MEWSLETTER 102

September - October 2011

Edited and distributed by Brian W Marshall,
16 Glendee Gardens, Renfrew, PA4 0AL
☎ 0141 886 6117 www. info@kitreg.org.uk

Taken as you can see from the shadows, in the bright sunshine that we enjoyed at Erddig this July, left to right we have Simon Hodges' black Kitten estate which came up from London, Al Osborn's two-tone Kitten estate all the way from Norfolk, Ray Best's red one, which was for sale, and sold at the event to Alan Blacker. Next is Malcolm Rush's lovely green estate car with a paint job that would be the envy of any Lotus or TVR owner, beside Yoland Brown's yellow Tempest. On the far side of the marquee is the "Jaffa" as John Pearce calls his very early hard working and well-kept high mileage orange saloon. Out of picture were Peter and Chew Grainger from Wolverhampton, whose wedding anniversary it was that day, in their brown Kitten estate, and George and Emma Rees from just outside Doncaster with their recently liveried Asquith.

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

New Kitten / Fox / Rebel parts stock held by Brian Marshall
E-Mail info@kitreg.org.uk

Rebel alternative parts list contact: John Blagburn
E-mail: wirelessjohn@googlemail.com

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

Fox alternative parts list contact: Duncan Bradford, 52 St. Phillips Road, Norwich, NR2 3BN.
E-Mail hidunc@ntlworld.com

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

Tempest Registrar: Martin Seymour 19 Cedar Court, Churchfields, South Woodford, London E18 2QU
E-mail mseymour@freenetname.co.uk

Mewsletter pictures – should be sent to John Pearce at Toddbury Farm, Slapton Road, Lt Billington, Beds. LU7 9BP
E-mail 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.

It should be noted that opinions and ideas, information and advice printed in this publication are as recommended by our readers and others, and, while believed to be accurate and correct, such information is given in good faith, and it does not necessarily have the approval of the Reliant Kitten Register, and cannot be guaranteed by either the Editor, or the Reliant Kitten Register. Owners must satisfy themselves as to the suitability of any suggestions made within these pages, as no responsibility can be accepted.

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

INDEX

Issue 102

As you will read in the Epilogue, there are some things, relating to Erddig, and future events, that I have held back. It was the intention to give Malcolm's get-together plans a big push, so, without wishing to upset those not on the internet, here is a shortened version of Malcolm's words :-

Brian, to answer your question in Mewsletter 100, yes, this is me volunteering as Events Co-ordinator. My impression at Erddig was that members really do enjoy meeting up with other owners, and so as promised, my latest thoughts on get-togethers is attached, which unfortunately will only work for members with an e-mail address.

In view of the above I would appreciate any feedback and can be contacted on:-

E-mail rkrshowpostbox@gmail.com Or alternatively at :- Berwyn, Heathwood Road, Higher Heath, Whitchurch, Shropshire, SY13 2HH

Regards, Malcolm Rush - Whitchurch - No. 352

Welcome as ever, back to normal this time, well, almost – wouldn't want to become complacent now, would we?

I happen to have two technical articles just now, both about the legendary SU carburetor, an excellent history by Duncan Bradford, which would fill most of a magazine for us, so I have serialised it, thank you Duncan, and a technical improvement article by Al Osborn. Now it so happens that Duncan won the distance (to the event) award at Whittington Castle, and Al won it at Erddig, and, quite by chance, they both live in Norfolk, but neither knew the other was writing about SU carbs! Must be something in the air in Norfolk! Thanks chaps.

Talking of coincidences / fate, call it what you will, Moira got through her tooth operation fine yesterday, (19/8/11, yes, same day I posted you the last mag!) (they tell me the procedure was a coronoctomy, I'm just hoping the title doesn't give her delusions of grandeur!) All went very well they say, though they want to keep a regular check on her for the next year!

We ordered a delivered chippy that night, the lad who was going to deliver it did not know Renfrew well enough, rang me to ask directions, and got promptly stopped and done by the police for using a mobile while driving – he actually said to me on the phone, "oh blast, I'll need to go, that's the police! His exasperated mum brought our rather cool fish supper round eventually, she told me he had just passed his test and started the job last week! (I'll bet he was not insured for carrying goods for reward either!) poor sod, one would have hoped Plod would have the discretion to let him off with a caution, but in these times of zero tolerance - I dread to think what that will do to his no doubt already astronomical insurance premium! The immortal words of G & S spring to mind – "Let the punishment fit the crime." A young life pretty devastated by a stupid mistake less than a week into a new job and a driving career – we had mince and potatoes ready to put on, but had decided at the last minute to opt for the lazy option, how unfortunate for the lad. Did make me wonder if either the driving instructor, examiner or employer had any responsibility in such a case – it wisnae my fault, yet I felt a bit guilty somehow! Aye, life…..

Right, enough with the distractions, Ed.

Our new subscribers since July are :

922 Phil Davies from Aberdare with a 1983 Jimp

923 Paul Stabler from Leicester with a 1984 Fox custom van pick-up

924 Julian Lack Liege News Editor – magazine exchange

925 Joe Collier from West Sussex with a 1966 Rebel Saloon

Kitten bit

I'm sure that Alan Shaw will not mind me sharing with you the results of the emission test on his Kitten this year. Alan has owned his Kitten estate, UMA 16V, from new, it has covered 103,584 miles, an annual average of just over 3,300. In April when presented for its M.o.T. at the ripe old age of 31, the CO^2 % by volume, which for a car that age is allowed to be up to 4.500, had an actual value of 0.675, and the unburnt hydrocarbons, of which we are allowed up to 1,200 parts per million, was just 227, this Alan tells me is still on the original needle and jet, which tells you something about Alan's standards of maintenance, as well as the quality and design of the good old SU carburetor.

The Shaw family are, I believe, unique, in that Alan's son Graeme has also owned his Kitten from new, (Graeme has 2 Kittens, but the second one has not been in the family for quite so long!) I did wonder how many miles Graeme had covered in his, and what its emissions were, so a telephone call later, and the answer is :- 2,200 CO^2 and unburnt HC of 260ppm for the white one, bought new by Graeme in April 1979, it has covered 112,00 since then and only does about 1,000 miles a year these days. The workhorse, the blue one, (which was yellow till Graeme had it resprayed a few years ago), is still (as are all the Shaw Reliants) on its original

engine, was 2,300 CO^2 and 272 parts per million of unburnt hydrocarbons. It has covered 180,000 miles and works hard for its living.

Graeme did make the point that he, unlike his dad, does not make seasonal adjustments to the carburettor.

~.~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

Hello Brian, August 23rd 2011

I've just read the article written by Neil Kirkland, in Mewsletter 101.

I can hopefully shed some light on the Kitten front brakes, having built my Liege using Kitten front uprights and hubs (as they all are). All my experience was gained first hand because I had no one else's help to fall back on at the time.

I bought a pair of used Kitten uprights and hubs that had already been removed from "their" car. The backplates were terminally rusted and were of no use. I was made aware that Kitten backplates were unobtainable but Leyland Mini ones would fit. I bought all the brand new components to build a set of front brakes from scratch, at no small cost. I bought backplates, wheel cylinders, springs, shoes, drums, the lot, in a deal from a Mini specialist.

The Kitten backplates and their Mini equivalents are very similar and could well be made on the same press. The only difference is that the Mini ones have an additional pressed steel, right angled "lip" spot welded around their periphery. The Mini drum is slightly thicker on its outer rim. The thickened outer rim of the drum has a corresponding slot machined into its edge, which fits over the right angle lip on the backplate, without touching it. This design forms a simple "labyrinth" seal on the outer edge of the brake, presumably to prevent water or dirt ingress.

I initially thought that the Mini drums would not go over the Kitten hubs due to a machined raised circular lip inside, which the Reliant ones didn't have. I didn't investigate this well enough and I bought some very expensive Kitten drums (over four times the price of Mini ones). The Kitten drums were compatible with the Mini backplates, although the outer edge is smaller in diameter making the extra "labyrinth seal" lip, as mentioned above, superfluous. The unused Mini drums went in the spares cupboard, with a view to getting them machined to fit at at a later date.

At a later date I got these drums out again and found they did actually fit straight onto the Kitten hubs once the steel "location" ring on one wheel stud is removed. The Mini drum uses a countersunk set screw to hold it to the hub, rather than the steel ring used by Reliant. So all the stud holes are the same size. The Reliant ones have one larger stud hole.

I had wasted over £100 on buying the "OE Reliant" drums I'd originally fitted! I painted up the Mini drums and used them, mainly because they look better. They hide the steel lip on the backplate and on the Liege the drums are in full view.

If Neil still needs a complete set of brakes for his Kitten, mine are now for sale. I've removed the entire drums setup in favour of the new disc brakes fitted earlier this year (written about in Mewsletter issue 100). They are in very good condition, with almost new shoes and one brand new wheel cylinder already fitted. The link pipes between the wheel cylinders are in cupro-nickel, rather than the original steel used by Reliant, so will possibly last as long as the rest of his car!

Best regards, Paul Wheatley - Shireoaks - No. 422

THE HOLLINGWORTH KITTEN SAGA PART 2

THE JOURNEY BEGINS.

The Kitten has arrived, DBR 304S was dropped off by Dr Chris D Bartlett and his son at approximately 22:45 on the 8th June 2011

I decided that the first job was to check the car over and make sure that it wasn't going to deteriorate further. My principle concern is the cooling system, I know how badly aluminium reacts with water and dissimilar metals if suitable inhibitors are not present i.e. antifreeze, the resulting galvanic corrosion is a killer. How depressing was it then to find that this car has stood for the better part of 20 years with the cooling system full.

Figure 1: The Journey Begins, First time on road since 1998.

Although the Kitten had antifreeze in, there was nothing coming out of the cylinder block drain, I prodded around a little and found exactly what I didn't want to find – the resultant mess that is aluminium corrosion, very BAD aluminium corrosion, the rear of the block is full of it so the engine isn't going to be a nice straightforward job, even if I got it running cylinder 4 gets no cooling and a self destruct is imminent. I have actually read a few tales where the death of a Reliant 850 could be attributed to a cylinder 4 meltdown. I decided to pull the cylinder head off to see if I could clean out some of the mess and assess the damage. Could I get the head off? not a chance, I made up a bar based on something from the R3W site that utilises pressure on the head studs from the rocker studs but all that it has done is lifted the distributor side of the head, there is a 1/8" gap on the distributer side and nothing on the manifold side. The manifold side remains stuck solid even after liberal applications of WD40 and lots of heat (500 or so Deg C). Tried to remove the manifold side head studs since it is clearly three of these causing the trouble, gave up when the first one broke off flush with the top of the head. It is going to take some serious machinery to get this head off that I simply do not possess and have no intention of buying.

The water pump is also similarly stuck fast despite similar treatment (although not so much heat) and no there are no nuts left all 4 are gone, there is no room to get anything in there to remove the studs. Again I am at a loss, short of laying into the thing with a sledgehammer there is nothing more I can do.

I'm not one to admit defeat but I simply don't have the equipment it will need to deal with these two issues, this part of the restoration has ceased to be a DIY job. The engine needs to be pulled, I don't know if it can be saved or not, it isn't looking good right now, it may be cheaper to seek a replacement but then I lose the car's originality.

I also gave the chassis a once over, solid enough but it is time for a body off restore I think there is a lot of surface corrosion and 'flaking' that needs sorting before it turns into welding, plenty of places for water to get in and hide, doing it with the body on will be a pain, not to mention that I am simply not interested in spending the next three months plus on my back with eyes full of crud and not deliver the sort of standard I am looking for.

So the body off decision is also made, but where the hell do I put all the bits is the next problem, 'er indoors is going to freak if I bring it in the house and even with a double garage I don't have the room for bits plus chassis plus body as separate entities.

The paintwork is actually flaking off quite badly too and there are tons of micro blisters so a full on respray needed. To be worthwhile all the old stuff must be stripped back it is simply too bad to put anything on top of, the amount of work that this entails is frankly scary.

I expected a lot of this when I bought the car, I thought I was prepared for it, but now it is here and having the first job on the car becoming a disaster (engine) the enthusiasm remains but with a mixture of frustration / depression, if the first job is a disaster what lies in wait on the next one?

Neil Kirkland - No. 916 from Cheshire (AKA Garfield)

PS : if anyone wants to respond, do so through the Mewsletter

~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

Foxy bit.

Hi Brian, 25/8/2011

Just a quick line and update on my Fox. What a joy to receive in the post my membership with some back issues. It seems I became a member in the blink of an eye due to my 12 hour day and night shift pattern and the speedy way you handled all my enquiries so far.

The 100th edition was for me an ideal issue to send with the others as it helped inform me on one or 2 issues.

I can now identify the drums and do have the correct ones fitted, thanks go out to John Box.

Before my m.o.t., I drained and refilled both gearbox and differential as well as a full engine oil change.

Now my Fox did not leak up until this point, but having found the words of wisdom by Les Smith, I can now see why I have leaks in the areas exactly indicated in the technical bit he wrote.

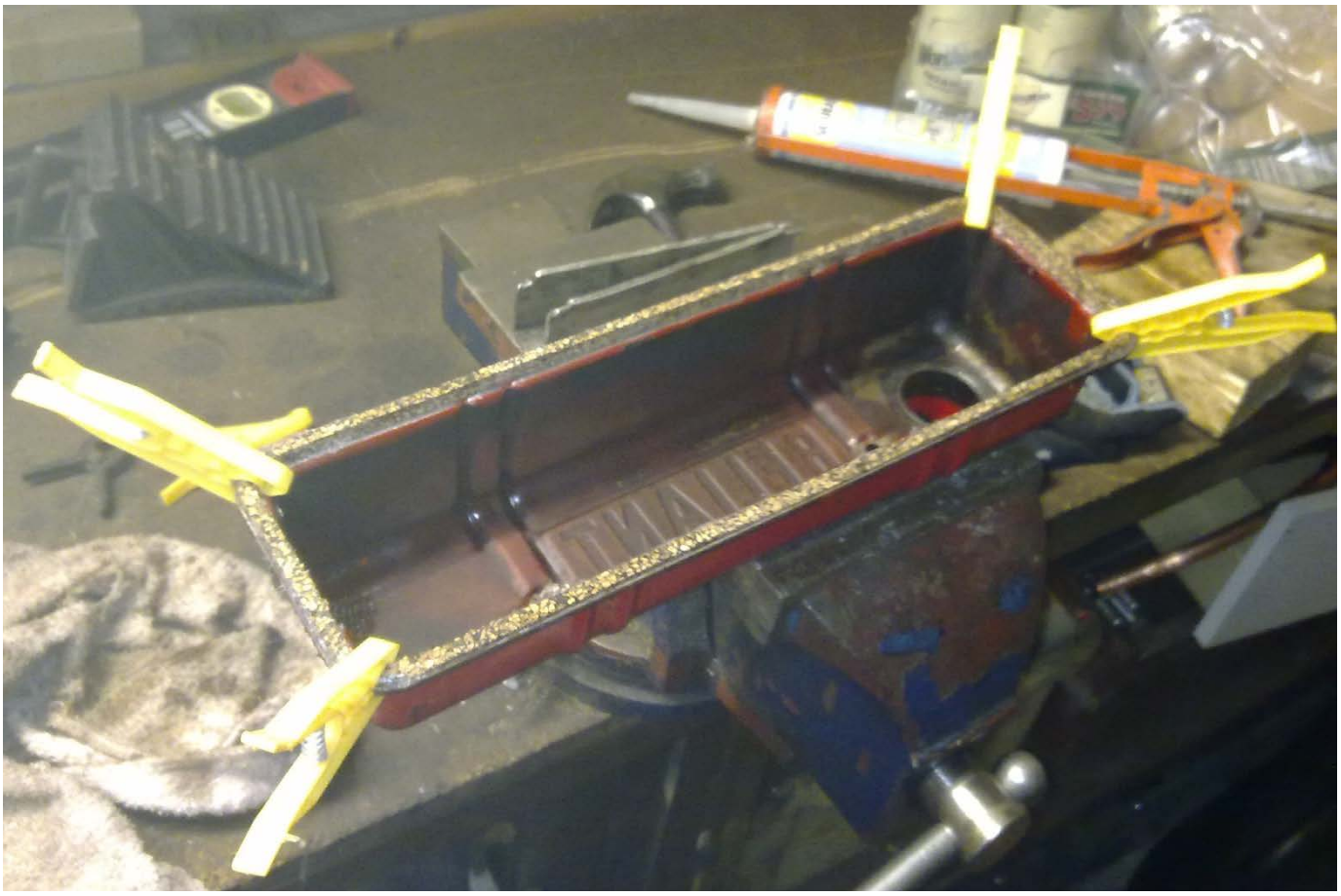
At the risk of making a fool of myself, I am going to interrupt here and make a point without checking my facts first – well, it is just after 6 in the morning, I can't very well phone a friend now can I? The thing is, I seem to remember a, recent, discussion with someone regarding the volume of lubricant (in a gearbox I think) and how the book volume does not bring the level anywhere near the filler plug, and the suggestion was that the filler plug is in the wrong place, (either that or it is a filler plug, and not also a level indicator!) and that overfilling causes leaky problems, which Les' mods may well address, but would using the book quantity and not the filler plug in fact avoid the problem, as an old lecturer once said – discuss! Ed.

The mod will be done ASAP and will avoid me having the laborious task of replacing said seals. A little bit of wisdom (if it is new). During all this leak fiasco and engine check over I noticed the rocker gasket was leaking a bit. As I was due to take it off anyway to set the tappets I treated myself to a full head gasket set.

Now then when it came to fit the new rocker gasket after cleaning all surfaces, it had obviously shrunk or been cut too small thus being no good if a seal was to be made at all!

I used a good quality silicon sealant and a pegged gasket (see photo) overnight and this held the offending part in place during the refitting process.

The rocker was finally seated with more silicon and a pair of tap washers under the nuts with penny washers and you guessed it, more silicon.



I have used silicon sealant on lots of rocker gaskets and many engine parts for years now and never had any problems with leaks. The other advantage is the ease of removal revealing mating surfaces clean and ready for reassembly.

Best regards to all.

Paul (Stabler) member No. 923 - B620 NWK

One of our recent subscribers is Tony Adams from Guthrie (in the north east of Scotland, oh, all right, I had to look too, if you draw a line between Dundee and Aberdeen, Guthrie is about a third of the way north east of Dundee, alternatively if you draw a triangle joining Forfar, Montrose and Arbroath, Guthrie is almost in the middle of the triangle – here endeth today's geography lesson!) – Tony has a Reliant powered 1938 Austin 7, and he discovered that we can supply alloy rocker covers – thanks to John Copestake for putting us in touch.

Hello Brian, 7/4/11

I'm glad that I contacted you and pleased that you are interested in the little Austin.

I've attached a picture of the engine installation which might go with the other picture.

It's got a Liege (John Sawle) inlet manifold and big carb, also four branch exhaust and straight through silencer, high compression head, fully balanced crankshaft, flywheel clutch and pistons etc and flowed valve guides, also stronger valve springs. Electronic ignition and electric fan too.

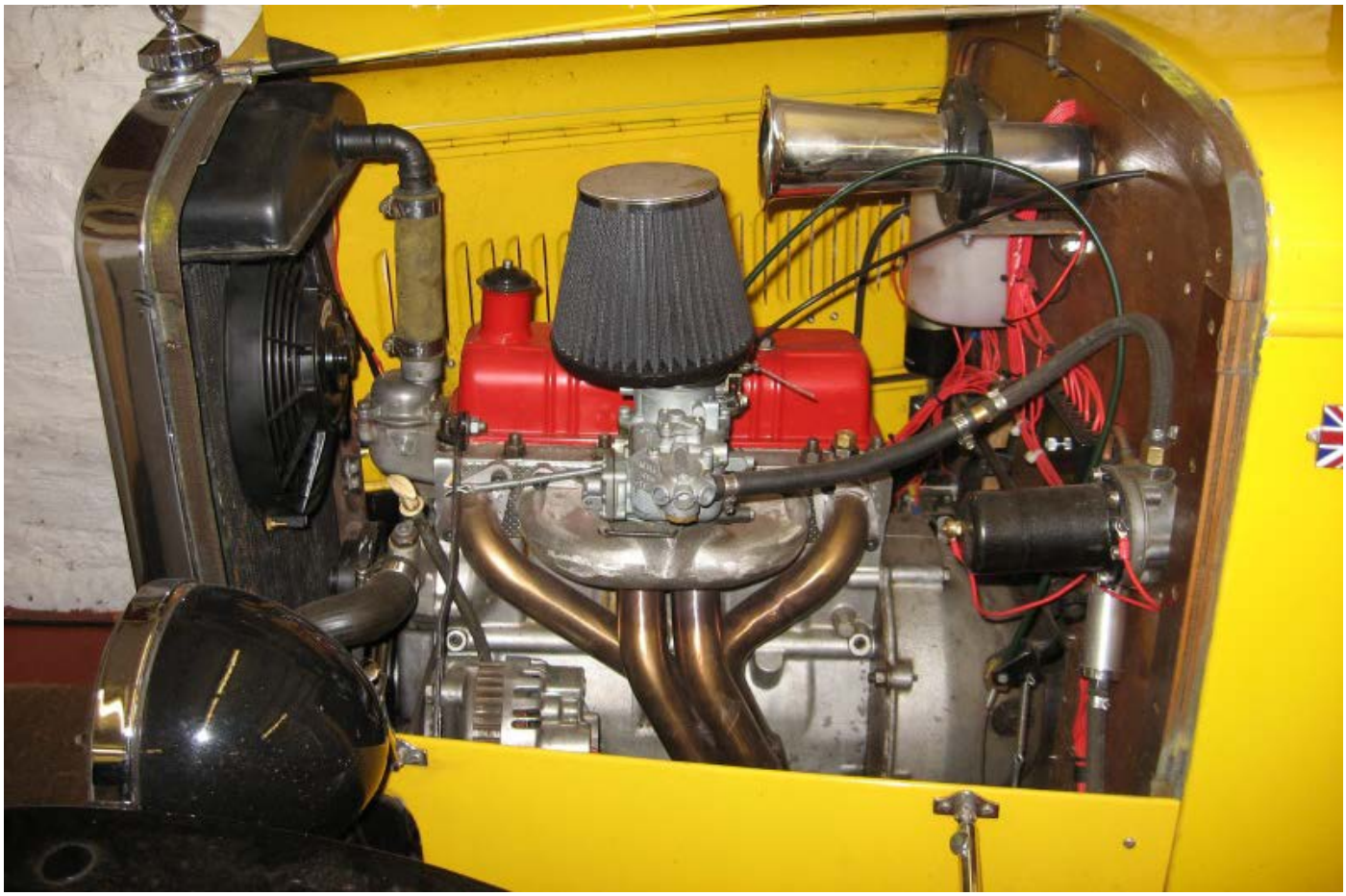
I have to admit that the torque at low speeds is a bit low, but on the other hand it does rev to 6,000 rpm and does tend to leave the other Austin Sevens behind!

To be perfectly honest, John suggested that I contact you because he thought that you had a Liege cover and also that your covers were a bit cheaper than his. ***(yes, Kitten Register subscribers get a really good discount – Ed!)***

But now the thought of an inscribed 'Austin' cover! that sounds great and is something that I didn't realised existed and would really like to fit.

It really would confuse the tyre kickers and the 'experts' when they looked under the bonnet !

The following pictures were taken before the alloy rocker cover was cast.



I am close to giving up on my ambition of getting Phil Hallam, who started the alloy rocker cover project, to actually meet Mike and Paul Cullingworth, the father and son outfit that are our patternmakers, here holding the latest pair in September 2011, outside their workshop at New Edlington – Doncaster to you!

~.~.~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

Liege Page(s)

One event that passed through Scotland in July this year was the Liege Car Club's Lands End to John O'Groats run. Our Editor had been approached to see if he could put the organisers in touch with the owners of the old Rest and be Thankful road, which of course I did – took me four phone calls mind you – so I am not as on the ball as I would like to have everyone believe!

Anyway, come the time, they were stopping for the night at the Premier Inn at Crosshouse near Kilmarnock, barely an hour's drive from my holiday hideaway at Lendalfoot, so :- with permission from she who must sometimes be obeyed, and Arleen, who was spending a few days with us with wee Aaron (our grandson), I headed off into the afternoon sun for points north east.

Upon my arrival there were 4 Liege present, the fifth arrived, and at my suggestion parked beside the other 4, but this meant using half a disabled parking bay (of which there were several – all empty, save the one I had "Sammy" parked in), we asked, but the management would not wear it, so it had to be moved – not before I took a picture or two!

When I tell you there was not a cloud in the sky you will realise that I had my rose coloured spectacles on that evening – (either that or I am just delusional!) In either case a most enjoyable meal followed a couple or three hours of banter.

I would like to think they are not smiling just because I said I wanted to take a picture before leaving them for the night!

A brief stop at Largs on the way to catch the ferry at Gourouck

Yes, that's old "Sammy" Citroen following up the rear

Leaving Largs then heading for Inverkip on the way to the Western ferry at Gourouck – where they arrived just in time to drive right on – and sail!

The ferry was there, just about to leave, so we didn't get a goodbye chat

And so our time together came to a rather abrupt halt as the ferry sailed! I was pleased that they did not have to endure the anticipated wait, but neither had I thought they would arrive at the jetty, drive straight onto the ferry, and be off within a minute or two! Life is truly full of surprises!

~.~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

Readers Letters

Dear Brian, 8th July 2011

First off, I must say thank you for the quick and generous way in which you responded to my telephone request with regard to the Reliant Kitten Register. I was so impressed that I have no hesitation in joining, please find my application and cheque enclosed.

So, who, what and why would a 77 year old motorcycle die harder show an interest in Reliant Kittens at this late time in his and the Kitten's life?

It goes back to the 1970's when I was a salesman with one of the country's largest Solus Reliant dealers, with a trade area covering most of Worcestershire. It was a wonderful time, I sold every Scimitar that Reliant could supply us with, and the three wheeler sales were unbelievable.

In fact my earning power was that good that when I left I set up my own motorcycle dealership. They were some of the happiest days of my life. However my interest in Reliant waned, although I always retained an interest in the Kitten.

So, right up to date now. A couple of weeks ago I entered a couple of motorcycles in Pugh's auction in Ledbury. Also in the auction was a Kitten based Liege, which had been built and registered as a new vehicle in 2002. It was beautiful, and I decided that if it went within my budget I would buy it. My last bid was for four and a half grand, but the car went on and sold for £6,400! Way above my limit.

However what it did was to re-kindle my dormant interest in the Reliant Kitten, but there is no way at this time in my life I would take building a kit car. So, as I was aware of a motorcycle friend who had restored a Kitten a few years ago, which I had never seen, I decided to go and see him.

He had totally stripped the car. The chassis was powder coated, transmission, brakes etc were totally reconditioned. The paintwork and upholstery were refurbished to a very high standard. I was amazed, and the car had only done 286 miles since he put it under covers in his garage.

The car is far better than it was new, just like the over restored motorcycles we see in the classic bike shows these days. The deal was done and I take delivery in about 3 weeks time when I have restored my own garage. I hope all this waffle hasn't bored you too much, and I will send you some photos that I will take after the car has arrived.

Brian, thank you again for your help.

Kind regards, Geoff Brett from Stourbridge No. 920

In a nutshell that letter sums up why I keep doing this – it just makes it all so worthwhile, both to be appreciated, and to learn about another really interesting Kitten. Geoff, thank you for your kind words, I look forward to the pictures (a future front cover possibly?)

As our national bard once said – "Oh to be able to see ourselves as others see us" Peter Davis would I am sure be less than amused to see the Liege described as a Kitten based vehicle, but it does use a modified Kitten steering rack, and Kitten uprights and brakes, as well as, in most cases, the Reliant 850 engine and gearbox. The chassis, suspension and body and wheels are all Peter's design and manufacture, they mostly use a Suzuki back axle these days, and several of them now use a Suzuki engine and 5 speed gearbox as well, though various Fiat and Toyota engines have also found their way into the tight engine bay of the Liege. I understand that a factory option alternative bonnet and nose are being made available to save those with the Suzuki engine having to cut a hole in the top of the bonnet to clear things! The Liege story continues to develop. Ed.

~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

ERDDIG JULY 2011

A view from Norfolk

It seemed a long way perhaps it was. But quite amazing, not so much the sunshine, the company and the site (which unfortunately we saw very little of) but the performance of Kitty car.

Now it was good to see you Reliant owners after all this time. Although not too many braved the mileage. Of course we had some interesting cars, Malcolm's Green thing, polished until it nearly disappeared. I thought I had cleaned my Blue Wizzer well, but it did not look that good amongst the others on the day. Well done everyone. Shame we couldn't have used up more of the spares that Brian brought, but I did get myself a set of the square head lights as I have an odd couple on the car at the moment. The 'new' ones turned out to be sealed beam units……after I had done the deal, but on checking all filaments work. I would have preferred H4 as I have a box full of spare bulbs.

Kitty car, the blue and silver thing, didn't she do well? 600 miles from the flat lands to the hilly bits! Oil, water all the wizzy bits all went so well it wasn't true. No oil or water used at all. The only snag was pinking! I had changed the plugs before departure (to the summer ones!) and had removed the dizzy, unfortunately it went back a slight tad more advanced. So I knocked it back a bit when left of Bridgnorth – better, and a second nudge back was even better but it wasn't until we were back in the flat lands of Norfolk did the problem appear to fully go away. Be assured I will be investigating in due course because as an inveterate fiddler I am running with a modified advance curve anyway. I must also re fit the vacuum advance to try to improve the MPG. We only did 47mpg on the event. We were two up and camping gear is my excuse, I also try to 'get on a bit.'

The whole event for us consisted of a Saturday jaunt to stay with a friend at Knighton - hilly bits. Then down to Erddig for the Sunday and all that sunshine!! Sunday night we found camping near Ruabon. Then we needed a meal - amazing how many Pubs / Hotels don't serve meals on a Sunday evening! We (my goodself and 'her who must be obeyed' eventually found an 'Italian' restaurant and popped in for a buffet meal. Only after we sat down and looked at the Chicken Korma and popadoms on offer did we realize this 'Italian' restaurant was an 'Indian'. NO sweat at all as I in fact prefer Indian and it was quite good at a modest £20 for two with drinks. Second night in the wild had us camped just outside Bridgnorth so we could take in the Severn Valley Railway on the morrow, which we did.

We didn't actually have a ride, just bumbled around the station and then the town, all to be recommended. Followed by the long haul home. A fine time all round.

I did in fact miss a regular big-ish motorcycle rally I regularly attend but I had thought it about time we saw some of the Kitty owners. It would also have been unfair to have turned up in our new camper van, but 600 miles in the Kitty with no snags was fun and reward in itself.

Al Osborn – near Thetford in Norfolk No. 295

~.~.~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

20TH ANNIVERSARY GET-TOGETHER AT ERDDIG.

We awoke to clear blue skies and unbroken sunshine and thought we can't be this lucky but we were, it lasted all day, in fact we were pleased to have the shade given by the gazebo provided by Yoland and Roger. Thinking we would arrive first to get organized, we left early but were still beaten by George and Emma, and John in spite of him being directed into a farmyard by his satnav. A chap from Erddig gave us a bundle of passes for free entry into the grounds and informed us that the centre section of the car park had been roped off for our exclusive use. As soon as the gazebo was erected and the Register banner put up we really looked the part. Through the morning members gradually arrived and we ended up with a total of eight vehicles, plus Register members without cars making a total of twenty three people. Starting from the entrance the line-up commenced with:-

George and Emma Rees:- Asquith Shetland. Peter and Chew Grainger:- Kitten Estate. John Pearce:- Kitten Saloon. Yoland and Roger Brown:- Tempest. Jan and myself:- Kitten Estate. Ray and Sharon Best: Kitten Estate. Alan and Sandra Osborn:- Kitten Estate. Simon Hodges and Maggie Young:- Kitten Estate.

One of the above was advertised for sale and within a short space of time had provisionally changed hands, which must prove how sought-after they are. *(the deal went through and the car changed hands the following weekend, Ed.)*

Around midday Brian arrived with a car-load of parts he was hoping to dispose of, (a last minute lock-up clear out had been attempted on the Friday!) the amount that came out of his old Citroen led me to think there must be a bit of Dr. Who's Tardis in there, either that or as fast as people were taking parts from the back, others were putting them back in the front. Unfortunately most of it had to go back into the car at the end of the day.

After the usual round of greetings Brian, Arthur Garnett, Jan and I headed for some lunch in the cool shade of the tea garden. It seemed as if as soon as we returned it was time to start gathering voting forms for the car of the day and adding up the votes.

Before the prize-giving we gave a birthday greeting to a surprised Al Osborn whose birthday was that day, and presented Peter and Chew with an anniversary card to mark their 29th anniversary also on that day. Shields were awarded to:-

1st place George and Emma Rees

2nd place Yoland and Roger Brown

3rd place Peter and Chew Grainger

Last but certainly not least, Brian was presented with a Thank You card for his and Moira's sterling work for the Register over the last 20 years.

After this the time seemed to fly by and it was time for everybody to head home. Although the turnout was low I think everyone that came enjoyed themselves, and a lot of knowledge and information was exchanged. We were the last to leave and making our way along the narrow lanes, coming in the opposite direction were two girls on bikes followed by another on a horse, so, not wanting to spook the horse I stopped and as they passed they thanked me and said they liked the car, as they looked back one exclaimed "It's a Reliant, I love it, I love it!"

A good end to a brilliant day. Malcolm Rush - Whitchurch - No. 352

~.~.~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

Parts

I am not aware of any particular problems on this front at the moment. Al Osborn is still frustrated by the short life of alternator brackets – the one that lets you tension the fan belt, but they are still readily available, though Al is thinking of designing a stronger one.

If you have problems finding parts, do let me know. Ed.

~.~.~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

Getting technical

How the SU carburettor works – and how to help it do so.

Part One

Overview

Mr. George Herbert Skinner, the inventor of the SU [Skinners Union, referring to the three Skinner brothers] in 1905, was evidently a clever chap, although he had no technical education. Having helped with his younger brother's experiments he realised the benefits of a constant velocity carburettor over the standard Benz-style design. By the time the SU carburettor had developed to what it is today though, George Herbert and his brothers had been bought out by Morris, who seized on the potential for the design. It became almost universally adopted for British engines, and copied in principle by other companies across the world, notably the Zenith-Stromberg-Solex conglomeration who got together in an attempt to bypass the patents and produced a cheaper carb based on similar principles.

The SU carburettor is a precision-crafted instrument. Unlike most carburettors it continually adjusts the mixture of fuel and air to precisely match the needs of the engine as they vary during driving. This makes it one of the most economical and efficient carburettor designs for any engine. Fixed jet carburettors such as the Weber designs can be tuned to give a little more power in a particular situation and at certain throttle openings but only at the expense of wasted fuel under other operating conditions.

I'd urge you not to hurry off and take your carb apart just yet; there are several handy things to know about how it goes back together. Some of them are safety-critical. Fuel, grp and ignition are not a very resilient mix to play with.

The oversimplified version of 'How It Works'!

A Float Chamber provides a reservoir of petrol, kept at a constant level, which is drawn out and introduced into the air inlet pipe through a variable jet. The jet is effectively an open ended brass pipe with the opening varied in size by a tapered needle automatically raised or lowered to allow through more fuel

or less, according to the engine's precise needs at any given moment. The air rushing in past the jet mouth draws the fuel through in a mist which mixes with the air to form 'the mixture'. This is then sucked into each cylinder in turn, where it is ignited by the spark plugs.
The clever bit is how the strength of the mixture is continually varied automatically by vacuum operating a piston.

Basic Principle

Almost all carburettors work on this principle: **The engine sucks in air past one or more graded fuel jets set in one or more venturi. This partially vaporises the fuel into the air. The throttle limits how much mix the engine's suction can draw in.**

The engine itself is the vacuum pump that sucks in the fuel / air mixture. The turning of the engine results in each of the four pistons in turn sucking in, via the inlet valve and the inlet manifold, a supply of air through the carburettor air intake. Just inside the air intake the channel narrows, partly because of a piston which slides down from above [in the SU], and partly because of a carefully designed sloping bridge built up from the floor of the pipe / intake tube. The narrowing of this area is called the Venturi, and the effect of drawing the air through this narrowed gap is to speed up the airflow and at the same time reduce its pressure, and is called the Venturi Effect. You can effectively see this in the way smoke from a fire speeds up as it passes through the restrictive throat up into the chimney.

Positioned in the centre of the bridge is the open mouth of the fuel delivery jet, and it is the venturi effect of the in-drawn air whistling past at low pressure which draws fuel out from the jet and vaporises it into a mix suitable for burning.

On the other side of the venturi is the throttle butterfly. The opening of this controls the overall rate at which the mix is allowed through into the cylinders, and hence the engine's speed.

The piston and needle.

The reason that the SU is so flexible is that although the jet that delivers the fuel is of a fixed size, the opening of that jet is continually varied in size by a tapered needle riding in it. The SU carburettor's cleverness lies in that it makes further use of the venturi effect:

As well as sucking fuel out of the jet, the same effect is used to raise the piston which holds the tapered needle in the mouth of the jet. This not only enlarges the fuel outlet, but at the same time enlarges the venturi size, allowing more mixture into the engine at a greater rate, something which a fixed-jet carburettor cannot do. [although Ford's attempt at a Variable Venturi carb did get partway there].

So the demands of the engine automatically adjust how far into the jet the needle is, at any given time, and therefore how much fuel is allowed out. At the same time the demands of the engine automatically increase or decrease the size of the air inlet aperture. This keeps the velocity of the incoming air passing the jet constant, hence the description Constant Velocity ['CV'] to this type of carburettor [or 'CD', Constant Depression, which is just a less happy way of referring to the same situation].

It is much simpler than it sounds, being an automatic process; it's just the words that get in the way, so bear with me:

The piston with a tapered needle mounted in the base, can slide up and down within a vacuum chamber, held on a lubricated chrome-plated central bearing. **As the venturi effect passes beneath the piston, it draws air down through a hole or holes in the back or base of the piston, creating a partial vacuum in the chamber above. The piston rises to 'try to fill' this vacuum. As it rises it draws up the tapered needle sitting in the mouth of the jet, creating a larger fuel outlet.** As an opening throttle

allows more air in, there is more vacuum to raise the piston and needle, allowing more fuel, which raises the speed, and hence the suction, until it matches the throttle opening. It's not quite that simple in practice, but more of that later. Because of this principle no other carburettor can deliver more power, so economically, over such a range of operating conditions.

There are a couple of other refinements and principles affecting the running of the carb, but these will be covered later.

The Jet and adjustment

If you remove the air cleaner and look at the piston, you'll notice that it never sits flush to the venturi bridge. There is a nylon stop about 1mm proud of the piston base. This is to give a minimal clearance for the starting engine to draw in the air needed to start it.

If you then start the engine you will see that almost immediately the piston rises a few millimetres. This is the venturi effect at work, raising the piston by vacuum, giving a carefully measured amount of air access to the engine by governing the size of the access. If you look closely beneath the centre of the piston you will notice the brass needle partially out of the jet, and a fine spray of fuel being drawn out around it.

If your engine was cold when you did this, you will have used the choke control. This uses a lever arm to lower the jet in its holder temporarily. This has two effects: it moves the jet down to a narrower part of the needle, therefore allowing a heavier flow of fuel, and it lowers the jet mouth to almost the level of fuel in the float chamber, so less suction is needed to draw it through.

The jet assembly is fixed to the base of the carb by a steel nut, but the jet tube can slide up and down not only by using the choke control, but also with a brass nut to fine-tune its height in relation to the carb and needle. Also part of the jet assembly is the delivery tube, the other end of which is connected to the base of the float chamber.

Linked to the choke operating arm is a cam, [a plate with a curved edge]. As the arm is operated, just before the jet starts to lower, the edge of the cam should come into contact with the tip of a 'fast idle' screw. Further movement of the cam plate moves the screw which, via a linkage, opens the throttle slightly while the choke control is in use. Note that the first part of the choke control operation only operates to provide this slight throttle increase: further movement of the choke control then starts to lower the jet and actually provide the richer 'choke' mixture. Always set up the throttle-stop screw first [see later] to give the right idle speed, and then set the cam screw with some slack in the cam's rotation before it starts to move the fast-idle screw.

SU 'HS' type carbs were made in various sizes, measured by the air inlet diameter, in increments of 1/8". The original HS was 1" diameter, the HS2 that Reliant used is 1"+ 2/8", or in other words one and a quarter inches. The jet and needle combinations likewise vary in size with the carb size. All HS2carbs take a jet of 0.090" diameter and a needle that starts off 0.089" diameter, so you can see that a tiny ring of gap around the needle shaft, 1thou wide, is all that's needed to let through enough fuel to run your engine at idle. The diameter of the needle is progressively reduced down its length, step by step, so that in action, as it rises with engine demand, it blocks the jet less and less.

The shape of the needle for your engine was decided under test conditions when the engine was under development. The fuel demands at a range of engine speeds were calculated and the diameter of the needle at each speed calculated.

In practice, needles' diameters reduce at fixed points down the length. These points are at 'stations' exactly 1/8" apart.

At the first station an HS2 needle always measures the same as it does at the very top, so for the first eighth of an inch a needle's diameter doesn't alter. Between the first and second station there is a very slight graded reduction. When the engine is idling and the piston is therefore slightly raised it is this first station, or slightly below it, that is positioned in the mouth of the jet. At this point the idling mixture can be adjusted by manually raising or lowering the jet slightly, so the needle and jet are in exactly the correct relationship. The test for this correct position is as follows:

With the engine at normal operating temperature and the air filter removed the piston is artificially raised 1/8" higher by means of the lifting pin below and to the rear of the air intake, if one is fitted, or with a blunt lever under the edge of the piston. This has the effect of weakening the venturi effect, which causes a temporary weakening of the mixture. There will be one of three results:-

If the mixture was rich the engine idle speed will rise

If the mixture was about right the engine will falter, but pick up and resume its idle

If the mixture was weak the engine will falter and die.

If the mixture needs to be adjusted the brass hexagonal adjusting nut should be turned anticlockwise [unscrewed] to lower the jet, enriching the mixture, or screwed upwards to weaken the mixture. It's recommended that you alter the nut no more than 2 flats at a time before repeating the test, and that you record what you have done so you don't lose track.
['Clockwise / anticlockwise' assume you are looking up at the carb from beneath it.]

If you are starting from scratch, you will need to adjust the jet for an initial idle:

In setting up the idle position for the jet, initially the jet is screwed up to level with the bridge, then unscrewed about 3 turns [downwards] this gives a situation where, once the engine starts, and the needle is drawn up and held just a few millimetres higher by the idling vacuum, the first 'station' of the needle, 3mm from its shoulder, is positioned approximately just above the mouth of the jet. Thus you can raise or lower the jet by one or two flats of the brass adjusting nut [1 flat = a sixth of a turn] and get the correct idling mixture strength. The needle diameter at the shoulder and the first station are always the same as each other and are always 0.0890" for use in a 0.0900" diameter jet. This gives a mixture just too weak to run an engine, but somewhere just below the first station should be right for your engine if you are using the correctly profiled needle.

The throttle-stop screw may need adjusting [undoing a little] to bring the idle speed back down to normal.

Be aware that you may have the wrong needle in your carb, especially if the carb may have originally come on a different car, or the needle may be part-worn, giving too rich a mixture. More of this later, but remember that needles are a 20,000 mile service item, which Reliant didn't always make clear.

SUMMARY

When the engine is running it draws in an amount of air/fuel mix controlled by the throttle butterfly.

An open butterfly allows it to suck a greater volume of mix through, so the engine speeds up.

As the engine speeds up the increased flow of air through the venturi draws air down from the vacuum chamber above the piston, so raising it and further increasing the air flow in. At the same time the raising of the piston raises the tapering needle further out of the jet mouth, blocking fuel flow less and so the engine gets more fuel as well as more air. Furthermore the needle diameter at the new position of the

needle in the jet will have been designed to give the optimum mix of fuel to air for the requirements of the engine at that precise state.

Life is always more complex than it seems though, and in reality far more is involved. Details – Part Two - in the next edition.

J. L. D. Bradford 2010 – 2011 hidunc@ntlworld.com

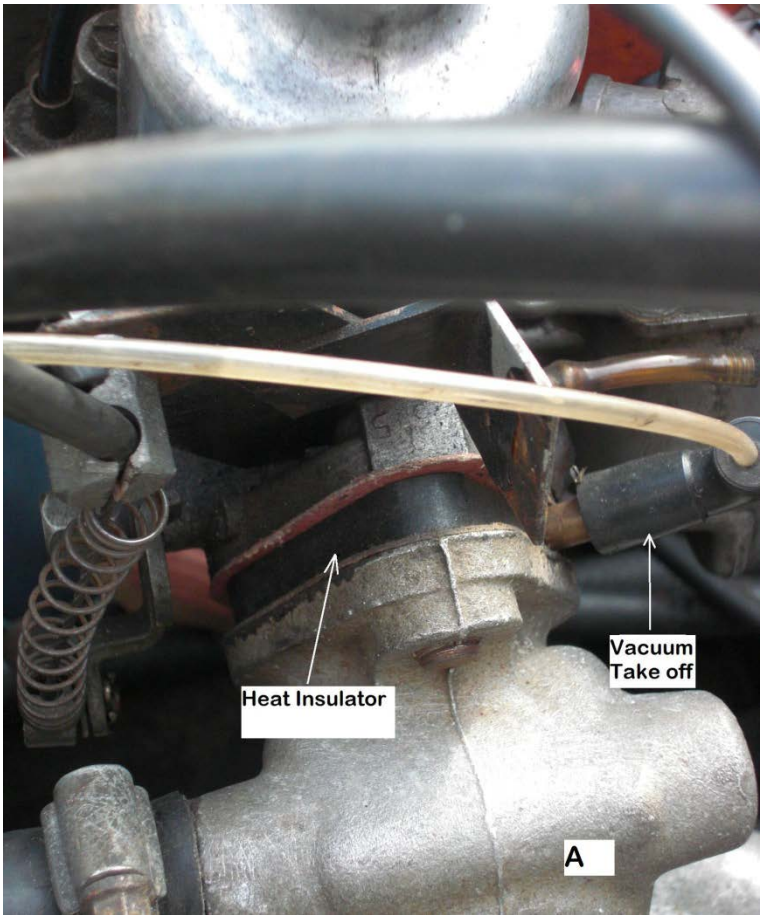
~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

SU Revisions - by Al Osborn

Despite the Reliant product being well designed and respected by most of us when it comes to the SU carb there is several failings that Reliant overlooked/ignored that are very easily put right.

Heat Insulation :- To reduce the 'boiled' petrol / carb syndrome, where one pops into the paper shop and on returning to the motor find it hard to start and hiccups down the road until the carb gets full of cooler petrol. The problem being far more prevalent with the Robin-heat under bonnet etc.

This is what you have to do - Fit a heat insulation spacer as per Pic A. Held on by two longer studs. Note that this spacer is the ideal place to fit a properly working take off for a vacuum gauge.



If you are handy you can make this yourself. Any insulating material (Tufnol) will do with a couple of carb gaskets.

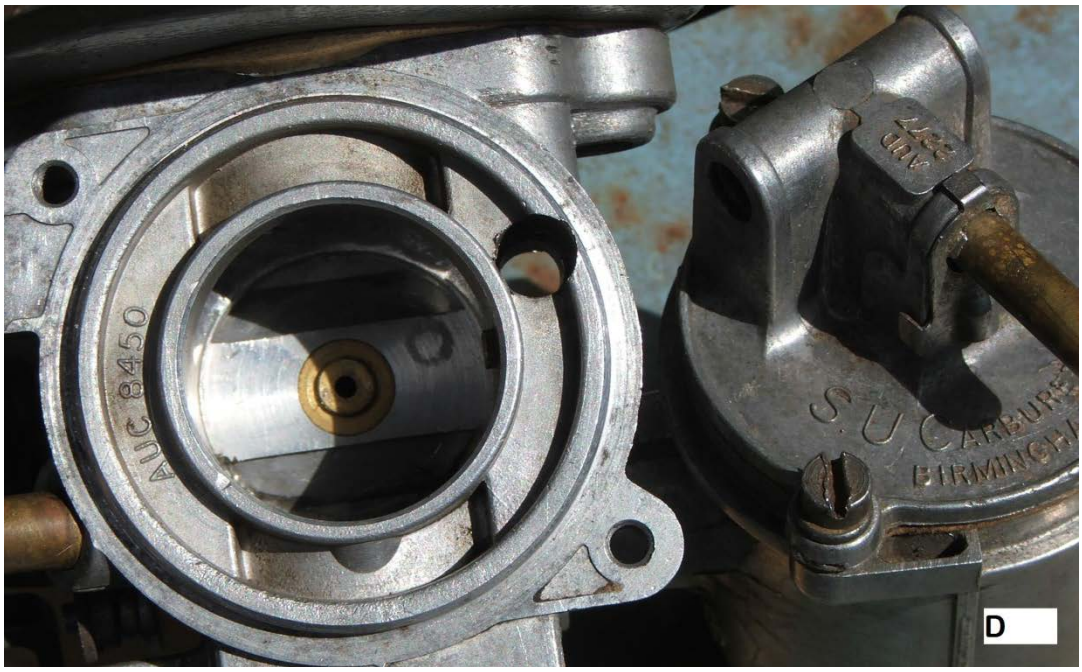
Again where Reliants ignored the physics of SU carbs is in the inlet from the air box. As found Pic B. shows a sharp edge where the air box back bolts to the SU. This edge causes significant turbulence and needs blending to about a 3/8 radius.

Your ‘Black and Decker’ with a metal burr is the tool for the job. Although cutting the steel while it is bolted to the carb seems odd but it is the easiest way to get a good blend as per Pic C.

Further:- Another easy mod that again improves the pickup and response to the throttle is the removal of the lifting pin and drilling the resultant hole out to full size (1/4) Pic D). This modification needs the original feed hole from air box blocked off as well. Hence is worth doing as part of the above modification. This hole is there to feed atmospheric air pressure to the bottom of the slide and thus to lift it under acceleration, feeding it from real outside atmosphere gives much improved throttle response along with less fuss with regard to the dashpot oil.

While considering SU improvements there is an oft strange fault that takes some finding. Symptoms:- False Tickover-Engine revs up, then you reduce it by the normal tickover screw, but find that flooring the clutch causes the engine to stall! No amount of fiddling with mixture or tickover will cure this, as it is carb wear that

steadily gets worse. The fault is that the butterfly is worn at the side where it sits in its shaft and touches the inside of the body. The cure is a new butterfly disc. Shaft should be ok but it might be an idea to replace it at the same time. When I have repaired this fault I have never yet found a worn body in this area. One reason for the wear could be that the throttle closure spring is pulling the butterfly / shaft at an angle, hence wear.



*My thanks to Al for his words of wisdom. Your Editor takes a different view on the engine slowing or stalling upon clutch depression however, he believes it is more likely the result of excessive crankshaft end-float, which is a slightly bigger job to resolve! But that is just another point of view! That said, Al is not wrong about carb wear, a little lubrication on the spindle every time you open the bonnet will help prevent such wear, just touch the bottom of the dipstick (not wise with a hot engine – but you always check the oil **before** a journey – don't you?) when you are checking the oil, and dab that finger on the end of the butterfly spindle – I know, If I'd told you that 30 years ago it would not be worn now! Brings a whole new meaning to the expression – it's all about timing!*

~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

Sales and Wants - See separate sheet enclosed

~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

My thanks to Lyn Rodden, who frequently finds such gems on the internet and keeps me in the loop, always good to hear from you Lyn. Ed.

The Italian Garden

An old Italian gentleman lived alone in New Jersey. He wanted to plant his annual tomato garden, but it was very difficult work, as the ground was hard. His only son, Vincent, who used to help him, was in prison. The old man wrote a letter to his son and described his predicament.

Dear Vincent, I am feeling pretty sad because it looks like I won't be able to plant my tomato garden this year. I'm just getting too old to be digging up a garden plot. I know if you were here my troubles would be over. I know you would be happy to dig the plot for me, like the old days. Love, Papa

A few days later he received a letter from his son.

Dear Papa, Don't dig up that garden! That's where the bodies are buried! Love..Vinnie

At 4 a.m. the next morning, FBI agents and local police arrived and dug up the entire area without finding any bodies. They apologized to the old man and left.

That same day the old man received another letter from his son.

Dear Papa. Go ahead and plant your tomatoes now. That's the best I could do under the circumstances. Love you...Vinnie

~.~.~.~.~.~.~.~.~.~.~.~.~.~.~

Epilogue

Here I am again (organised!) it is July the 11th, edition 101 is still at the printers, this one is ¾ full, and I am naive enough to believe that I am on top of things (quick glance over shoulder – no, no men in white coats – yet!)
As regular readers will be well aware, my memory is not that great these days, and while I have great intentions, the reality does not always come up to the mark. One individual who has not seen his name in print for a while is Thomas Mitchell. Like me, Thomas lives in Renfrew, and those of you with good memories may recall his articles of his exploits in his black Rebel saloon a few years ago.

Thomas is a busy young man, but he does make the effort to call in half a dozen times a year, and is always expecting during those visits to get roped into something! Quite often that something tends to be addressing and stamping the envelopes this comes to you in, a task which takes me a day or more to do on my own, but which, with Thomas' help, barely takes a couple of hours! Brings home to me just how slow I am becoming at almost everything I do these days, but also how wonderful it is to have friends who are able and willing to help out in a great variety of ways. Thank you Thomas, and all concerned, it is greatly appreciated.

Well it is August now, late August right enough, and I find myself with less than a page to go with this one, and the next (Christmas) one is half full too! How lucky am I? My sincere thanks to those concerned, this job is really easy when material abounds, as it seems to be doing at the moment. (Magazine editors throughout the land are no doubt turning green!) That said I'm sure I said to a couple of folk that this one would not be going to print till the third week in September – leading them to believe they had time to get something in, but at the moment I'm good to go!

Anyway, September now, I've just realised that I have 2 articles and lots of pictures of Erddig to share with you, and no room!!! What to do, add a few pages? Issue an extra edition? Hold it back till the Christmas edition - I'm going to compromise and do a bit of both options 1 and 3, i.e. add a page and keep some back till next time – **You know what I'm going to say now, don't you? So do it!**

Oh, and check the antifreeze as well, what do you mean you can't find your hydrometer? (the rubber bulb on mine disintegrated a couple of years ago, and I have yet to replace it!) – should I be stocking them now too? (**No**, too many different sizes!) Till next time, take care,

Brian

Erddig 2011 – some of the cars and the people :-

Thank you once again Malcolm for a great day of wonderful memories.

GRAHAM WALKER LIMITED

28 Bumpers Lane
Sealand Road Ind Est
CHESTER CH1 4LT

RELIANT

RETAIL AND TRADE SUPPLIERS OF RELIANT PARTS WORLDWIDE ROBINS TO SCIMITARS

OVER 10,000 LINES STOCKED
MAIL ORDER PARTS ARE OUR SPECIALITY
NEXT DAY NATIONWIDE DELIVERY SERVICE

SHOP BY PHONE FOR FAST MAIL ORDER
ORDERS RECEIVED BY 4.00PM WILL BE DISPATCHED SAME DAY

ALL MAJOR CREDIT CARDS ACCEPTED

TELEPHONE		OPEN
		Monday - Friday
Mail Order:	01244 381777 – 7 Lines	8.00 am – 6.00 pm
Fax No:	01244 381262	Saturday
		9.00 am – 1.00 pm

WEB : www.grahamwalker.co.uk **E.Mail :** tracey.jones@grahamwalker.easynet.co.uk

COMPARE OUR PRICES, OUR QUALITY AND OUR SERVICE
FULL WORKSHOP FACILITIES AVAILABLE

MOTOR INSURANCE

IMMEDIATE COVER FROM THE SPECIALISTS

pfs

P F SPARE

INSURANCE BROKERS

Free quotation
Payment by Credit Card
Payment by instalments

Established 1962

Underwritten by a leading UK insurer or at Lloyds
High quality advice from trained staff
Nationwide Service
Fast, efficient claims handling

Phone Us on 01530 270574

Authorised and Regulated by the Financial Services Authority