153.94	196.07	111.22	132.73	132.73	201.06
Calliper Piston	Norton Std Cal	Norton Std Cal	AP Race Calliper CP2696					Brembo	Brembo
Bore Diameter mm	44.5	44.5	41	41	41	41	41	32 & 34mm	32 & 34mm
No Pistons	2	2	2	2	2	2	2	2	
Area	3110.57	3110.57	2640.51	2640.51	5281.02	2640.51	2640.51	3424.34	6848.67
Mech Adv	4.6	4.6	4.6	5.6	6.4	6.4	5.6	5.6	5.3
Hydraulic Adv	15.7	23.4	13.3	17.2	26.9	23.7	19.9	25.8	34.1
Overall Adv	20.34	28.05	17.96	22.71	33.33	30.14	25.45	31.36	39.38
		138%	88%	112%	164%	148%	125%	154%	194%

(Wow! – editor)

So assuming these numbers give us some guide to potential effectiveness version 1, as per factory isn't bottom of the class, that's reserved for Ver 3 - adding the AP racing calliper to a std MC it makes a bad situation worse. I'd put a "Triumph (Nissin)" MC in place on my bike and got the mammoth 12% improvement. AP Racing offer 2 versions of adjustable MC's, which allow variation of the Hydraulic ratio - my figures are based on the maximum ratio. Ver. 6 is designed for single calliper use and works with an effective 11.9mm at maximum and at this you see a 48% increase on the Std system.

The 900SS (Ver 9) was included to provide a comparable ratio employed in a very well braked modern (1998) bike that also weighed pretty much the same as the Commando. At 70mph they would both possess a similar degree of momentum and require similar dispersal of Kinetic energy to avoid Texting Audi driver in front. Clearly the original bike (Ver 1) has no chance. Sleeving the original MC down to 13mm yields a 38% immediate improvement and probably provides the most cost effective result. Andover Norton now offer replacement 13mm MC's. The Colorado Norton option seemed to offer the best modern parts single

disk option with a 54% increase. All of these increased ratios come at the expense of increased lever travel but this was adjustable in the case of the AP kit.

Its also only part of the story and for me I decided that a twin disk option may be a little like overkill but I'd had too many decades of "underkill" and I'd ran out of patience.

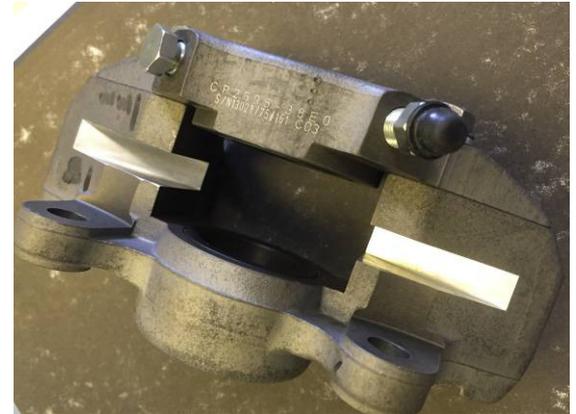
So I went with Ver6, twin AP callipers and the variable MC setup coupled with one of the major retailers twin Discs, hub and Fork Slider options. I also decided that if you were going to be adding more un-sprung weight to the front end then you probably needed to look at more modern fork internals. I went with a conversion kit from Consentino Engineering that offer a road kit for Commands based on Showa fully adjustable dampers.

Many of these parts were well made and designed but I had some big issues with others. Firstly the fork sliders were different dimensions in terms of the calliper working radii - so whilst one calliper had plenty of lateral clearance between the perimeter of the disc and itself - the other did not. Spin the wheel and it rubs against the inside of the calliper. Now on use, it would have seated more equally on the floating pins but it also required a working clearance to allow for expansion as the brakes got hot. The retailer didn't share my concerns and ran with the argument that plenty of other people used the parts and therefore all must be OK (The: Nobodies dead yet argument). The laws of Physics held more weight in my considerations. An engineering (a real one!) colleague calculated a 1.5mm clearance was needed, so the calliper was duly machined. Both Discs also appeared badly warped with run outs in excess of 1mm being measuring on a dial gauge.. A quick test ride had the front brake lever oscillating badly so the apparent variation wasn't related about float on the disc carrier. Dismantling the discs and accurately measuring the distortions on a local firm's rather expensive CNC testing machine gave the working disc surface a maximum run out of about 1.1mm.

Then add to this debacle one of the front end fork sliders seizing on the newly installed Showa fork damper units owing to inaccurate machining tolerances in the base of one of the sliders (well they wouldn't be the same would they!) and lets just say I was less than happy. The picture on the right illustrates what happens if you went over a speed bump @ 10mph!



(No, I cannot quite see – ed)



None of this went down very well with the retailer either (diplomatic speak here).

It took 6 months, 3 sets of Discs and finally the intervention of a very helpful Mr Pete Lovell to get things where everybody was happy. But the important point was we did get there in the end. The Braking system is absolutely excellent with 2 fingered effort sufficient for most situations.

So problem 1 eradicated! - however owing to these shenanigans the bike didn't see action that year - so the Italian rally remained a pipe dream.

(All I can say is that I am clearly not intelligent enough for disc brakes – ed)

Well, folks, that's successfully filled up a few pages with verbiage!!!!!!! Right now the weather is crap. 10 days back I took the Dommi over to Derwentwater for a walk . I want to take Lizzie back so she can enjoy the same walk, which at this time of year means the car. (Having just listened to Boris, I am not sure if this would qualify as "exercise"). Still, if the computer does not lie, we are in for a run of "high pressure" – the weather variety - so I could make a third trip over to the lakes, by Dommi, before the great salting of the roads puts an end to my riding. Then I can amuse myself seeing if I can improve the clutch, which, though it works, is not quite right. You have to have SOMETHING to pull apart in the winter. But – a propos the ride to the Lakes –

There is no trace at all of the burnt out café on Hartside, only a shipping container serving what function I know not. And – while I like 2 wheels, I really cannot understand the joy of dressing yourself in Lycra and pedalling a push bike up over Hartside early on a very cold morning.

Hoping we do not all get totally grounded – and we all still get some happy riding.

AND, APART FROM THE FINAL CHAPTER OF SEAN'S STORY ABOUT RUNNING IN HIS BIKE, I HAVE ABSOLUTELY NOTHING TO PUT INTO THE CHRISTMAS NEWSLETTER. SO – PLEASE – SOME ARTICLES – STORIES – EVEN YOUR FAVOURITE RANTS – DO NOT WORRY IF YOU THINK IT MAY NOT LOOK RIGHT WHEN PUBLISHED, OR YOU GOT THE GRAMMAR WRONG (THEY STOPPED TEACHING THAT YEARS AGO, ALONG WITH ALMOST ANYTHING ELSE EDUCATIONAL) - OR THAT YOU MAY CAUSE OFFENCE, OR GET JAILED FOR SAYING SOMETHING NOT POLITICALLY CORRECT, YOUR EDITOR'S JOB IS TO EDIT (UNLESS YOU INSIST I CHANGE NOTHING) AND HE'S HAPPY TO DO SO.

Education: Here's a rant of mine – we once lived 2 1/2 years in Germany, and our then small son used to go to the local Kindergarten. Like most small kids he picked up the language in no time and was fluent. On returning to the UK, he opted to do German at school. When the British educational system had finished with him, he could no longer speak a word of it. End of rant. And that's filled the rest of the page.

Scribe



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