



# MEWSLETTER 109

*November-December 2012*

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*O.K., the bare facts - Yes, this is a Kitten chassis. Yes this is a recent picture (July 2012). Yes the car has been in everyday service for over 30 years. Yes it has covered a truly epic number of miles – around half a million, and no it is not in Northern Ireland! (Eddie Kelly is not the only man to have recently done this kind of thing!) It is John Pearce's "Jaffa" minus body and running gear, during its recent body off chassis restoration. I'm just wondering if orange paint will take to Zinc?!?*

*The Register caters for all the under 1 litre Reliant 4-wheeled vehicles plus all of their derivatives: Foxes, Rebels, Tempests, Salamanders, Ciphers, Jimps, Asquiths, Vantiques and all other specials including the Liege.....*



## **The Reliant Kitten Register**

Rebel parts stock held by: - Adrian Hanwell Tel: **01277 227708**

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Kitten alternative parts list: **\*\*Situation vacant\*\***. Contact the Editor to volunteer.

Fox alternative parts list contact: Duncan Bradford, 6 Clabon First Close, Norwich, NR3 4HE.

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Our Mutual Aid Spares scheme is run for us by Phil Hallam 4, Greenhead Holding, Stevenston, Ayrshire KA20 4JX Tel : **01294 462089**

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Tel: **01939 261121** E-mail [tempest@eleventowns.com](mailto:tempest@eleventowns.com)

Mewsletter pictures – should be sent to John Pearce at Toddbury Farm, Slapton Road, Lt Billington, Beds. LU7 9BP Tel: **01525 758171**. E-mail [john@atodini.co.uk](mailto:john@atodini.co.uk)

The Register is a member of the FBHVC, which monitors UK & EU legislation and lobbies on our behalf to protect our freedom to use vehicles of all ages on the roads. Readers are invited to show their own support of this worthy cause by becoming members in their own right. Contact the editor for details.

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Web page: <http://www.kitreg.org.uk> or have a look at <http://www.reliantkitten.co.uk>

# Dinky Cars

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# I N D E X

Issue 109

Page 3	Index.
Page 4	Editorial.
Page 5	Rebel Update by Mark Jones.
Pages 6 – 16	A Kitten rebuild story, by John Pearce.
Pages 17 – 19	A Kitten Virgin by Neale Shepherd.
Pages 20 – 22	20 Years with a Tempest, by Les Richmond.
Page 23	A special sporty Kitten.
Pages 24 & 25	Liege Page, with an A7 twist, by Bob Riches.
Pages 18 - 21	Getting Technical – Rebel axles by Mark Jones.
Pages 26 - 29	Almost technical – by John Pearce.
Page 30	Words of Wit – the satnav story from the net.
Page 21	Federation News - insurance and salvage.
Page 32	Epilogue.
Pages 33 & 34	Adverts.

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Well, the good news is that I have never had so much (and such good quality) material! It is now the first of September, this edition is already full, all but one page, and I have half of the next one organised!

Mainly thanks to John Pearce this time, (Maira loves your articles John, she finds them both interesting, even though she has no interest in technical stuff, and there is very little for her to correct! ) and Jim Lambert. My apologies for holding the details of your Kitten pick-up back till next time.

I now have a bit of a challenge! I had stuck a couple of email's text in here to remind me about some matters we ought to air, but, this side of yet another extra A4 sheet – No, I'm not! So I'll need to summarise:-

I must in future leave room for a reciprocal advert with RUM Car News, sorry guys, next time, I promise!!!!!!!!!!

Simon Fitch was saying, whilst giving me an update on Marmaduke's progress, he has managed to fit a pair of MGB seats, details are promised. (That means yes please Simon!)

Simon was asking me to confirm that it is the MPK1 brake adjusters kit that can be used on the Kitten, he managed to track down a set of them on e-bay (amazingly only £5) As the Register doesn't have any in stock he has kindly offered to keep an eye out for more.

Now, I also have a note about rear door hinges and matched paint, was it you who was asking about them Simon? (If it was anyone else, or indeed if you have an answer to the questions, please get in touch!! Ed.)

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*Roger Brown, who has been doing a lot of globetrotting recently, was good enough to send me the following regarding his progress with the **Tempest Register**, thank you Roger. (See the bottom of page 7 too!)*

The Tempest Register has made some progress on two fronts:

We have a new database set up.

John Box has kindly provided chassis details of all the cars that he and Ian Foster produced.

I also have offers of information from Dave Smith and Joe Mason plus part details of cars owned by Carl Pickles and Andrew Curson.

The question then is:- **“What about the rest of you?”**

See the Form View (separate sheet, Ed) of what a record contains for the information I would like (plus a photo if possible).

Regards, Roger 28/10/2012

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## Rebel Round up

Hi Brian,

3/9/12

Hope all is well. Just a quick update pic taken heading home from the Tamworth heritage display yesterday. The little Rebel is now wearing Triumph Spitfire front disc brakes & the engine has been treated to an electric rad fan. A set of carpets has been acquired and the interior is the next on the list, soundproofing etc.

All the best, Mark (Jones) - No. 936 from Ryton XI Towns



Hi Brian,

4/9/12

The disc brakes are much more predictable than the old drums, especially on the sometimes flooded narrow country lanes around here & don't suffer from ovality so feel much smoother. I think a slightly smaller bore master cylinder would help though, as they are slightly on the heavy side compared to modern brakes, but no heavier than my old Spitfire I had in my 20's as far as I recall. All the brakes are new now apart from the master cylinder & I was thinking of fitting a remote reservoir type when I get

around to it so will try a smaller bore one when I do this. I have been neglecting the Scimitar prototype so must do some work on that soon, before the winter comes & its too cold to paint the chassis etc. Tamworth was most enjoyable, unfortunately a bit tucked out of the way to get much public interest though. I don't know if you were aware but Tom Williams Way in the picture is a small housing estate built at Two Gates over what was the old Reliant works. There is nothing to say it was there, such a shame. Off that road is Regal, Robin & Fox Close, that's their only nod to Reliant.

Regards, Mark (Jones) - No. 936 from Ryton XI Towns

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## ***Purely Kittens now!***

### **A Minor Repair - May till August 2012**

Well, that's how it started..... I had the wee car up on stands carrying out the monthly lubrication and check routine. I had checked wheel bearings, adjusted brakes, greased the front ball joints and decided that it was high time I put a squirt of grease into the prop shaft nipples as well. As I gripped the central cross member to pull myself under to get to the rear prop universal there was a crunching feeling as my finger went through the tube – oh dear, time for some welding.

It was always going to happen one day, in fact I had been looking (not very hard) for a chassis to refurbish in anticipation of this very event, but I was no way ready for doing it yet. Time for some planning.



*The hole that started it all!*





I decided that I would not be refitting the tow bar – I only rarely used it anyway.

Removal consisted of detaching all earths, water, brake and fuel pipes and cables under the bonnet; I removed the distributor and carb too to avoid damage. I removed the seats and seat belts, disconnected the steering column link, removed the grille and surround plus the radiator and fan assembly. Beneath the car I disconnected the clutch cable, the speedo cable plus the reversing light switch and the handbrake cable ends. In fact I removed the cable completely so it would not get in the way..... With all this clear there are just 16 bolts holding the body on. There are two ¼” UNF nuts and bolts under the front, one accessible from inside the air intake, the other from under the offside wheel arch. Then the two captive ¼” UNF “A” post bolts (that both sheared off) followed by four 5/16” nuts and bolts beneath the “B” pillar holding the roll bar to the end of the chassis outriggers. The remaining eight ¼” UNF captive bolts are through the floor in to the chassis rails, five in the boot, two in the offside foot well and one in the nearside. A couple of these had to have the heads drilled off because they were rusted in solid or the heads too corroded to get a six point socket on, a legacy I suspect of years of water leaks from the windscreen and rear hatch rubbers.





*The trusty air drill soon shifted it!*



*This one too!*

Time now to purchase a few beers – not for me, I'm not much of a drinker, but for "rent a mob" a motley collection of old biker mates to lift the shell off the chassis. Having re-christened the Ignis, "Pignis", this was duly completed. It was time to take stock of what needed to be repaired.....



The body removed. Yes that is a vintage Fordson tractor in the background and the lake is normal when it rains as the fields drain straight through the barn – hence the shell is on pallets.....

A first look over the chassis was encouraging. Apart from the

aforementioned hole in the cross member, a couple of the outriggers were a little frilly but that appeared all, so I decided to strip the chassis and have it shot blasted, to hopefully expose any further corrosion. The stripping went quite well. Remove steering rack, exhaust, engine, gearbox, prop shaft and rear axle, fuel tank and all fuel and brake pipes. The rear suspension came apart easily as did most of the front, with the exception of the lower wishbone bolts which had corroded solidly to their centres. Despite copious application of penetrating fluid (I found 3 in 1 to be the best), PH Crackit and a propane torch they refused to budge. Eventually I was forced to jack them through (using progressive wedges behind the bolt end and the chassis, winding the nut against the wedges and forcing the centres through the front chassis hole, which, of course distorted it somewhat. They came off in the end though. Repairing the “belled” out chassis holes proved simple. I just used a pair of the thick seat spacers and a high tensile 5/16” UNF nut and bolt to jack them back to where they originally were whilst heating with a propane torch. The resulting repair is undetectable!

Now I sent the chassis off to the shot blasters (along with the front suspension wishbones plus numerous spare ones, tie-bars etc.) and odd other metalwork. £70 well spent. Smaller brackets and such I used my bead blast cabinet to clean up. As expected, a couple more holes appeared but nothing terrible. I did find a crack in one of the lower wishbones so this was discarded in favour of one of the spares. All the suspension components were then primed and painted..... I also dismantled the rear leaf springs; wire brushed, primed and painted them, then reassembled them with new bushes, quite a satisfying job to do!



*The original hole had gotten somewhat larger since blasting (as expected)*



Other examples of where “tin worm” had struck, these areas were duly repaired.



All the above were welded, the cross member being tubed internally, then plated externally and a new outrigger fabricated and welded to the offside. All the captive inserts in the chassis were replaced with welded in nuts and “keeper” bolts inserted. The chassis was then sent off for galvanising. I had arranged this through Balguards, a local metal fabricators who agreed that I would only have to pay for “my” proportion of their weekly galvanising order. They specialise in fire escapes and fencing so have a lot of galvanising done. I know the galvanisers quite well (they’re in Corby and I’ve had work done there before) and had given them the “heads up” that it was my chassis. In the event they did a superb job, very thick galvo, no distortion and no extra holes drilled. The best bit was “my” proportion of the galvanising load – Balguards charged me just £20!!!!!!



First job was to remove the “keeper” bolts from the captive threads and clean each out with a tap, followed by drilling through all the holes to clear out the zinc. Then I started reassembly, using all new nuts, bolts and Kitten Register supplied poly bushes. Being on a budget, some components were not renewed, the (fairly recent) Kitten Register “Gaz” front shocks were dismantled, inspected, cleaned and reassembled and the also fairly recent Monroes on the rear simply cleaned – they came up like new! Likewise the rack was simply treated to a new pair of gaiters and cleaned. I do have a brand new, (boxed) rack in stock but could find nothing wrong with the original. The new one will stay in stock for another day! The front roll bar links, only replaced late in 2011, were found to have split rubbers and I could not source replacements, so I dug out a serviceable pair of original links from my shed, cleaned up and used these (with new nuts and bushes). I also found a little lift in one of the lower ball joints so replaced this also, with a serviceable second hand item. I did fit all new rubbers to the upper and lower ball joints – these were easily sourced and inexpensive (only £4.99 set inc p+p), from an e-bay supplier. The track rod end rubbers were fine so not replaced.



The rear axle was wire brushed, reinforcing washers welded to the handbrake cable stops, then painted in Hammerite.

## Modifications

It was at this point that some of the modifications were carried out. I had already decided to renew the entire braking system, apart from the brake back plates (which were only recently(ish) replaced. I had purchased new wheel cylinders, master cylinder (actually an MGB 1962-74 single row one) and ordered new drums from EBC. Then they returned my money apologising that the drums they list were not suitable for Kittens – and I couldn't find any other source. Do the DM019's fit Kittens? I guess I'll never know. I therefore decided to go with Fox drums instead as I had a couple in stock, and Joe Mason reckoned he could find me a couple more, plus some Fox hubs (which he did – thanks!).

I had also decided to renew the exhaust system which, although stainless, had been on there for 20 years so, whilst still sound, was looking a bit second hand. I was also going to fit one of Joe's 4-branch manifolds.....

I started at the front end, fitting the Fox hubs with new bearings. The brake back plates were simply cleaned, painted and the adjusters freed and copper slipped. New wheel cylinders, shoes and springs too. The Fox drums were then fitted. At the rear I found that Kitten rear hubs are identical to Fox ones so I kept the originals, just fitted the new wheel cylinders, new adjuster screws and tappets (again copiously copper slipped), springs, shoes and Fox drums. I found that I also needed to fit 10mm longer studs all round to accommodate the spacer built in to the Fox drums. The thickness of the alloys added to the spacer cast in to the drums left the wheel nuts on just too little thread. The Jaffa, by the way, uses exactly the same drums front and rear.....

The next job was the replacement of all the brake pipes. I used Kunifer for the pipes with Goodridge braided flexible hoses. Another very therapeutic job to do – I really enjoy this type of task..... Just for the record, a single line braked Kitten needs 15 male ends and 5 female ones...





I re-used the original nylon fuel pipe, just fitted a new filter at the tank end. This stuff is amazing, appears completely unleaded proof and all but indestructible.....

The engine and gearbox were roughly cleaned and refitted and the new Joe Mason 4-branch manifold installed – it was found necessary to trim the rear engine plate slightly for clearance, but a simple job.... It was obvious that the alternator was far too close to the front pipe of the 4-branch, about half an inch of clearance, so I decided to replace the alternator with a shorter one, as the factory did on late Robins when they fitted the 4-branches. The original alternator is a Lucas LRA100 (current part number). The replacement I needed was an LRA 602, under £50 from a local auto electrical supplier. This has about 2 inches of clearance but nonetheless I have made up and fitted a heat shield, of thick alloy plate, clipped to the pipe with “terry” clips....





The rest of the new exhaust system was sourced from Steve at Dinky Cars. This fitted easily and gives ample clearance from the rear shock absorbers – also mated up to the 4-branch (after cutting) very well. At £180 not a bad buy.



*Exhaust heat shield – a simple piece of thick alloy, 2" x 7" attached to the pipe with 1" terry clips.*



therefore radiused the face between the inlet ports to improve flow, though I've seen no mention of this on any inlet manifold modification references.



I found that numbers 1 and 4 exhaust valve guides were very worn to the extent that if you lifted the valve face level with the head face the valve would move as much as 0.078" back and forward. The valve stems themselves only had about 0.001" wear. Are these guides normally so prone to wear, and if so is it caused by valve gear flexing? I ordered a new set of cast iron guides from Michaels of Selby, and after replacing the two badly worn ones, went no further as the new ones still has 0.010 -0.011" slop in them, more than the other worn ones still in the head!!! I'll send the other 6 back. Why aren't phosphor bronze ones supplied as aftermarket units to improve valve cooling?

I'd bought a gasket set from e-bay that usefully included both crank seals, but failed to have the oil pump block to crankcase gasket, the fuel pump to block gasket, the oil pressure relieve valve housing "O" ring or the aluminium seal for the housing to block, nor did it have the sealing washers for the rocker cover retaining nuts, something of a disappointment. It also included the cam lock tab but not those for the flywheel or the big ends, so all in all I had mixed feelings about it.

I ground out the exhaust manifold face to clear the gasket, as I've seen suggested and also modified the gasket to ensure it was bigger than the ports. At the same time I countersank (is that correct?) all the manifold mounting holes to ensure that any lifting of the gasket did not cause the gasket to keep the manifolds from seating properly. I also countersank all the holes on the head face for the same reason.



During all this I found both the Haynes and factory manuals totally devoid of much useful data, half the torque settings such as sump to block, or front cover to block were just not in evidence, nor were details such as valve stem diameter or guide o/d. There was no mention of cam drive sprocket alignment yet one set showed distinct wear due to their not being set up properly. The valve springs appear to be of a progressive rate, yet no mention was made of which way up they should be fitted. Such details are always helpful but were frequently omitted. In fact I felt that both were only half finished in that respect, another disappointment.

What was very interesting, in the light of recent clarification of head tightening torques in the Mewsletter, was the fact that the block material around stud no 12 was lifting slightly, suggesting earlier incorrect loading. I removed the raised metal and left well alone rather than embarking on fitting a thread insert at this stage.

Hopefully it will all prove reliable once in use, though I must now work on the rest of the car and get it back on the road though I've yet to investigate the brakes and suspension.

Finally I have a question for those of you with experience of these things. There are several fabricated exhaust manifolds on the market, however they all appear to be of a 4 into 1 configuration. In my experience most road engines give best results with 4 into 2 into 1 exhausts, so have I missed something here, or are all these competition derived items that work best with lumpy cams and at high revs? Has anyone compared these manifolds back to back on a rolling road, and what carb needles and ignition settings should be used?

Many thanks, Neale (Shepherd) from Ashby de la Zouch No. 947

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## Twenty Years with a Tempest.

I had always been interested in unusual cars, and had owned a few, such as BSA three wheelers, Bond Minicar, ranging from a 4.4 litre V8 Buick to a 175 cc Messerschmitt, and various motor bikes. In 1989 I was interested in a TD MG, but realised that one in good condition would cost about £10,000 for a twenty year old car. By comparison, a Tempest kit car would cost less than £5,000 for a brand new car. Furthermore, there would be the fun of building one's own car, with any modifications as desired, without destroying value. So, after meeting Ian Foster, and being frightened by his demonstration of the cornering powers of his car, I decided to invest, and collected the kit on a trailer from his place in Lancashire in August 1989. It was built as I wanted it and on the road in early June 1990.

So what did I do? The kit was complete mechanically, with the body fitted, so that only bodywork, wiring, painting and hood fitting was required. I did nothing to the engine or gearbox, just accepting it as standard Reliant equipment. But I did alter some of the bodywork, as follows:

The bonnet supplied with the kit was of sheet aluminium, hinged down the middle, and giving limited access to the engine, so I made a crocodile bonnet hinged at the rear. While making this I also reshaped the radiator grill to line up better with the bonnet sides, and added a centre bar to the grill because I thought it looked better.

At the back there was a cover over the petrol tank, and the spare wheel stood on this cover. This made it rather high, (like a Jeep!), so I altered it to drop the spare wheel behind the tank for extra safety and better appearance. This involved making the petrol tank a little narrower. This was the only work that I had done by an outside expert, since I could not do the welding required. It made the tank slightly smaller, but since the car will do more than 200 miles on a fill anyway, it was not important. Why carry an excessive weight of petrol around?

As I am fairly small, (5'6"), and my wife even smaller, the seats did not reach to the rear of the body, so I was able to make a welded frame behind the seats to form a narrow, but very useful, luggage space. Also a simple welded frame carries the hood, purchased with the car, over the luggage boot and locked with a key like any real car.

I had previously made three very successful folding hard tops, and would have liked to make one for the Tempest, but there seemed to be no

way to achieve this without radically changing the body at the rear, so I accepted the cloth hood.

The car has been used every year since it was completed, and has now done 33,000 miles. We have used it to go on several week-long holidays, one trip from Cornwall to Middlesbrough in freezing weather, several trips to the kit car show at Stoneleigh, but mostly driving around in Cornwall for various activities. It has been a completely reliable starter, and except for one dreadful couple of months in 2007, (condenser trouble), a very satisfactory hobby for a minor car nutter. (I always resented having more MOT's than services, and recently paying more tax than many bigger cars, but that is the price of a non-standard interest I suppose!)

The construction of the Tempest was very satisfying to me. I had become fed up with cars that rusted so easily, and the Tempest's galvanised chassis and welded steel frame, with aluminium and fibreglass parts, was very appealing to me. After twenty years it has proved to be very rigid and corrosion free. I count it as a very pleasing car to own.

Les Richmond from Looe in Cornwall - No. 339



Les Richmond behind the wheel of his Tempest which he owned from new.



A couple of other pictures of Les' Tempest (which now belongs to Carl Pickles)



Those with a better memory than mine will remember the car that follows. It was owned at the time of its conversion by Brian Ayres from Newstead Abbey. Brian kindly donated many of the surplus bits from the donor car, indeed I collected them from him a decade ago!

The car found its way to Northern Ireland where we lost touch with it after a couple of years, then it resurfaced just down the road from here in Kilmarnock! John Bark is selling it, taxed and tested, so if you fancy something different, this could be the Kitten for you! Ed. *(Now sold!)*





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## Liege Page with an A7 twist

Dear Brian,

October 2012

We have returned from South Australia in good condition. In our three weeks away we travelled four thousand three hundred and thirty kilometers, of which about one thousand were in the “Ulster”.

It was a well organised Rally, which commenced with participation in the “Bay to Birdwood” vintage car run.

This is an annual gathering which attracts about two thousand pre-war cars which travel from Adelaide sea-front to the National Motor Museum at Birdwood in the Mount Lofty Ranges, a distance of about 70 kilometres. This year the organizers requested that the A7 be the feature car (ninety years since the first Seven was produced) and 162 cars participated.

After a picnic day, all the Austins travelled to Tanunda in the Barossas Valley (wine growing area) where we were engaged in a “hub” type rally each day. The rally concluded six days later with the sixtieth running of the annual Collingrove Vintage Hillclimb organised by the Sporting Car Club of South Australia.

We enjoyed good weather all week, and the day at the hill was perfect. About twelve A7's participated, the fastest being Grant Cowie's rebuilt factory "Duck" racing car which achieved fourth fastest overall., and a blows "Ulster" replica was sixth. The field included a number of pre-war classics sixth as K3 MGs and Bugattis.

With permission of the stewards of the meeting, Judith and I celebrated her 82<sup>nd</sup> birthday during the lunch break with an untimed run up the course in the Ulster!

To other matters; We enclose a cheque for the Mews, if this amount changes let me know. I tried your on line effort and it seems ok, but I shall have to learn how to copy specific extracts without printing it all.

I thought I had fixed the Liege before we went away. When it started it idled OK, but tried to drive it yesterday – but absolutely no power. Now suspect that the problem I thought was associated with the blower was not, and may be valve timing. Have you ever heard of the timing chain skipping a tooth during a carby backfire?

Regards, Bob (Riches) Australia No. 457

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### Almost technical ! by John Pearce

A heads up for anyone wanting to use other Reliant bits.

*We were recently asked about the possibility of using parts from a 1990's Robin for a Kitten. I am grateful to both Derry Bowman for having the wisdom to ask before acting, and to John Pearce for taking the time to share his experience and knowledge with us in response.*

*I am aware of a number of people who have given themselves a lot of extra work / frustration / delay and expense, by acting without doing due research and making incorrect assumptions. In truth the following is something we should have published a while ago. There are differing views on some of the opinions below, but it is an excellent starting point, thank you John.*

*I always wondered why Reliant did not make available a conversion kit to allow the early gearboxes to use the later clutch release bearing, but that could be part of another story. Ed.*

Surprisingly few parts from a 1994 Robin are the same as a Kitten, though major mechanical items can be modified to fit. Not always straightforward though. I will explain.

## Engine

To fit the engine from any Robin or Rialto you need to modify the front engine mounts, or fit the front engine plate from a Kitten engine. On the three-wheelers, the engine mountings are “upside down” to the Kittens. Instead of the mounts being threaded into the chassis and secured with nuts and washers from above, they are the other way up, threaded in to captive nuts welded on to the front engine plate and secured with nuts and washers from below – not possible on a Kitten as the cross member is a box section, so is inaccessible from below.....

When I fitted my late engine I simply cut off the captive nuts (with a cutting wheel in an angle grinder) from the Robin engine front plate but this must be done very accurately. Or you can remove the water pump, timing cover and timing chain and wheels and swap the front engine plate for a Kitten one.....

Red-top Robin and Rialto engines up to about 1982 are completely interchangeable with Kitten ones. The engines from 1982 on are different though (see below).

Later engines (1984/5(ish) on) used a pre-engaged starter which is a completely different fitting from the Kitten's inertia type and will not mate up with the Kitten gearbox – the mounting holes are closer together on the pre-engaged starters, so the holes in the gearbox bell housing do not line up. Also the flywheel is different (slightly smaller? with less teeth on the ring gear) and the ring gear itself is fitted the opposite way round as pre-engaged starters throw in away from the engine and inertia types throw in towards it, so the offset (lead in) on the teeth has to face the correct direction. Ergo to fit a later engine to the Kitten gearbox, you also need to change over the rear engine plate and flywheel from the original Kitten engine too – or fit the later engine and gearbox as a complete assembly. The wiring modifications to accommodate the pre-engaged starter are simple though. I have seen (on R3W) advice being given to “slot” the holes on a pre-engaged starter to enable it to be fitted to an earlier engine – NEVER DO THIS!!! If the starter is not in absolutely accurate alignment the starter ring will be destroyed in a very short time.

And it doesn't stop there as the head, compression ratio, camshaft on various engines (1982/3 on) is different so the advance curve and carburettor jetting and needle are different. The original Kitten distributor and carburettor will not be optimal for the later engines (but will still work, though performance and or economy will suffer). These differences depend on the engine type, which were denoted by the colour of the rocker cover. Simply put, all red top engines are the same. Yellow tops without a letter E stamped on the head are all the same. Yellow top HT-E engines are all the same and dark green top (actually painted black on very late engines from the mid 1990's) are also the same but distributors and carburettors should be kept with these original types.

In practice where distributors are concerned, only the yellow top HT-E engines seem to cause problems but the carburettor needles and jets are different so it does pay to use the original distributor and carburettor for the engine – as a side note the currently available “electronic” distributors being sold for Reliants at this time are never right – though performance is usually improved simply by doing away with the points and condenser so most buyers are pleased - at least until they get to drive a properly sorted “right” one anyway!

### Gearboxes

Four different gearboxes are used on 850cc engines. Also the position of reverse gear was changed with later engines having reverse as “lift, towards the driver and down” being the later position. These later gearboxes are the only types with provision for a reverse light switch. Main gearbox internals can be swapped between types though, if you're brave, and have been as the later (mid 1990's on) gearboxes can be fragile. My own has the original Kitten gears fitted in to the late gearbox casing as the box that came with my engine died very quickly.....

These types are:-

1. Original Kitten and Robin, up to 1979(ish) with reverse on the nearside of the gate, no provision for reversing light switch, inertia starter, carbon thrust clutch.
2. Rialto and early Fox up to 1984/5) with reverse on offside of the gate, provision for reversing light switch (though not always fitted), inertia starter, carbon thrust clutch.
3. Rialto and later Fox 1985 - 1990 with reverse on the offside of the gate, reversing light switch, pre-engaged starter, carbon thrust clutch.

4. Rialto, Robin Mk 2 & 3 plus BN models – 1990 on with reverse on the offside of the gate, reversing light switch, pre-engaged starter and roller thrust clutch.

Changing from carbon thrust clutches to roller clutches can be done but you'll need a lot of spanner work as the clutch release assembly is very different. The flywheel too is different though some early flywheels had drillings for both the different locating dowel patterns (mine did). The gearbox front cover (inside the bell housing) has a tube included on the roller types for the thrust bearing to locate on. I actually reverse engineered my gearbox from roller clutch back to carbon type – not usually recommended but the roller clutch assembly was rusted solid, plus I had a couple of new carbon types on the shelf and I've never had problems with clutch thrust wear anyway (in over 40 years of Relianting!)..... Easy to spot which type you have without dismantling as the clutch arm spring on a carbon type holds the thrust away from the engine being located between the clutch arm and the gearbox mounting plate. On a roller clutch it holds the thrust in contact with the clutch cover so goes the other way, from the clutch arm to the rear engine plate.

### Axles

Whilst they can be physically fitted, most Robin and Rialto axles are 3/8" narrower than Kitten ones and use different (early Herald) brakes (also 3/16" narrower shoes) too. It can and has been done but the handbrake linkage is awkward to arrange as it is completely different, plus there is a danger of contact between the tyre walls and the spring leaves, particularly if 165 profile tyres are fitted, so spacers may be needed, which in turn may need longer studs to be fitted.

Late Robins (mid 1990's on) factory fitted with 12" wheels are, however, the same width as Kitten axles, having the same (Mini) brakes and handbrake layout so can easily be fitted. You might run in to a problem with the shock absorber length though as two different axles were used on Kittens – the late Robin axles need the longer shock absorbers as the shock absorber brackets are on hanger plates below the axle. Some Kittens had this layout from new, others had the shock absorber mounts 2" higher with pins welded to the centre line of the axle tubes. Originally the factory fitted cast drop plates to the upper shock absorber chassis mounting tube to allow the fitting of the shorter (standard) dampers on Kittens sent out with the lower mount type axles. Later a longer shock absorber was specified.

## Other items

Obviously the Robin prop shaft and exhaust pipes are shorter so no use on a Kitten.

The front brake assembly on all 850 Robins and Rialtos is identical to the nearside Kitten one – these are very much handed though so no parts can ever be used on the offside wheel.

Door glasses and windscreens are the same up to the Mk3 Robins. Estate rear doors and window glasses are also interchangeable with estate Kittens. Doors from 1979 used different handles and internal locking mechanisms but can still be fitted. Only Robin Mk 1 bonnets will fit a Kitten. Robin Mk1 saloon rear glasses will fit Kitten saloons but the rear hatch glass is slightly different as it has only one hole so one parcel shelf strap cannot be used.

Electrical switches up to the mid 1990's are the same. If fitting a later 2-speed wiper motor from a single wiper three wheeler you must swap over the drive wheel from the Kitten wiper motor as the wipers on the single wiper models are different. Easy to do and well worth the effort though, as the two speed wipers are vastly better.

Seats from the three wheelers can be fitted (you need to drill the floor though) but are even less comfortable than the factory Kitten ones – NOT recommended!!! Odd bits of interior (door cards, dashboard mouldings etc.) are interchangeable too again up to the mid 1990's when the layout was changed a tad.

Very little from the Mk 3 and BN Robins can be fitted. These used different doors, dashboards, instruments, switches and so on.

That's all I can think of for the moment.....

John Pearce (RKR). Leighton Buzzard - No. 304

~~~~~

*John, many thanks, another case of you doing something I ought to have done ages ago, better late than never. Ed.*

It's almost Christmas day you know, and I am feeling brave!

These words of wisdom did appear

And with you I thought I'd shave!

*(Well, shave rhymed better than share! Ed)*

I have a little Satnav, it sits there in my car.

A Satnav is a driver's friend, it tells you where you are.

I have a little Satnav, I've had it all my life

it's better than the normal ones, my Satnav is my wife.

It gives me full instructions, especially how to drive.

"It's thirty miles an hour", it says, "You're doing thirty five"

It tells me when to stop and start and when to use the brake.

It tells me that it's never ever safe to overtake.

It tells me when a light is red, and when it goes to green.

It seems to know instinctively, just when to intervene.

It lists the vehicles just in front, and all those to the rear,  
and taking this into account, it specifies my gear.

I'm sure no other driver has so helpful a device,

for when we leave and lock the car it still gives its advice!

It fills me up with counseling, each journey's pretty fraught.

So why don't I exchange it and get a quieter sort?

Ah well, you see, it cleans the house, makes sure that I'm well fed,

It washes all my shirts and things, and keeps me warm in bed!

Despite all these advantages, and my tendency to scoff,

I do wish that once in a while I could turn the damned thing off!



## Epilogue

Right, lest I forget, we are doing a feature on Tandy campers next time, and hoping to do a feature on Jimps in the not too distant future. if you have any knowledge or experiences you would care to share, now would be a good time to get in touch, please nicely.

At the time of writing (actually it is still August would you believe!) my computer's e-mail in box has just 16 outstanding items in it, so I can boast that I am not letting that aspect of life slip any further behind.

Speaking of said in-box, there are a number of people reading this, and some not that might be if I were better organised. Names from said in-box – that are overdue or waiting for a response, include - René Bakker, Jan Ole Sørensen, Wilfried Dibbets, Glyn Walsh, Simon Fitch, Rob Spare, Neale Shepherd and Dave Williams. I have not forgotten about you, you are on the list, feel free to chase me up, he said a good three months before anyone other than my beloved proof reader is likely to see this! Nothing like a looming deadline to spur one into action – well, one can live in hope!

Moving on, we have had several responses to our comments about B1 licences and up-coming changes of entitlement. There was, and probably still is, confusion within the DVLA about this, (not only were they not aware of how the rules affected us, they are not “after” those who drive a Kitten on a B1 licence, it is quite a different group they are seeking to control. In truth they had failed to realise at the time of weight limit increases a decade or so back, that the situation where we could, would have existed. In other words we were able to exploit an unintended loophole which they are now closing. The advice is the same, if you are driving a Kitten on a B1, if at all possible, sit your car driving test before January 2013. (I believe it is the 19<sup>th</sup> the legislation changes come into effect.) I am well aware that we have a number of octogenarian readers, and some of them fall into this category, who have no desire to subject themselves to sitting a driving test. While I sympathise, the advice remains the same. Don't shoot the messenger!

~~~~~

Right, it will be November tomorrow. I was just talking to Peter Wellington, good to talk to you again Peter. There were a number of topics we discussed ranging from the current price of running secondhand engines, which Peter tells me is close to £500 these days, to the matters of an engine test bed, and me finally putting out a list of subscribers, which reminded me that I have fallen by the wayside as regards including new





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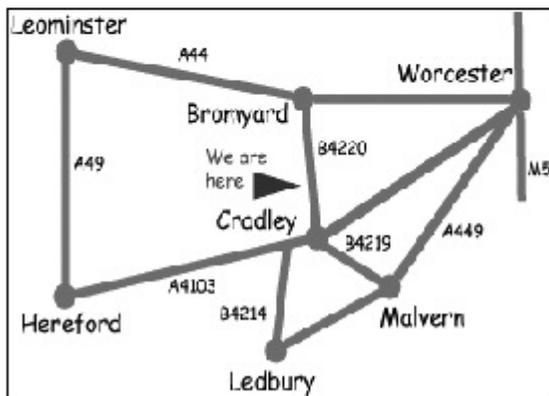
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