

PROJECT
TRIUMPH
3TRick's planning to give some
love to a relatively
unloved Triumph

Will it suit me to a T?

Mention a 350cc Triumph and everyone thinks of the bathtub-backside 3TA or its sportier Tiger 90 derivative, but there was an earlier model born just after World War II. Meet Rick's latest project – a 3T extracted from a greenhouse

WORDS AND PHOTOGRAPHY: RICK PARKINGTON

Triumphs are probably the most popular of all British twins; the rigid-framed twins have appealed to me since I was young enough to have a 'thing' about choppers – but I've never lusted after a 3T. While it could be described as the pretty kid sister of the 500cc Speed Twin, friends my dad's age scorned them as gutless and unreliable – but then, as lads they wanted Bonnevilles not a clunky old three-fifty. I mean, I don't recall anyone getting excited about owning a Yamaha FS1-E when we were 16 and stuck with the blooming things! But I do remember an elderly friend who was very fond of his 3T and never had any trouble with it.

What cannot be denied is that, rather like a sickly infant in a Victorian melodrama, the 3T had a difficult birth, a short life and an unremarked passing. It was really a pre-war model – but the planned full-page front-cover press launch in September 1939 was cancelled at the last minute when Poland fell to the German invasion. This unmistakable first step in what would become five years of terrible world

conflict made it prudent to pause production. A prototype 3TW was made for the armed forces, but Hitler – no doubt recognising the threat – sent the Luftwaffe to destroy Coventry in November 1940 and Triumph's Priory Street factory was obliterated. The 350 didn't reappear until 1945, now fitted with the new telescopic forks instead of the original's girders. But while attractive and praised for its light weight and good manners, it didn't really catch on. After the game-changing Speed Twin, people wanted more – the sporty Tiger 100 or the big 650cc Thunderbird – not less.

**'THE FORMER OWNER'S WIDOW
HADN'T EVEN KNOWN THAT
THIS BIKE EXISTED'**

I wasn't looking for a 3T when I was offered this one by my friend Steve Hallam, selling on behalf of a local widow. It had turned up hidden away in her late husband's greenhouse – despite several decades of wedlock, she hadn't known it even existed. Discs still in the tax holder revealed the bike's original Breconshire registration and charted its migration, via Hampshire and Oxford, to its final rest in Norfolk, but unfortunately no documents could be found. I've lodged an enquiry with Powys Council Archives, who have some original registration records; cannily, they charge £20 up front with no money back if the search draws a blank, but here's hoping...

But that's not the only problem. The 3T shares few parts with the bigger twins, the engine is a very different design with rocker boxes cast into the cylinder head and a crank that is clamped (rather than bolted) together – an idea only shared with the post-war military TRW side-valve – so parts are more difficult than for other Triumph models. Then there's the chromed tank, one feature common to the 1948 range. The sparkling plating, with its white-lined black panels and simple Triumph script badges, is one of the bike's most attractive features – but over 73 years, the tank has lost its bling, made worse by a past owner sanding it as a key for paint. Done properly, replating a tank is expensive enough, but it also raises the bar for the rest of the job. Having had the tank restored, you need to match the rest to the same standard; not just new rims and handlebars, there's levers – not forgetting

**BORN TO BE MILD**

Launched as part of the 1946 range, the 349cc (55 x 73.4mm) 3T delivered 19bhp (the 500cc delivered 28bhp) from a 7:1 compression ratio to provide a top speed of 75mph. The frame was of similar (but lighter) construction to larger models, with flattened tube-ends in place of some lugs and is similar to that used on TR5 trials models. A De Luxe model with Triumph's sprung-hub rear suspension was also available. A Sports 'Tiger 85' model never got beyond the prototype stage and the mild-mannered 3T was discontinued in 1951.



Above: Rick with Steve Hallam, who was selling the bike for a neighbour



Far left: No documents, but tax discs revealed the bike's registration number and show it was in regular use from 1954 to '57

the kickstart and gear pedal – and countless twiddly bits, nuts and bolts needing plating. It costs the same on a small bike as anything else and can easily swamp the budget.

My restoration features aim to show how to save money – we all know how to spend it! – so I need to think this one through. Our 3T is in the wilderness between original and restored. It's had black paint slapped on top of what was previously green, and all plating is past cleaning up with wire wool so it needs stripping and doing again... somehow.

But the first step is to get it all apart – turn the page to see what's needed inside... >



Left: Most bits not on the bike were in these boxes; there's not too much to find



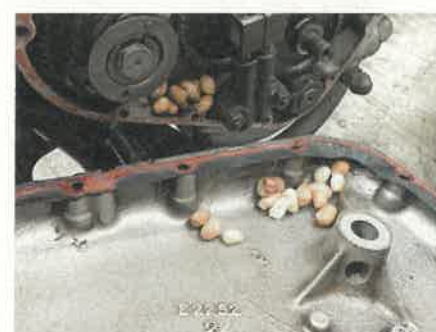
1 This was a good start; the speedo records 13,000 miles. It seems unlikely – although it was only nine years old when the last tax disc expired. I think it's had a harder life than that.



2 Most Triumphs have separate rocker boxes; the 3T's are cast in with the head, increasing rigidity – but adding weight. Tappet covers are held by a single central screw.



3 The head is retained by eight bolts, like other pre-unit Triumphs; not having to remove the rocker boxes first saves a bit of time – and they don't leak, either, of course.



10 That's nuts! A squirrel clearly didn't realise he'd need a screwdriver to get his nuts back when he poked them through the open dynamo hole!



11 The worst part of the engine: one sump plate bolt has been tapped out two sizes over and this one has flaked a chunk out of the casting. I think I can weld it...



12 Talking of bits broken out of Triumph crankcases, remember to remove the two crankcase mouth screws before reaching for the hide mallet.



4 The cylinders are spigoted deeply into the cylinder head. Bores look pretty good – I'd squirted plenty of oil down the plug holes before attempting to turn the engine over.



6 My worry was that 3Ts have white-metalled steel rods, rather than replaceable big-end shells and they're difficult to recondition when worn. Thankfully, these particular ones feel good.



5 Here's another unusual feature; head gaskets are copper rings that fit on top of the spigots rather than the usual 'goggles' shape Triumph gasket that fits around the bolts.



7 Crank's reduced clamping diameter prevents scoring soft rod bearing when fitting, but regrinding requires a factory-supplied flywheel with undersize clamp holes.



8 Small ends are straightforward to replace if needed, but they don't feel bad. Given the state of things, I was surprised to find the pistons are plus 40 – second oversize.



9 Maybe this is why: there's a big chip out of the barrel skirt, looks like a blow-up. The pistons look fairly new, so maybe the engine hasn't done many miles since a full rebuild.



13 Magneto will almost certainly need a rebuild. Undoing the nut on the auto advance unit, it'll come loose then go tight again – keep going, it's a built in extractor.



14 As I suspected, the original coil has no continuity on the secondary (HT) winding. It needs a rewind; Bakelite slipring's broken and alloy body's cracked, too.



15 But all good inside the primary chaincase. With the pistons sitting on hard nylon bars, the crank is locked; a safe way to undo engine nuts by shock; worth remembering for assembly...



16 I use a big (Norton Commando exhaust ring) C-spanner to hold the gearbox sprocket; in first gear it locks the transmission to undo the clutch centre nut.



17 Many Triumph speedos are driven internally from the gearbox, but this is like a girder fork front wheel drive adapted to run off a cog behind gearbox sprocket.



18 To prevent the primary chain adjuster bending as it swings the gearbox through an arc, it has a neat ball joint were it locates to the frame!



19 Mudguards are robust but battered with surplus drilled holes. It's worth marking the holes that need filling before removal; it may not be obvious later...



20 The rear stay for the front 'guard doubles as a front wheel stand for removing the wheel; a useful feature that stayed on Triumphs till the late '60s.



21 The fork top nuts can be unscrewed to top up oil, but the forks are held together by internal damper units. You must work from the other end to get 'em apart.



22 Removing the bolt in the bottom of the fork slider enables the fork internals to be slid out from the top. You need good sealing washers on these bolts.



23 You need a good fitting C spanner to avoid damaging seal holders. The original seals are made of felt, but they don't leak; oil level's quite low in these forks.



24 Head bearings are the same as the pre-war singles, making them hard to find – but luckily, John Brewster (JHB Engineering, 01797 226775) makes and supplies these and other pre-war parts.



25 Charging system may need overhauling and there was no wire harness anyway. Lucas dynamo is stamped 5/48 so it's probably the original.



26 I'm currently way behind schedule, so a big thumbs-up to Pete from Britsteel in Dover who's offered to take the chassis and paint it for me. Thanks mate!

NEXT MONTH
While Rick's getting to grips with the engine and gearbox, Pete will be setting about the rolling chassis and he's already come up with a great idea for how the finished bike should look.

PROJECT TRIUMPH 3T

Rick continues to give some love to a relatively unloved Triumph

Down to brass tacks

As restoring the 3T back to showroom condition would be prohibitively expensive, Rick's taking the approach he used to apply in his youth – a more pragmatic and much more affordable way to breathe life back into a bike

WORDS AND PHOTOGRAPHY: RICK PARKINGTON

There's a good reason my workshop always looks such a mess. It's because whenever I get a project, I immediately strip it down to the smallest part.

I know, that's the complete opposite of the sound restorer's advice to stick to one job at a time. It leaves me with more things in bits than an explosion in a jigsaw factory, so why do I do it? Am I just yielding to my spoilt inner child with a new toy?

No. Well, maybe a bit... but really it's about saving money. The sooner I know what I'm going to need, the sooner I can start looking for it – that's vital with vintage bikes where parts are scarce. But whatever the bike, you'll find bits are cheaper if you buy them before you're desperate for them.

I wasn't looking for a 350 Triumph, this 3T came to me by chance, so my aim is to make something good out of it for the least possible outlay. I've had the Project 3T stripped for some time, but the pandemic and my subsequent accident threw a split pin in the timing gears, offering little opportunity to seek out bits, so it's no surprise that this month I ran into parts trouble.

My big worry with the Triumph had been whether the crank was worn; but my delight in finding it was OK – along with a speedo reading of just 27,000 miles – blinded me to some less positive aspects of the engine. I mean, I noticed the cam followers were pretty worn – but Triumph's hard stellite faces can be reprofiled, so that was no problem. At least, so



Replacements for the worn valves and guides? Easy. But cams? Not so...

I thought. But these 1948 followers are not stelled, they're just case-hardened and have worn down enough to damage the cams. Hmm... maybe that odometer is broken, too. The cylinder head told a similar story; the valves and guides are too worn to reuse – I managed to buy some from original Triumph parts magnate Mark Francis (triumphtwinsparts.co.uk) – but while 3T followers are, thankfully, the same as other models, the cams are specific to the 350 and I had to make a few phone calls to track some down.

On the positive side, this month I got the frame back from Pete at Britsteel Classics in Dover (facebook.com/Britsteelclassics). Pete kindly volunteered to paint it while I was incapacitated and got the ball rolling for me – not just with the paint, but with an idea of where to go with the project. As I said last month, being just a 350cc the 3T isn't held in the same regard as other Triumph twins – but it's a light and (I'm told) perky performer. That and the fact that, to restore it properly, we'd need the tank expensively plated suggested to Pete that with knobby tyres and the tank sprayed silver and lined blue, it could look like a 350cc version of the TR5 Trophy.

I liked this idea immediately; it took me back to how things were in the early 1980s. Back then, collectors and restorers were mainly interested in standard bikes that just needed paint and plating and avoided anything that was missing too many hard-to-find original parts. That meant incomplete 'classics' like the 3T, old café racers and field bikes were affordable for my younger age group to make something of. We did them up as best we could – even if they did end up with 'ape-hanger' bars and tulip 'silencers'. But eventually the supply of 'easy restorations' dried up and restorers lowered their sights to our end of the market, pushing prices beyond our reach. Disappointingly, now when I see the offerings in recent 'deceased sales', it turns out many never did get restored; there they still are with their dented tanks and cracked alloy 'guards' – just even rustier, having been hoarded all these years by restorers who bit off more than they could chew.

Well, soap boxes aside, I like the idea of building the 3T non-standard. No ape-hangers for me now, though – my favourite specials are the ones that could be mistaken for standard models, so I'm aiming to use as many standard bits as I can, while keeping expenses to a minimum. I'm hoping it will come out looking something like the TR3 Triumph never made. ◻



Above: The return of the frame, kindly painted by Pete at Britsteel, gave the Triumph project a boost this month

THE SUCCESSFUL DEBUT of two new stars!

The 350 c.c. Twin Triumph and 'Jimmy' Alves created a major sensation in the 'Open' trials world by proving for the first time that a modern multi-cylinder machine, handled by a competent rider, is not only at all disadvantage but can win against the strongest possible opposition. In three appearances this one machine and rider have:

- ★ WON THE COTSWOLD CUP TRIAL
- ★ WON THE MITCHELL TRIAL
- ★ WON a First Class Award in the BEMROSE TRIAL

A second machine in the hands of G. F. Robertson on its first appearance gained a First Class Award, one mark only behind the winner, in the Mitchell Trial.



TRIUMPH'S HISTORY ON TRIAL

The idea of turning the Project 3T into a 'TR3' is not so daft as it may sound. Triumph did well in trials before the war with their single-cylinder models, but these were discontinued post-war, leaving the 3T twin as the sole 'lightweight' in the range. One of these was prepared (with lower gearing and a big front wheel) for works rider Jim Alves' entry in the Cotswold Trial. Alves won the event and enquiries started rolling in. Triumph considered a 3TR trials model, but the revived ISDT of 1948 demanded a more powerful machine, leading ultimately to the creation of the TR5, initially fitted with the alloy top end from the factory's Lancaster bomber generator sets. The TR5 became the first model to carry the Trophy name into a range of capable off-landers.

Left: Period Triumph ad lauding the achievements of Jimmy Alves on a 350cc Triumph in top-flight trials competition. The factory never followed up with a production model, but Rick fancies the idea of creating his own version...



1 Pete took the 'old school' route of sanding the frame for painting rather than blasting. There was plenty of good primer beneath the top coat that he was able to use, why waste it?



2 Paint is inky black 'International' yacht enamel. Pete recommends doing all the fiddly bits first, where runs are often generated, filling in straight tube sections after.



3 I'd call that a pretty good finish – plus it can be touched in when it gets scratched without reacting, as happens with some paints – it worked out very cost effective, too.



4 Felt fork seals are standard; the oil level's a fair way below the seal, but Pete bored out the new holders I supplied to take belt 'n' braces oil seals, too.



5 Original fork shrouds will go back on; they give much better protection than gaiters. After dipping, filling and rubbing down, here they sit ready for a spray coat of gloss black.



6 And here's the frame fitted with new head bearings, and loosely assembled ready to return. With those glossy fork shrouds fitted, I think it looks great already!



7 Next job for Pete was the wheels. The plating on the original rims is too far gone to clean up, but we might get them powder coated and then rebuild them with new spokes...



8 ... that'll keep the functional look while saving on new rims. What do you mean I'm tight? Not as tight as the last owner – there were 14 patches on this rear inner tube!



9 Here are the hubs, stripped cleaned and painted. I've got spokes on order – galvanised as standard, I think stainless would clash with the enamelled rims.



10 Back home, one fork legs wouldn't pull fully up into the yoke. It was just a sight burr where the top had been hammer-bruised sometime; it was easily filed off.



11 To test fork bushes you need to set them up at about mid position; at full extent they're close together and will feel worse than they are; the 3T's need replacing.



12 Fortunately, Triumph used the same bushes for years and I had a new set in my spares. The fork tubes were in good enough condition to keep.



13 Any pitting can be rubbed smooth with sandpaper and won't destroy seals – especially these felt seals. Soaking in melted tallow keeps the seals oil-tight.



14 Steel washers sit either side of the felt seal. The lower one bears on the top fork bush, keeping it in place, so check it screws fully down before fitting fork tube.



15 The castellated nut that holds the bottom bush is usually very tight; breaking the grip with careful use of a punch can be safer than using a C-spanner.



16 Bottom bush fits tightly. Vee angle aluminium makes a good removal drift; flat alloy plate makes it easier to check bush is going on squarely when fitting.



17 Before finally fitting the seal holder, use sealant or a few turns of PTFE tape on the threads; otherwise you can get a slight oil leak from here.



18 Fork tool pulls forks into the yoke. Ensure peg on base of the damper units, which locates in a hole in the slider, is engaged before tightening retaining bolt.



19 Chassis together, I started on the engine at the cylinder head. Cast-in rocker boxes work the same as the separate type – tap the nut to remove the spindle.



21 I decided to fit new-old-stock valves, guides and springs. To clean the head I put it in my caustic bath – a lidded tile-adhesive tub full of caustic soda/water mix – it's pretty effective.



22 If the hole looks slightly oval, you're right – it is! The guides were very badly worn. When there's this much burnt oil in the rocker box, it's usually an indication that they need replacing.



25 I've seen it advocated that guides should be fitted with the removal drift, but they're bound to shatter or at the very least end up with a buried end. The drawing tool is a far safer way to do it.



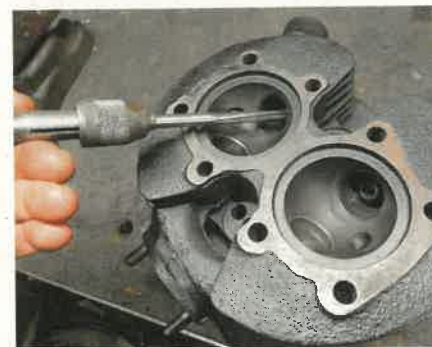
20 One thing I'd noticed was that the rockers were rubbing each other at the pushrod end. Ah, that'll be why – someone has put all the thrust washers on one side!



23 Removal is a bit brutal – drive them out using a drift. The pilot locates in the guide bore and the drift body is smaller than the guide diameter, otherwise it could get stuck in the head.



24 Guides often shatter as they come out, so take care. The fitting tool is a much more subtle and bespoke thing – the cone end sits in a variety of valve-seat sizes, with the guide being wound in by the nut on the threaded bar.



26 Finish by reaming the new guides – here $\frac{5}{16}$ in (0.312in). Valves are made with clearance-diameter stems (0.310in), but the guide's tight fit in the head may pinch it up slightly.

NEXT MONTH

If all goes well, we could be talking wheels, engine, gearbox, tank... maybe all of them at once. It all depends on how cold it gets in Rick's workshop!

PROJECT TRIUMPH 3T

Rick's trying to avoid big resto costs by turning this bike into an off-road special



Things are really rolling along

That was quick – the Project 3T is starting to look like an ISDT bike already! Rick puts it down to a question of confidence, but admits that can work two ways...

WORDS & PHOTOGRAPHY: RICK PARKINGTON

Right: We're surprised at Rick's rapid progress, too. The 3T's a smart-looking rolling chassis already. No wonder he's looking pleased with himself!

I've been busy this month – and it's been well worth the effort. I think you'd have to be a determined Triumph hater not to admit that the Project Triumph is looking pretty good.

Last month I revealed that the plan was to build the Project 3T 350 in off-road style to prevent big-bike restoration expenses running away with the budget. Personally, I think it's worked out; after all, how many projects have stalled indefinitely due to cost when there was maybe an alternative way around the problem?

The major step forward this month has been turning the frame into a rolling chassis. It's a seminal moment in a restoration; fitting the wheels is when you get the first real impression of how the bike will turn out.

Rather than scrap the rusty but perfectly serviceable rims, we decided to have them powder coated. With new galvanised spokes and tyres, I think the wheels look really tidy – and besides, past experience suggests they might outlast chrome replacements in our climate!

I was concerned about finding 19in dirt tyres but 'Britsteel' Pete, who's helped with the restoration, recommended Heidenaus. The German-made K67 is a vintage trials pattern in 18in, 19in and 21in sizes and allegedly a harder compound than 'real' trials tyres, which wear rapidly on tarmac. A 4.00 is too big for the 3.50 frame and it really needs a

21in front wheel to look right anyway, so we went for standard size 3.50 x 19 rear and 3.25 on the front.

I bought the alloy mudguards from Simon and Linda Stephens (renovationspares@mail.com) at Kempton Park. Alloy guards are available elsewhere – but I like Simon because he makes those he sells and can advise on the radius you need for given wheel/tyre combo; this avoids the 'not quite right' fit you often get with universal 'guards.

I've used the original Triumph stays to keep the bike looking as 'factory' as possible – and they also support the grabrails and chainguard. I just need to make the front mudguard bridge and brackets, because our alloy front 'guard is narrower than the original.

But it hasn't all been fun this month. First thing was the crankshaft. I'd been relieved to find the big-ends felt good, but was that enough? To be sure – and to clean out the 'sludge trap' filter – meant splitting the crank but I was

hesitant because the unusual design left me unsure about getting it back together right and, well, it felt OK. Like they say: 'If it ain't broke don't fix it'...

But that's a cop-out; like those manuals that say: 'Simply remove the spindle' when yours (like all the rest) is rusted in solid. What would the *CB* reader who's bought this magazine because he's facing this very job feel when turning the page to find I'd dodged it? The reason I have so much stuff is that I like to have options in case something goes badly wrong – but sometimes you have to be confident in yourself and just take the leap. I leapt and I landed safely, so now I'd have the confidence to tackle another one.

But it was over-confidence that caught me out with the wheel build. I was anxious to crack on; front and rear rims are the same size, but I couldn't find the 'F' mark Pete had made on the front one when he stripped them. Never mind, they looked identical, so I made an educated guess and laced

them. Rear wheel built, trued and tyre fitted, I was just truing the front when I noticed the spoke nipples weren't settling in the dimples properly... idiot that I am – of course they're not the same! While the rear hub is roughly symmetrical, there's a blooming great brake drum on one side of the front! In my haste, I'd omitted my usual checks – sticking spokes into the rim to check angles – and my penalty was a wasted day building the rear rim onto the front! And just to add insult to injury, while grumbling my way through undoing all the spokes on the rear wheel, I spotted Pete's 'F' stamped under the paint...

But never mind, I have a 'cheat' for swapping the rims (see How to... in Rick's Fixes, on page 83), so it didn't take very long to put right – and with the wheels fitted, the bike looked so good I soon forgot all about it. That's the thing with rebuilds – there are ups and downs, but as long as you see steady progress, that's all that matters. ◀

Inset, top: Simon and Linda of Renovation Spares, purveyors of fine mudguards to the general public



Right: Triumph 3T crank laid bare: A design only used on the 3T and the Military TRW 500cc. Rick reckoned it was maybe not as simple as the book makes out, but decided to take a leap of faith...





1 Unusually, the 3T doesn't have shell bearings or removable conrod caps. The crank has to be dismantled to inspect the white-metalled big ends and to clean out the sludge trap.



2 After undoing both clamp bolts, the manual suggests drifting the web outward through the flywheel; I preferred left/right rotation while pulling by hand, because...



3 ... without factory facilities, hitting the unsupported web at a difficult angle risks distortion. Anyway, it came apart safely and, as I hoped, the big-ends had very little wear.



4 The 'sludge trap' centrifugal oil filter is well placed for filtration, but not cleaning. Regular oil changes (1000 miles) minimise the need to do it and the trap was nearly empty.



5 To true-up the crank on assembly, you're supposed to use a guide rod through these holes, but being just a 1/2in diameter I wasn't confident this would be precise enough.



6 But, guided by the rod, I pressed the halves into the flywheel. With no 'stop' to centralise the flywheel, you need to press up so there's equal conrod end-float both sides.



7 But when checked with a dial gauge, as I'd suspected, it wasn't quite true – about five thou out. That's not good enough, but gentle taps to rotate the web slightly sorted it out.



8 Before finally tightening the clamps, a trial assembly showed it ran true, but locked when the crankcase bolts were tightened. No end-float – something's not right



9 I'd thought a bit more rod clearance than expected was due to wear and tear, but in fact I hadn't pressed the crank fully home... a tiny movement and all was well.



10 Next job: check crankcases; there was that broken sump-plate stud to sort. First, I opened out the area using a carbide burr in a Dremel die grinder tool.



11 Then I filled the area with aluminium using my hobby MIG welder. I know, it looks a right mess – but from past experience, I think it'll work better than it looks!



12 Cleaned up, it was strong enough to be drilled and the thread re-tapped. Using the burr again over the surface creates a fair copy of the original sand-cast finish.



13 The two-sizes-over second hole needed an insert; I made one from brass – stronger than aluminium. A bolt and locknut makes an insertion tool.



14 The hole in the case was badly cut, making my insert too loose. Tinning brass with solder makes it that bit bigger; a dab of Loctite on top solved the problem.



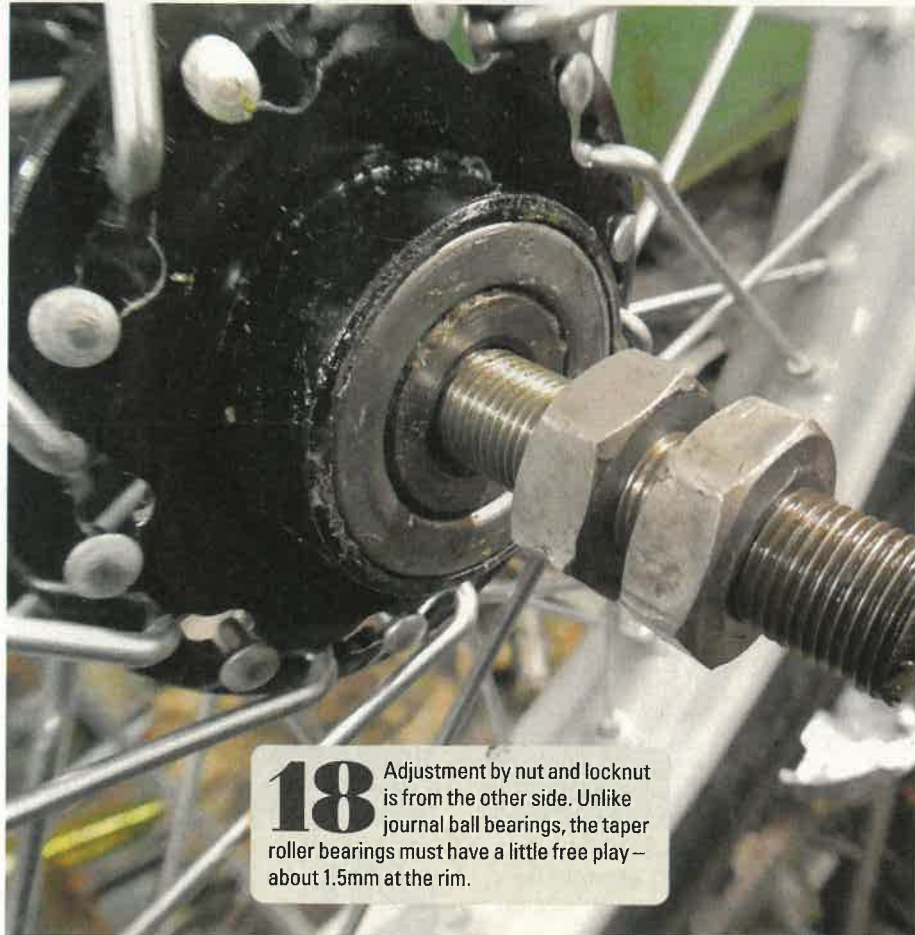
15 I blew out all the oilways and used a tap to clear any sealant from the holes. Beware: enough can build up to burst the casting when the screw's tightened.



16 The rear brake shoes looked greasy; gentle heat showed how it oozes out when the brake gets hot under heavy braking. Luckily, I had some spare shoes.



17 Wheel bearings are taper rollers; the spindle has to be set up correctly for adjustment. First, fit the brake-side bearing and tighten the nut hard onto the spindle.



18 Adjustment by nut and locknut is from the other side. Unlike journal ball bearings, the taper roller bearings must have a little free play – about 1.5mm at the rim.



19 Before stripping wheels, take both-side photos of spoke pattern. This is 'cross three': each spoke crosses three going the other way, one at the spoke flange.



20 Put four spokes in the bare rim and push down on the spoke nipples to reveal angles; here the higher cross point reveals the brake side.



21 Hub counter-sinks show which holes are for inside spokes. With keyhole slots, the spoke will point in direction of slot, so find the rim hole that best lines up.



22 No wheel jig? You can true the wheel in the forks/frame; that way you know it's spot-on for your bike. Pull the rim over by tightening spokes one side and loosening the other.



23 A security bolt, fitted close to the valve, arrests tyre creep on the slippery powder-coated rims that could lead to it ripping out of the tube.



24 To mark holes for rear 'guard stays, I had to fit the crankcase, primary and chainguard, as it all connects together. I marked for frame and chain clearance.



25 An alloy 'guard has enough stretch that you can shape any relief for clearance with a hammer and anvil – use a smooth-faced hammer.



26 Before drilling, put the guard back on and step back to check how it looks. Starting with small holes/screws allows for a bit of filing if 'tuning' is needed.

NEXT MONTH

*So far so good!
What have we left?
Engine and gearbox
to rebuild, electrical
system? Plenty to
keep me busy if
I can keep up the
pace over Christmas.
Have a good one!*



PROJECT TRIUMPH 3T

We're only on part four of this resto, and the cracking pace continues...

A present to myself

The festive season isn't all about food and drink; Rick kept from adding to his waistline by adding weight to the Project Triumph instead with some serious seasonal shed time

WORDS & PHOTOGRAPHY: RICK PARKINGTON

Here's hoping you all had a good Christmas break – despite (or maybe because of) the seasonal government restrictions. After all if you've not got guests to entertain, you've got a good excuse to nip out to the workshop and get on with something useful.

While dads everywhere were trying to get the Christmas tree lights working, I was busy with electrics of a different kind. The Project 3T is equipped with dynamo lighting and magneto ignition – the devil's work to lovers of solid-state electrics, but in fact both are simple, robust and repairable. They're just very, very old.

When I started on old bikes, I had a lot of bother with magnetos. They'd be OK for a cold start, but start misfiring when they were hot – and you were far from home. If you stopped to have a look, the bike wouldn't restart; maddening! Worse still, reconditioning was expensive but not necessarily worthwhile – I was forever hearing people wheezing between kicks that: "It can't be the mag, it's just been done..."

I guess back then, new parts were unavailable and rewinding the coil was little help if the slip-ring insulation was breaking down. One thing we forget when we grumble about the 'ridiculous prices of old bikes' is that increasing value has made the manufacture of quality parts worthwhile and today if you get a mag rebuilt, it's likely to be better than new. That said, there are still rubbish slip-rings and brushes for sale on the internet, so buy from trusted sources – preferably people who build mags themselves and know what parts work.

The 3T magneto body was cracked where, I guess, someone's tried to lever it off with one of the nuts still attached – but I had an exact replacement and after fitting a reconditioned armature and slip ring, it sparks like a blacksmith's anvil.

Best news this month is that I was able to reassemble the engine, after a hold-up in locating replacements for the worn camshafts. Without a good one to compare, I couldn't even be sure how bad mine were, but my mate Dave found a good secondhand one; it revealed that although the exhaust was scrap, the inlet was reusable. They're both the same profile, so I assembled the bottom end and put it back in the frame.

Whoops! One of the 3T's unique features is an integral rocker box, good for oil retention and valve gear rigidity – but however I tried I couldn't squeeze it under the frame tube! Crazy thing was it came off that way – but looking at stripdown photos the pushrods had dropped out; with them fitted it's impossible. The manual confirmed it's an engine-out job, but even then it's a palaver and I'd imagine this is why all subsequent models had separate rocker boxes.

With that put right, things started happening quickly. Gearbox and primary drive, magneto fitted and timed, carb stripped and cleaned and we're now pretty close to firing the bike up. That's good; spring isn't far around the corner and there's things on my other bikes I'd like to get sorted. My accident last March meant that spring was both the start and end of my riding season; I've got catching up to do – and I want to be ready for spring when it comes. 🍷

HISTORY CORNER HEADLINE

The bike came with no log book, but several tax discs showing a Breconshire number, EU 9274. Thanks to Peter Bennett at the VMCC Library who confirmed the 3T's engine, gearbox and frame match a bike supplied to Trevor Brookes Motor Cycle Depot, Lion St, Brecon on July 6, 1948.

My £20 enquiry to the Powys Council Archive (archive@powys.gov.uk) also bore fruit, with a copy of the register showing the bike was supplied a fortnight later to one Haydn Howells at Blaen Brynich Farm in the Brecon Beacons. Google reveals that the farm still exists and now has a holiday flat; maybe the

bike will return one day for a weekend break. Although the register entry didn't include the all-important frame number, happily it was confirmed on a card showing that the last tax disc expired in Norfolk in December 1957 – that's the last disc from the holder and that's where I got the bike. So we now have the evidence needed for DVLA to reissue the original registration.

Meanwhile, a piece of rolled-up 1974 newspaper in the speedo bulb hole gives an idea when the last owner started work on the bike. You could say this restoration has been a long story!



'BEST NEWS THIS MONTH IS THAT I WAS ABLE TO REASSEMBLE THE ENGINE'



STEP-BY-STEP

Engine & magneto rebuild



1 Wear ridge shows the exhaust cam's badly worn. The inlet's not as bad – but how much is too much? Luckily, a mate supplied a good replacement – but he only had one.



2 The good cam gave me a benchmark for wear. Look how bad that worn exhaust lobe was – nearly 1mm! Luckily the worst lobe on the inlet cam was just 10 thou worn.



3 Smooth diamond sharpening stones are good for tidying up scored hardening and a quick polish did the job. The profiles are the same, so I used the best cam on the inlet.



4 I'd already sorted the crank, barrel and cylinder head, so I was now in a position to get the engine together double quick. At least that was the theory...



5 Breather valve needs care when you're assembling Triumph crankcases. Disc goes first, followed by the spring; ensure the pegs engage in the slots or it will jam up solid.



6 Check the cam turns freely before bolting up. When fitting the cam gears (use the proper tool), ensure Woodruff key does not shift, it'll lock the cam and damage the casing.



7 Paint helps to highlight timing marks – and not just for old geezers. Flaws in the metal can be misleading and the 'real' dot (by the keyway) can be obscured by points of the nut.



9 Old and new cam followers. You can see why the cam was worn and why Triumph dropped the case-hardened followers in 1951. I'm fitting later stellite-tipped ones, they're far superior.



8 Always check the gap on new rings; four thou per inch of bore is about right, any less and they need filing on the ends. Bigger gap on original ring (right) reveals wear.



10 To support the engine safely while tightening the nuts, I put it back in the frame. With the barrel off, you can lock the crank with supports below the pistons.



11 Triumph's plunger oil pump is pretty reliable if the plungers are in good condition. Scoring or corrosion pitting from long inactivity is the killer; this one looks OK.



12 Clean the ball valves under these plugs to stop oil flooding the engine. Plugs are tight; putting bolts in the fixing holes prevents crushing the body in the vice.



13 Copper head gaskets can be annealed and reused. When heating to red hot, you save a lot of time and gas by putting them on old gas-fire radiant bricks.



14 Hang on, how's this going to work? The head simply won't fit under the frame. Hmm, should have read the manual... complete engine assembly has to be done out of the frame!



15 Guide holes in the pushrod tubes position the inlet pushrods as you lower the head. This mark on the tube confirms the guides are still in the right place.



16 Rock the head enough to slip in the exhaust pushrods and tube; I marked this, as they're easily twisted. Poke a finger in the rocker box to check rods are located.



17 It's tricky, but I got it eventually. With no chance of using sealer on the tube washers, I poured oil down the tubes as a rough leak check. Seems OK – so far...



18 The head steady bolts also hit the frame, so don't tighten the engine bolts till they're fitted. Then you can shoogle the engine about and wriggle them in.



19 Magneto was in a bad way; the alloy body was cracked and checking from the HT pick up to earth, the HT coil is open circuit. Bakelite slip-ring is broken too.



20 Luckily I had a rewind coil in stock. I also had a good, identical spare body and a replacement slip-ring. Better get on with putting it together!



21 Check the HT wire is making contact with the brass slip-ring segment. Buy slip-rings from a proper mag builder, not cheap internet sources.



22 Magnet in the body makes it very difficult to fit new seal, paper cup and bearing outer but it's easier when clipped to this home-made nylon mandrel.



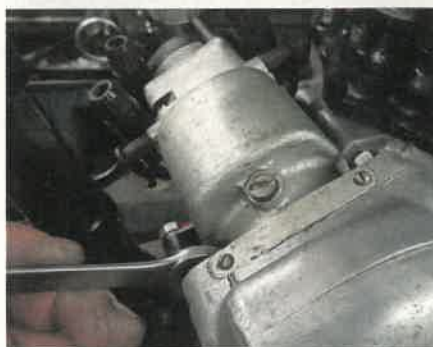
23 Armature shimming usually needs adjusting. An old bearing, ground loose, facilitates trial assembly. With shims set, real bearing can be pressed on.



24 Air gap screws give safe escape for the spark if a plug fails. Fit last – and remove first on a strip; failure to take them out is usually what breaks the slip-ring.



25 When replacing the points, there's a tiny key that fits into its keyway, rotate till you feel it engage. This times the points at the peak position for a spark.



26 Ignition system complete, just add plugs and leads. Insulation quality in this rebuilt armature means a better-than-new magneto that'll last indefinitely.

NEXT MONTH

BritSteel Pete tells me he's got the tank painted, Ferret's offered to come round and wire the bike up and if we can keep up the pace, with a bit of luck we might hear it running!

PROJECT TRIUMPH 3T

It's only part five of this resto, and Rick has cracked through it so far

It was all going so well...

The bike's sitting pretty, but the project has entered restoration purgatory. It's a place Rick's keen to leave behind

WORDS AND PHOTOGRAPHY: RICK PARKINGTON & TRIUMPH

Top Right: whilst putting together our ISDT issue, we came across these Triumph adverts from 1949 showing the ISDT Triumph Trophy model which Rick's 3T is based on

Below: Thanks to Steve from PPS Bodyshop (07516 662168) near Dover for filling all those dents, spraying and hand-lining the tank

What a rotten month I've had! I know that when a restoration seems to be going really well, it's just conjuring up a false sense of security – but even so, I took a hiding this time.

It should have been good – I got the tank back, painted, lined and looking great, but after that it all went sour. Making the front mudguard brackets was one fail after another, then I had to cut about and restructure the saddle because I wanted to fit a smaller size that reflects the 'trials' style – which of course, meant it didn't fit. At least I was looking forward to rebuilding the dynamo – I'd ordered a replacement armature and some other parts – but when the box arrived, no armature. It was out of stock, so I couldn't finish that, either.

But worse still, my shed has moved to the Bermuda Triangle. Bits keep disappearing. I haven't seen the special nuts that secure the rocker box covers for ages and last month, when I assembled the engine, I was short one head bolt. They're a different size to other models – so until I find it, I can't fire the bike up.

You've seen photos of my workshop – it's... 'well stocked' and if anything goes missing there's little point turning things upside-down searching. So instead, I think: 'Maybe

it fell down the back of the bench... did I mix it up with other head bolts in my Triumph spares box? What about the parts washer – perhaps it dropped down into the reservoir? None of these.

I've given up and will just have to wait till it turns up – I've found one a bit longer that I could adapt in an emergency, but then there's the tank badge screws; I taped them to the old badges... but I can't find them now, either. The final straw was trying to sort the oil pressure gauge at my workbench; the needle slipped from my fingers and completely vanished – I even checked my trouser turn-ups. A broken man, I decided to go for a complete gauge on eBay... only to be outbid in the last seconds.

At least the mudguard brackets fought me man-to-man. Always difficult to get right, this time was no exception. I finally got them to fit, gave a slight twist... and the mounting clip on the fork broke. Corrosion marks showed it was

hanging together by a hair; despite wire brushing, rubbing down and painting, it had waited till now to break, to change it meant a front end strip.

Angry? Hell yes! I fired in with the welder in situ, never mind the shiny paint!

I got away with that, the paint survived and the weld was easily touched in – but now I spotted a big gap at the top of the fork shrouds, like they'd been cut down. A slice of cycle inner tube would make a gaiter – but again called for a fork strip to fit, aaargh!! Thankfully, before grabbing the spanners I saw my mistake – unlike later Triumphs, the top yoke can be floated on the fork stem. Loosening pinch bolts and tapping the fork yoke further down closed the gap.

I don't know how many bikes I've restored over my life – between 50 and 100, I guess – but even with that experience and quasi-professional resources of parts and workshop, this kind of thing batters you down and it's no wonder how

often people place those 'unfinished project' adverts when frustration outweighs enthusiasm. The stages I've reported over the past four months have all represented big leaps covering a lot of ground. This month, spending hours working for no obvious gain has been purgatory.

Thankfully, experience tells me it's just temporary. The head bolt will turn up and I'll get my dynamo armature and get rolling again. Gutter though they've been, several horrible jobs are now done. My seat alterations were well worthwhile – the saddle looks spot on for the bike, and with the tank fitted I'm delighted how it's all turning out.

See? I'm feeling better already – but the Triumph is officially on hold for a month. Ferret kindly agreed to come and do the rewiring, but he's busy for now and I need to sort that dynamo and find the missing bits first.

So next month I'll be attending to an altogether different cloud on my horizon... who said life would be easy?! ☺

Above: Rick's happy with the way the bike looks, but niggling issues have delayed the start up





1 Dynamos produce AC current when the armature (wire coil) is rotated within a magnetic field from the field coil (an electromagnet, energised from the voltage regulator).



2 Two opposing carbon brushes pick up the current from a segmented copper commutator. AC current is automatically rectified into DC, ready to charge the battery.



3 The two field coil wires – one goes to the 'F' terminal, the other to earth. Test-connected to a battery, the magnet should take a firm hold of a spanner.



4 Of the two brushes, one goes to earth, the other to the 'D' terminal. Switching which brush OR which of the two field wires is earthed will reverse direction of rotation.



5 To test a dynamo, join the 'F' and 'D' wires together and to one battery lead, with the other lead to earth – ie the dynamo body, matching the earth polarity of the bike's system.



6 If all's well, the dynamo will spin or 'motor' – and in the direction of the arrow on the body/drive from the engine. If it goes the wrong way, swap 'D' and Earth brush connections.



7 If it doesn't motor, check for continuity between each commutator segment – but none from any segment to the steel armature parts, meaning it's shorting to earth.



8 High resistance or 'open circuit' between segments could mean a dry solder joint between a coil wire and a segment. Poke through insulation if necessary to check.



9 Coils can break here, or come loose in the segment, but being soldered in place they may be repairable. No obvious problems with my armature, though; I just need a new one.



10 Lightweight BSA Bantam-size repro saddle suits the trials styling, but no surprise it's too short and the nose bracket is too narrow for the frame lug.



11 And it comes with corkscrews for springs! This LF Harris-made repro set was well worth £50 – looks right, fits properly, good quality and comes with fitting studs.



12 First job was remove rear brackets; they reach too far forward. Pruning them back will move the saddle nose forward and closer to the frame lug.



13 Cut down and reshaped, I welded them back onto the saddle frame, keeping it level and true to the bike (although the level can be adjusted with spacers).



14 Next I cut off the original front brackets and welded new ones, angled forward and wider to fit the frame lug. Painted up and with the cover fitted back on, I think it looks made for the job.



15 Next: the speedo cable; the cloth binding has frayed, but it's an original and it's not broken, so I was loath to replace it. Maybe I could smarten it up...



16 Job done. I was able to remove one end without damaging it, enabling me to slide some heatshrink over the original frayed binding. Good as new; well, nearly.



17 Damp has ruined the face; I'll just have to paint it black. At least the figures aren't that relevant, you're looking for consistency more than an actual figure.



18 I saved the Smiths decal. Where's the needle? I dropped it and it disappeared. A 'Bermuda Triangle' workshop – I'm lucky I can still find the door!!



19 Triumph welded tabs to the mudguard for stays, but alloy blades need a bracket like this. Creating stepped bends in tough steel like this is a tricky job.



20 Plumber's solder is easily bent to the profile, then flattening the middle gives an idea of where the bends need to go. But it's not 100% accurate.



21 After the first bend, this block acts as an anvil and former to bend the strip back the other way. It has to be done before curving to fit the guard, so...



22 ... altering the shape of the original centre bridge needed another approach. Welding two bars close together created a 'corned beef tin key' to twist it.



23 It worked well but while fitting it, the fork mounting bracket broke! See that tiny silver line? Just enough to hold it together – until now, that is!



25 Then there was this – why the gap at the top of the fork shrouds? The bottom pinch bolt holes are oval to take a bit of movement, but not this much...



24 Thankfully, I was able to weld it without wrecking the paint or having to strip the complete front end. Once it was ground flat and repainted, the repair couldn't be seen.



26 Silly me; the top yoke can move up and down the adjuster nut. I just had to loosen all the pinch bolts and tap the forks a bit further through the yoke.

NEXT MONTH

I'll be taking a break from the 3T for a month to start the ball rolling on a new project that's already part restored – but then it ran aground with a very big problem...

PROJECT TRIUMPH

3T

Part six of Rick's ISDT-esque resto, and a first ride for 65 years looks close...

Classic Workshop

Wire we here? This man knows

Back on course with the Project Triumph this month – and after an illuminating visit from Ferret, Rick finds the job is very nearly finished

WORDS AND PHOTOGRAPHY: RICK PARKINGTON

Right: Electrical expert Ferret knows the difference between impedance and impudence

Nine out of ten carburation problems are actually ignition problems, they say. It's true, electrical trouble causes most breakdowns – and yet when it comes to restoration, we tend to economise on the wiring that makes it all work... at least that's Ferret's argument.

"People pay a fortune for paintwork, plating and original parts – things you can polish and talk about," says the Master of Electricker. "But they get a mate who used to fit TV aerials to wire it all up with Halfords trailer cable!"

It's clearly a sore point. I mean, Ferret's work isn't cheap – especially compared to buying a repro harness – but then that's like contrasting the cost of a pro engine rebuild against the price of a piston kit. Ferret doesn't just renew the harness, he rewires the whole bike because most problems occur in the bits that attach to the main harness. As he says: "Why waste new wire joining up a load of problems? Trouble always finds a weak point – you have to eliminate them all." And after literally hundreds of rewires, Ferret knows where to look with old – and new repro – electrics.

The last time we saw him, he wired Lewis Perry's 1950s

Right: Later on, Lucas changed the letter order to FAED on the regulator box... wonder why?



PROJECT TRIUMPH 3T

'AS FERRET SAYS: 'WHY WASTE NEW WIRE JOINING UP A LOAD OF PROBLEMS?''

Excelsior for the 21st century – a one-off redesign that was well beyond my ability. I could have tackled the 3T myself, but I wanted to see what Ferret's skills could bring to a simpler job like this.

A six-volt Lucas dynamo is as simple as it gets – certainly easier than the turbo/injection GSX-R1000/Kawasaki ZX-7R special he's working on for another customer. But this 36-watt system probably started the 'Joe Lucas, Prince of Darkness' jokes – compounded by the Field, Ammeter, Dynamo and Earth connections being presciently stamped as 'FAED' on the regulator box.

"People dismiss six-volt systems unfairly," says Ferret. "The problem is that they're more vulnerable to bad connections than 12v. People compensate with bigger bulbs, making it worse – a 40w headlight takes more than the dynamo produces; drop to 25w and you'll get a bright white light, with watts to spare for the rest."

Ferret adapts features from Honda's peerless '70s systems – adding an earth circuit and fitting concealed block connectors

– while retaining the original wire colours to match the factory diagram. It makes the perfect upgrade – improvement without obvious change.

Repro harnesses generally use post-1960 Lucas colours, but Ferret wired the 3T correct for 1948. He stocks all colours – if they're no longer available, he has them made. He also stocks all terminals and connectors and carries a good range of switches, meaning there's no need for hold-ups or compromises – but don't ask to buy these things, they're purely for his jobs. As he says: "You wouldn't walk into a chippy asking for a cod fillet and some spuds!"

What especially impresses me is Ferret's thoroughness. He gives a year guarantee and while he admits he can make mistakes like anybody, it won't be due to short cuts. Every part we fitted, new or old, was stripped, cleaned, sorted and rewired first. These were fitted before making the actual harness – which took maybe a third of the job time, illustrating the difference between rewiring and just fitting a harness.

Ferret prices jobs by time taken, because no two are the

same. The better you prepare the bike, the more you save – lights and switches should all be where you want them and ideally the engine ready to run to check charging.

Part of the 3T's simplicity stems from magneto ignition, whose only contribution to the loom is a wire to the kill button, so I had the engine running before Ferret's visit. It fired up third kick and since then it's been first time – one advantage of a softly-tuned engine, but it still sounds pretty beefy for a 350.

I bought a new Lucas dynamo armature from specialist Paul Dunn and, just to round things off nicely, while sat on a stool in the shed doorway having my hair cut, I spotted the lost oil gauge needle on the concrete – at the opposite end of the shed from where I'd lost it!

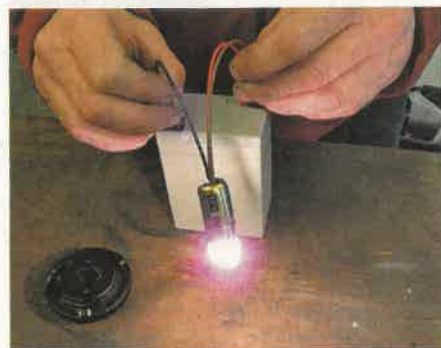
So that is almost the end of the story. I still need to sort out a proper exhaust system and maybe take it for a ride for the first time since 1957. See you next month! ◊

• Thanks to Ferrets Custom Electricker, 07765 832420

Above, inset: Rick put a tin of bits next to the missing oil gauge needle (ringed) so he didn't lose it again while he went for the camera!



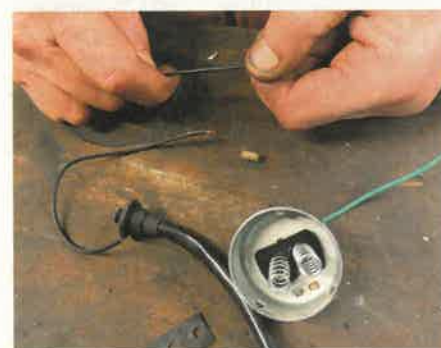
1 What can possibly go wrong here? Thin wire the wrong colour, nasty connectors, a 12v bulb in a pre-war 6v type tail-light and ring terminal just pushed under the socket for earth.



2 Properly soldering on the earth, fitting wires of the correct colour and rating and using quality bulb terminals/connectors should mean this light stays on forever.



4 Meanwhile, Ferret was looking at the light switch. It's a pre-war design and replacements are hard to find. It came in bits and some turned out to be missing.



7 Now the repro headlight socket. With the strength (and hair) of Samson, Ferret pulled the crimped bulb terminals off the (wrong colour) cables with his fingers.



3 I'd bought a dip switch but it's for a 7/8in bar. Although it fitted the Triumph's inch bars, it left a lot of ugly screwthread exposed. A bit of black fuel pipe makes it look better.



5 The dash panel fitting prevents using a later switch but Ferret salvaged parts from a scrap switch to sort it. It's a bit of a hybrid beneath, but it's not visible and it works.



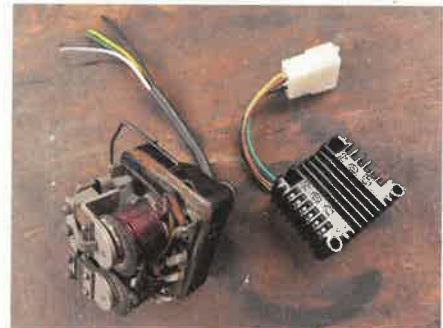
8 Socket earth wire is soldered to the terminal – good. But the terminal is just crimped onto the socket – not good. How long before corrosion gets in there?



6 Next on the slab was the DC40 panel light. Ferret had a repro item, but the original was salvageable after stripping down, cleaning and rewiring. Tank panel done!



9 Completing the socket-problem hat-trick, Ferret found these pegs weren't properly bent to secure it in the unit. Easily bent with a screwdriver – so why isn't it done already?



10 Ferret prefers the solid state regulator (right); it'd fit in the original box. But I've tested the mechanical regulator, so I'm keeping it – at my own risk!



13 ... perfect, Ferret says you need 5amp minimum for a dynamo. Now why do you think he's splodged white paint on my frame under the hole in the tank panel recess?



15 Ferret uses 2mm cable for main harness wires, soldered into connectors. He uses a professional crimping tool for minor circuits.



16 Clip on these stop switches doesn't fit any known brake rod without wrapping something round it! Nyloc nut avoids overtightening and pinching the switch.



11 Original box and dynamo connectors are 'split bullets' with a bit of inner pushed through and folded over. Ferret solders these for a more reliable connection.



12 Lucas rubber battery replacement gets a fuse and block connector. Connecting the two 6v gel batteries in series gives 12v 4.5ah; in parallel you get 6v 9ah...



14 To make sure the wires from the front and the back of the bike meet in the right place to go up to the tank panel – the sort of thing experience teaches you!



17 As well as lighting the gauges, the panel light's bayonet fitting and long lead means it can be removed and used as an inspection light for roadside problems.



18 As Ferret says, the problem with 6v systems is they're more vulnerable to bad connections. With correct bulbs, earths and wiring, 6v will see you home.



19 Paul Dunn (01782 856839) supplied a new dynamo armature. Slight modification is needed for Triumph fitting, but it's a simple job in a lathe.



20 Paul also supplied a new oil seal for the drive bearing. Bolted to the timing chest, it needs to be in good condition to keep engine oil out of the dynamo.



21 We're negative earth, so I connect F and D terminal wires to battery positive, earth the body to battery negative and the dynamo 'motors'. A good sign.



22 If the dynamo spins the wrong way for the drive, swap these field wires over so the one going to the F terminal becomes earth and vice versa. That will reverse direction.



23 Always replace worn pinion keys. A charging dynamo is heavy to turn; these take the load. If they're not a good fit, the shaft keyway will suffer.



24 You want virtually no resistance across an ammeter's terminals. In an emergency, putting all the wires onto one terminal will get you home.



25 Connect a battery and bulb across the ammeter to see if it's recording charge and discharge. Reverse connections to check needle swings the other way.

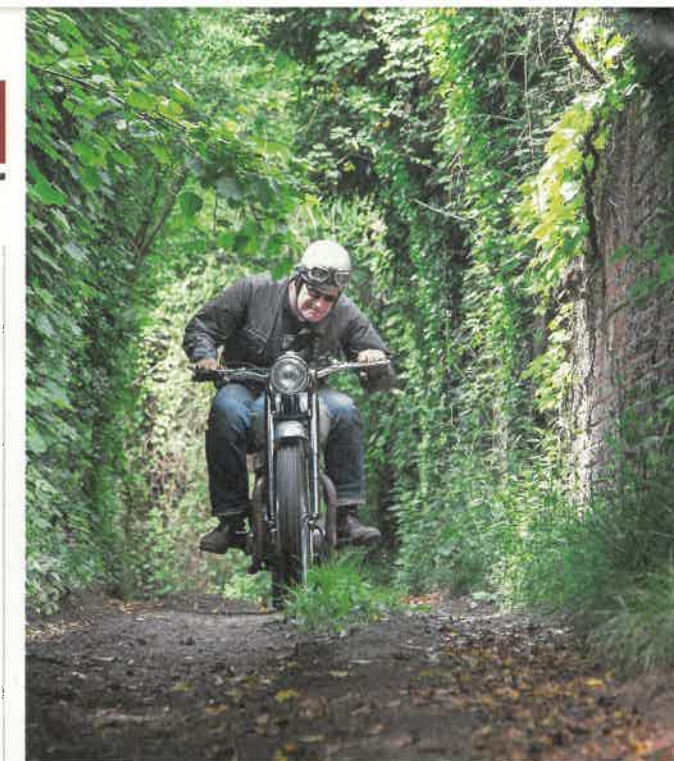


26 Put it all together and this is what we got. I'm really delighted with how this Triumph has turned out. Can't wait to get it off the bench and on the road...

NEXT MONTH
We're nearly there! Next month I'm aiming to get the exhaust sorted. I'd like a high-level one, but nobody makes them – until now. Then I'll take the 3T for a ride. See you then...

PROJECT TRIUMPH 3T

Rick's ISDT-esque resto, part seven. Looks like it's flippin' well finished...



It's no trials bike, but the 3T made a decent fist of it on this byway

Finishing in style

The Project 3T is finally off the workbench after another month of struggle. Rick's ridden it on the road and off it to test for its natural environment

WORDS: RICK PARKINGTON PHOTOGRAPHY: GARY MARGERUM & RICK PARKINGTON

Above: The on-road characteristics of the 350cc hard-tail Triumph have given Rick a surprise – a pleasant one, at that

Iknew it was coming; as soon as the June issue of *CB* hit the shelves, a sarky text message from Ferret arrived: "So will Sir be requiring the electronic voltage regulator conversion after all?" Last month, I fessed up that after testing the 3T's original voltage regulator and insisting Ferret fit it, it turned out not to work. But digesting a slice of humble pie wasn't my only problem in bringing the project 3T to a close – it also had an oil leak. I know, it's a Triumph, but this wasn't a discreet drip, it was an unacceptable puddle coming from the sump plate. It should be an easy fix, but

I really struggled – the whole sorry story is on page 94, but suffice to say that if, after doing everything possible, the fault persists, odds are you're fixing the wrong bit.

Then, having booked Ferret to fit an electronic regulator, I realised what I'd done wrong with the Lucas one and he arrived just in time for me to show him everything working perfectly after all! But we decided to go ahead with the electronic conversion, because I'll be selling the bike and solid state units are probably more dependable.

Originally I planned to get a high-level 'siamese' exhaust made up, but in the meantime I tried a 500cc set in case it

Clockwise from top left: Soft, 349cc engine and small carb make for an easy life; replica five-inch headlight suits the styling perfectly; ammeter shows a charge, oil gauge shows pressure – no worries there; the 3T taking a breather after a blast down local country lanes



PROJECT TRIUMPH 3T



1 On bikes like the 3T, the voltage regulator is in plain sight, so Ferret removes the works from the old box and replaces them with an electronic unit, no-one will ever know...



2 But I didn't want mine stripped, having fixed it! I'd carefully checked voltages for regulator function, but missed the obvious – the regulator points were badly corroded.



3 While cut out points (between dynamo and battery) are open 'dead engine' to prevent drain, only closing when the engine's started to supply charge to the battery...



4 ...regulator points are closed 'dead engine', joining F and D terminals to initiate charging while the battery's out of circuit. As charging exceeds 8v they open again...



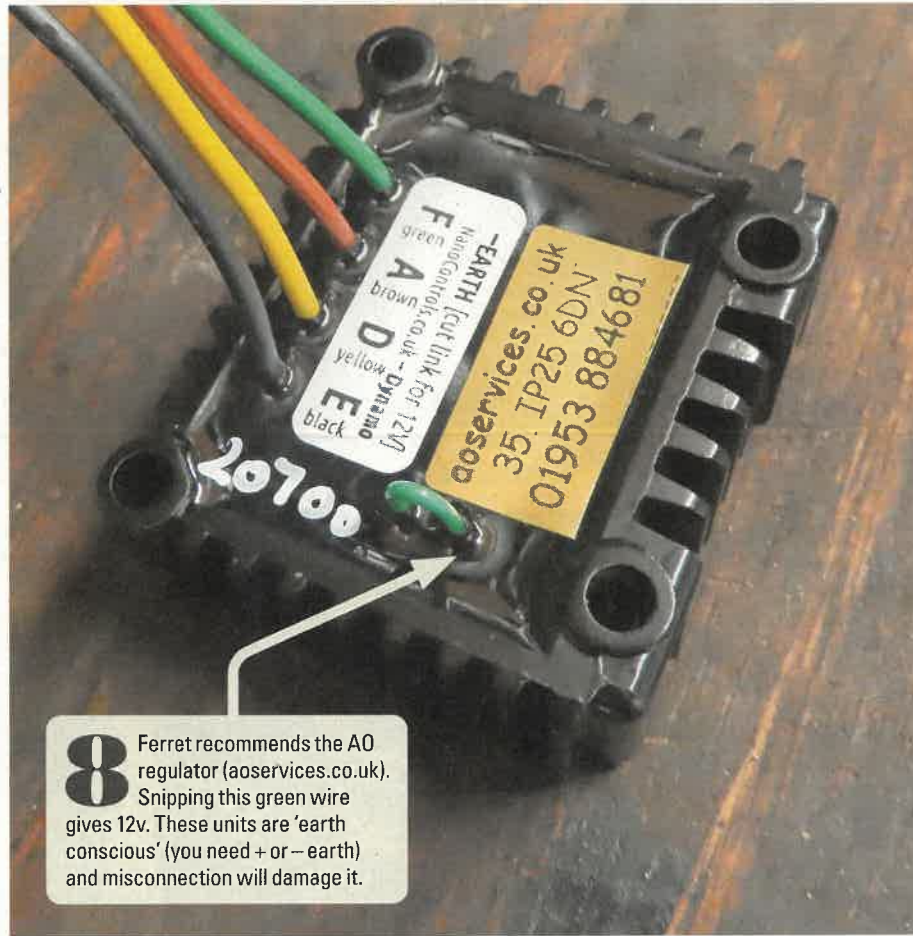
5 ... introducing a 35ohm (says my meter) resistance that reduces the charge: voltage drops, points open again, charge goes up, they close, etc. Primitive, but it works.



6 The corroded points prevented the F and D wires connecting so no charge could be created. With cleaned points, I got zero resistance between terminals F & D; that's better!



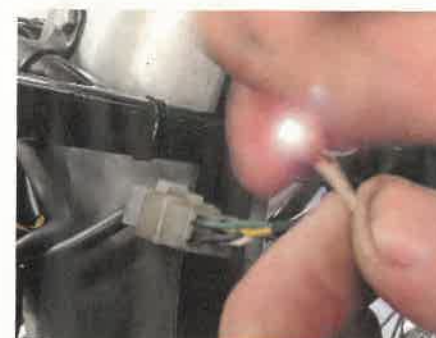
7 But we still decided to fit electronic – not concealed in the box, but bolted neatly behind the battery. A rubber pad prevents the exposed fittings digging into the battery case.



8 Ferret recommends the A0 regulator (aoservices.co.uk). Snipping this green wire gives 12v. These units are 'earth conscious' (you need + or - earth) and misconnection will damage it.



9 Ferret rewired the connections to take a block connector: "You can't see it and it makes it impossible to get the connections wrong if you have to take it off," he says. Fair point.



10 To polarise the dynamo to match the bike's system, Ferret uses a ready-wired block connector tool; or 'flash' a live battery wire against the dynamo F terminal.



11 Another Ferret tip: it's easy to scratch the paint when you lift a tank off past the handlebar clamps; this patent tool prevents damage in a most effective way



12 Next job was the exhausts. I'd been given a unit 500 high-level to try, would it fit? The 3T port stubs were too small – but made-up sleeves dealt with that.



13 But it was still too tight in the frame. I think the 3T ports are closer together, plus it doesn't clear the battery and to be honest I think it looks a mess. Back to the stock pipes for now.



14 Next, the fuel tap, it's a copy of the original reserve type and very economical – fuel just drips through! A drill fixed that, but there's loose rust in the tank.



15 Rather than mop it up with tank sealer, I let it collect in the tank balance pipe/carb and drain it out. Dirt collects in these low points and clears easily.



16 I left sealing the primary chaincase until after my ride. On British bikes, clutch spring tension is adjustable so it's worth checking before final assembly.



17 Tight primary chain's due to torque pulling the gearbox back. Overtighten, then back off to take up adjuster backlash. Run the front chain a bit slack.



18 Be wary of adjusting a loose rear chain; it may be (as here) because the front's pulled tight. Adjusting one chain affects the other so always check both.

SUMP LEAKS? DON'T TALK TO ME ABOUT SUMP LEAKS!



19 Triumph sump plates are steel pressings; overtightening the nuts causes distortion, forming domes around the holes, stopping the plate sitting flat.



20 But I have this special tool – a punch I made on the lathe. It locates in the hole, letting you press the domes out, either in the vice or by using a hammer.



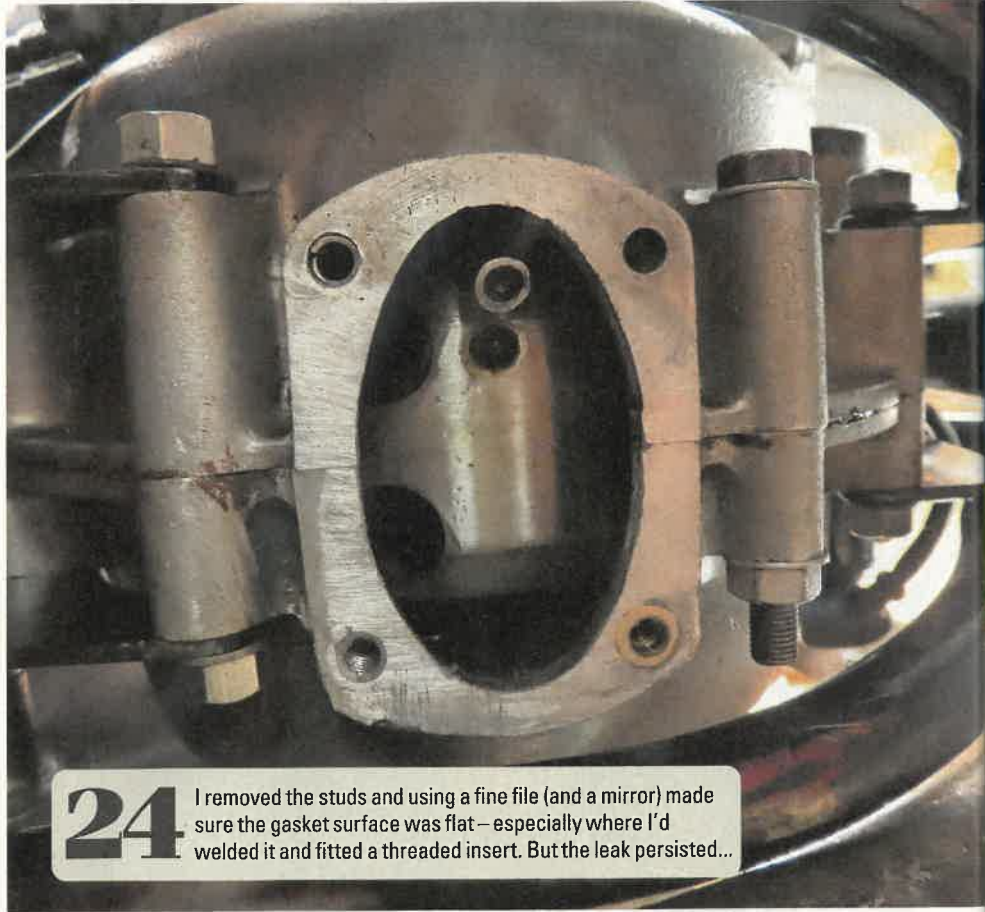
21 Uh-oh; the drips started again. Sticking one gasket to the plate and the other to the crankcase still leaves the filter easily removed for cleaning.



22 Still leaking. I unsoldered a spare filter's damaged gauze so I could look for distortion with feeler blades. Looks like a 15 thou gap at the leaky end...



23 But bolted to the engine, 'Plastiguage' (thin plastic wire that reveals clearance) showed the gap was minimal when properly clamped up.



24 I removed the studs and using a fine file (and a mirror) made sure the gasket surface was flat – especially where I'd welded it and fitted a threaded insert. But the leak persisted...



25 Using lathe tools as 'straight edges', the plate was definitely not flat; so I pressed it out. It still leaked! Right, what am I missing here!?



26 Turns out my weld was porous; it allowed oil pooling in the stud hole to seep through the repair. Using RTV from inside to block the hole fixed it. Doh!

NEXT MONTH

With summer events underway, before getting buried in the next job Rick's hoping to spend some time sorting one of the bikes he'll be using this year – or will something else crop up? Find out next month...

Rekindled affair

After completing his CB Project 3T last year and giving it a brief road test, the 1948 350 went into storage, but Rick's back riding and fettling his Triumph



The 3T was supposed to be a 'restore it and resell it' job, but Rick's finding it hard to resist the alluring attractions of the lightweight 350...



Rick's been riding the Project 3T that he finished last year, to iron out any minor problems before getting round to selling it. Trouble is, he's starting to like it too much!

WHEN YOU COMPLETE a restoration, your expectations are on overdrive - but here in the real world, the damned thing won't start, a pool of oil develops underneath or wisps of smoke emerge from under the tank. There's bound to be something that's not quite right - and after all that time and money it can be a dispiriting start.

Luckily for me, then, that the strain on my personal time/space continuum means that as soon as one project's off the bench, another becomes the priority, pushing its predecessor aside for later. That's why last year, after a brief road test, the CB Project 3T went into storage.

Now that it's back out for spring rides, I'm far enough away from having finished the build to treat it as a fresh job - and I'm actually enjoying the fettling that progressively turns a restoration back into a viable motorcycle.

One major reason for buying the 3T was that, while I've long hankered for a rigid Triumph twin, I have no more room, the last thing I want is another bike I'd be tempted to keep - but a 350's too small to interest me.

But isn't that the same foolish thinking that creates a market for motorcycles with massive two-litre engines? After a ride out with my mate on his fairly new 1750cc Harley 'Slim' factory bobber, I think it is.

Physically, the 350 is lighter - but no smaller - than a five hundred and the lower displacement is only really evident on faster roads and hills. On the flat, it feels like the 3T could pull a higher gear - it feels very busy at 60mph; but as I've grown used to it I realise it's quite a revvy motor; open up more and it gobbles up another 10mph without feeling stressed. When I rebuild the engine, a rebore wasn't needed - just new rings, so it doesn't need running in - but equally I'd like to do a few miles before opening it up fully. On hills, third is better than top, maybe dropping to second near the crest to maintain pace - but, on B-roads at least, that won't hold you up much.

As for my mate's Harley, it's alright - probably double the weight of the Triumph and four times the bhp. Admittedly, it's not my kind of bike, but am I being unfair to ask whether it's actually any more practical as a motorcycle? It wouldn't be my choice for touring Europe or daily commuting round the M25 - and bear in mind the Harley is a modern design.

The worst the 3T was expected to handle would have been a long slog overtaking 30mph lorries up the Great North Road. And if the H-D is mainly a bike for Sunday riders looking for scenic rambles, then I have to say the 350 soon left it behind on the B-roads round here. Maybe small really is beautiful!

I've now covered about 150 miles on the 3T. Remember I had trouble starting it last time? Well, the rebuilt mag puts out a spark long enough to frighten a church steeple, but when I looked closer at the plugs they're old ones, discarded from my Excelsior two-stroke donkey's years ago. Since fitting a new set, it's a first-kicker.

Back home after riding with my mate, I chuckled about losing the Harley and set about necessary adjustments to make the bike that bit better. Dammit, I'm getting seduced already... this won't do at all!



A FEW FINISHING TOUCHES



Clutch lever bracket

With the clamp fully closed, the pattern clutch lever still moved round the 'bar. Luckily, the brass bracket is easily faced down on the sander to give more free space to clamp up tight.



Brake spring

Not sure if this brake spring that pegs into a hole in the arm is original or not. Either way, it keeps jumping out, so I've swapped it for a later one that hooks securely round the arm instead.



Loose screws

The 350's not a shaker, but rigid frames take a battering over bumps. I can't tighten the screws harder or they'll deform the mudguard. Nyloc nuts (or Loctite) are the answer to that problem.



Gear change

Not an issue with the 3T, but if the gearchange gets tough on a separate-gearbox bike, check the front chain - it can self-tighten, stressing gearbox bearings. Best to run it slightly loose.



Fuel tap

Previous trouble with tank rust blocking the fuel tap hasn't recurred. There's a tiny bit in the 'sediment filter' (tank balance pipe) but nothing in the carb, so looks like that's sorted.