

Classic Bike  
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# Classic Bike

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## ULTIMATE BEEZA

★ 725cc AND A 270° CRANK ★ 21ST CENTURY CHASSIS

Sensational BSA A65 Lightning redefines the great British twin

- BIKES IN THIS ISSUE**
- Dunstall & Norvil Commandos
  - Triumph T140 Bonnie
  - Honda CB400 Four
  - Matchless G50
  - BMW RnineT
  - BSA Gold Star
  - Honda CR750
  - Indian Chief
  - BMW R90S

**2014 CLASSIC EVENTS GUIDE**  
From Spanish rallies to muddy trials fun: key diary dates



★ **HIGH FLYER**  
**SUPER MOUTH**  
Steve McLaughlin, the man who invented Superbike racing



★ **CX500 STRIP**  
**MAGGOT POWER**  
Crawling inside Honda's unburstable V-twin





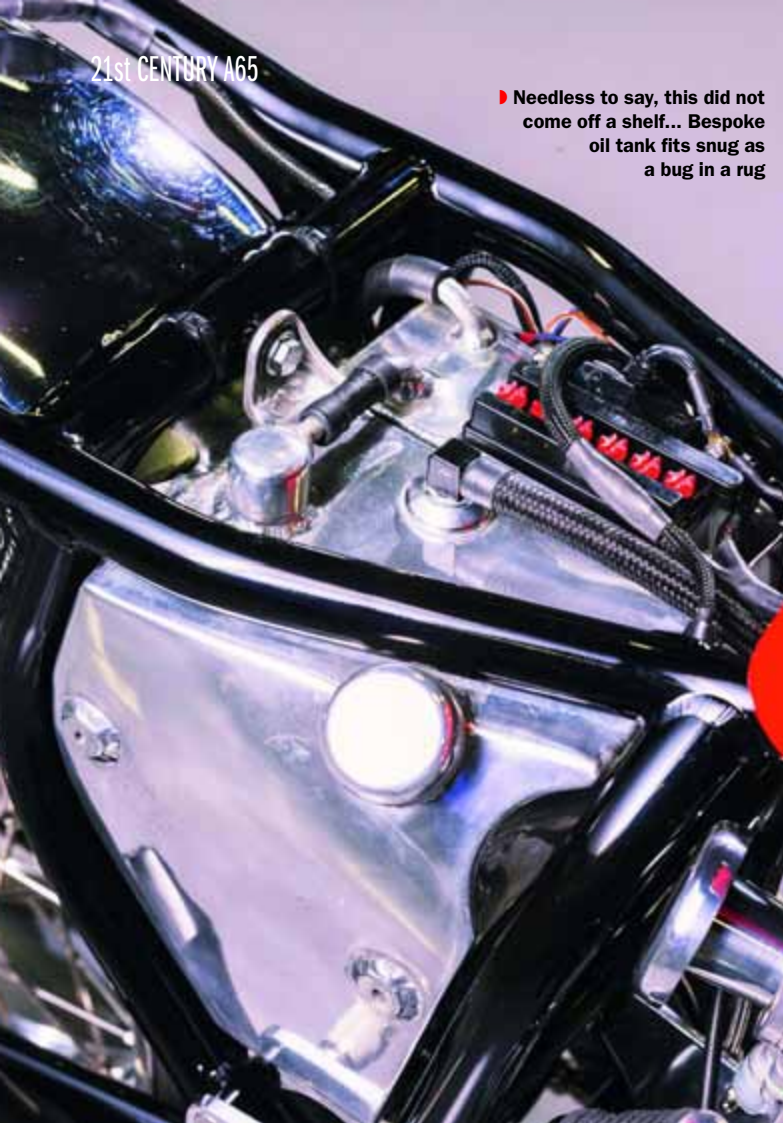


# HEIR SUPREMACY

BSA built their last A65 Lightning in 1972. Forty years on, Jim Gysin has created a 21st century successor, complete with bespoke chassis and a radical motor. Prepare for take-off...

WORDS: RUPERT PAUL. PHOTOGRAPHY: JASON CRITCHELL

▶ Needless to say, this did not come off a shelf... Bespoke oil tank fits snug as a bug in a rug



▶ Adjustable gear rod was turned from hex. Central hex-section holds the rod while the locknuts are tightened or loosened



▶ Amals only come as left-handers. The solution – a rose-jointed choke linkage – came from the steering for a radio-controlled car

▶ Motogadget tacho also displays mph, voltage, air/oil temp, max rpm, etc. Oil pressure warning doubles as shift light



▶ Just in case you missed the radically different roar it produces...

▶ Sidepanel looks like the BSA original, but is shrunk and substantially restyled to suit the rest of the bike. Curved subframe support tube follows the original's lines



J

im Gysin, owner of this unique BSA special, tells a nice story about his first long ride on the bike, in the company of his Triumph-mounted brothers Rob and Bill: "It was last summer. We'd been riding all day and stopped for a Ribena in some Welsh village.

This elderly lady comes out, and we're right in front of the shop – three noisy bikes going 'broom, broom', with the three of us yelling to each other. We're expecting her to say: 'Get those bloody things out of the way'. What she actually did was go into mum mode: 'Oh, it does you good to see good old British motorcycles. They're lovely'. You wouldn't get that on anything else. But that's what British bikes do – they seem to engender a feeling of warmth and nostalgia in everyone."

It's a reaction Jim's getting used to, even though his bike is a very different animal from the BSA A65 Lightning upon which it's based on, and that he rode for 20 years.

Apart from the crankcases, cylinder head, fuel tank and a few smaller bits, this reborn Beeza is made from completely new parts – most of them highly modified or designed from scratch. The result is a Brummy twin that goes, stops, turns and rides like a modern bike, but retains the charisma of its 1960s inspiration.

Jim and his brother Bill dreamed up the idea of a 21st century British bike in a pub in 2006. At the time they were plotting to re-engineer a Bonnie for third brother Rob's 50th (see below). But the impetus for choosing a Brit bike in the first place was Jim's BSA Lightning café racer, which he'd bought in 1991 for £1950. "It had been built in the late 1970s, then put into a museum," Jim explains. "I bought it not even knowing if it would run. I'd just sold a Triton that literally disintegrated beneath me. The BSA had a matt black exhaust bolted on in about four places, and I thought: 'That's not going to fall apart.'"

Within minutes of starting the bike, Jim realised he'd bought something special; 23 years later, he relives the moment with rolling eyes, wild hand gestures and extravagant sound effects. "It was like, brrrrm, this is good, warr, this is quick, narrrrrh, this is bloody unbelievable! Then I changed from third to fourth. Hang on, the clutch is slipping! But no – it had a close-ratio 'box!'"

When the BSA finally blew up eight months later, the brothers had the chance to appreciate what had gone into the motor. "It was a masterpiece, built by someone who knew what they were doing, but didn't have any money," says Bill. "It had a Devimead 750 conversion and timing-side roller bearing. The matt black pipes were tucked in and upswept, cut and shut round the rearsets,

with completely empty silencers. The timing gears were drilled by hand, with all the holes countersunk and cleaned up. The valve spring retainers were all scolloped round the edges – guaranteed to break at some point, but cheaper than titanium and with the same effect." There's a film of how quick the BSA was (search for 'Cadwell Park 94 A65' on YouTube), showing it being chased round Cadwell by a screaming CBR400 at a *Performance Bikes* trackday in 1994. Even from the Honda's cockpit you can hear the Beeza's ear-splitting roar, and marvel at its drive out of corners. Years later, Jim tracked down the BSA's builder on the phone. The old gentleman, whose name Jim has sadly mislaid,

said he sold the BSA to a guy who made him an offer he couldn't refuse – and then realised immediately he'd done the wrong thing.

The brothers built Rob's Bonnie, engaging top-quality specialists Metal Malarkey to make the frame and P&M to assemble the engine. Next

**"The more finished a bike looks, the harder it is to imagine the vast piles of physical, financial and spiritual swarf that created it"**

came Bill's Trident, featured in *Classic Bike* in December 2011. Finally, in early 2012, it was the turn of Jim's BSA. With two amazing bikes under their belts, the brothers decided the A65 would be more adventurous, but retain the original café racer's red tank and chrome mudguards. "The goal was lightness and trickness," says Jim. "A 270° crank and a light, chromoly frame."

The more finished a bike looks, the harder it is to imagine the vast piles of physical, financial and spiritual swarf that created it. Point at any part of the BSA and the brothers will produce a hilarious tale of interconnected problems, blind alleys, false starts and wasted money. Together, these yarns would fill the entire magazine, so we'll take just one – the mudguards.

In keeping with the original bike, they had to be chrome. But to accommodate a 160-section tyre, the rear mudguard had to be a custom item. Bill considered steel, briefly. "I thought: 'How the hell am I going to add three inches to the middle without it looking crap? So we decided make them out of GRP, which was good for light weight, and get them metallised.'"

Jim takes up the story with the air of a man who has learned the hard way not to take himself too seriously. "We started off with some chrome-sprayer bloke. He had about five attempts, and it came out in various shades of copper and purple." Bill chips in: "And each time it happened we had to take the paint off again, take it back to the paint shop and get it smooth as a baby's bum in primer to get the new finish applied." Next Jim found a metalliser. "He was just rubbish. He was on the phone: 'They >>

## HE AIN'T HEAVY, HE'S MY BROTHER (AND SO IS HE)



Bill and Jim Gysin planned to build three no-compromise British bikes as "a kind of thread to bind us back together again," as Jim puts it. The first, a 50th birthday present Bonnie for oldest brother Rob, set the style for what was to come: Metisse-type frames by Metal Malarkey, P&M tuned motors, Maxton suspension, ISR brakes and switchgear, Hinckley Triumph forks, modern tyres and Motogadget electrics. Bill and Jim used a

lifetime spent building custom cars and boats to subtly update the original styling. "The bikes had to look as good as people's memories of them," says Bill. "Rob reckons only about one person in 25 realises how special his Bonnie is. The rest just say: 'You've looked after that well.' As far as we can tell, nobody's ever done this before with these bikes." Search for 'Classic British Bikes Reborn' on YouTube for the three brothers' tale.

'On a stock A65 the vibration is enough to turn your blood to cappuccino froth. The brothers say this one finally starts shaking at 8000 revs'



look lovely, mate!' But he didn't have a clue. I just said: 'How much do we owe you?'. That was another £120. Then he was: 'We'll do 'em again!' 'You've done enough damage,' I told him."

Finally, as Bill explains, something went right. "Jim found this little outfit in Brough who subcontract stuff like headlamp reflectors for Land Rover. These guys had a proper chamber big enough to apply what's called conductive primer. Then they spray on aluminium and immediately lacquer it." It sounded good, but then came the phone call. "They said: 'Sorry, lads. It hasn't worked. We're not happy at all.'" The mudguards had seen so much paint and filler there were tiny air bubbles popping out during the process, leading to barely-visible pinpricks in an otherwise perfect finish. But it was so much better than anything else we'd had."

I asked Jim how long the mudguards took. "I'd say six months, driving around the country," he replied cheerily. "It's just constant

prattling about." Bill, who did the lion's share of the build, comes closer to revealing the dark night of the special builder's soul. "You really have to want to do it. Otherwise you begin to question your own sanity, as well as other people's."

There were more long waits for the made-to-order Megacycle camshaft, needed to suit the 270° offset Nourish crank they'd hoped to use. When that, too, took longer than anticipated, they turned to Geoff Collins of Ed G Cranks in Toronto. Geoff welds up a 270° crank from two originals and his work arrived as a straight bolt-in. P&M's initially-suspicious Dave Whitfield fitted it in the cases, added SRM 750 barrels and pistons, an SRM high-flow oil pump and a cylinder head gas-flowed and rebuilt by Richard Peckett with lightened and polished rockers. 'Oily Tom' Moore of Moore Performance Engineering provided new lightened timing gears, and the existing close-ratio box was

► Engine is offset 12mm to allow a 160-section rear tyre – *trompe l'oeil* exhaust downpipes restore the central look. The engine is also canted forward 13° to add visual dynamism. This raised the engine sprocket relative to the swingarm pivot – Metal Malarkey's adjustable pivot compensates nicely



renovated with gears from Morespeed. Bob Newby supplied the dry clutch and belt primary drive. A special Pazon ignition arrived from New Zealand in two weeks.

Over in Shropshire, Malcolm Shepherdson of Metal Malarkey modified the previous bikes' Metisse-type frame to suit the 20mm-shorter A65, and lengthened the swingarm by the same amount. He also developed rearsets, a gear linkage, a sidepanel and seat unit (all of them useful, but eventually changed), as well as the oil tank and battery tray, the rear brake reservoir and the fabulously stylish, ceramic-coated exhaust. As Bill and Jim's ideas evolved, the original Gold Star alloy fuel tank got four new bases. They spent long weeks styling and then building the final versions of the seat, tank and sidepanels, as well as the myriad jobs no one else cares about: hiding the loom, shortening bolts and plumbing-in >>

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‘The best thing about building a bike like this is all the different people we’ve learned from. People who have a great deal more experience than us’



► Just as Jim has gone his own way with his A65, so Rupert coolly ignores signage

the Motogadget clock and M-Unit (a digital electrical control unit that dispenses with fuses and relays) and ISR switchgear.

Their conversation returns again and again to ace fabricator Malcolm, and Richard and Dave at P&M. Says Bill: “The best thing about building a bike like this is all the different people we’ve learned from who have a great deal more experience than us, particularly Malcolm and P&M. We’ve had constant battles with them about the importance of aesthetics over function, and how our balance is different from theirs. I’m sure initially they thought we were a bunch of tarts, but I think the respect flows both ways now.”

The BSA was understandably grouchy on its first awakening. It registered 60bhp on P&M’s dyno before fracturing its one-piece exhaust and blowing much of its oil out of the breather. But by January these troubles were sorted. Like all high-compression, belt-drive Brit bikes, it’s a sod to kick over. Bill uses a petrol-driven roller from cold, but it fires instantly, emitting a huge, rich, Conan-the-Barbarian bellow from its twin silencers.

The basic idea of a 270° (or thereabouts) crank on a parallel twin is to reduce vibration. On a stock A65, that vibration is enough to turn your blood to cappuccino froth. But as you pull away on Bill’s bike (nice clutch), all you’re aware of is a friendly, lolloping growl as the bike gets up to comfortable speed. The motor’s in a fairly high state of tune, with Megacycle’s hottest road cam, but it doesn’t feel remotely peaky. What you do notice is how quickly the revs rise and fall – the effect of the lightened internals. >>

## PERFECTIONISM IN PICTURES



After an extended dalliance with Nourish, Jim looked to a Canadian company for his smoother, 270° crank



Metal Malarkey’s integral oil tank, breather and battery box. Sorting the breathing was a real headache



Short motor allowed a 20mm-longer swingarm than the brothers’ other Malarkey-framed machines



Exhausts look simple but aren’t. Silencing wadding is replaceable without cutting the meggas up



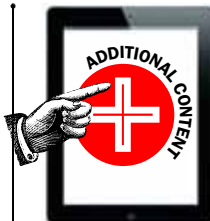


Useable power starts around 3000rpm, and even at 6500 it's still smooth. The brothers say it finally starts shaking at 8000, but I can't bear to rev the still-new motor that hard. For the kind of use the bike encourages – razzing along between 50-90mph – the balance factor is perfect. The gearbox (one-up, three-down) is light and friction-free, and almost up to modern shifting speeds, especially changing down.

The riding position looks gung-ho, but it's just right for a machine that, at 150kg dry, weighs less than a MotoGP bike (Bill reckons the frame alone weighs 4-5kg less than the cold-drawn steel versions on his and brother Rob's Triumphs). It's also exceptionally agile; the 24.5° steering angle is decades sharper than any classic, but stable with it. Rob's Bonnie and Bill's Trident get a bit lively on bumpy corner exits. Jim's BSA stays planted. I'd put that down to its more forward weight bias, longer swingarm and higher-spec Maxton suspension. Even in modern terms, the ride comfort, steering accuracy and tyre feedback are excellent.

The tyres themselves – modern Michelin radials in 120/70 and 160/60 sizes – are almost unique on a British bike. Triumph and BSA chain runs usually mean a 120-section rear is the most you can get away with, but Bill wanted to smash through that barrier, as much for the look as for cornering grip. So he's offset the engine to the left by around 12mm. "Plenty of people said you can't do that, but no one I respected, and Malcolm said it'd be okay." And can you tell? No, you can't. The bike feels as balanced as any other. The fat front suits the ample power of the ISR disc, too. You could ride this bike in the fast group on a modern trackday.

To most riders, the final years of BSA evoke a kind of dog-eared glory, a sense of what might have been. If the factory had somehow staggered on for another 40 years, would they be building something like this, just as Kawasaki have done with their W800? Maybe so. But it wouldn't have been half as good. **CB**



Download our digital edition for more photos of this amazing A65

#### SPECIFICATION

### 2013 BSA A65 LIGHTNING

#### ENGINE/TRANSMISSION

Type	air-cooled, two-valve twin with 270° crank
Capacity	725.5cc
Bore x stroke	79 x 74mm
Compression ratio	10:1
Fuel system	2 x 34mm Amal MkII
Clutch/primary drive	dry multiplate/belt
Gearbox/final drive	close-ratio four-speed/chain

#### CHASSIS

Frame	Metal Malarkey twin loop
Front suspension	Hinckley Thunderbird 43mm, Maxton cartridges, fully adjustable
Rear suspension	twin Maxton shocks, fully adjustable
Brakes front/rear	320mm disc, 6-piston caliper/210mm disc 2-piston caliper (all ISR)
Wheels	stainless spokes, Morad aluminium rims
Tyres front/rear	Michelin Pilot Road 3, 120/70 18 / 160/60 18

#### DIMENSIONS

Dry weight	331lb (150kg)
Wheelbase	50.8in (1400mm)
Seat height	30in (762mm)
Fuel capacity	4 gallons (18 litres)

#### PERFORMANCE

Top speed	125mph
Peak power	60bhp at 8000rpm

#### COSTS

Price then	n/a
Value now	£30,000

The brothers would like to thank Metal Malarkey ([www.malarkeyengineering.co.uk](http://www.malarkeyengineering.co.uk)), P&M Motorcycles (0208 847 1711), Ed G Cranks ([www.offsetcrank.com](http://www.offsetcrank.com)), Maxton suspension ([www.maxtonsuspension.co.uk](http://www.maxtonsuspension.co.uk)) and Rob Tupper (07545 253834) for his paintwork