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The
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COMMANDO

920cc big bore | 90° crank | Re-engineered chassis

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NORTON COMMANDO 920

Is this the kind of Commando Norton would be making today if the company hadn't crashed and burned? Maybe. One thing's for sure - it's a full-on assault on all the senses...



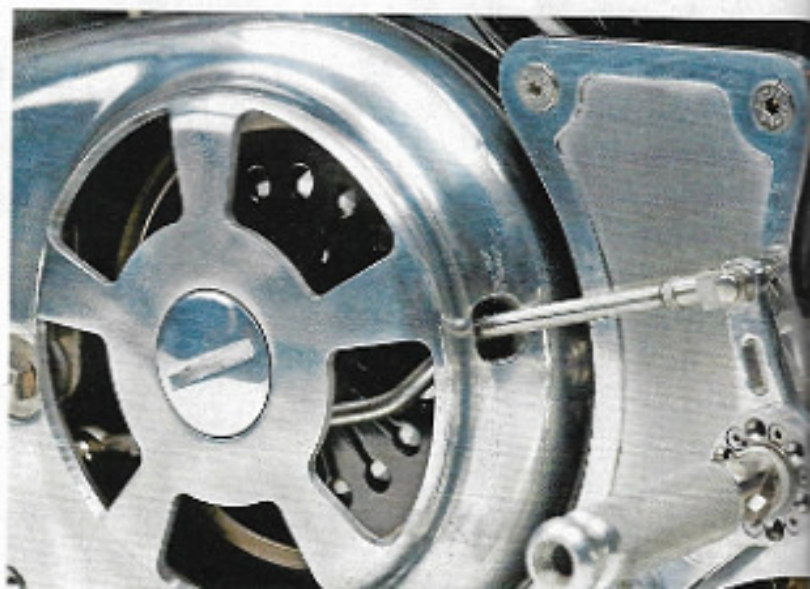
A photograph of a motorcycle rider on a road winding through a forest. The rider is in the foreground, wearing black riding gear and boots, with the rear wheel and exhaust visible. The road is paved and has a white dashed line. In the distance, a dark car is visible on the road. The trees are lush green, and the sky is bright. The overall scene is a scenic, natural setting.

SPECIAL FORCES

This Commando has been drafted into the 21st century with a 920cc big bore, 90° crank and re-engineered chassis. We take it out on manoeuvres



ABOVE: Peashooter 'silencers' are misnamed; quieter ones are planned. Corbin seat is a Commando aftermarket part.
BELOW: Clocks are Smiths electronic items; milling the clamps off the Buel top yoke left handy holes for charge/neutral lights and clock menu switches.
MkIII B50 gearbox, built brand new, with Quaife five-speed internals, has the gearchange was on the 'modern' side in keeping with the ethos of the bike





Jerry (right) and his co-builder Roy (left) resplendent in appropriately-branded casual wear

Riding a bike that's taken someone years to build is always an honour – and, for obvious reasons, also a bit of a nerve-jangler. But meeting Jerry Hutchinson and his 920 Commando Roadster felt like going on a modern manufacturer's press launch. Not only was there a detailed spec sheet and professionally produced brochure, Jerry and his co-builder Roy Chappell also wore 920 Commando shirts and served us tea in 920 Commando mugs.

And I've got to say their pride is totally justified. I mean, just look at the pictures. It's even finished like a production bike. Or rather, as Jerry puts it: "It's what Norton would probably have done if they hadn't crashed."

This is one of those rare specials that bring the looks and character of a 1970s classic into the 21st century. And, as Jerry explains, it almost never happened.

"When my dad died in 2009, I wanted something that would be a tribute to him. He was a mechanical engineer and loved old British cars and bikes, so I thought a British-engineered product would fit the bill. Norton were starting up, so I thought I'd get one of those. I ordered one and paid the full £12,500 for it.

'IT'S A TRIBUTE TO MY DAD. HE LOVED OLD BRITISH CARS AND BIKES'

"In those days you could watch your bike being built at the factory, or even join in. Roy and I went along and actually started putting parts on the frame under the instruction of the guy building it. I was full of enthusiasm: soon I'm going to have my own Commando!

"Two years later it still hadn't appeared, and even the sales director advised me to get my money back, which I did. But I still wanted a special Norton. So I said to Malcolm one day: "Have you ever done a Norton special?" He said: "No, but I'd love to". And that's where this bike came from."

The Malcolm that Jerry mentions is Malcolm Shepherdson, boss of Shropshire engineering shop Metal Malarkey. They'd met in 2008 at the Stafford show when Jerry had noticed one of Malcolm's earlier creations, a Bonneville he had co-built with serial customer Bill Gysin.

Jerry remembers the moment well. "I thought: 'Whoa! That's a nice Bonneville!' And we got talking." It looked like a Bonnie, but had a custom frame, proper running gear and all the period half-arsed design details ironed out.

With Malcolm's help Jerry went on to build his own **C**



Triumph twin – a flat-track-style road bike. So by the time he decided on the Commando in 2014, their collaborative working relationship was already fully formed. Egged on by Roy, who also likes his Nortons, Jerry began to work out what sort of bike would make a suitable tribute to his dad.

"I wanted a newer interpretation of the 1970s Commando Roadster. It would have modern suspension, wheels, brakes and chassis but also obvious design DNA from the original bike," he explains.

Malcolm's computer-aided design service helped them plan how the bike would look, even down to details like the forks, shocks and footrest hangers. And Jerry had already decided he would switch to a 270° crank, which virtually all modern parallel twins use. The irregular firing interval would sound excellent, and having the crankpins 90° apart would reduce the vibration which obliged Norton to adopt rubber mounting on the original Commandos.

"With the 270° crank and a reed-valve engine breather we felt we could get away without any Isolastics, getting rid of a hell of a lot of clutter," remembers Malcolm. "I suggested a 14-gauge cold-drawn tube for the frame – a little heavier than usual, but we weren't sure exactly how much the engine would vibrate. We didn't want it ringing like a tuning fork."

So how can an engine breather damp down vibration? "It means the engine is running free rather than pumping that volume of air around," Malcolm explains. "It makes quite a big difference – Yamaha and BMW have used similar systems."

With the main styling decisions taken, Malcolm could assemble the frame tubes to suit the engine, tank and side panels. Using 17in wheels and 43mm forks would let the bike turn quickly, so Jerry went for a 24° head angle and 90mm of trail – the same as a 1999 Honda FireBlade (stock Commandos were 27/28°). Wheelbase, thanks to the '60s pre-unit engine design, would be 1435mm, against about 1410mm for a typical early-2000s Japanese sports bike.

Jerry's second key collaborator was Mick Hemmings, who ran a wonderful Norton shop in Northampton until semi-retiring recently. Mick supplied (and still can supply)

SPECIFICATION

ENGINE/TRANSMISSION

Type	Air-cooled, 4v pushrod twin
Crank	90° billet, 54% balance factor
Capacity	970cc
Bore x stroke	81.0 x 89mm
Carburation	35mm Keihin PWK
Clutch	Hemmings dry, multi-plate
Camshaft	PW3 profile
Gearbox/final drive	Quaife five-speed/chain

CHASSIS

Frame	Bronze welded CDS by Metal Malarkey
Swingarm	Malarkey oval section
Suspension	43mm Buell Cyclone forks, Hagon Nitro shocks
Brakes	Front: 320mm braking disc, Harrison six-pot caliper. Rear: 252mm braking disc, Harrison two-pot caliper
Wheels	Morad rims, Talon hubs
Tyres	Bridgestone T30: 120/70-17 front, 150/70-17 rear

DIMENSIONS

Dry weight	345lb (157kg)
Wheelbase	56.5in (1435mm)
Seat height	30in (762mm) est
Fuel capacity	2.3 gallons (11 litre) est

PERFORMANCE

Peak power	80bhp at 6000rpm (est)
Quarter mile	12.5s at 90mph (est)
Fuel consumption	50mpg (est)
Price (our guess)	£30,000

the Quaife five-speed gearbox and belt primary drive, and he built up the box and bottom end. The 850 MkIII Commando the bike is based on had a left-side gearchange, which Jerry wanted. He says: "The gearchange rod going in through the back of the primary case was my idea (based on a photo of a bike in the US); Malcolm loved it too, so that's what we went with. It took some adapting because we used the earlier primary case. But it looks really trick!"

"Mick has been so helpful," Jerry adds. "He's sent me engine plates to use as patterns. Like Malcolm, he's become a good friend."

The all-important engine breather came from Pete Lovell in Birmingham. Mick provided a one-way oil feed to eliminate wet sumping, and the light 90° crank which was machined from solid in Birmingham. That, in turn, needed a special camshaft and Tri-Spark ignition, plus the new crankcases (also from Mick), 920cc barrels and pistons from Steve Maney, and 40mm inlet valves for the 850 head.

It sounds easy, but it wasn't. "If I told you the full story about just the camshaft you'd be here until tomorrow," Jerry warns. Setting up the carburation was another long job. Malcolm machined the ignition pick-ups to suit the firing order, and

suggested many small improvements such as the Harley-style oil drain pipe which is P-clipped in the upright position under the seat. To change the oil, you just undo the clip, remove the bung and direct the pipe into a suitable container.

Jerry did the electrics, using a Motogadget M-Unit and, largely, through-the-frame wiring. The bike passed its first MoT in March 2018, then spent 12 months being quietly refined and developed. Eventually, it was ready enough.

On its 17in wheels it looks long, low and crouched. As with the Gysin bikes that inspired it (see below), the Norton looks like your idea of what the original bike was – because your brain doesn't remember the annoying bits. There are no ugly brackets, Heath Robinson switches, oil leaks or crappy cable runs. There's no key, either (it uses a Motogadget RFID chip instead). The clutch (with a hydraulic lift **C**

GIVING BRIT CLASSICS A MODERN VIBE

Re-engineering a British classic. Could you do it? It's a mammoth task – re-imagining the whole thing using a better frame, suspension, brakes, electrics, while retaining (or even enhancing) the essential beauty of the original. Not many people manage it, because projects like this cost a bomb and demand huge levels of imagination, skill and persistence. They take years to build and sort out – but when they're ready, we usually feature them in CB. You can see the 920 Commando, and the three Gysin brothers' bikes, on malarkeyengineering.co.uk Here's a gallery of the bikes we've been proud to feature in our pages...



MALARKEY TRIDENT
Classic Bike December 2011
By: Bill Gysin



T150 TRITON
Classic Bike August 2013
By: Jim Hodges



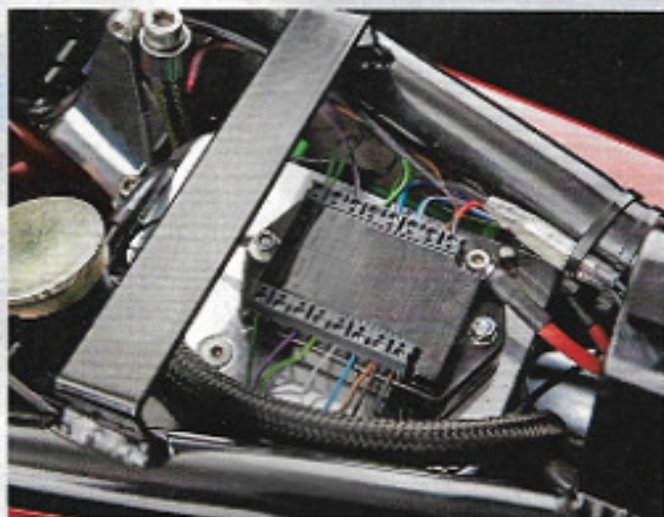
MALARKEY BSA A65
Classic Bike March 2014
By: Jim Gysin



650 TRITON
Classic Bike March 2015
By: Jim Hodges

Owner Jerry did all the electrics himself - this Motogadget M-Unir is the heart of the neat and tidy set-up

Discs by Braking and calipers by Harrison make for amazingly strong brakes - only one finger required



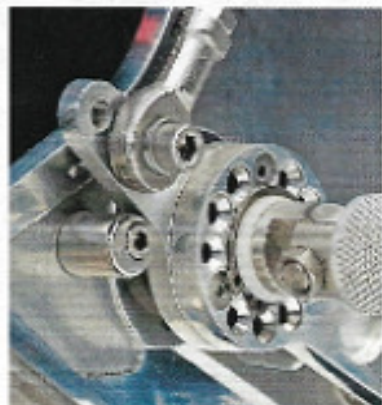
Trident kickstart and RGM knuckle give extra leverage. Fold the footrest and brake pedal away first, though...



**'THERE ARE NO UGLY BRACKETS,
HEATH ROBINSON SWITCHES,
OIL LEAKS OR CRAPPY CABLE RUNS'**



Stock tank has been reshaped underneath, with the front and rear cutouts filled. The 17in wheels give a low, long and crouched attitude - this Commando looks ready for maximum attack...



ABOVE: Roll-on, roll-off bend-swinging is this Commando's forte, accompanied by a raucous soundtrack. Switches, linkages and pegs heap style on top of function

'THERE'S HEAPS OF DRIVE AT 5500rpm, ENOUGH TO SMASH PAST ANY CAR'

mechanism from Colorado Norton Works) and throttle are light, and there's decent suspension, excellent brakes, good chassis stiffness, and more than adequate tyre grip. But don't get the idea it's been sanitised.

Today's retro-minded riders have plenty of modern parallel twins to choose from. But every one of those bikes feels like a wilted lettuce compared to a big-bore, high-compression Commando

with a lightened crank. Jerry has thoughtfully fitted a Trident kickstart for its extra length, but you still need to fold the footrest and brake pedal out of the way, hold the throttle half open, summon the blood, and swing the damn thing with enough heft to wake the engine up.

The result, should you succeed, is the usual low-rpm snarl of a Commando, rendered positively scary by peashooter silencers and a 270° firing order. Within a few seconds it'll tick over happily while you get your breath back, but its round-town behaviour is a bit like taking a T-Rex for a walk. Even from 2500rpm it just wants to lunge forward, savagely. This is not helped by the riding position, which in a 30mph limit is quite challenging. The bars are fairly wide, the rearsets tip you forward, and with the dry clutch only 330 miles old it's got a non-linear feel. In 1000 miles or so it'll be fine. Meanwhile, the Quafe gearbox shifts nicely, and you can hit neutral as long as you're still rolling.

I lead outta town, ease your wrist back three degrees and you've effortlessly summoned a 60-70mph breeze to lean into. Now the bike starts to make sense. Higher gears take the snap out of the

power delivery and replace it with the kind of shove that suits mile after mile of roll-on, roll-off bend swinging. Hanging on to 5500 gives heaps of drive, enough to smash past any car. Not much of a rev range, you may think. But it covers a lot of road speed in the high gears. Jerry likens the delivery to his old Ducati 996. I'd say it's more like a Harley V-Rod – lusty, noisy and very strong. Vibes peak at 4000, but unless you're especially sensitive they're OK.

Jerry has chosen soft springs and light damping, so the ride quality is as good as a twin-shocker gets. The bike steers neutrally, as you'd expect, and feels good leaned over (modern tyres are wonderful things). The Corbin seat is wide, with a cup-shaped recess and edges. It's great for comfort and perfectly follows the curves of the tank, though it would slightly impede you if you're a hanging-off type of rider. Braking is amazingly strong – one finger is enough.

As with any bespoke bike, there are still jobs to do. Though the motor pulls beautifully, Jerry plans a dyno session after a few more miles, and he's keeping a beady

eye on the engine breather system as the revs increase on the still-young motor. He'll also be toning-down the exhaust volume a bit. More pressingly, the sidestand bracket docks out on left-handers. A solution is already in train.

Perhaps the bike's greatest quality is the consistency of how it looks – the degree of polishing, the similarity of fasteners used, the way the paint finishes match, the lack of clutter. To some people it just looks 'normal' – but if you've tried building your own bike, you will know that level of finish is anything but. Jerry agrees, but insists he is just doing his thing. "I build the bikes I build because I like them. If someone else likes them too, that's fine. But I build what I want it to be." ☺

**320
COMMANDO**

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 Premier Accident Repairs, Neston
 Other paint: Graham's Garage, Caerhewell
 Powder coat: Cambrian Powder
 Coaters, Oswestry